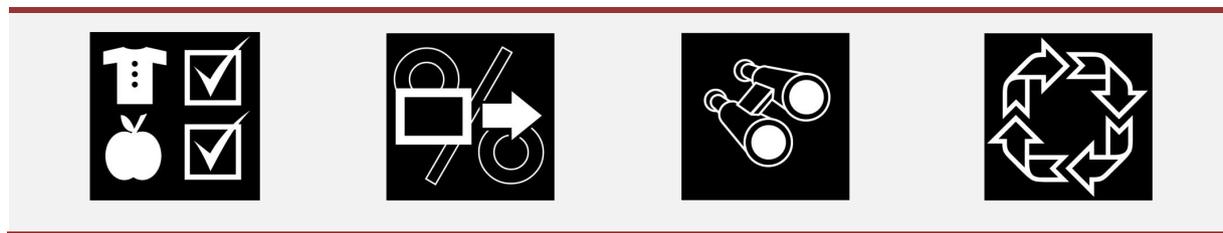


# ValueLinks 2.0

*Manual on Sustainable Value Chain Development*



## Volume 1 Value Chain Analysis, Strategy and Implementation

Andreas Springer-Heinze

**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH



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## Acknowledgements

Since the first version of ValueLinks appeared on CD-Rom in 2007, the methodology has been widely disseminated. From the first ValueLinks seminars in Germany, Ethiopia, Nepal and Ecuador in 2005 and 2006, ValueLinks quickly spread to many countries. In 2009, a group of advisors and trainers founded the *International ValueLinks Association e.V.* in order to share the experience and to discuss and promote the value chain approach to development. Early on, many people argued that ValueLinks needed a much stronger focus on the sustainability agenda and kept on pushing for a prominent inclusion of the environmental and social issues involved in economic development and globalization.

This book is the first volume of the revised and much expanded version of ValueLinks – *ValueLinks 2.0*. The new ValueLinks manual is the result of a great effort to address the sustainability issues in value chain analysis, strategy formation and program implementation. It became possible because many colleagues have contributed great ideas, shared their own experience, materials and entire text passages.

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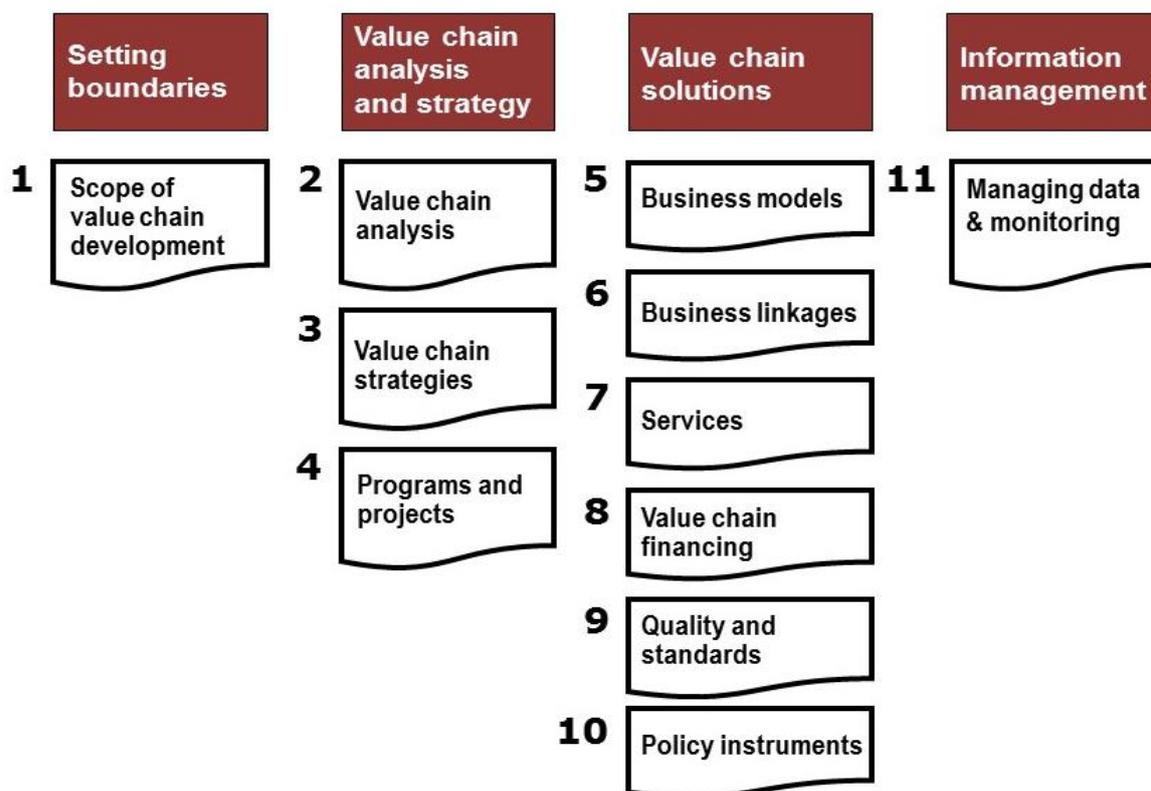
These are some of the people who have actively participated in producing the first volume. The contributors to modules 5 to 11 are named in the acknowledgments for the second volume the ValueLinks 2.0 manual.

*Andreas Springer-Heinze*

Eschborn, January 2018

## Overview

### Content Structure of ValueLinks 2.0



This volume 1 includes modules 1 – 4.

Volume 2 includes modules 5 – 11.

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The contents of this manual represent the opinion of the author and are not necessarily representative of the position of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

# Table of Contents

<b>List of Boxes</b>	<b>v</b>
<b>Abbreviations/Acronyms</b>	<b>ix</b>
<b>Glossary</b>	<b>x</b>
<b>Introduction</b>	<b>2</b>
<b>Value chains - a key perspective on development</b>	<b>2</b>
<b>Sustainable value chain development</b>	<b>10</b>
<b>Utilizing ValueLinks 2.0</b>	<b>14</b>
<b>Module 1 The Scope of Value Chain Development</b>	<b>21</b>
<b>1.1. Introduction: The context of value chain development</b>	<b>21</b>
<b>1.2. The system boundaries of value chains</b>	<b>25</b>
<b>1.3. Selecting value chains to promote</b>	<b>30</b>
<b>1.4. Value chain development as a program component</b>	<b>41</b>
<b>Resources</b>	<b>52</b>
<b>Module 2 Value Chain Analysis</b>	<b>58</b>
<b>2.1. Introduction: How to analyze a value chain</b>	<b>58</b>
<b>2.2. Structural analysis – value chain mapping</b>	<b>62</b>
<b>2.3. Economic analysis of value chains</b>	<b>92</b>
<b>2.4. Environmental analysis of value chains</b>	<b>105</b>
<b>2.5. Social analysis of value chains</b>	<b>132</b>
<b>Resources</b>	<b>154</b>
<b>Module 3 Value Chain Development Objectives and Strategy</b>	<b>163</b>
<b>3.1. Introduction: Goals and strategy development</b>	<b>163</b>
<b>3.2. Strategic considerations for promoting inclusive growth</b>	<b>170</b>
<b>3.3. Strategic considerations for ecological sustainability</b>	<b>190</b>
<b>3.4. Strategic considerations for promoting social benefits</b>	<b>203</b>
<b>3.5. Gender-sensitive value chain development</b>	<b>231</b>
<b>3.6. Elaborating value chain development strategies</b>	<b>242</b>
<b>Resources</b>	<b>261</b>
<b>Module 4 Value Chain Programs and Projects</b>	<b>268</b>
<b>4.1. Introduction: Implementing value chain development</b>	<b>268</b>
<b>4.2. Program formats of lead actors in value chain development</b>	<b>275</b>
<b>4.3. Cooperation for value chain development</b>	<b>291</b>
<b>4.4. Steering value chain development</b>	<b>305</b>
<b>4.5. Managing processes of value chain development</b>	<b>313</b>
<b>4.6. Capacity development and learning</b>	<b>337</b>
<b>Resources</b>	<b>347</b>

## List of Boxes

Box 1.1.1: Concept – Definition of the term value chain	21
Box 1.1.2: Concept – Factors affecting the market inclusion of the poor	24
Box 1.2.1: Concept – Classification scheme according to the CPC Ver.2.1	26
Box 1.2.2: Concept – Levels of aggregation in consumer markets	27
Box 1.2.3: Case – Textile and garment sector structure in Ethiopia	28
Box 1.3.1: Tool – Guiding questions and suggested indicators for economic key criteria	32
Box 1.3.2: Tool – Guiding questions and indicators for key environmental criteria	34
Box 1.3.3: Tool – Guiding questions and suggested indicators for social key criteria	35
Box 1.3.4: Tool – Guiding questions and indicators for key institutional criteria	36
Box 1.3.5: Tool – Overall scoring matrix developed by BMZ/GIZ & ILO (2015)	38
Box 1.4.1: Concept – Matrix showing overlaps of regions and value chains	42
Box 1.4.2: Concept – Presence of value chain stages in a region	43
Box 1.4.3: Concept – Resource management and value chain perspective	46
Box 1.4.4: Case – Argan oil from Morocco	47
Box 1.4.5: Case – National Plan to promote ‘socio-biodiversity’ value chains in Brazil	48
Box 1.4.6: Concept – Crossing perspectives of value chains and small farms or farming systems	49
Box 1.4.7: Case – Innovation Center for the Agriculture and Food Sectors in Ethiopia	51
Box 2.1.1: Tool – Template of a subsector or value chain study	61
Box 2.2.1: Concept – Generic elements of a basic value chain map	62
Box 2.2.2: Concept – Generic elements of a basic value chain map	63
Box 2.2.3: Concept – Basic value chain map completed with institutions and support service providers	64
Box 2.2.4: Tool – Value chain mapping symbols	66
Box 2.2.5: Concept – The “market system” concept (M4P)	67
Box 2.2.6: Tool – How to proceed in chain mapping	68
Box 2.2.7: Case – Map of finished leather and leather products, Ethiopia	69
Box 2.2.8: Case – Overview value chain map of a typical meat value chain, several countries	72
Box 2.2.9: Case – Overview value chain map of conventional honey, Mexico	73
Box 2.2.10: Case – Overview value chain map dried walnuts and walnut kernels, Afghanistan	75
Box 2.2.11: Case – Overview value chain map a generic maize value chain, Africa	76
Box 2.2.12: Case – Overview value chain map of jute products, Bangladesh	77
Box 2.2.13: Case – Mapping services in the handmade toys chain, Asia	79
Box 2.2.14: Case – Mapping chain supporters of the sheep & goat leather value chain, Ethiopia	80
Box 2.2.15: Case – Overview value chain map of herbal medicine products, Bangladesh	81
Box 2.2.16: Case – Overview value chain map of bamboo and rattan products, Vietnam	81
Box 2.2.17: Concept/case – Chain mapping in the garment sector	84
Box 2.2.18: Case – Visible and invisible functions and operators in service provision	85
Box 2.2.19: Concept – Chain mapping in the tourism sector	86
Box 2.3.1: Concept – Template showing the composition of value added	94
Box 2.3.2: Concept – Calculation template placed into the value chain	95
Box 2.3.3: Concept – Distribution of value added along the chain	95

Box 2.3.4: Concept/case – Distribution of value in the pineapple value chain, Ghana	96
Box 2.3.5: Concept/case – Distribution of value added, wage income & profits along a value chain	98
Box 2.3.6: Tool – Spider web of competitiveness benchmarks in the footwear industry	100
Box 2.3.7: Concept – Causes of food losses along the value chain	103
Box 2.3.8: Case – Food losses along the parboiled rice value chain, Nigeria	104
Box 2.4.1: Concept – Interaction of the value chain with the environment: natural resource flows	106
Box 2.4.2: Concept – Interaction between value chains and the environment	107
Box 2.4.3: Concept – Methodology of environmental analyses of value chains	108
Box 2.4.4: Concept/Tool – Identification of technical process steps, case of rice, Benin	110
Box 2.4.5: Concept – Natural resource categories and related issues in the case of rice	112
Box 2.4.6: Case – Local ecosystems in a biodiversity-based value chain	112
Box 2.4.7: Concept – Environmental impact matrix for the value chain, case of rice	113
Box 2.4.8: Case – Example: REWE template for the hot-spot analysis	116
Box 2.4.9: Concept – Components of vulnerability to climate change	118
Box 2.4.10: Tool – Climate proofing of value chains	118
Box 2.4.11: Case – Commodities which are most damaging for biodiversity	121
Box 2.4.12: Tool – Examples of measures of resource efficiency along the value chain	123
Box 2.4.13: Tool – Operationalizing climate vulnerability assessments	125
Box 2.4.14: Tool – Determining type 1 environmental hot-spots	128
Box 2.4.15: Case – Results of the hot-spot assessment, rice value chain, Bénin	130
Box 2.5.1: Case/Concept – Poverty mapping	134
Box 2.5.2: Tool/Concept – Poverty groups in subcontracting arrangements	135
Box 2.5.3: Tool/Concept – Mapping rural poverty markets	136
Box 2.5.4: Tool – Overview of criteria to identify and characterize poverty groups	138
Box 2.5.5: Concept – Value chains in a livelihood context	143
Box 2.5.6: Concept/Tool – The 'gendered' value chain map (1): Chain stages	145
Box 2.5.7: Concept/Tool – The 'gendered' value chain map (2): Chain operators	146
Box 2.5.8: Tool – Harvard matrix determining who does what in the value chain	147
Box 2.5.9: Tool – Assessing power differences of men and women in a value chain	148
Box 2.5.10: Tool – Assessing distribution and control of assets in fresh fisheries	149
Box 3.1.1: Concept – Objectives of sustainable value chain development	163
Box 3.1.2: Concept – Procedure to elaborate strategies for chain development	167
Box 3.2.1: Case – Furniture chain map indicating constraints and opportunities, Peru	178
Box 3.2.2: Tool - Checklist to identify market failures	180
Box 3.2.3: Case – Market failure problems in the potato value chain in Kenya	182
Box 3.2.4: Concept – From strategic considerations to strategic options for economic growth	183
Box 3.2.5: Tool – The Ansoff matrix	184
Box 3.2.6: Concept – Maize supply routes in Africa	188
Box 3.2.7: Concept – A stylized maize supply chain in Africa	188
Box 3.3.1: Concept – Value chain in a circular economy	192
Box 3.3.2: Concept – External costs	196
Box 3.3.3: Concept – Strategic considerations for ecological sustainability	198

Box 3.4.1: Tool – Assessing the possibilities for economic inclusion of the poor	203
Box 3.4.2: Tool – Checklist of factors impeding competitiveness of poor producers	205
Box 3.4.3: Tool – Value chain mapping depicting the competitive situation of poor operators	206
Box 3.4.4: Concept – Market power	207
Box 3.4.5: Tool – Checklist of factors enhancing the market power of poor suppliers	208
Box 3.4.6: Tool – Assessing the risks of poor operators	209
Box 3.4.7: Concept – Relating value chain development and employment	211
Box 3.4.8: Tool – Defining and calculating living wage and living income	213
Box 3.4.9: Tool – Table identifying a poverty penalty in conventional markets	216
Box 3.4.10: Tool – Points to consider assessing the livelihood impact	219
Box 3.4.11: Concept – Interaction of food value chains and nutrition	221
Box 3.4.12: Concept – Strategic options creating social benefits	223
Box 3.4.13: Concept – Easily accessible business models of poor producers	224
Box 3.4.14: Concept – Outcomes of utilizing different business models	225
Box 3.4.15: Concept – Business models for poor entrepreneurs	226
Box 3.4.16: Tool – Overview of social protection policies complementing chain development	229
Box 3.5.1: Tool – Assessing possibilities for greater gender equity	231
Box 3.5.2: Concept – From strategic considerations to options creating gender benefits	235
Box 3.5.3: Case – A female cooperative enterprise in Ecuador	240
Box 3.6.1: Concept – Tasks in strategy formation for value chain development	242
Box 3.6.2: Tool / Concept – Distinguishing levels of inclusion in economic development	247
Box 3.6.3: Case – SWOT analysis and strategies to upgrade fish subsector, Kenya	249
Box 3.6.4: Case – SWOT analysis integrated into cinnamon value chain map, Sri Lanka	251
Box 3.6.5: Tool – Template for the formulation of a value chain development objective	252
Box 3.6.6: Tool – Overview of strategic options for value chain development	253
Box 3.6.7: Tool – Overview of strategic options for value chain development	254
Box 3.6.8: Tool – Criteria to assess value chain solutions	256
Box 3.6.9: Case – Examples of value chain upgrading objectives and actions	258
Box 3.6.10: Tool – Prototype logic model of value chain promotion	259
Box 4.1.1: Concept – Classifying value chain actors	269
Box 4.1.2: Concept – Success Factors of Capacity WORKS in value chain development	274
Box 4.2.1: Concept – Private supply chain initiatives	277
Box 4.2.2: Case – Value chain development, part of Nigeria’s National Agricultural Development Plan	280
Box 4.2.3: Concept – Types of public agencies (1): Directly responsible agencies	282
Box 4.2.4: Concept – Types of public agencies (2): Indirectly responsible agencies	283
Box 4.2.5: Concept – Types of public agencies (3): Cross-cutting agencies	283
Box 4.2.6: Concept – National investment plans as reference for value chain development policy network	284
Box 4.2.7: Concept – Scope of donor-funded full-scale value chain development projects	286
Box 4.2.8: Concept – Value chain development projects for one channel or market segment	287
Box 4.2.9: Concept – Market linkage project	288
Box 4.2.10: Concept – Institutional set-up of value chain development projects	288

Box 4.3.1: Concept – Types of value chain development partnerships	292
Box 4.3.2: Tool – Identifying partners for value chain development	293
Box 4.3.3: Tool – Checking on the characteristics of change agents	294
Box 4.3.4: Concept – Reasons for seeking cooperation	295
Box 4.3.5: Concept – Public and private interests in PPP	296
Box 4.3.6: Concept – Contributions of private companies to development	297
Box 4.3.7: Concept – Characteristics of informal and formal cooperation	298
Box 4.3.8: Case – How GIZ structures the implementation of PPPs	299
Box 4.3.9: Concept – Formal and informal cooperation options	300
Box 4.3.10: Case – Examples of different PPP instruments in Ecuador, 2014	301
Box 4.3.11: Concept – Establishing contact with potential cooperation partners	302
Box 4.3.12: Case – Public-private consultation on business laws in Vietnam	303
Box 4.3.13: Tool – Procedure and success factors organizing private-public dialogues	304
Box 4.4.1: Concept – Basic steering models for value chain development	306
Box 4.4.2: Case — Regional cocoa roundtable in the Amazon region, Ecuador	307
Box 4.4.3: Concept – Steering structure for value chain development	308
Box 4.4.4: Case – Supporting value chain policy in Latin America	311
Box 4.4.5: Case – Interprofessions in Senegal	311
Box 4.4.6: Concept – Institutionalizing the steering structure	312
Box 4.5.1: Concept – The relation of visioning & implementation processes in value chain development	313
Box 4.5.2: Tool – Participatory chain mapping in workshops	315
Box 4.5.3: Case – Joint value chain strategy development during a multi-stakeholder workshop	316
Box 4.5.4: Concept – Typical project cycle of value chain development project	318
Box 4.5.5: Tool – From vision to action	319
Box 4.5.6: Tool – Design of meetings - contents and participants	320
Box 4.5.7: Concept – Preconditions for the success of value chain development	321
Box 4.5.8: Concept – Structuring the value chain development implementation process	322
Box 4.5.9: Tool – Conditions for entry into a chain promotion project	323
Box 4.5.10: Tool – Criteria to stop facilitating or exiting a value chain development process	324
Box 4.5.11: Important principles of promoting and facilitating value chain development	326
Box 4.5.12: Concept – From incentives to compete to incentives to cooperate	329
Box 4.5.13: Concept – From incentives to compete to incentives to cooperate	329
Box 4.5.14: Concept – Aspects of conflict management along the value chain development project cycle	332
Box 4.5.15: Tool – Gender-sensitive value chain development support processes	336
Box 4.6.1: Concept – Two types of capacity development relevant to value chain development	337
Box 4.6.2: Tool – Steps for developing training materials and contents	341
Box 4.6.3: Case – Capacity development for service providers in Ethiopia	342
Box 4.6.4: Case – Capacity development within the 2SCALE project	342
Box 4.6.5: Case – Regional Strategic Analysis and Knowledge Support System	344
Box 4.6.6: Case – Promotion of Private Sector Development in Agriculture, Kenya	345
Box 4.6.7: Case – A graduate program in Ethiopia	346

## Abbreviations/Acronyms

CARE	Cooperative for American Remittances to Europe
CARICOM	The Caribbean Community
DCED	Donor Committee for Enterprise Development
Deval	German Institute for Development Evaluation
ECAPAPA	Eastern and Central Africa Programme for Agricultural Policy Analysis
ECOWAS	Economic Community of West African States
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FSC	Forest Stewardship Council
GDP	gross domestic product
GHG	greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GRI	Global Reporting Initiative
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
IFAD	International Fund for Agriculture Development
IFC	International Finance Cooperation
IICA	Inter-American Institute for Cooperation on Agriculture
IIRR	International Institute of Rural Reconstruction
ILO	International Labour Organization
ILRI	International Livestock Research Institute
IPCC	Intergovernmental Panel on Climate Change
KIT	Royal Tropical Institute
NGN	Nigerian Naira
NGO	non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
PCA	principal component analysis
PPP	public private partnership
REWE	Revisionsverband der Westkauf-Genossenschaften
SADC	Southern African Development Community
SAFA	Sustainability Assessment of Food and Agriculture Systems
SDG	Sustainable Development Goals
SIDA	Swedish International Development Cooperation Agency
SME	small and medium-sized enterprises
SMEDSEP	SME Development for Sustainable Employment Program
SNV	SNV Netherlands Development Organisation
SWOT	strength, weaknesses, opportunities and threats
TEEB	Economics of Ecosystems and Biodiversity
ToR	terms of reference

# Glossary<sup>1</sup>

This glossary includes definitions of terms frequently used in the ValueLinks manual and trainings. It is meant to help understanding and facilitate the communication between the users of the methodology.

## Business linkage

*Value chain operators* relate to each other both horizontally, among similar enterprises at the same *stage* of the value chain, as well as vertically between suppliers and buyers at different stages. Vertical business linkages are the *market* transactions between operators. They range from once-off transactions in a traditional street market (so called arms-length relationship) to order contracts and the *vertical coordination*. In a *value chain map*, vertical business linkages are visualized by arrows. *Service* provision and subcontracting are business linkages as well, but differ from the vertical business linkages along the value chain because service providers and subcontractors do not become owners of the product that defines the value chain. Horizontal business linkages range from informal networks of entrepreneurs to formal cooperative enterprises.

## Business model

The business model is the combination of product/markets, internal business operations and organization, technology employed, supply and marketing links that an enterprise uses to run its business, and to succeed and grow. The types of *value chain operators* shown in the *value chain map* use a similar business model.

## Business operations

Business operations are the activities performed by enterprises to run the business. They comprise of technical processes, such as harvesting, milling or packaging, and commercial activities. They are grouped together in particular *business models* (also see *value chain stage*).

## Cluster / economic cluster

An economic cluster is a geographic concentration of enterprises which are closely connected to one another in a particular production region. An example is the *value chain actors* of the cut flower export business settling close to buyers and an international airport. A straight-forward definition is: A cluster is a value chain that is concentrated at a particular location.

## Commodity

Commodities are bulky, natural resource-based products that are traded internationally either in raw form or after having gone through basic industrial processing. Important agricultural commodities include grains (rice, wheat), soybeans, green coffee, cocoa, palm oil, cotton and white sugar (see *global value chain*).

## Competitiveness

At the *micro level*, the competitiveness of a value chain is determined by hard comparative advantages, such as the location, the availability of primary resources and the labour costs as well as by soft conditions, such as the entrepreneurial competence. At the meso and *macro levels*, competitiveness is a function of *value chain* coordination and *governance*, the existence of *support service* providers and the business enabling environment. The latter can be summarized as the systemic competitiveness of the value chain.

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<sup>1</sup> For financial terms see the glossary in volume 2 of the ValueLinks manual

### **Development partnership with the private sector**

A development partnership with the private sector is a joint venture of a company with a government body to implement development activities, in this case *value chain development*, in which both sides contribute resources. The public partner defines the criteria that need to be fulfilled before engaging in the partnership, such as a clear contribution to development policy objectives, mobilization of private funds that otherwise would not be invested and the long-term commitment of the company to the development of the value chain at stake. The concept differs from conventional public-private partnerships (PPP), which do not necessarily address the sustainable development agenda.

### **Embedded service**

In an embedded service arrangement, *operational services* are delivered in combination with a basic business transaction, i.e. the sale of a product or a loan contract. The basic idea is to pay for the service as part of the *business linkage*. An example is the combination of technical advice with the sale of machinery or inputs. Embedded service arrangements between business partners can include third parties, such as professional service providers.

### **Environmental impact, type 1**

Type 1 environmental impacts are the negative impacts of a value chain on the environment, such as water pollution, emissions, deforestation or unsustainable extraction of biological material from ecosystems

### **Environmental impact, type 2**

Type 2 environmental impacts are the negative impacts of degradation, increasing scarcity of natural resources and climate change on a value chain.

### **Global value chain**

This is the value chain of a globally traded good. Production, trade and consumption span several countries. All value chains of agricultural *commodities* essentially are global value chains, even though they serve domestic markets at the same time.

### **Governance**

Governance is the setting, monitoring and enforcing of norms and rules with which the stakeholders in a collectivity manage their common affairs. The collectivity can be a value chain (thus *value chain governance*) or a local, national or global community of people interested in resolving a common problem or promoting a common goal. Basic types of governance include *markets*, *networks* and *hierarchies*.

### **Lead actors in value chain development**

ValueLinks distinguishes between three types of *lead actors* who engage in *value chain development*: private (lead) companies, government bodies and (UN or bilateral) development agencies. The motivation to enter into value chain development activities varies for each type. Each uses different program or project formats.

### **Lead company**

Enterprises that have a powerful position in the value chain can be *lead companies*. This means that they not only buy and sell products but also set rules and influence the way other operators pursue their business.

## Macro level

The macro level of the value chain includes the relevant government institutions, major providers of public utilities, such as water supply, and the judiciary that determine policies, and regulate the conditions for doing business in a country together. Only part of these institutions are specific to a particular value chain.

## Market

In ValueLinks, the end market (or final market) is the group of customers that buys and consumes the end product that defines the value chain. The end market can be segmented into a series of markets by differentiating the types of consumers. In many value chains, there are intermediary markets for raw or semi-finished products. In such cases, different types of operators together constitute a group of customers – the intermediary market.

The term market is also used to describe a particular type of *governance*. Market transactions can take different forms depending on the character of the goods traded (e.g. *commodities*, perishable products, investment goods or services) each connected to particular rules of exchange. Market transactions not only comprise the act of buying and selling but also the exchange of information (also see *business linkages*).

## Market failure

Generally speaking, market failures occur, when market transactions lead to undesirable results, don't work properly or do not come about altogether although both sides would benefit. Referring to value chains, market failures are the result of a lack of value chain coordination, *business linkages* characterized by asymmetric information, lack of transparency, lack of trust and the absence of shared rules and quality standards.

## Meso level

Within a *value chain*, the meso level includes the specific private and public actors providing regular *support services* or representing the common interest of the *value chain*, such as business associations.

## Micro level

Within a value chain, the micro level comprises of the *value chain operators* and the *operational service providers*.

## Operational service / operational service provider

Operational services are those services that either directly perform *value chain operations* on behalf of the *value chain operators* or are closely connected to them. Many operational services are not specific to the value chain but generic in nature, such as transport, maintenance or accounting services. Operational service providers entertain business linkages with value chain operators but don't become owners of the product themselves. In the *value chain map* the service relation is distinguished from the vertical *business linkages* between operators by using a different type of arrow.

## Operator

See value chain operator.

## Scoping of value chains

Before engaging in value chain studies or value chain development activities, *lead actors* have to define the boundaries of the system to be addressed. In the absence of a generally accepted classification of sectors, *subsectors* and value chains, this is a design task. The scope of a value chain development activity can reach from entire economic *sectors* to small end *market* segments. Starting from a sector, scoping means differentiating specific products and end markets. For example, the horticulture sector can be differentiated into flowers, plants, vegetables and fruits. Each category may be broken down further. The result of scoping is a decision on a specific product and its market(s) that define a *value chain*.

## Sector / subsector

An economy can be divided into sectors following different criteria. For ValueLinks, we define sector along broad product categories, such as the agri-food sector, forestry sector, the apparel sector and the tourism sector. Sectors can be further broken down into subsectors and value chains. The reach of a *value chain development* program is determined by a *scoping* exercise.

## Services

Services are immaterial products delivered by a service provider to a client. Services differ from physical products because delivery and consumption of services are closely interconnected. One important distinction is between private services delivered to private clients, and public benefit services delivered to groups of people in their collective interest. In *value chains*, it is necessary to distinguish between *operational services* and *support services*. Another category is membership services provided to insiders of an organization, e.g. a cooperative or association.

## Standard / standard system

The International Social and Environmental Accreditation and Labelling Alliance (ISEAL) defines a standard as a “document that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory.” Standards refer to particular products and thus value chains. A standard system is “the collective of organisations responsible for the activities involved in the implementation of a standard, including standard-setting, capacity building, assurance, labelling and monitoring.”<sup>2</sup>

## Strategic options for value chain development

ValueLinks suggests a series of pathways for transforming a value chain. They are structured according to the economic, environmental and social development goals of *value chain development*. Most *value chain development strategies* are a combination of several strategic options.

## Supply chain / supply chain management

The basic concept of a supply chain is similar to that of a *value chain*. The difference is that the supply chain refers to the (upstream) sourcing and (downstream) marketing linkages of an individual enterprise. Therefore, supply chain management is a tool for business planning and logistics rather than a development concept. However, the supply chain strategy of a *lead company* can have significance for the value chain as a whole.

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<sup>2</sup> [www.isealliance.org](http://www.isealliance.org)

### Support service / support service provider

Contrary to *operational services*, support services do not directly support (or perform) basic functions in a *value chain*. Instead, they refer to general investment and preparatory activities benefitting all or at least several *value chain operators* simultaneously. Support services therefore provide a collective good shared by the *value chain actors*. Typical examples are the setting of professional standards, provision of information, trade fairs and export marketing, research on generally applicable technical solutions, vocational training or political advocacy. Support services are often provided by business associations, chambers or by specialized public institutions. They belong to the *meso level* of the value chain.

### Transaction cost

Apart from the cost of production and marketing at each stage of the value chain, the *business linkages* between suppliers and buyers engender transaction costs. These include the costs of search for business partners, for seeking information and screening the *market*, and for negotiating, monitoring and enforcing contracts. High transaction costs are often a result of *market failure* and overall inefficiencies, such as weak infrastructure and low market transparency.

### Upgrading / value chain upgrading

The term upgrading denotes the economic development path of a *value chain*. In the *ValueLinks* terminology, upgrading is one of several *value chain development strategies*. Upgrading improves the overall efficiency and *competitiveness* of the value chain. Conventionally, product upgrading means the innovation, diversification or improvement of the end product. Process upgrading is the improvement of production and distribution technology and logistics. Functional upgrading means the shifting of *value chain functions* from one *value chain operator* to another, for example shifting primary processing to farmers. All forms of upgrading have a direct bearing on the *business models* of the operators.

### Value added

Value added is a measure for the economic value created in an economy. It is equivalent to the total value generated by the *operators* in the chain (chain revenue = final sales price \* volume sold). The value added per unit of product is the difference between the price obtained by a *value chain operator* and the price that the operator has paid for the inputs delivered by operators of the preceding stage of the value chain and the intermediate goods bought from suppliers of inputs and *services* who are not regarded part of the value chain. Thus, only part of the value added remains in the chain (= *value captured*), another part is captured by suppliers external to the chain.

### Value captured

This is the part of value added that remains within the value chain and is cashed in by *value chain operators*.

### Value chain

A value chain is

- A sequence of related business operations (functions) from the provision of specific inputs for a particular product to primary production, transformation, marketing, and up to the final sale of the particular product to consumers. This is the functional view on a value chain.
- A set of enterprises (*operators*) performing these operations i.e. producers, processors, traders and distributors of a particular product. Enterprises are linked by a series of business transactions in which the product is passed on from primary producers to end consumers.

According to the sequence of functions and operators, value chains consist of a series of *value chain stages*.

### **Value chain actor**

This is the general term for all individuals, enterprises and public agencies related to a *value chain*, in particular the *value chain operators*, providers of *operational services* and the providers of *support services*. In a wider sense, certain government agencies at the *macro level* can also be seen as value chain actors if they perform crucial functions for the *governance* of a particular value chain.

### **Value chain development**

Value chain development is the active promotion of a value chain supporting its development and gradual transformation towards a sustainable (green and inclusive) economy. It is the *lead actors* who take on the role of promoting and facilitating value chain development.

### **Value chain development strategy**

The value chain development strategy refers to the value chain as a whole. It describes the aspired changes in the value chain to be realized within a couple of years, and that are needed to reach development objectives (also called vision). Very often, several programs and projects contribute to the development of a value chain in parallel, each focusing on specific *strategic options for value chain development* and on specific *value chain solutions*. Most value chain development projects thus pursue partial strategies only.

### **Value chain function**

This is a higher level term that refers to the functional definition of the *value chain*. Value chain functions include the sequence of *business operations* and of *value chain stages*.

### **Value chain governance**

For one, value chain governance refers to the way *business linkages* are structured along the value chain. Following the terminology defined by Gary Gereffi, we distinguish between market governance, modular value chains, captive relationships and *vertical integration*. Market governance means that products change hands in a once-off interaction. In a modular value chain an independent supplier makes products according to buyer specifications. Captive relations and vertical integration are forms of governance, in which small suppliers depend on a much larger *lead company*.

Value chain governance also refers to norms and rules addressing common concerns for sustainability. Sustainability governance of value chains is achieved by *standard systems* often in conjunction with public policies. When value chains coordinate the setting and enforcing of rules with local or national communities to address an issue of common interest (e.g. natural resource management), we speak of co-governance. In this case, both governance systems address the same issue.

### **Value chain map**

The value chain map is a chart visualizing the *micro and meso levels* of the *value chain*. Following the definition of value chain it consists of a functional map showing the *value chain stages* combined with a map of the *value chain actors* and their relations. ValueLinks defines specific symbols for the value chain stages, end markets, *value chain operators*, *business linkages*, subcontracting relations, operational and *support service linkages* and the support service providers. Value chain mapping can, but does not necessarily, include the *macro level* of a *value chain*.

### **Value chain operator**

The enterprises performing the core functions within a *value chain* are called *value chain operators*. Typical operators include farmers, small and medium enterprises, industrial companies, exporters, wholesalers and retailers. They have in common that they become owners of the (raw, semi-processed or finished) product at some stage of the value chain. There is a difference between operators and *operational service providers*, the latter being subcontractors of the value chain operators.

### **Value chain solution**

To achieve a value chain development strategy, different elements of a value chain have to be altered. Solutions refer to improved *business models* of operators, *business linkages*, service provision, financing arrangements, to quality and sustainability standards and to improved policies. ValueLinks modules 5 to 10 contain possible solutions for the changes to be made in the value chain (see the second volume of the Value-Links 2.0 manual).

### **Value chain stage**

Connected *business operations* are summarized into value chain stages (or chain links). For example, the sequence of land preparation, field management, harvesting and post-harvest handling is conventionally taken together as the stage of primary agricultural production. The specific separation of value chain stages differs between value chains and follows from the classification of *value chain operators* and their *business models*. Processing of raw material may be differentiated into several separate (e.g. primary and secondary) processing stages. Value chain stages are indicated by hollow arrows in the *value chain map*.

### **Vertical coordination / vertical integration**

Vertical coordination means formalizing *business linkages* through written agreements and contracts. A case in point is contract production in which suppliers and buyers closely coordinate their *business operations*. In extreme cases, one party is entirely controlled the other (also see *value chain governance*).



# Introduction

## Introduction into ValueLinks 2.0

### Value chains - a key perspective on development

Sustainable development is about transforming today's wasteful, inequitable economies to more sustainable and inclusive societies. The current consumption and production patterns waste talent by keeping the poor and young from taking economic opportunities. They discard resources by pursuing inefficient practices in mobility, housing, energy use and nutrition, and they damage the ecological foundations by overexploiting natural resources and polluting the environment. There is a widespread consensus that the current mode of economic development involves very high ecological and social risks. Persistent poverty, growing social inequality and increasing resource scarcity will lead to economic instability and trigger conflict.

To change course, the global community has agreed on the Agenda for Sustainable Development, urgently calling for “bold and transformative steps (...) to shift the world onto a sustainable and resilient path”<sup>3</sup>. The agenda deals with a global challenge, not with developing countries catching up on delays in their economic development. It requires a transition to sustainable approaches in all countries – creating new ways of organizing production and consumption patterns worldwide. It is about a fundamental change, not just about mitigating local symptoms of crises.

The sustainable development goals aim at no less than at transforming our world addressing the economic, environmental and social dimensions of sustainability simultaneously. The sustainability agenda builds on the understanding that the problems are interlinked and that progress in one sustainability dimension relies on the achievements in the others. Transformation means systemic change of production and consumption, which implies the parallel change of economic processes, technology, social behavior and institutional structures. No single government, company or social organization could bring about the change on its own. Individuals and organizations react to each other and to the conditions of the socioeconomic system that they themselves constitute through their interaction. The change thus has to come from within these systems. It will be the outcome of collective efforts and involve all participants likewise. In this sense, the sustainability agenda provides a vision but not a design of a sustainable future. It indicates a direction while it is the inherent momentum of economic systems that drives their evolution.

Any approach to implementing the agenda for sustainable development has to take a systemic view shining a light on the intertwined social, economic, technical and institutional factors. Clarifying the conditions for transformation towards sustainability should help intervening actors better understand the underlying dynamics and enable them to act.

There are different options to achieve this, depending on the perspective taken. One approach is located at the level of international agreements and policy programs. It looks for possibilities to strengthen political coalitions for sustainability. Another focuses on a national or regional economies, or on spatially defined economic systems, such as urban agglomerations, the utilization of watersheds or fishing grounds.

The manual at hand takes commercial products and markets as its starting point. Value chains are technical, economic and social systems at the same time. They connect the spheres of production and consumption, therefore being classic fields of policymaking and regulation.

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<sup>3</sup> <https://sustainabledevelopment.un.org/post2015/transformingourworld>

They encompass highly localized foods systems as well as economic networks spanning international borders. On the agenda for sustainable development, there is no way around transforming the value chains that constitute local and national economies and ultimately the global economy as a whole.

## The value chain concept

Very broadly, value chains can be defined as socioeconomic systems that include all enterprises cooperating to serve a particular market. The enterprises forming the value chain interact constantly – buying and selling products and services, exchanging information and cooperating to pursue shared interests. The enterprises are the core of a wider value chain community that consists of private associations, specialized service providers and industry-specific public organizations providing support.

Two terms are very close if not synonymous to value chain: industry and economic (sub)sector. A similar concept, with some qualifications, is the economic cluster. These notions refer to particular groups of goods and services as well as to the markets for these products, and they include *all* economic actors that play a role in the production and consumption of the goods concerned<sup>4</sup>.

There is an important difference between value chains and supply chains: In contrast to a value chain or industry, the supply chain is bound to one particular company and denotes its backward supply linkages. Organizing the supply chain of a company is a managerial task while improving a value chain builds on the collaboration between partners in the industry at large. Being composed of enterprises, the value chain includes the supply chains as smaller sub-systems<sup>5</sup>. By looking at the entire business community of an industry, value chains include the meso level of the economy while supply chains refer to individual companies at the micro level.

The definition applies to all types of value chains, from very simple local systems to the most differentiated global production networks. As soon as operators divide the tasks to make a consumer good and rely on each other to reach final markets, their cooperation constitutes a value chain. Thus, value chains come in a wide variety of shapes and sizes. As with all open social systems, there are no exact limits. The value chain becomes visible as an analyst defines the scope of the system based upon the specific interest and in response to the interaction within the value chain that he/she observes<sup>6</sup>.

Nevertheless, we can differentiate between types of value chains. One aspect is industry structure: Value chains based on natural resources and agriculture are often linear in structure, characterized by one type of raw material and a narrow range of product variants as in the case of coffee. Value chains of manufacturing industries rather have a network structure as the final products contain many components and supply linkages branch out accordingly. Service industries, such as tourism have yet another structure because services are “produced” in the interaction with customers. Other criteria to classify value chains include the degree of integration and intensity of interactions along the chain and their location. Value chains within one country have to be distinguished from global value chains that cross national borders.

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<sup>4</sup> For more on the definition of value chains, see the introduction into module 1. The description of its systemic characteristics follows in module 2.

<sup>5</sup> For definitions and the terminology around value chains, see the ValueLinks glossary.

<sup>6</sup> The scoping and selecting of value chains is a subject of module 1.

## Value chains as complex socio-economic systems

Markets and the conditions of doing business are changing constantly. To survive and be successful, enterprises have to adapt their business processes, review their relations to partners and position themselves vis-à-vis competitors. The structure of a value chain is the result of self-organization in response to a multitude of factors related to the natural environment, trust and social norms, power relations and the available technology and infrastructure. While these factors influence the behavior of the value chain actors, the same actors also shape the conditions of value chains by creating new technical solutions and agreeing on rules for cooperation. A value chain thus is a self-organizing socio-economic system. It is not created by a specific actor but emerges from cooperation. Value chains are open systems because they are embedded in a wider economy and cultural context. They exchange materials and energy with the natural environment. Value chains evolved in early economic in parallel with the exchange of goods and an increasing division of labor.

The systemic nature of value chains is essential. We have to understand why and how a value chain works *before* we can think of influencing its development. The idea is to utilize the concept in order to relate to the economic world as it exists and to look for a leverage point to improve it. Value chain development has to deal with the complexity of an economic system that is driven by largely uncontrolled market forces.

## Value chains in development policy

Market-based development and the involvement of the private sector have been widely debated by international development actors since the UNDP report on making business work for the poor<sup>7</sup> in 2004. The key argument is that markets and economic growth are essential for alleviating poverty, the creation of jobs and, ultimately, the income of poor people. The pro-poor growth concept builds on the premise that only economic growth and the market success of poor people provide a solution to the poverty problem. Economic inclusion of the poor – be it as producers of food or as workers in labor-intensive manufacturing processes – evokes the value chain concept: Promoting the growth of markets and value chains provides opportunities for the poor and can help lifting them out of poverty.

Another line of debate is about the impact of globalization on the socio-economic development of low-income countries. On one side, the increasing scope and importance of global value chains have opened up windows of opportunity for marginalized countries that, for the first time, had a chance to join global production networks as suppliers to multinational companies. On the other side, globalization has intensified the competition taking it to every corner of the planet. The question is whether the poor can actually gain from participating in global value chains or whether they get trapped in the race for cheap labor. In any case, development policy addresses labor conditions and environmental issues in numerous initiatives that aim at introducing sustainable practices into global value chains.

The value chain concept also plays a role in addressing environmental degradation and biodiversity loss. For one, consumers increasingly judge commercial products by their ecological footprint which is determined by the processes applied to making the product. Sustainable consumption is only possible by taking account of the natural resources consumed along the value chain. At the same time, value chain development offers a perspective for realizing the *economic* value of ecosystems: Finding ways to market landscape beauty or collected produce from the wild attaches additional value to these resources and helps protecting them.

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<sup>7</sup> See the story in UNDP, 2008, and the website <http://growinginclusivemarkets.org>

The role of markets and private sector involvement was confirmed by the UN resolution Transforming our world: the 2030 Agenda for Sustainable Development of September 2015<sup>8</sup>. It defines 17 Sustainable Development Goals (SDGs) to be achieved by the world community by 2030. In the descriptions of SDG 1 (“No poverty”), the UN states that “the private sector, as an engine of economic growth, has a major role to play in determining whether the growth it creates is inclusive and hence contributes to poverty reduction.” As it stands, both large and small enterprises are part of value chains. The economic success of the poor presupposes their integration into markets. SDG 9 (“Build resilient infrastructure, promote sustainable industrialization and foster innovation”) explicitly refers to the objective to “increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services including affordable credit, and their integration into value chains and markets”. “Promoting inclusive and sustainable economic growth” is the objective of SDG 8. Economic development along value chains also has a role in SDG 12 (“Ensure sustainable consumption and production patterns”).

Independent of the question whether or not the term value chain itself appears in the development agenda, the concept is useful to operationalize the reference to markets and the role of the private sector. Because of its versatility and systemic nature, the value chain concept helps addressing the interactions between economic development and social inclusion, as well as the interactions between economic growth and the environment.

### Value chain development methodologies

In the early 2000s, the term value chain started to show up in the vocabulary of the international development community and has been used widely ever since. The value chain concept is not a fad. Its importance lies in the fact that it describes the economic reality in a way that allows handling the complexity of development. It is a methodology to guide policymaking and the design of development programs.

Over time, development agencies and academia have presented a variety of market-based approaches building on the value chain concept. Widely quoted terms related to value chain development include:

- Value chain (or subsector) development
- Linking farmers to markets
- Making markets work
- Public-private development partnerships
- Inclusive business
- Standard initiatives for global commodities

In fact, the value chain approach is utilized in very different ways. It can be the guiding principle of an entire development program or policy, or simply represent the concern for economic viability of (any) development strategy. Programs may be organized around specific value chains or take a value chain perspective by including a reference to markets in a design that focuses on regional development or natural resources otherwise.

The main contributors to the value chain development paradigm are UN organizations and major development agencies. ILO, UNIDO, World Bank, FAO have published manuals and technical literature, just as the US Agency for International Development USAID, the Swiss

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<sup>8</sup> Resolution of the United Nations General Assembly “Transforming our World: the 2030 Agenda for Sustainable Development” adopted on 25 September, 2015

Agency for Development and Cooperation and the Dutch SNV. The German Agency for Technical Cooperation GTZ (now German Agency for Technical Cooperation International GIZ) published the first edition of the ValueLinks manual in 2007. A collection of documents of these agencies is available on the internet platform [www.value-chains.org](http://www.value-chains.org)<sup>9</sup>. Several authors have presented comparative studies on different value chain methodologies<sup>10</sup>.

Today, the value chain approach is well established. Nevertheless, despite its success — or maybe as a consequence — there are critical voices challenging its strategic importance. On the surface, this has to do with uncertainties about the exact meaning of the concept. Obviously, the terminology and understanding of the value chain approach diverges in the literature. More importantly, observers express doubts about the impact of value chain development work. One point is the question to what extent market development actually contributes to social and ecological improvements. The other concerns the outreach of value chain development, the possibility to get beyond islands of sustainability in an economy that otherwise continues inflicting ecological damage and exacerbating social inequality.

## The philosophy and guiding principles of ValueLinks 2.0

ValueLinks 2.0 responds to these concerns by placing the idea of a green and inclusive economy in the center and by clarifying what the value chain approach can achieve and where its boundaries are. The following four paragraphs lay out the basic principles guiding ValueLinks.

### *Building on the sustainable development agenda*

The first principle of ValueLinks 2.0 is its explicit focus on social equity and sustainability. We understand economic development as the transition to a green and inclusive economy. ValueLinks 2.0 subscribes to the goals and values of the UN sustainable development agenda applying them to value chains. It treats the economic, environmental and social dimensions of sustainable development equally.

### *Systems thinking*

ValueLinks takes off from the fact that value chains are dynamic self-organizing systems. The complexity of value chains implies that it is virtually impossible to capture the many intervening factors and establish clear cause-effect relations. Value chain development is the result of collective action and an open-ended process that never advances smoothly: While every contribution counts, no one is fully in charge. However, the value chain system provides the intervening actors and development programs with a common reference. In view of the knowledge problem, we have to proceed step by step taking into account the dynamics of development in which one issue leads to the next. ValueLinks asks users to analyze the specific conditions for change and provides options to improve the system gradually. The modular structure allows switching between different perspectives moving from the ecological analysis (e.g. value chain and water use) to an economic question (does investment pay off?), to an institutional issue (enforcement of rules) on to the social side (where are job opportunities?). ValueLinks thus offers a way of thinking, not recipe-type solutions.

### *Determining the scope and limits of the value chain approach*

The potential impact of promoting a value chain depends on where it stands today. Value chain development is path-dependent and we have to be realistic how much change is possible in a

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<sup>9</sup> The site [www.value-chains.org](http://www.value-chains.org) is run by the Donor Committee for Enterprise Development

<sup>10</sup> See Donovan et al., 2013, and Humphrey/Navas-Alemán, 2010

given time. Therefore, every value chain development initiative has to choose its level of ambition carefully. The point is to make the right move in the given situation, even if it is only a small step and a partial solution. This implies managing the expectations of policy makers accordingly.

It is also necessary to be clear about the limits of the value chain perspective as such. Sustainability issues have to be addressed by a variety of means. Besides being actors in value chains, people are also part of other social systems at the same time. Therefore, the value chain perspective can never address a sustainability problem completely. It is advisable to combine value chain development with other development concepts that take a different approach – from natural resource management and regional development to many other themes. Conversely, ValueLinks is a source for other development concepts which have to understand the economic aspects of the particular problem they are addressing. The value chain approach can thus be a complementary perspective for territorial development programs or policy advice. ValueLinks 2.0 provides expertise to cover the economic dimension of sustainability in development programs that do not primarily focus on value chains.

### *Seeking compatibility of ValueLinks with other value chain development methodologies*

It follows from the preceding statements that ValueLinks delivers one type of contributions to value chain development alongside others. ValueLinks 2.0 seeks the compatibility with other value chain methodologies to enable partners to choose among tools from different sources. In their own interest, investors in value chain development have to collaborate to achieve change. They should do everything to avoid confusion and not place terminological differences higher than the need to get active.

An important principle of ValueLinks 2.0 therefore is to seek the compatibility with other manuals and guidelines in the field. Users are invited to feed the expertise collected and presented by ValueLinks into their own work context. At the same time, ValueLinks is open to receive other ideas.

## **Building economic structure**

The economic dimension of sustainability is the first to consider. In the broadest sense, the goal is economic growth – producing more goods and services and making them available to a large number of people. Affordable market products are the basis of a decent life wherever people have no access to essential goods or even lack basic food stuffs. At the same time, growth means increased economic activity which offers opportunities for poor people to earn money and escape poverty. There is an obvious relation between the economic and the social dimensions of sustainability as economic growth is a precondition for reducing poverty.

Essentially, the goal of economic development is the strengthening of the capacity to produce useful goods and services. This productive capacity rests in a combination of factors: Economic growth not only depends on the conventional production factors – equipment and infrastructure capital, land and labor. Growth theory has shown the importance of human capital – skilled people and of the social capital of society – the values and trust-based relations between economically active people. In addition, economic performance appears to be a function of the differentiation of the economic structure<sup>11</sup> – the fact that products are not created by individual enterprises but by networks of enterprises with complementary skills that together possess the right mix of expertise. The combination of factors counts for economic perfor-

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<sup>11</sup> See Rodrik, 2009

mance. Economic development therefore has to build an economic system in which the different factors fit well together: Products respond to market demand. The technology makes productive use of the available resources and the workforce has the set of skills to operate it. The division of labor allows professional specialization while trustworthy business relations help to achieve coordination. Financial services facilitate the investment.

The application of this goal to the value chain concept is straight forward. Value chains are economic systems. However, basic they may seem at present, they always describe one way of doing business based on a particular set of factors of competitiveness. The value chain concept brings out the potential and the constraints to higher economic performance by analyzing value chains as economic structures and thus provides the foundation for additional economic growth. By making the connection with end markets, the value chain concept is useful to specify growth opportunities and measure them.

Another important aspect of the economic dimension of sustainability is the need to verify the financial viability of any innovation, not only in business but also in the non-economic development sectors. To be sustainable, social and environmental improvements have to be financially feasible. Development solutions are incomplete if they lack the economic perspective.

### Greening value chains

The second goal dimension of sustainable development is ecological sustainability. Development policy needs to find answers to the ongoing depletion of soil fertility, fresh water, ecosystems, biodiversity and other natural resources in many regions, and the mounting carbon emissions and pollution worldwide. UNEP calls for a green economy leading to “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities”<sup>12</sup>. Development can only advance if economic growth is not achieved at the expense of its ecological foundations.

We can distinguish two aspects of the goal. One is the protection of essential ecosystems and biodiversity that are the foundation of the economy and, ultimately, of human societies. The second aspect is a low-carbon and resource-efficient production decoupling socio-economic development from resource use and environmental degradation. Whereas the first aspect points to absolute ecological limits, the second is a matter of minimizing the consumption of energy, material and water resources, and of greenhouse gas emissions.

It is not difficult to transfer these objectives to the value chain context. The value chain concept is a framework to calculate the total resource consumption *per unit of a marketable product*. The ecological footprint of a product arises along the entire production and marketing chain. The value chain sequence also helps detecting critical ecosystem limits. Assessing the conditions at every chain link allows to differentiate between unsustainable, ‘dirty’, and sustainable ‘clean’ products.

Ecologically sustainable production means reducing the ecological footprint of a marketable product while preserving ecosystem stability. Consumers switch to a more sustainable consumption pattern by reducing the sum of footprint values in the average basket of goods they purchase. Another possibility for operationalizing the ecological sustainability goal in a value chain context is the promotion of innovative products that help saving materials, water and energy.

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<sup>12</sup> UNEP (2010): “Green Economy. Developing Countries Success Stories”, Geneva, see the website <http://www.greengrowthknowledge.org/sectors>

## Promoting social inclusion

The third dimension of sustainable development deals with social aspects. The SDG 1 is about ending poverty in all its forms everywhere. Poverty being a multi-dimensional problem, the goal of inclusive growth refers to a range of issues, including health and nutrition and the question of income equality<sup>13</sup>. Another important question is the economic inclusion of women, and gender equity in general. Sustainability has a social dimension not only because development has to generate social improvements but also vice-versa: Poverty and inequality seriously impede economic progress and contribute to resource degradation<sup>14</sup>.

Transferred to the value chain context, the main goal is the economic inclusion of poor and disadvantaged people in a value chain. Inclusive business has always been the core of value chain development — the one objective that proponents of value chain development had in mind in the first place: This is expressed in the idea of linking farmers and microentrepreneurs to markets via inclusive business models and microfinance solutions, and in the promotion of labor-intensive products.

Improving the income of poor entrepreneurs and making jobs accessible to poor people remain to be key objectives of chain development. The value chain concept allows addressing the dynamics and the conditions of economic inclusion vs. exclusion and has tools to locate and describe poverty groups. Yet, the social dimension of value chains also extends to smaller, partial benefits. Supporting diverse income opportunities makes sense even if that provides only partial contributions to the livelihoods of poor households but helps enhancing their resilience to external shocks. Productive food value chains are important for food and nutrition security. It is very clear that gender equity is an important concern in value chain development as well.

In summary, the three dimensions of the sustainable development agenda are critically important for value chain development. The value chain concept helps to operationalize the goals and brings out the connections between them. Sustainable value chains are an integral part of the sustainable development agenda, the idea of a green and inclusive economy.

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<sup>13</sup> OECD, 2015a

<sup>14</sup> OECD, 2015b

## Sustainable value chain development

Value chain development is a process through which governments, private companies or development agencies seek to promote the transition of the economy to greener and more inclusive industries. The question is how they can achieve this. While the value chain concept helps to understand the structure and functioning of a chain, it does not necessarily imply that public policy can actually change the way an industry works. The nature of value chains as social systems includes that value chains develop in a self-organizing process. In fact, all value chains are the result of an evolutionary process, not of external design.

### Rationale of developing value chains: Impact hypotheses

Which are the conditions for sustainable economic growth and the success of value chain development? Development theorists have given different answers to this question<sup>15</sup>.

The liberal position argues that the best policy to foster growth is to get the framework conditions right and leave space for private investment and the creativity of entrepreneurs in the search of solutions. In this view, public programs should not directly engage in value chain development but mobilize and encourage private investment by improving the business environment — strengthening the rule of law and providing the requisite infrastructure and services, such as public research. Jobs and better incomes are supposed to emerge indirectly because of better policies.

A related strand of development thinking places the focus on correcting market failures. This view takes off from the observation that the market mechanism does not deliver desirable social and environmental outcomes by itself. The idea is to correct these failures and, more specifically “making markets work”<sup>16</sup>. By correcting failures of coordination and information asymmetries along the value chain, economic development is expected to speed up and become more inclusive. Market failure is also part of the diagnosis underlying the strategies for greening the economy. Greater control on economic development helps avoiding environmental damage. The strategy is to influence and steer economic behavior towards the common sustainability agenda.

The third hypothesis is that poor people lack the skills and organizational capacity to benefit from existing economic opportunities. Essentially, the impact hypothesis claims that helping the weaker market participants overcome their disadvantages will generate pro-poor growth. This includes organizing small enterprises, improving their access to technology and facilitating their market participation. It is an active approach linking small enterprises and smallholder farmers to buyers. Another hypothesis is that many value chain innovations involve parallel investment of enterprises, which does not happen automatically. The cooperation along a value chain has to be arranged actively, often by a lead firm.

ValueLinks does not rule out any of these hypotheses. In fact, only few development programs rely on one hypothesis alone. The position of this manual is that value chain development should try to harness market forces and the self-organization of value chain actors. To the extent possible, strategies should rely on the local knowledge and creativity of poor entrepreneurs who should be free in their choice of innovative economic solutions. At the same time,

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<sup>15</sup> See the treatment of economic development theory in Easterly (2001), Lin (2012) and Rodrik (2009)

<sup>16</sup> The Springfield Centre (2015): “The Operational Guide for the Making Markets Work for the Poor Approach”

strategies have to define the ecological and social boundaries. Wherever value chain development stagnates, strategies have to include incentives for innovation. On the other hand, governments have to avoid marginalizing weak actors. Maintaining the resource base required for a stable economic development requires policy interventions as well. The point is to keep the balance and avoid the trap of detailed economic planning.

## Public and private perspectives

Building a green and inclusive economy requires the collaboration between private and public actors, the coordination of interventions and co-investment. At the same time, both sides have to benefit for their own interests and needs.

### *The interest of government and private companies in value chain development*

The conventional view is that the interest of governments builds on the sustainable development goals, whereas the bottom line of private enterprises is their profitability. However, the reality is not so clear-cut.

Public policymaking has to seek the balance between the many demands put forward by economic interest groups, including private associations and companies. Many of their interests are going in different directions and therefore cannot be satisfied. The main challenge is to operationalize the sustainability goals into a set of effective measures, taking into account the limitations of administrative capability and of government funds. As a result, governments do not derive coherent policy programs for sustainable economic development but react to changing coalitions and initiatives. Value chains provide a framework for sorting out the issues and build agreements on the rules and direction for market development. The state should “facilitate the movement of the economy from a lower level of development to a higher one ... addressing externality and coordination issues”<sup>17</sup>.

The interest of the private sector in value chain development is as fragmented as the industry as a whole. Broadly, we can differentiate between individual company interests and the collective objectives of a business community. Some private companies have an interest in promoting sustainable production and consumption and may even include sustainability objectives into corporate strategies. Some multinational companies have started to develop products and services tailored to poor consumers.

At industry level, the private sector often has a collective interest in value chain development in terms of improved regulation, shared technology and market development. Strategic alliances linking different enterprises along the chains are therefore gaining importance. Industry associations engage in value chain development to seek and lobby solutions for the value chain at large. That value chain solutions do make economic and financial sense is indeed a key criterion for development. Private financial viability corresponds to the public concern for economic sustainability and therefore is an important corrective for economic policy.

### *Public-private co-operation and co-investment*

Governments depend on private investment for implementing the sustainable development agenda. They have to accommodate industry perspectives and the interest of private enterprises to find solutions that work. Enterprises operate at the micro level, pursue concrete projects and are certainly more pragmatic than public administration.

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<sup>17</sup> Lin, 2012, p.27

However, the negotiation arena between public and private interests is complicated. Unlike the generic public goals, private objectives are more diverse and specific. The private sector as such does not exist in the same way as the public sector. In fact, enterprises often seek particular business solutions for which there are no counterparts in government.

ValueLinks takes a neutral position between public development actors and private enterprises serving both of them equally. The decisive issue is to support both sides so that better collaboration and partnerships can ensue. The value chain concept can help to enhance the mutual understanding. Relating to the same knowledge base the different parties – government, private enterprises as well as development agencies – can see their connections better and try to bridge the gap. Using the value chain development language facilitates public planning that is complementary to private investment.

### **What can be achieved? The limits of value chain development**

Analytical concepts, such as the value chain are intellectual tools that have the function of reducing the complexity to a level that decision-makers can handle and that facilitates communication. Reducing complexity implies to select just one perspective to create a model of the reality. In this case, the perspective is value chain systems.

Value chain is a description of a social system that links enterprises and supporting actors who work with particular goods and markets. Value chain maps show the interactions and the structures in which the participants organize themselves to coordinate their economic objectives. The economic purpose defines the system boundaries and delimits the scope of the value chain approach.

As an analytical concept, the value chain focuses on internal operations first: the technology, business models, contracts and cooperation, financial flows, rules and governance. These elements constitute the value chain as a system.

Secondly, the analysis looks at the relations of the value chain with its natural and social environment: The technology in use connects the value chain with ecosystems and resources. The people entrepreneurs and workers involved entertain social relations outside the value chain and the rules in the value chain refer to the wider regulatory and cultural framework. The concept entails the interactions *across* the boundaries of the value chain in order to address the related environmental and social problems — from the value chain perspective. The number of key issues arising in the environment of the value chain is theoretically unlimited. The analysis has to take into account any connection that appears as important — from the connection between value chain and local ecosystems to value chains and food security or any other concern influencing value chain development.

However, the concept always sticks to the value chain as its reference and does not address the ecological and social conditions in general. For example, the value chain perspective per se is not sufficient for understanding the poverty problem or malnutrition. It can be used to clarify the terms under which vulnerable groups of small producers or migrant workers participate, but it cannot capture the living conditions of poor people in full. Analyzing particular social groups requires taking another systems perspective that places these groups in the center and studies the social context in which they live. If the value chain approach is used to specifically address poverty problems, it has to be complemented by other, additional instruments that contribute to the regional, sociological and cultural dimensions of poverty.

Conversely, the value chain approach is complementary to other systems perspectives for which it constitutes the economic environment: For example, the analysis of a watershed man-

agement system benefits from the value chain concept that helps capturing the economic activities of local stakeholders and provides answers to the economic and financial side of natural resource use. In any case, the value chain perspective makes the trade-offs and conflicts transparent between the three goal dimensions of sustainability.

Value chain development is about the development of the system. This is the action side of the value chain approach, the design and implementation of development strategies. The same considerations apply here as well as in the value chain analysis. Value chain development focuses on improving the technology, linkages and rules of the value chain. Any useful solution has to respond to the conditions in the environment of the value chain – the demand of consumers, civil society, politicians, or the sheer necessity to adapt to increasing resource scarcity. To the extent that value chain development aims at inclusive, pro-poor growth, the business solutions have to take particular account of the potential for increasing the skills, creativity and competitiveness of poor people, and of any potential negative implications of structural change, especially the risk of squeezing out traditional producers in small-scale industry and agriculture. Yet, generating additional income for the poor does not automatically bring solutions to other social problems affecting poor people, from malnutrition to risky health behavior or gender relations.

The value chain approach has its place wherever the economic dimension of sustainability is at stake and when the development potential remains unused because of market failures.

Economic inclusion is a condition for moving out of poverty but in itself it is not sufficient to end poverty. Certain aspects of desirable social and economic change simply are beyond the scope and reach of value chain development. It is a matter of scientific honesty to be clear about these limitations. Analysts should not consider them as a deficit but use them to decide when and where the value chain concept works best.

## Utilizing ValueLinks 2.0

Knowledge is only useful if it reaches the decision-makers and practitioners working on concrete solutions. The expertise compiled by ValueLinks has to reach the right people at the right time.

### Who ValueLinks is for

ValueLinks is an information product intended to be a resource for anyone with responsibilities in studying, planning and implementing value chain development activities. ValueLinks covers both agricultural and manufacturing products and is applicable across regions and differing degrees of economic development. The value chain development instruments are generic in principle and apply to agricultural and natural resource-based, as well as non-agricultural products.

It is not a fixed methodology and procedure but a collection of tools from which users have to select the ones that fit best the context of application. In this sense, ValueLinks 2.0 has no specific type of customer. The earlier edition of ValueLinks was meant to primarily serve development agencies but meanwhile it has become all too obvious that value chain development is a collaborative process in which different public and private actors take the lead. Therefore, ValueLinks 2.0 explicitly targets government and private companies as users.

This implies that the expertise is applied to very different formats of promoting value chain development. The classic donor-funded development project is just one option. Governments engage in public support programs and policies. Companies and business associations conduct value chain initiatives, and public agencies and companies collaborate in partnerships. Providing the knowledge to different types of actors supports building a common understanding of the issues and facilitates the communication between them.

#### *Public and private customers*

The formats of value chain development — and thus the specific needs for know-how — depend on the role of lead actors. Public customers of ValueLinks include government ministries, public administration and service agencies. Decision-makers, planners and service providers use ValueLinks to serve policy objectives. Typical formats for value chain development in the public sector are public investment programs, the service provision by specialized public agencies, such as research, training, technical support and subsidy schemes for farmers and small enterprises. Each case generates specific knowledge needs, ranging from full-scale value chain analyses to particular value chain solutions.

In the private sector, the value chain approach emerges as an increasingly important concept as well. This applies to the organized private sector in the first place, which has a natural interest in developing the subsector. Besides the business associations, individual companies benefit from the methodology by setting their business strategy into an industry context. Entrepreneurs and company staff can use ValueLinks to guide the engagement of private companies. An important field of application are supply chain initiatives organizing the backward linkages of companies to their small-scale suppliers and introducing sustainability standards into the entire supply chain. The expertise is also useful to guide the private contributions to public-private partnerships for value chain development.

### *The development community*

Development policymakers and development agencies staff are probably the biggest group of users. The structure of ValueLinks mirrors the logic of value chain development projects so that planners can directly refer to it.

However, the design of most development programs includes the value chain approach only as a component or uses it as an instrument to conceptualize the economic side of a regional development or natural resource management project. This depends on the importance of markets in the respective development strategy. Formats also differ widely according to the scope of the value chain work, its focus and the available resources. Given the importance of value chains for development policy in recent years, the number of users is thus potentially very large. However, for most people in the development community only certain modules and value chain solutions will be relevant, e.g. business models or linkages. Nevertheless, they also make use of the generic methodological foundation of ValueLinks, especially value chain analysis, to connect the development activities with markets and the business world.

### *Making the knowledge accessible*

Essentially, ValueLinks is a method for capacity development and addresses all three levels: Individuals, the enterprises and organizations they work in, and the value chain at large that provides the institutional framework. ValueLinks 2.0 has a special chapter on capacity development that presents the concept. See ValueLinks Module 4, chapter 4.6.

Here, the question is how the knowledge transfers to the people in charge strengthening their practical competence. In fact, ValueLinks started as a training program. The manual and accompanying materials have been the basis of numerous training courses since 2007. The ValueLinks website<sup>18</sup> provides an update on current training offered.

Given the fact that knowledge needs and interests differ widely between groups of users, ValueLinks training courses have to select the relevant content. To be as user-friendly as possible, every seminar should actually look different. However, economic principles apply here as well. The traditional training seminar setting is the generic Introductory ValueLinks Training that presents the concept and essential tools.

Other kinds of training adjust the content to serve particular groups of users. Two directions for the design of advanced and specialized seminars exist. One targets the lead actors in value chain development, especially policy decision-makers and staff of government agencies. An example is the introduction of ValueLinks to African leaders implementing the Comprehensive Africa Agriculture Development Programme (CAADP) investment plans with a value chain perspective. ValueLinks training has also been adapted to the interests of field staff in value chain development projects — combining explanations of methodology with direct application to a concrete planning task.

The other direction for designing specialist training is a focus on particular commodities. Industry-specific ValueLinks seminars exist for tourism, biodiversity-based products and food products.

## **Structure and content**

ValueLinks 2.0 has eleven modules grouped in four columns. The structure is shown in the graphic on page iii, at the beginning of this manual. ValueLinks is a systematic compilation of

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<sup>18</sup> [www.ValueLinks.org](http://www.ValueLinks.org)

methodological knowledge, concepts and tools to inform the utilization of the value chain approach in sustainable development.

Module 1 sets the stage by providing the principles and criteria to define a value chain system as unit of analysis and area of action. This includes tools for scoping value chains — defining the system boundaries and for selecting value chains as a promising target for development activities. It also places the approach into the broader development agenda.

The second column is the core of the methodology — the analysis of the value chain as a system in module 2 and the tools to explore strategic options for value chain development in module 3. Both modules structure the respective expertise according to the sustainability dimensions. They look at the value chain from outside, from the viewpoint of a neutral observer.

Module 4 places the responsible actors in the center — private companies, government and international development agencies. The issue is the internal logic of these actors and the ways they can become active. Concrete development programs can only make partial contributions to value chain development, confined by the roles of the protagonists and the resources available to them. It is important to note that the strategy question is treated twice — in module 3 for the value chain as a whole and in module 4 for the program design of the lead actors in value chain development.

The modules 5 to 10 cover the different elements of the value chain system separately, i.e. the operators, linkages, services and rules. Each module highlights a series of possible innovations and solutions in a different field of change, such as improved business models, cooperative organizations, service arrangements or market regulation. These are all value chain solutions but at the same time, they are thematic areas that encompass a huge body of knowledge themselves. The approach of modules 5 to 10 is to address the issues from the perspective of the value chain development strategy presenting considerations and criteria for the choice of an appropriate value chain solution. The idea is to provide strategic orientation, not a blueprint for value chain development or detailed descriptions of what stakeholders should do. ValueLinks connects anyone seeking further information to the pertinent literature and sources of knowledge.

Module 11 closes the sequence. It offers procedures and tools to determine and quantify the ongoing change. This includes methods for collecting and processing data to inform analysis and strategy formation and to formulate impact models and indicators.

It is possible to read the structure of ValueLinks as a sequence of steps — from defining the subject to analyzing it, from the strategy to the implementation of actions and on to the final evaluation. However, the rationale of conducting specific value chain development programs is the subject of modules 1 and 4 and to some extent module 11. All other modules refer to the value chain system at large.

The contents respond to the fundamental reorientation of ValueLinks towards the sustainable development agenda. In addition, ValueLinks 2.0 also contains conceptual and technical innovations distinguishing it from the first version of ValueLinks<sup>19</sup>. The main ones are the inclusion of the new module 5 on business models, the restructuring of module 4 taking the perspective of public and private lead actors.

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<sup>19</sup> GTZ, 2007: „ValueLinks Manual, the Methodology of Value Chain Promotion“

## How to use this manual

Different groups of users need different instruments and pieces of expertise. The modular structure of ValueLinks allows picking topics and instruments in line with their specific needs. Readers do not have to go through the complete text but can use it as a reference work.

Nevertheless, users are advised to familiarize themselves with the fundamental terms and concepts in order to be able to make better use of the tools offered. Module 1, chapter 1.2 on value chain analysis and the treatment of economic strategy, and module 2, chapter 2.2 are core elements in terms of the methodology. The explanation of value chain mapping certainly is essential reading as well. Chapter 4.2 in module 4 discusses the program formats, which is needed to put acquired knowledge into practice.

All modules always start with an introductory chapter laying out the terminology and main concepts. Certain topics are found easiest by consulting the detailed table of contents for each module. The table of contents and the glossary also deliver the keywords for searching the relevant text passages.

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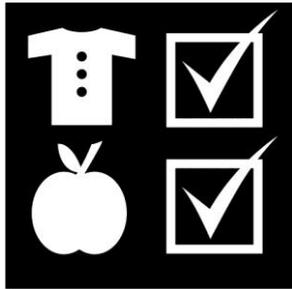
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# Module 1

## The Scope of Value Chain Development

## Contents

<b>Module 1 The Scope of Value Chain Development</b>	<b>21</b>
<b>1.1. Introduction: The context of value chain development</b>	<b>21</b>
1.1.1. Introducing the value chain perspective in development	22
Value chain development vs development taking a value chain perspective	22
System boundaries of the value chain approach	22
1.1.2. Potential and limits of value chain development	23
<b>1.2. The system boundaries of value chains</b>	<b>25</b>
1.2.1. Classifying value chains	25
1.2.2. Determining the scope of value chains in development	27
<b>1.3. Selecting value chains to promote</b>	<b>30</b>
1.3.1. Decision criteria	30
Criteria to assess the economic potential	31
Environmental criteria	33
Criteria to assess potential social benefits	34
Institutional and pragmatic criteria	36
1.3.2. Compiling decision criteria and developing a decision matrix	37
Other tools for value chain selection	39
1.3.3. The decision-making process	39
<b>1.4. Value chain development as a program component</b>	<b>41</b>
1.4.1. Value chains and regional development	41
Synergies of regional development and value chain development	41
Connecting regional development to value chains	43
Anchoring value chain development in regions	44
1.4.2. Value chains and natural resource	45
Economic utilisation of biodiversity-based products	46
Protecting and managing ecosystems at the local level	47
Using the value chain perspective to underpin economic sustainability	48
1.4.3. Value chains and agricultural development	49
Farmers at the intersection of agriculture and value chains	49
Value chain development as part of an agricultural development agenda	50
<b>Resources</b>	<b>52</b>

## Module 1 The Scope of Value Chain Development

### 1.1. Introduction: The context of value chain development

Value chains are a key concept in economic development. The value chain concept takes commercial products and their markets as the starting point. It focuses on enterprises active in specific markets and thus takes industries as reference rather than the economic actors in a regions or particular topics of economic policy.

The idea of value chain development is to foster economic growth as a necessary precondition for incomes to rise while making sure that the additional income benefits poverty groups and is not gained at the expense of the environment. Value chain development aims at strengthening the functioning of markets for the benefit of marginal and poor people, improving their access to jobs and by influencing the distributive outcome of market processes. It is based on the triple bottom line of the sustainable development agenda:

- Importance of economic growth: Economic growth is a necessary condition for incomes to rise as well as a highly important objective of everyone lacking access to basic consumption goods.
- Ecological sustainability: Sustainable economic development means creating value while using less water and energy and conserving the ecosystems on which the production activities rely.
- Social inclusion: Private investment deserves public support to the extent that it creates decent employment, improves the livelihoods of the poor, reduces the price of basic products, allows people to move beyond subsistence and benefit from economic opportunities.

The value chain is a systemic concept that relates to each of these development hypotheses because it connects commercial products/markets with economic actors (including self-employed poor and workers) and with the business activities utilizing natural resources. The connection is expressed in the definition of the term value chain (see Box 1.1.1).

#### *Box 1.1.1: Concept – Definition of the term value chain*

**A value chain is defined as:**

- The sequence of related business activities from the provision of specific inputs for a particular product or product range to primary production, transformation and marketing, up to the final sale of the particular product to the consumer.
- The set of enterprises that perform these business activities, i.e. the producers, processors, traders and distributors of the particular product. Enterprises are linked by a series of business transactions by which the product is passed on from primary producers to consumers in end markets.

*Source: adapted from GTZ, 2007*

By combining the view on markets and economic growth with the analysis of the social and ecological conditions of producing and marketing, the value chain concept provides a framework for understanding the structural, social and ecological implications of economic growth.

### 1.1.1. Introducing the value chain perspective in development

The value chain concept lends itself to conceptualizing development for two reasons:

First, the business community of the value chain constitutes a natural platform for development action. Value chain actors have several interests in common. They all depend on the same end markets to be successful; they necessarily have to interact to reach markets and, doing so, they have to abide by the rules and standards of their business. By their very nature, value chains are multi-stakeholder systems.

Second, value chains are relevant in different fields of development. Ultimately, employment, incomes and wages, technical change and ecological efficiency all depend on the conditions of the market and the functioning of the respective value chain. Without the economic incentive provided by markets or, more simply, without the possibility of earning money, enterprises will not hire people or invest in better technology. Thus, apart from being a key term in business development, the value chain concept is generally applicable to conceptualizing the economic aspects of development.

#### *Value chain development vs development taking a value chain perspective*

The value chain concept is used in different ways. It can be the guiding principle of an entire development programme or policy, or simply represent the concern for economic viability of any development strategy. Programs are designed according to value chains or may include value chain development as just one element combined with other development approaches. Whatever its significance and role in practice, the decisive point is that the value chain approach introduces a reference to particular products and markets and hence to the ultimate source of income.

The ValueLinks methodology is thus not limited to the design and implementation of value chain development projects as such. The ideas are also useful for programs operating in a regional context or addressing particular groups of people. Besides value chain development in a narrow sense, ValueLinks offers expertise for development with a value chain perspective. This means that regional or sectoral development programs include a reference to particular value chains making sure their strategy builds on information about the relevant markets, growth potential and the enterprises in the respective value chains. The significance of a value chain perspective in development is elaborated on in chapter 1.4.

#### *System boundaries of the value chain approach*

Using the value chain concept in development bears the question where to draw the system boundary around a value chain. A value chain is defined by a particular product and its markets, and the community of value chain operators includes all enterprises adding value to the product on its way from raw material to the final consumer. The question is how to categorize, aggregate or disaggregate products and markets so as to define the value chains to be targeted in each particular case.

Drawing a boundary around the value chain to be promoted implicitly determines the scope of the development effort. After all, the size of a market determines the number of enterprises serving it and niche markets naturally engage fewer people. Limiting the value chain development to particular locations or stages of the value chain, such as farmers only can make sense for pragmatic reasons, but runs the risk of actually losing the value chain perspective. The delimitation of a value chain for development should always extend to end markets.

Value chain development also has to be distinguished from supply chain management. Value chain development follows a collective or public interest in an entire industry, whereas supply chain management aims at optimizing the logistics of input sourcing and marketing from the perspective of one particular company. The latter is a private management instrument and much more limited in scope than the value chain. The criteria for scoping value chains and value chain development are taken up in more detail in chapter 1.2.

### **1.1.2. Potential and limits of value chain development**

The value chain approach is an analytical methodology in the first place, a way of describing economic realities and sorting out possibilities for sustainable development. It elicits opportunities that projects subsequently turn into economic and social progress. The analysis of a value chain intends to bring out strategic options for inclusive and green growth but it can also show limitations. The ValueLinks methodology does not provide a particular recipe for sustainable economic development. Within a value chain development framework, there are several ways of reaching the goals.

A more fundamental question is whether and under which conditions the value chain development framework is appropriate for tackling the poverty problem and other social and environmental issues. Before engaging in value chain development, decision-makers need to gauge the relevance of market-oriented development vis-à-vis other development approaches. The main point is to explore the tension if not conflict between economic growth and poverty alleviation:

- Under which conditions does economic growth actually translate into social benefits and the inclusion of the poor?
- What can we expect from a strategy that concentrates on the functioning of markets?
- How does it compare to alternative approaches of social policy, redistribution and the direct public regulation of environmental and social matters?

Of course, there are no easy answers to these fundamental questions of economic policy. Nevertheless, development planners need criteria to judge the relevance of the value chain development approach for programs that aim at poverty alleviation.

Supporting poverty groups through market development may not be sufficient by itself as the economic potential and competitiveness of the poor is often too limited. Box 1.1.2 lists typical constraints affecting the inclusion of the poor in commercial markets.

Market development has the potential to create negative social effects. One issue concerns the consequences of structural change: Dynamic competitive markets tend to squeeze out traditional producers in small-scale industries and agriculture benefiting bigger and more efficient producers. Any investment into productivity improvement in highly competitive food markets translates into decreasing prices. Building exclusively on low cost and low wages can lead to market integration but may fail to produce a substantial poverty impact to the terms under which vulnerable groups (smallholder farmers, migrant and casual labor) participate in the economy.

**Box 1.1.2: Concept – Factors affecting the market inclusion of the poor****Business environment and policy**

- The business environment implies higher risks and relatively higher costs of doing business for small enterprises as compared to large ones.

**Access to crosscutting service markets**

- Small farmers and micro enterprises are negatively affected by a limited access to financial markets.
- Because of the size of their operations, small producers regularly face problems of access to input and business service markets.

**Productive assets and property rights**

- Low education and health problems put the poor at a disadvantage in labor markets.
- Lack of assets and missing property rights on land and water critically limit investment.

**Conditions of the location**

- Poverty is often concentrated at marginal locations where market access is critically limited, thus raising marketing costs and impeding investment.

*Source: Own compilation*

Designing a value chain intervention has to consider these risks. As they differ between markets and value chains, planners have to assess the severity of the poverty problem and the interconnections between the constraints carefully. The strategic choice of a development approach has three possibilities:

- (1) The first option is to utilize a value chain development approach selecting those value chains offering the greatest opportunities and the least problems for the poor. This includes making the best of an adverse condition. For example, even if the location appears marginal, it may offer some local specialty or be attractive for tourists so that the constraint can turn into an opportunity.
- (2) The second possibility is to complement value chain development with separate interventions, specifically targeting the constraints of poverty groups that cut across value chains.
- (3) Wherever the factors mentioned in Box 1.1.2 become so pervasive that a value chain development program cannot accommodate them and poverty groups remain excluded from the benefits of economic growth, the program design should use another development approach for poverty alleviation. To capture the economic dimension, the design can still include a value chain perspective.

Wherever value chain development reaches its limits, non-economic topics become important, such as the regulation of land and water rights, the provision of basic education and health services and the improvement of social organization or the direct transfer of social benefits. These interventions improve the general ability of the poor to engage in business activities. They complement or precede a market-oriented development strategy. Other interventions improve the infrastructure, protection of ecosystems and natural resource management at marginal locations. Module 3 presents the strategic considerations on how to complement a value chain development approach with other elements in more detail. See especially chapter 3.6 that deals with the trade-offs and conflicts between different goals.

Most development programs do not rely on value chain development alone but combine different development approaches. Some typical combinations follow in chapter 1.4.

## 1.2. The system boundaries of value chains

Utilising the value chain concept implies defining and delimiting the value chains to be developed. The identification and selection of interesting value chains is one of the most important decisions in any value chain development endeavour.

Before planners proceed to selecting a value chain, the alternative options must be clear. This is the idea of scoping — i.e. determining the products and markets to which a value chain refers and delimiting its size accordingly. It means setting boundaries around the value chains considered for promotion.

The second step after establishing the choice of value chains is priority setting and value chain selection. Chapter 1.3 discusses possible selection criteria.

### 1.2.1. Classifying value chains

Basically, there are two possibilities of setting boundaries around a value chain. Most important is the horizontal boundary, that is the types of products and markets served by the value chain, i.e. the 'width' of the value chain. A second boundary delimits its outreach towards end markets, i.e. the vertical boundary or 'length' of the value chain. Although it normally reaches end markets, there are exceptions. For example, it is useful to set a vertical boundary for export value chains at the national border of the exporting country.

A third aspect is the spatial extension of the chain. Staple food value chains often are spread out everywhere. A regional development project will be mainly interested in the potential within its own geographical boundaries. Nevertheless, the spatial delimitation of the value chain should still build on the existing economic linkages. Planners should locate the major production zones and consumption centers on a geographical map to define the spatial extension of the value chain exactly. The identification and selection of economic opportunities in the context of regional economic development is yet a different process<sup>20</sup>. In any case, regional projects have to take into considerations the market access conditions and business linkages outside the project area.

The point of departure for scoping is always the horizontal boundary of a value chain, its width. The literature on economic structure uses the terms markets, value chains, subsectors and industries interchangeably. Subsectors include horticulture, handicrafts, furniture or leather goods — or 'tourism' as an example for a service industry. The reference to kinds of products and customers in these examples is straight forward. Yet, analysts have to be precise which particular products a category, such as horticulture, contains. If it is not limited to seasonal vegetables, does it include fruits or flowers?

There is no definite method of subdividing market products or services into categories. The criteria of classification depend on the interest of the analyst. There are, however, internationally recognized industry and product classification systems which can be used as a starting point to understand economic classification systems and to get an overview of the respective economy.

The classification according to the International Standard Industrial Classification of All Economic Activities (ISIC) represents entire industries, thus the productive activities in an economy. Thereby, "an industry is defined as the set of all production units engaged primarily

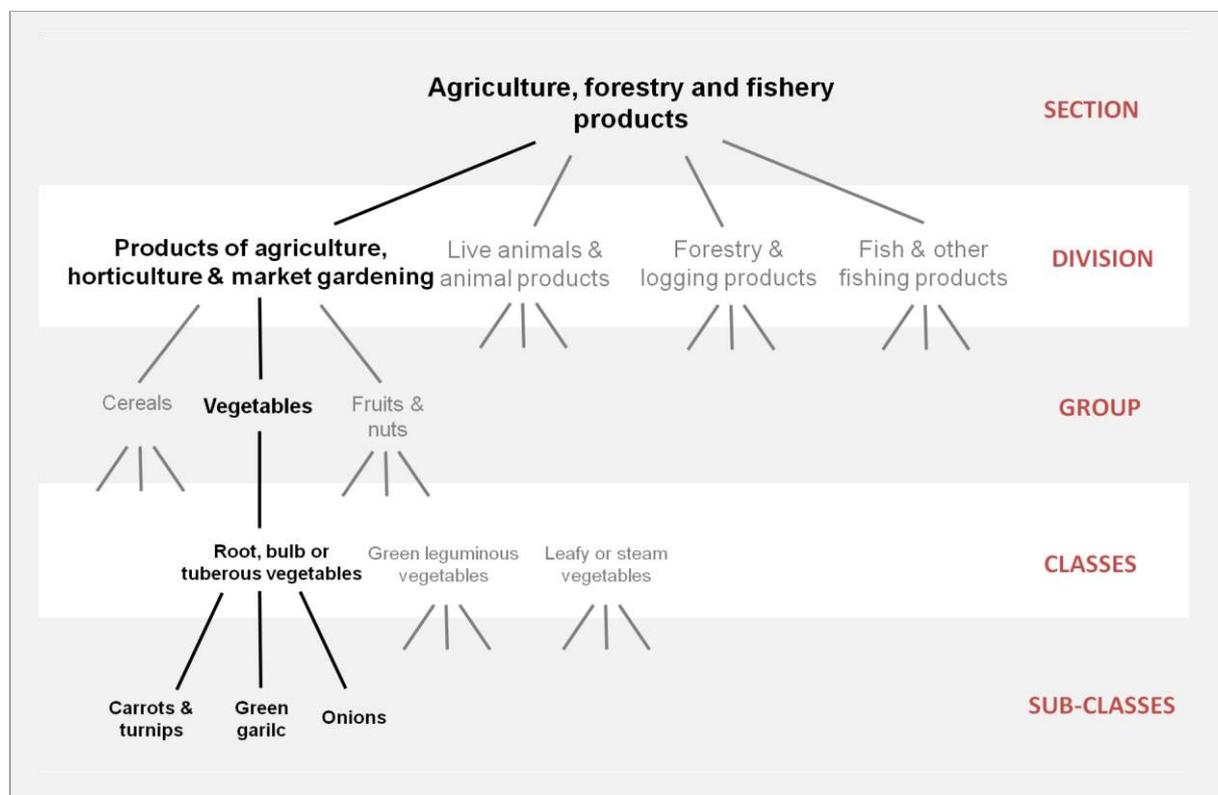
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<sup>20</sup> See section 1.4.1 for the combination of value chain development with local and regional economic development

in the same or similar kinds of productive activity”<sup>21</sup>. The ISIC serves the purpose to provide a tool for international comparison and guidance to countries for developing a national activity classification structure. The economic activities included in the ISIC are subdivided into a hierarchical four-level structure of mutually exclusive categories. The categories at the highest level are called sections which are alphabetically coded categories from (A) ‘Agriculture, forestry and fishing’ to (U) ‘Activities of extraterritorial organizations and bodies’. The classification is then organised into successively more detailed categories which are numerically coded: two-digit *divisions*, three-digit *groups* and, at the greatest level of detail, four-digit *classes*<sup>22</sup>.

Since the value chain perspective starts from the end product and the respective market, it is also useful to look into product classification systems, such as the Central Product Classification (CPC) by the UN Statistics Division.<sup>23</sup> While the ISIC targets economic activities and industries, the CPC takes products and services as a classification variable to describe the economy.

**Box 1.2.1: Concept – Classification scheme according to the CPC Ver.2.1**



Source: Own concept, based on UNDESA, 2015

It is not possible to establish a one to one correspondence between activities and products, thus both ISIC and CPC have their place in describing economic markets. Each category in CPC is accompanied by a reference to the ISIC class in which the respective good or service is mainly produced. This does not imply, however, that all units producing these goods or services are classified in the ISIC. In practice, the output of an industry, no matter how narrowly

<sup>21</sup> UNDESA, 2008, p.9

<sup>22</sup> See UNDESA, 2008 for a detailed description of the ISIC

<sup>23</sup> UN Statistics Division: <http://unstats.un.org/unsd/cr/registry/cpc-21.asp>

defined, will tend to include more than a single product. Correspondence tables are available online.<sup>24</sup>

Box 1.2.2 shows levels of aggregation in their relation to the value chain concept. At the highest level, there are economic sectors containing many product categories which can be further divided into subsectors. Every subsector is differentiated into several value chains which in turn can be broken down into sub-chains or market channels. The following box shows how products and product categories relate to the definition of subsectors, value chains and channels.

**Box 1.2.2: Concept – Levels of aggregation in consumer markets**

Sector	Agriculture & Food	Tourism	Textiles & Clothing
<b>↓</b> <b>Subsectors</b> <b>↓</b>	<ul style="list-style-type: none"> <li>- Horticulture</li> <li>- Dairy products</li> <li>- Meat</li> <li>- ... and others</li> </ul>	<ul style="list-style-type: none"> <li>- Ecotourism</li> <li>- Beach tourism</li> <li>- Conferences</li> <li>- ... and others</li> </ul>	<ul style="list-style-type: none"> <li>- Clothing</li> <li>- Textiles</li> <li>- Carpets</li> <li>- ... and others</li> </ul>
<b>↓</b> <b>Value Chains</b> <b>↓</b>	e.g. Horticulture: <ul style="list-style-type: none"> <li>- French beans</li> <li>- Tomatoes</li> <li>- ... and others</li> </ul>	e.g. Ecotourism: <ul style="list-style-type: none"> <li>- Hiking in national park</li> <li>- Animal watching</li> <li>- ... and others</li> </ul>	e.g. Clothing: <ul style="list-style-type: none"> <li>- Cotton apparel</li> <li>- Knitwear</li> <li>- ... and others</li> </ul>
<b>↓</b> <b>Sub-chains/ market channels</b>	according to end product <ul style="list-style-type: none"> <li>- e.g. table tomatoes sold in supermarkets</li> </ul>	according to individual services & attractions <ul style="list-style-type: none"> <li>- e.g. cabin accommodation for hikers/ facilities for nature observation</li> </ul>	according to end product <ul style="list-style-type: none"> <li>- e.g. brand-name clothes sold in specialty stores</li> </ul>

*Source: Own concept*

Starting from an economic sector at large, for example the textile and clothing industry, it is possible to specify smaller categories, such as a subsector (e.g. clothing), a value chain (e.g. cotton apparel) or specific products, e.g. a specific production line of men's shirts with the label 'Egyptian cotton'. Which one to address in a value chain development programmer is a matter of scoping the value chain for the purpose of program design, which is the subject of the next section.

### 1.2.2. Determining the scope of value chains in development

The (dis)aggregation of products and industries generates sets of alternatives from which to choose one or several value chains to work on. These alternatives should be roughly comparable and correspond to the available resources and time of a planned value chain initiative. It would not be very useful to produce a set of choices that includes a small local value chain of

<sup>24</sup> UN Statistics Division: <http://unstats.un.org/unsd/cr/registry/isic-4.asp>

minor economic importance along with an export-oriented subsector that stands for an important share of the national economy.

**Box 1.2.3: Case – Textile and garment sector structure in Ethiopia**

Product category 1	Product category 2	Individual products	Arguments in favor or against supporting the product/value chain
<b>Home textiles</b>	<b>Cloth</b>	Table cloth	<ul style="list-style-type: none"> <li>- Growing market</li> <li>- Uses local cotton</li> <li>- Technology is available</li> <li>- Does not require high skills</li> </ul>
		Bedding (bed sheets)	
		Curtain cloth	
	<b>Decorative materials</b>	Bags, hangings	<ul style="list-style-type: none"> <li>- Niche product</li> </ul>
<b>Clothing</b>	<b>Knitwear</b>	Basic T-shirt / polo shirt	<ul style="list-style-type: none"> <li>- Value-adding in Ethiopia</li> <li>- Labor-intensive product for domestic and export market</li> </ul>
	<b>Uniforms and work wear</b>	Students, hospital & office uniforms	<ul style="list-style-type: none"> <li>- Good domestic market</li> <li>- Technology is available</li> <li>- Uses Ethiopian cotton</li> </ul>
		Factory work wear	
		Military and police uniforms	<ul style="list-style-type: none"> <li>- Good export opportunities</li> <li>- Made to order – cannot easily be rationalized</li> </ul>
	<b>Dresses</b>	Traditional (national) dress	<ul style="list-style-type: none"> <li>- Rising demand for fashion products</li> <li>- Is produced by small enterprises</li> <li>- Labor-intensive</li> <li>- Technology is available</li> <li>- Unique product</li> </ul>
Suits		<ul style="list-style-type: none"> <li>- Narrow market</li> </ul>	

*Source: Developed during the 'ValueLinks Textile and Garment Seminar', Addis Ababa, August 2006*

The list of alternative value chains from which planners would pick the most attractive ones should:

- Be at approximately the same level of aggregation, i.e. the set should either comprise economic sectors, subsectors or value chains.
- Have a comparable size so that the funds available for value chain development conform to the outreach and size of the business community.

Decisionmakers in industrial policy would likely go for larger categories than planners of small value chain projects with few resources. The list of options has to be designed accordingly.

Planners should not go for the smallest categories, sub-chains and market channels though. There are limits below which a further disaggregation loses sense either because the business

community becomes too small and the value chain promotion inefficient or because product variants are made by the same operators. Often operators produce, transform and trade different products, such as different kinds of fresh vegetables. Improving the business models or linkages of producers benefits all product lines at the same time. Similarly, interests of different operators overlap if they rely on the same sources of raw material as in the case of leather goods.

Planners have to make sure to address a level of aggregation that is in line with the enterprise perspective. Box 1.2.3 shows the example of the textile and garment sector in Ethiopia.

Sector experts developed this structure to identify products and value chains that might receive public support. The box not only shows the options, it also helps to decide where and whether it would be useful taking on a whole category rather than individual products. This is the case in the category uniforms and work wear. Students, hospital and office uniforms cannot be treated separately as all are made by a small group of firms with similar technology and sold on the domestic market. Although the markets differ, upgrading the respective value chains most probably includes the same activities. Here, it makes sense to gather different products in one category. Further ideas on how to differentiate or aggregate products follow in the section on market segmentation. See chapter 2.2.2 in module 2.

### 1.3. Selecting value chains to promote

The selection of a value chain to work on marks the beginning of any value chain initiative. This is true for government programmes, development agencies and private companies alike. Decision-makers have to pick those value chains from a set of alternatives that offer the greatest potential for achieving the desired impact. They should make an informed decision based on a transparent method for selecting the most promising value chains identified in the scoping process.

This chapter presents key criteria for value chain selection organized according to the economic, environmental and social dimensions of sustainable development. In addition, the decision-making process uses information on the institutional framework as well as some political and pragmatic criteria.

The preferences of governments or other interest groups often limit the choice of value chains. USAID Microlinks specifically warns against the practice of selecting value chains based on political preferences that are not founded on an informed decision process as it could result in suboptimal outcomes and eventually in reduced benefits<sup>25</sup>. Wherever planners of value chain programs are confronted with a preliminary decision, the value chain of choice still has to undergo an assessment.

The value chain selection process is a series of miniature value chain strategic analyses. The decision criteria always measure the *potential* for change. Assessing criteria means formulating hypotheses about the possible impacts of an intervention. Although the amount of resources dedicated to the selection decision is limited, the assessment of the alternatives thus can benefit from the methods for value chain analyses and strategy formation presented in modules 2 and 3. The information gathered during the selection process not only remains useful for subsequent in-depth value chain analyses. It also is a first approximation of the impact hypotheses of the subsequent development activities.

#### 1.3.1. Decision criteria

The criteria to select a value chain for promotion follow the three dimensions of sustainable development — realization of the economic potential accompanied by environmental and social benefits.

The economic criteria describing the growth potential of a value chain are considered first. The value chain needs to have the potential to generate additional revenues — greater volume sold or higher value products — before any operator can increase his or her income. Economic growth therefore is a necessary precondition for sustainable development.

But the economic dimension can never be the sole criterion as it interconnects with environmental and social criteria. To guarantee the success of a value chain development effort, the value chain selection process has to be holistic giving equal weight to all three sustainability dimensions. To this adds the institutional environment as a fourth dimension.

Apart from the key sustainability criteria, planners should also consider pragmatic aspects. The main questions concern the actual prospects of success and the outreach of a program. The amount of public investment has to correspond to the size of the value chain and the number of value chain actors. It is possible to pick a small value chain as long as the investment is

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<sup>25</sup> USAID Microlinks: Link to the <https://www.microlinks.org/good-practice-center/value-chain-wiki/selection-problems>

equally small. In addition, value chain selection depends on the lead actors taking responsibility and on the type of the intended value chain initiative.

The following list of selection criteria is based on the “Guidelines for Value Chain Selection” in which the results of several expert consultations have been published by BMZ/GIZ and ILO in 2015<sup>26</sup>. The criteria presented in the Guidelines are generally applicable. The set of criteria used in practice needs to be coherent with the specific objectives and the conditions of the case.

### ***Criteria to assess the economic potential***

Decision-makers always start by assessing the economic growth potential of a value chain. It is determined by the market demand for the products of the value chain on one side, and its competitiveness on the other.

The issues to consider on the demand side are the current market trends, unmet domestic and export market demand and changing consumer habits. This information is generated through market research, analysis of national statistics or websites of business associations.

The second point is the competitive position of the value chain at hand. USAID Microlinks argues that the *competitiveness* criterion should receive the highest priority<sup>27</sup> and recommends a set of competitiveness assessment tools<sup>28</sup>. Some of these are covered in module 3, chapter 3.2. Regardless of how interesting a product may be for small enterprises, they need to have a chance of competing successfully.

It goes without saying that the expected economic growth has to provide opportunities for additional employment.

Another aspect to consider is market failures affecting the prospects of growth, especially a lack of coordination and transparency along the value chain. As in the case of the competitiveness criterion the question is how severe the problem is and whether it can be solved. The existence of a constraint can be an argument in favor of selecting the value chain if the value chain initiative has the time and resources to overcome it. Similarly, deficiencies in the organization of entrepreneurs and business linkages can be rated pro or contra choosing a value chain for promotion. These aspects are also covered in the set of institutional criteria.

Some guiding questions as well as indicators for the economic criteria are presented in Box 1.3.1. More information on the measurement of the value-added along the chain and overall chain efficiency follows in module 2<sup>29</sup>.

The question where to obtain the data is treated in module 11. One source, among others, is the United Nations Industrial Development Organization (UNIDO) which provides an extensive list of websites for useful market and trade data<sup>30</sup>.

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<sup>26</sup> Schneemann and Vredeveld, 2015

<sup>27</sup> USAID Microlinks: [Value chain selection](#)

<sup>28</sup> USAID Microlinks: [Competitiveness assessment tools](#)

<sup>29</sup> See chapter 2.3 on the economic analysis of value chains

<sup>30</sup> UNIDO 2011, p.11

**Box 1.3.1: Tool – Guiding questions and suggested indicators for economic key criteria**

Guiding questions	Suggested indicators
<b>KEY CRITERIA 1: Market demand prospects</b>	
(1) What are the prospects for market growth? (2) Is there (seasonally) unmet market demand? Are traders/customers willing to buy more of the product/service? (3) Is there scope for import substitution?	<ul style="list-style-type: none"> <li>- Volume and value of (local and export) market demand in the last 5 years</li> <li>- Volume of unmet market demand</li> <li>- Price of products (and variations during the year)</li> <li>- Volume of production and consumption</li> <li>- Share (%) of the value chain/sector in GDP and export value</li> </ul>
<b>KEY CRITERIA 2: Opportunities for employment creation</b>	
(4) How many persons (male/female) are currently (self-)employed in the value chain (sector)? (estimation) (5) Has (self-)employment in the sector in the last 5 years increased, decreased or remained the same? And what are the drivers/causes? (6) Which are the growth prospects and opportunities for employment creation?	<ul style="list-style-type: none"> <li>- Volume and value of (local and export) market demand in the last 5 years</li> <li>- Volume of unmet market demand</li> <li>- Price of products (and variations during the year)</li> <li>- Volume of production and consumption</li> <li>- Share (%) of the value chain/sector in Gross Domestic Production (GDP) and export value</li> </ul>
<b>KEY CRITERIA 3: Comparative advantage of production; level of competitiveness (in comparison with competing producers)</b>	
(7) What are the production costs per unit relative to the benchmark? Can the product be supplied to buyers at attractive prices? (8) What are the comparative (dis)advantages of the product/value chain in national and export markets? E.g. product differentiation, product quality, standards/labelling, image, proximity to markets. (9) Which competing imported products can be found on the markets, for which price/quality? Can local products substitute imports? How? (10) Are infrastructure, qualified labor force, raw materials and inputs sufficiently available at a comparative price and quality? (11) Do enterprises in the sector have the management and technical capacity for upgrading and innovation?	<ul style="list-style-type: none"> <li>- Volume and value of (local and export) market demand in the last 5 years</li> <li>- Volume of unmet market demand</li> <li>- Price of products (and variations during the year)</li> <li>- Volume of production and consumption</li> <li>- Share (%) of the value chain/sector in Gross Domestic Production (GDP) and export value</li> </ul>

Source: Adapted from Schneemann and Vredevelde, 2015, p.23

## Environmental criteria

When applying environmental criteria to value chain section, planners should refer to the entire life cycle of a product: Beyond production and trade, the complete life cycle also includes product use and waste disposal that also generate environmental impacts. Here again, we recommend to consult the tools for value chain analysis in chapter 2.4 on the environmental analysis of value chains and the strategic considerations presented in chapter 3.3.

The environmental criteria are organized according to the three different types of interaction between value chains and the environment (see chapter 2.4) – the environmental impact of the value chain, its susceptibility to resource degradation and climate change, and the economic opportunities offered by green services and green products. The respective criteria are presented in Box 1.3.2 together with some guiding questions and possible indicators.

To rate the criteria, decision-makers have to assess the importance and severity of the environmental impacts identifying the environmental hot-spots along the value chain. For the purpose of chain selection this will have to be a rather cursory assessment. Nevertheless, the principles of a hot-spot analysis apply, and readers may find it useful to refer to chapter 2.4 for more details.

The main point is to identify the hot-spots that present the most severe environmental problem. An excessive consumption of water that cannot be maintained in the longer term, severe soil erosion and pollution problems or high risks and loss of productive capacity due to climate change can all be arguments to rule out the respective value chain. Wherever the environmental cost is unbearable it can be better to shift production or give up on the value chain entirely. Value chain interventions would have to turn to the regulatory framework.

Another point is to verify whether the intended economic development could create any negative external effects. Neglecting environmental impacts not only brings high risks but affects the economic performance as well. This is a complicated valuation issue because economic development often implies greater energy and resource use. The question is whether the additional resource use can be justified on social grounds or not. The rule of thumb is to make sure that *major* negative impacts on ecosystems are avoided.

In all other cases of environmental impacts the assessment depends on the objectives and the available time and resources of the value chain initiative. If the intended program can address an environmental hot-spot effectively this is an argument in favor of selecting the value chain. The program could use the potential for strengthening the resilience of the value chain and support measures for climate change adaptation. Along similar lines, selecting a value chain with environmental problems allows to take action minimizing negative effects of growth, such as increased emissions and natural resource degradation. It is clear that the selection of the value chain on these grounds entails that the program should include an environmental component.

Value chains that lend themselves to greening initiatives are particularly interesting. This is true for biodiversity-based value chains that help protecting natural forests, for organic food products, and for the value chains of any kind of water or energy saving technology.

**Box 1.3.2: Tool – Guiding questions and indicators for key environmental criteria**

Guiding questions	Suggested indicators
<b>KEY CRITERIA 4: Impact of the value chain functions on the environment</b>	
(1) Which are the environmental hot-spots of the value chain? (2) What is the level of raw material use? (3) What is the type & level of energy use? (4) Does the value chain impact on land and its future production potential? (5) Which impact has the value chain on water (consumption, pollution, quantity/quality)? (6) Does the value chain cause (low/high levels of) air pollution, emissions and waste? (7) Does the value chain impact on biodiversity?	<ul style="list-style-type: none"> <li>- Use and origin of raw materials</li> <li>- Energy (non-renewable) consumption levels</li> <li>- Level of soil or soil fertility loss</li> <li>- Water consumption or pollution</li> <li>- Air pollution level</li> <li>- GHG emissions level</li> <li>- Carbon footprint</li> <li>- Impact on biodiversity</li> </ul>
<b>KEY CRITERIA 5: Impact of the environment on value chain functions; low vulnerability of the value chain to degraded environment and climate change.</b>	
(8) How vulnerable is the value chain to climate change and a degraded environment? (9) What is the impact of extreme weather, high temperature, reduced rainfall on the chain? (10) To what extent is the value chain able to cope with impacts of climate change? (11) Are the value chain actors able to adapt?	<ul style="list-style-type: none"> <li>- Level of vulnerability of value chain sections to rising temperatures, reduced water availability, less reliable rainfall, etc.</li> <li>- Adaptive capacity of the actors in value chain</li> </ul>
<b>KEY CRITERIA 6: Green opportunities</b>	
(12) What is the potential for products or services that are conducive for a green economy? (13) What is the potential for products or services that compensate for greenhouse gas (GHG) emissions?	<ul style="list-style-type: none"> <li>- List of concrete new products or services with low levels of GHG emissions, pollution, waste, resource use; or using the cradle-to-cradle concept.</li> </ul>

Source: Adapted from Schneemann and Vredevelde, 2015, p.24

**Criteria to assess potential social benefits**

Generally speaking, the potential to generate social benefits will be greater, the more important a value chain is for smallholders and self-employed micro entrepreneurs and as a source of livelihoods for the poor. The first criterion turns around the potential of a value chain to create business opportunities for small and medium enterprises and new jobs for low-skilled laborers. The question is whether the products and markets and the structure of the value chain enables the inclusion of poor people. Decision-makers would go for those value chains that offer the

greatest opportunities. At the least, the value chain should supply products consumed by poor people and offer the possibility to bring down consumer prices.

Another criterion concerns both the needs and the possibility that value chain development makes a difference in the conditions under which people are employed. Priority goes to those industries where public programs are needed to address the question of living wages, worker rights, health and safety risks at the workplace, as well as social ills, such as child labor or forced labor. The key social criteria to be observed are listed in Box 1.3.3.

**Box 1.3.3: Tool – Guiding questions and suggested indicators for social key criteria**

Guiding questions	Suggested indicators
<b>KEY CRITERIA 7: Prospects for inclusion of disadvantaged groups</b> (poor, women, youth, refugees, minorities, handicapped, ...)	
(1) Do poverty groups have the potential to become active in the value chain? (2) What is the share of poverty groups that are active/employed in the value chain? (3) Do they have the necessary skills and conditions to participate? (4) Which assets do they control? (5) What are the barriers to entry for poverty groups?	<ul style="list-style-type: none"> <li>- Business opportunities of poverty groups</li> <li>- Position of poverty groups in the chain</li> <li>- Access and control of resources and assets</li> <li>- Skills requirements vis-à-vis available skills of poor and disadvantaged groups</li> <li>- Type and level of barriers, and availability of solutions</li> </ul>
<b>KEY CRITERIA 8: Working conditions</b>	
(6) What are the health and safety risks for entrepreneurs and workers at the different chain stages? (7) Is there freedom of association and how is it regulated? (8) Is child or forced labor present in the value chain? If so, at what level and in which activities?	<ul style="list-style-type: none"> <li>- Health and safety risks</li> <li>- Worker perceptions of physical and mental well-being</li> <li>- Existence of freedom of association/collective bargaining regulations and laws; actual coverage</li> <li>- Share of child or forced labor</li> </ul>
<b>KEY CRITERIA 9: Impact of the value chain on surrounding communities</b>	
(9) Are the right to food, right to health, right to property (land) and right to water (access and use) of communities respected? (10) Any risks of the value chain causing or being subject to conflict? (11) Do individuals, workers or communities have access to a complaints mechanism?	<ul style="list-style-type: none"> <li>- Risks for and type of right violations (food, land, water, health) in surrounding communities</li> <li>- Potential conflicts between value chain actors and communities</li> <li>- Political conflicts impacting the value chain, such as ethnic tensions and discrimination of minorities</li> </ul>

Source: Adapted from Schneemann and Vredevelde, 2015, p.24

The third criterion in the table above concerns the embedding of the value chain in the political arena. Decision-makers have to be aware of the limits beyond which conflicts affecting value chain development become unmanageable.

### ***Institutional and pragmatic criteria***

The institutional criteria refer to the enabling environment and include favorable policies and a regulatory environment promoting or hindering green and inclusive development. The institutional dimension of value chain development determines the rules of the game that shape market outcomes and allows value chain actors to make use of the opportunities offered by the market<sup>31</sup>. The institutional criteria, the corresponding guiding questions as well as suggested indicators are presented in Box 1.3.4

Box 1.3.4.

#### ***Box 1.3.4: Tool – Guiding questions and indicators for key institutional criteria***

Guiding questions	Suggested indicators
<b><i>KEY CRITERIA 10: Reason(s) and need for public investment</i></b>	
(1) Where are the limits to market governance and private investment? Why is public investment needed?	- List of constraints (and type of constraints) that cannot be solved by the market itself
<b><i>KEY CRITERIA 11: Evidence of private sector, government and or donors having plans for investment in the value chain</i></b>	
(2) Do private sector, donors or governments have realistic plans to invest in the value chain?	- Relevant value chain support programs - Volume of budget allocated by lead actors
<b><i>KEY CRITERIA 12: Sector (promotion) policies and regulations are in place &amp; effective</i></b>	
(3) Policies and regulations in place? (4) Does the government provide support or can this be expected? (5) Do producers have access to markets? Are there physical, regulatory or other obstacles to enter the market?	- Government statements and policies - Quality of implementation modality - Ranking in ease of doing business report; list of most and least important constraints - Enabling environment for green and socially inclusive business opportunities
<b><i>KEY CRITERIA 13: Chain actors/government/donors/support organizations' readiness to change, to collaborate and to align interventions</i></b>	
(6) Are chain actors open to cooperation? (7) What is the potential (win-win) for increased cooperation between the value chain actors? (8) Do any shared strategies for value chain development exist? How do government objectives relate to donor interventions?	- Open mind and attitude for exchange and cooperation - Number and type of value chain initiatives - Contribution (budget or services) by donor and value chain support organizations - Size or volume (budget) of joint initiatives or actions

<sup>31</sup> Schneemann and Vredevelde, 2015, p.12

<b>KEY CRITERIA 14: Feasibility of the intervention</b>	
(9) Have the intended innovations been tested and validated?	- Available evidence of tested and validated innovation
(10) Is the organizational capacity of actors sufficient for the tasks ahead?	- List of services and prices of services
(11) Are business development services and other support services available?	- Demand for the services
(12) Are sufficient program funds available?	- Project budget secured

Source: Adapted from Schneemann and Vredevelde, 2015, p.25

The institutional criteria have to do with the readiness for change, especially the political will and preparation of the value chain community. Criteria 14 refers to a pragmatic consideration – the question whether a lead actor is actually able to move the intended value chain intervention forward. After all, the development potential identified by the preceding criteria still needs to be realized a needs the requisite organizational and financial capacity.

### 1.3.2. Compiling decision criteria and developing a decision matrix

The tables above present the key criteria for value chain selection. They provide the basis for value chain selection taking into account all three sustainability dimensions as well as the institutional environment.

Planners have to construct a decision matrix<sup>32</sup> to compile the criteria and priorities the value chain alternatives. The criteria to be included and the matrix have to be defined in an early phase of the decision-making process. It is important that the decision matrix does not include overlapping criteria and that the criteria are clearly defined to avoid different interpretations by those collecting, analyzing and comparing the data. To meet resource and time limitations the number of criteria needs to be kept manageable.

Trade-offs between the sustainability dimensions are a common reality. By assigning different weights, certain criteria can be emphasized in line with the conditions of the case. To compare and rank the value chain alternatives, planners have to attach scores to the criteria. Scoring assigns values, such as low-medium-high or numeric scores ranging from 1 to 5.

Box 1.3.5 shows an example of a decision matrix used for value chain selection by the Economic Sector Development Programme in Yemen. The complete matrix is presented in the “Guidelines for Value Chain Selection” including the criteria and data for the environmental, social and institutional dimensions<sup>33</sup>. The box contains a simplified version that only shows the economic criteria and serves to illustrate the principle of assigning weights to criteria and scoring them. The matrix is also available online as an Excel template, including useful instructions<sup>34</sup>.

The four sustainability dimensions — economic, environmental, social and institutional — are each assigned different weights adding up to 100%. The economic criteria received 35 percent allocated to the nine criteria of the economic dimension. By multiplying the weight of each criterion with its score we arrive at a weighted score. The scores differ between 1 and 5, with 5 being very good or

<sup>32</sup> Other terms are ranking matrix or scoring matrix

<sup>33</sup> Schneemann and Vredevelde, 2015, p.35ff.

<sup>34</sup> BMZ/GIZ and ILO (Schneemann and Vredefeld, 2015): [Overall scoring matrix](#)

very high. Adding the different weighted scores leads to the final score of 2.39 for the value chain under consideration in the Yemen example.

**Box 1.3.5: Tool – Overall scoring matrix developed by BMZ/GIZ & ILO (2015)**

SELECTED KEY & ADDITIONAL CRITERIA		Weight of criteria of total %	Value chain / (Sub-)Sector 1		
I	ECONOMIC	35%	Score	Weighted score	Underlying data f. score
Employment promotion					
1	Opportunities for employment creation	5%	3	0.15	...
Sector growth potential					
2	(Unmet) local or export market demand	4%	3	0.12	...
3	Prospect for value addition	3%	2	0.06	...
4	Prospects for growth in demand on local or export market	3%	3	0.09	...
Competitiveness					
5	Comparative advantage (product differentiation, low cost of production, low price, etc. relative to competitors) with a special focus on MSMEs to serve the local market	4%	2	0.08	...
6	Comparative advantage of MSMEs to serve the export market	4%	1	0.04	...
Profitability					
7	Level of net profits by SMEs in the sector	5%	3	0.15	...
Scalability					
8	Potential for engaging a large number of private sector enterprises at different stages of the value chain	4%	2	0.08	...
9	Potential for replicating the intervention in different parts of the country	3%	2	0.06	...
				0.83	
II	ENVIRONMENTAL	25%	Score	Weighted score	Underlying data f. score
...	...	...	...	...	...
III	SOCIAL	25%	Score	Weighted score	Underlying data f. score
...	...	...	...	...	...
IV	INSTITUTIONAL	15%	Score	Weighted score	Underlying data f. score
...	...	...	...	...	...
TOTAL (max score = XX points)				2.39	

Source: Schneemann and Vredevelde, 2015 34

Some criteria refer to preconditions that have to be fulfilled before a value chain qualifies for selection. Only after the inclusion or exclusion criteria are fulfilled, the other criteria can be scored<sup>35</sup>. In case of unacceptable consequences the decision is a no-go for the value chain under consideration. There are also other examples of decision matrices. A good source is USAID Microlinks<sup>36</sup>.

### ***Other tools for value chain selection***

Apart from the criteria presented above, other sets of criteria have been developed by USAID Microlinks<sup>37</sup> and by UNIDO<sup>38</sup>. In addition, there are tools addressing specific issues, such as conflict or gender. These include, amongst others:

- The Making Markets Work for the Poor (M4P) Approach<sup>39</sup>
- USAID's Conflict-sensitive approaches to value chain development<sup>40</sup>
- Corporate responsibility to respect Human Rights<sup>41</sup>
- AgriProFocus' Gender in Value Chains<sup>42</sup>

Instead of ranking alternative value chains, development agencies can also decide on complete portfolio of value chains to cover. USAID Microlinks recommends to take a Portfolio Approach<sup>43</sup> selecting value chains with diverse risk profiles in order to mitigate risks associated with dynamic and volatile markets. In order to do so, planners rate the levels of different types of risk associated with a variety of value chains, such as price volatility, susceptibility to adverse weather, logistical breakdowns and political risks. Eventually, the choice is between different portfolios of value chains.

### **1.3.3. The decision-making process**

The decision-making process and selection of a value chain to work is the first step in value chain promotion. The setting up of a value chain development program is the subject of ValueLinks module 4. Chapter 4.5 deals explicitly with the question of managing processes of value chain development. Therefore, readers should consider the recommendations given in module 4 as an input into shaping the process of value chain selection. However, as value chain selection precedes actual program implementation, a few hints are in order at this stage.

The first concerns the basis of decision-making: Assessing the different value chain alternatives based on hard data and detailed analyses may appear desirable at first glance but meets with narrow limitations in practice. One is the limited time and funds available for collecting and processing information; another is the fact that most often quantitative data are simply not available. Deciding on a value chain is only a seemingly objective decision. In the absence of a sound basis, decision-makers have to rely on opinions obtained from stakeholder meetings and interviews with experts. The decision therefore has a political character.

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<sup>35</sup> For an example, see UNIDO, 2011, p.12

<sup>36</sup> USAID Microlinks: [Examples of ranking matrices](#)

<sup>37</sup> USAID Microlinks: [Value chain selection](#)

<sup>38</sup> UNIDO, 2011

<sup>39</sup> The Springfield Centre, 2015

<sup>40</sup> Gündüz and Klein, 2008

<sup>41</sup> UN Office of the United Nations High Commissioner for Human Rights, 2012

<sup>42</sup> Senders et al., 2014

<sup>43</sup> USAID Microlinks: [Portfolio Approach in Value Chain Selection](#)

Another issue is the sequencing of the decision-making process. The “Guidelines for Value Chain Selection” have recommendations on how to achieve this<sup>44</sup>. The starting point is always the clarification of the objectives, mandate and resources of a suggested new value chain program. This first step is a precondition for screening and scoping a list of value chain alternatives. It also helps establishing the set of decision criteria. Next is the development of a decision matrix followed by the collection of the pertinent information. The actual decision is taken in a workshop that uses the decision matrix to rank the value chains alternatives. It is important to keep in mind that value chain selection is a first attempt at formulating value chain strategies and impact hypotheses. The question what lead actors and partners can expect from promoting a particular value chain will certainly pop up again once program activities have started. It is useful to carefully document the rationale behind selecting a particular value chain. This allows to review and rethink the decision as implementers gain experience and additional information emerges in the process.

The question who to involve in which step of the process is crucial and deserves special attention. Involving stakeholders in the selection process has many benefits. It not only allows the integration of differing perspectives and ideas but also helps creating commitment and ownership from the very beginning. Separate meetings with less powerful stakeholders help to make sure that all interests are represented. As people understand the reasons behind a new value chain program they are more likely to follow suit. However, there are drawbacks to keep in mind.

One is that stakeholder involvement bears the risk of making the process unnecessarily time-consuming. Building a consensus between parties with different key interests and different levels of knowledge is tedious. Stakeholders might develop unrealistic expectations. As the process requires several meetings participants may tire out. A second problem is the fact that many participants have own interests and therefore are biased. If decisions were to be taken by actors with special interest in one particular value chain, the decision would be highly biased. The UNIDO paper points out that stakeholders should represent interests *across* different value chains and have a broad overview on the range of alternatives from which the selection is made. It also does not have much sense to let different interest groups fight for the access to funds. Thus, the final decision-making should be left to major stakeholders who are in a neutral position and able to compare the different value chain alternatives without fear or favor. For more information on support and facilitation processes, see chapter 4.5.2.

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<sup>44</sup> Schneemann and Vredeveld, 2015, p.16

## 1.4. Value chain development as a program component

ValueLinks is primarily about value chain development in a narrow sense – policies and program that target particular products and markets and organize interventions along the entire value chain. The different program formats for value chain development depend on the type of lead actor and are the subject of chapter 4.2 in module 4.

However, conventional stand-alone value chain development is only *one* possibility of using the approach. Value chains also play a role in other types of economic development programs. The following chapter looks at the possibility of combining value chain development with programs that take a fundamentally different approach focusing on a region, a natural resource system or on particular groups of people. The issue is to introduce the value chain perspective into regional development, natural resource protection or small farm development projects.

To the extent that such programs pursue *economic* sustainability, they have to support the business potential of their clients. This potential is not limited to the confines of the location. Except for highly localized value chains and economic clusters, value chains extend across regions in a country and even beyond its national boundaries. Enterprises are not only part of a local business community but most often entertain linkages to partners in other places. Integration into value chains thus necessarily implies crossing the limits of the district, province, ecosystem or watershed.

The different perspectives are not mutually exclusive. In development practice, territorial and sector approaches are often combined and value chain development is a component within bigger programs of economic and rural development. The development of a value chain often needs accompanying measures at regional level to be effective. Conversely, policies and programs that do not target specific chains still benefit from a value chain perspective.

### 1.4.1. Value chains and regional development

In contrast to value chain development, territorial development programs target people at particular locations. Defining the boundary of a territorial program follows administrative units and builds on the spatial proximity of the actors but not necessarily on their commercial relations. Programs protecting natural resources focus their activities on ecosystems and watersheds, and thus have a spatial organization as well. The same is true for most programs aiming at agricultural development. Planners select their target groups not only according to their social characteristics but mainly in terms of their location.

Territorial and value chain perspectives overlap where farmers and enterprises belong to a local community and are operators of a wider value chain at the same time. The question is how to combine value chain development with territorial approaches in practice.

#### *Synergies of regional development and value chain development*

To show the overlap between territorial development and value chain development, planners first have to define the spatial unit, from villages to entire regions. In rural economic development, administrative units, such as counties, districts, municipalities or provinces, often define a development region. The area has to be large enough to include the players that are important for the development of the local or regional economy: public administration, business associations and service providers.

In many development regions, we find multiple value chains at the same time. The economic structure of these regions – the community of local enterprises and service providers – connects to several chains. From the value chain perspective, in turn, several locations come into

view as production and marketing often spread across several locations. Certain basic staple food items, such as maize flour in West Africa, are produced almost everywhere in the country. The conceptual matrix in Box 1.4.1 below shows how regions and value chains can overlap, using the example of different types of value chains and economic regions. Wherever enterprises of a particular value chain are present in a region, the points of intersections are marked.

The matrix illustrates cases where operators (producers, processors or traders) of value chains are present in several regions of a country. It has information on the locations of the value chain as well as on the regional economic structure. For example, staple food (value chain 1) is produced and consumed in all regions. The high-value product (value chain 3) is only made in region (a), a high-value coffee that only grows under specific climatic conditions, and marketed by traders in region (d). Region (a) thus is a coffee-producing region apart from the staple food. Region (d), by contrast, has a focus on trade and consumption. Finally, the fourth column presents a local specialty product made *and* consumed in region (c) exclusively.

**Box 1.4.1: Concept – Matrix showing overlaps of regions and value chains**

	VC 1 Staple food	VC 1 Other food	VC 3 High value	VC 3 Local specialty
Region (a)	X farmers		X farmers	
Region (b)	X farmers	X farmers		
Region (c)	X farmers	X farmers		X VC as a whole
Region (d)	X farmers	X traders	X exporter	

*Source: Own concept*

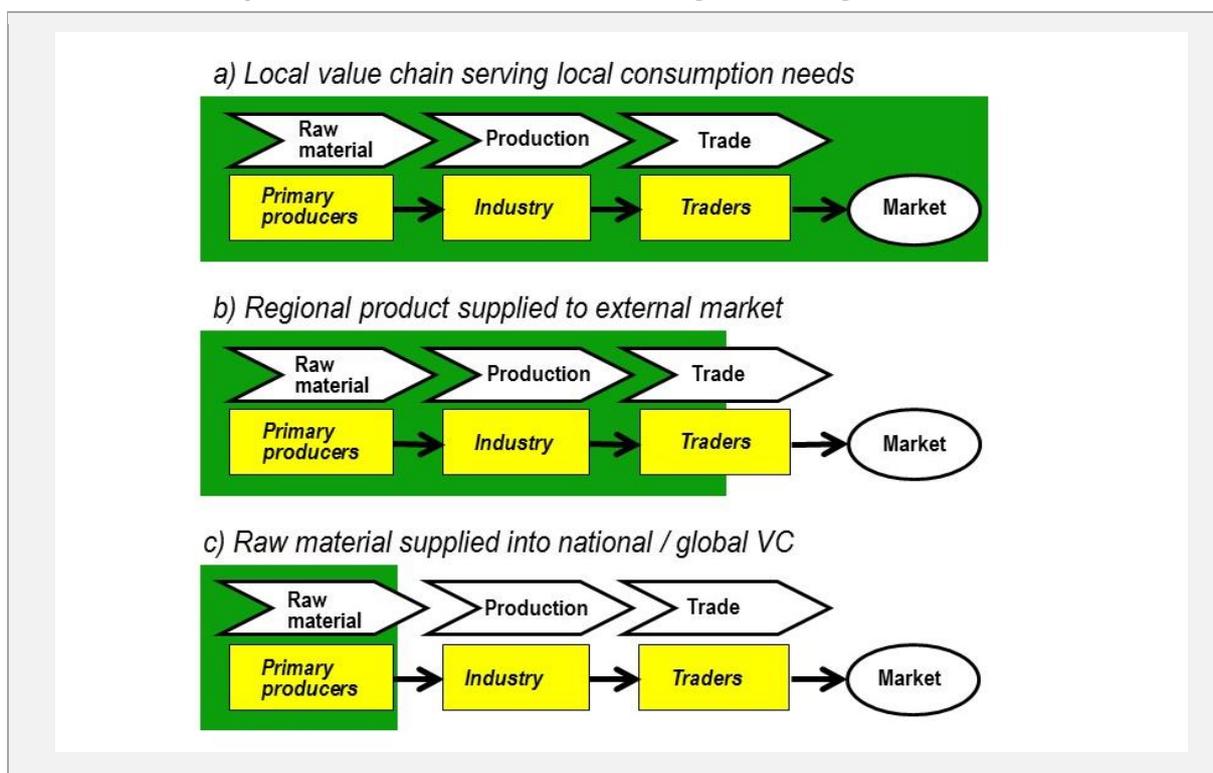
Though the matrix draws a very simplified picture of reality, every intersection provides information on the range of value chains present in a region and, at the same time, on the outreach of the value chains across regions. Sector and spatial perspectives on economic development thus complement each other.

Starting from a particular region, development planners have to deal with different value chains. Analyzing their development potential leads to the identification of promising business opportunities in the respective region. In turn, starting from the top of the matrix allows identifying the locations where the value chain is present. Analyzing the conditions of doing business in each region brings out the critical factors of location which need to be addressed. Hence, a combination of both value chain and regional perspectives can engender important synergies.

The importance of a value chain for regional development depends on the extent to which regional and value chain business communities overlap. Box 1.4.2 below shows three situations differing by the value chain stages located in a region. The importance of the value chain and the share of value captured in the region depend on the number of operators present. If the product in situation (b) has an important economic value, we speak of an economic cluster.

To arrive at an effective combination of value chain development and regional development, planners should decide whether to start from a regional or from a value chain perspective. Apart from situations where a value chain is clearly concentrated in one region, the design should either focus on value chain development covering several locations or use the regional economic development concept with a perspective on value chains and markets. This decision will be the subject of the paragraphs below.

**Box 1.4.2: Concept – Presence of value chain stages in a region**



Source: Own concept

**Connecting regional development to value chains**

Rural development as well as local and regional economic development benefit from the value chain perspective in any of the situations shown in Box 1.4.2. The most interesting contribution of the value chain approach to regional economic development is the identification of those products of a local economy that offer the greatest development potential. The analysis starts by listing the types of value chains in the region distinguishing the situations presented in Box 1.4.2 – products consumed locally and raw materials or intermediary products made and exported to markets beyond the borders.

With the exception of locally consumed products, the value chain analysis has to refer to the national level. Information gathered from the value chain analyses includes the overall market demand for the product, buyers and investors from outside the region and the regional market share. It helps positioning the region in comparison to other places and detecting competitive

advantages. Local producers benefit from the availability of raw material, the regional labor force, low production cost, specific technical skills and cultural traditions, the existence of a local business network, administrative support, and other relevant factors of location.

Once regional business opportunities have been identified, the value chain approach can contribute to local and regional economic development by:

- Connecting local suppliers with buyers outside the region
- Strengthening the competitiveness of local chain actors in view of their integration into the value chains
- Transferring technical and business innovations from other places
- Any other applicable value chain solution

The greater the overlap between value chain and region and the number of locally active value chain actors, the greater the significance of the value chain approach to regional development. Of particular interest are regional products forming a regional economic cluster – value chains that are concentrated in one place and occupy a share in employment above the national average. In this case, value chain development refers to local value chains combining location-specific with market-specific interventions. In such cases, there is a close conceptual relationship and interface with the cluster development approach to economic development<sup>45</sup>. The synergy is greatest wherever the final market of a value chain is in the region itself.

In the opposite case, in a region only sharing a small share of the different chains it hosts – in terms of enterprises, employment, and value captured – regional economic development and location-specific interventions gain the upper hand. Here, it is more important to improve the local conditions of doing business first, working across the full range of products that the region has to offer.

### ***Anchoring value chain development in regions***

The link between regions and value chains is also relevant when the starting point is the value chain. After all, economic efficiency depends on the conditions of location. One example is fine cocoa, an important export product of Ecuador that has its origin in several well-defined locations in the country. Promoting fine cocoa makes it necessary to address the technology and service problems in these regions. Another example is organic honey that presupposes local regulations of land use banning intensive agriculture in specific places so as to prevent the contamination of the honey.

It is important to have a clear picture of the locations of enterprises and other value chain actors. This is covered by the spatial analysis of a value chain, see module 2, chapter 2.2. For value chain development, value chain solutions have to work in a local context, which means that the factors of location have to be appropriate. To make value chain solutions work, value chain development has to address issues such as water supply and road connections. Thus, rural and regional economic development can make important contributions to value chain development creating conducive framework conditions for business at a particular location.

In particular, a territorial approach can help improving the factors of location for a specific value chain by:

- Providing access roads and other infrastructure
- Making utilities, such as water and energy supply available
- Paving the way for new investors by removing administrative obstacles

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<sup>45</sup> See Pietrobelli and Rabellotti, 2004

- Establishing linkages between the private sector, public agencies and the local interest groups of the civil society
- Managing the conflicts between competing demands on scarce local resources
- Regulating land rights and access to land
- Fostering networks, local chambers of commerce and producer associations
- Working on the complementarity of different chains in a region

The different locations of a value chain provide value chain development with an interface to decentralisation and regional planning. Regional economic development enables the stakeholders of a region to jointly undertake initiatives for promoting economic development in their region. However, the contributions of the regional economic development to value chain development imply a challenge as the value chain innovations actually have to move from one place to the next. For value chain development to be effective, it should not get stuck in one region but seek to scale out innovation across all locations of the value chain.

There are two ways to deal with the challenge:

One is to ensure the complementarity of regional development and value chain development from the start of a new program or policy. A development program would coordinate the selection of the regions and of the value chains supported. For example, a development program that works in three regions could go for promising value chains that are present in all of them to fully exploit the synergy.

A second possibility is to build on the regional representation of large processors and traders who buy from several regions in parallel. Such firms have an interest in establishing their business in several regions and therefore have a voice in questions of location as well.

### 1.4.2. Value chains and natural resource

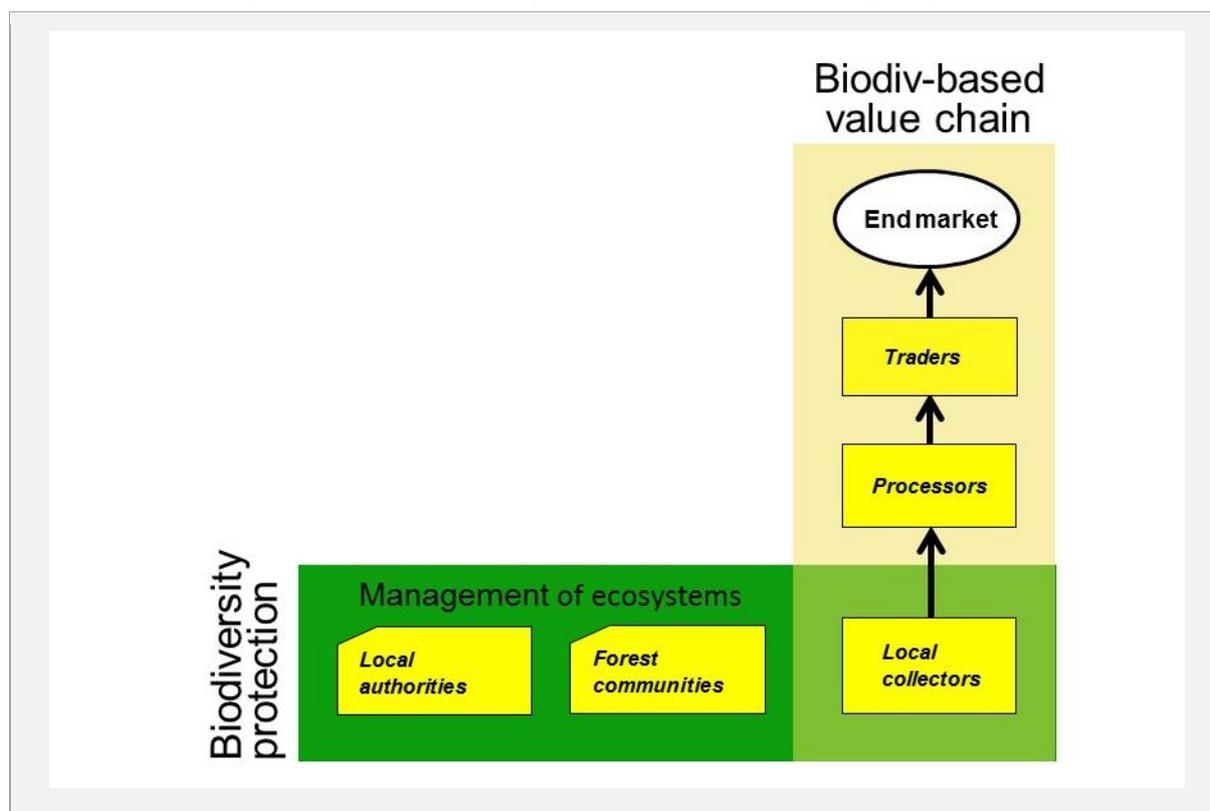
The market perspective of the value chain approach also combines well with development programs in natural resource management and the protection of biodiversity. The development approaches for sustainable management of natural resources — especially fresh water, biodiversity and ecosystem services — are organized spatially. The spatial units are the natural landscapes — mainly watersheds and protected areas and national parks, especially tropical forests. Much of what has been said on the combination of territorial and value chain approaches in the previous section is applicable here as well. The difference is the focus of natural resource management on the protection of a valuable natural ecosystem.

The connection with value chain development is the principle of use it or lose it, with regard to a particular ecosystem resource. Ecosystems and biodiversity can be protected more easily if they have economic value. The economic utilization of resources — its sustainable extraction and sale — generates income for the people living in protected areas and thus creates an economic incentive for managing and protecting them as a source of income. Marketing ecosystem products and services also generates revenues to pay for measures to protect the resource.

Box 1.4.3 visualizes the interrelation between the biodiversity-based value chain with the management of local ecosystems from which the raw material is extracted. Natural resource management is integrated into the value chain.

The use it or lose it principle combines two types of systems thinking: value chain systems on one side and ecosystems on the other. Both the economic logic and the ecosystem logic have to be observed. The following two sections look at ways to manage the tension between the two.

**Box 1.4.3: Concept – Resource management and value chain perspective**



Source: Own concept

**Economic utilization of biodiversity-based products**

Many national parks and natural resource management programs engage in activities fostering the economic use of the ecosystem to help protect it. Ecosystems have the potential to deliver economic value:

- Forest ecosystems providing in-situ habitats for diverse wild plant and animal species
- Forests and wetlands regulating local climatic conditions, supplying fresh water and protecting watersheds
- Carbon binding capacity
- Attractiveness of landscapes, scenic beauty and wildlife

The difficulty is that a value chain is defined by a commercial product. The value chain transforms ecosystem elements and properties to fit the commercial market logic. In the case of food products such as fruits the connection is straightforward. Local collectors extract the product in the forest and sell on to buyers. The situation comes close to agricultural products where the raw material does not undergo much processing and defines the value chain.

In many other cases the ecosystem products and properties cannot be taken as defining criterion because the end products are too distant and too diversified. Here is a possible classification of biodiversity-based value chains:

- Collected and cultivated food products, such as fruits, herbs and nuts
- Biological materials, such as parts of plants, resins, oils, fibers, aromas and the like
- Pharmaceutical products (phytomedicine)
- Cosmetics and personal care products
- (Agro)chemicals, especially biological control agents
- Handicrafts using biological material, such as dried butterflies
- Ecotourism services around natural attractions, such as bird watching and recreational hunting
- Payment for ecosystem services, such as e.g. carbon sequestration certificates
- Fresh water
- Bioprospecting genetic resources of scientific and commercial value

A comparison of the two lists shows the difference of ecosystems and market perspectives. Typically, natural resource management programs tend to think locally and supply-driven because they focus on the services of the particular ecosystem, while chain development starts from the market. It is the traders and industries who determine whether certain natural materials run a chance of being included in their portfolios. This has to do with the fact that many biodiversity-based products are niche products and the effort going into market development is high. Companies have to look for new and diversified materials and be extremely innovation-oriented. In order to increase the chances of success value chain development of biodiversity-based products cannot easily be limited to one particular raw material from one location only. Box 1.4.4 shows the case of argan oil from Morocco.

#### **Box 1.4.4: Case – Argan oil from Morocco**

The classical example is the protection and economic use of the wild *Argania spinosa* tree in South Morocco. This tree stands on around 800,000 hectares (“arganeraie” ecosystem) in the Agadir region. Traditionally, fruits are used to obtain the high-value argan oil, a local specialty providing the livelihood for the rural population. As *Argania* is extremely slow growing and hard to propagate, this ecosystem at the fringe of the desert is in danger. Unsustainable utilization and felling of trees lower the water table and accelerate desertification. As a consequence of an increased out-migration, the available labor force for argan oil production is reduced.

As a result of the resource protection program some years ago, provincial authorities introduced a framework for the use of the arganeraie ecosystem in order to halt the degradation process. The area was declared a UNESCO biosphere reserve. Developing the argan oil value chain is an important contribution to achieving the protection goal because it helps maintaining the economic value of the trees.

*Source: Own compilation*

On the positive side, value chain development benefits from the existence of natural ecosystems as a source of raw materials. Products from nature have consistently high growth rates. Tropical forests and other habitats offer rare natural products, and are therefore a source of product innovation.

#### ***Protecting and managing ecosystems at the local level***

Developing biodiversity-based value chains involves risks and has to confront clear ecological limitations. The main risk is the overexploitation of the resources taken from the ecosystem and the degradation caused by the business activities. For the market development of biodiversity-based products to be useful, securing the ecological sustainability is paramount.

This is the reason why the development of a biodiversity-based value chain necessarily has to include the local actors using or influencing the ecosystems at stake. External buyers are only one among several stakeholders that determine the fate of a forest. Value chain development needs to include the spatial dimension: Without an effective local resource governance it cannot be sustainable. Local natural resource management in support of biodiversity-based value chains includes:

- Setting rules and implementing management plans for the local ecosystem to avoid overexploitation
- Supporting arrangements for the access and benefit sharing of local communities in accordance with the Nagoya Protocol, wherever applicable

Local management of natural resources and biodiversity also has a social side. Biodiversity-based resources and other ecosystem services are typical for marginal regions with a relatively high poverty incidence. The concept of '*sociobiodiversidade*' in Brazil reflects the social conditions of the communities whose livelihoods are based on a local ecosystem. See Box 1.4.5. The revenues have to be shared fairly between buying enterprises and the local collectors.

### ***Using the value chain perspective to underpin economic sustainability***

The value chain perspective contributes to the market success of local natural materials by:

- Connecting natural resource management with bio-trade markets
- Showing the commercial logic of the product value chain
- Employing the full range of market development solutions, business linkages and the development of business models in particular
- Making sure the relevant sustainability standards are observed

#### ***Box 1.4.5: Case – National Plan to promote 'socio-biodiversity' value chains in Brazil***

In 2008, Brazil's government launched the National Plan for Promotion of Socio-Biodiversity Product Chains – a joint effort by the Ministries of Agricultural Development, of Environment and of Social Development and other public agencies. Its goal is to develop 'socio-biodiversity' value chains generating income for traditional people from the collection and cultivation of native species. The economic activity builds on local knowledge and practice, improves the living conditions of local communities – protecting their environment and respecting their traditional rights.

The four main action areas are the promotion of sustainable extraction activities, development of industrial processing, organization of markets, and the strengthening of local social and productive organizations. The key concept is the productive inclusion of poor communities. This concept emphasizes the importance of supporting the self-organization of communities and community-based networks of medicinal herb gatherers, producers and healers, in partnership with public research institutes and providing a mix of social assistance and productive support, particularly for those communities located in poor and underserved areas<sup>46</sup>. In turn, biodiversity-based value chains benefit from the local knowledge.

*Source: National Government of Brazil; Lal and Sorte, 2011*

A particular point is the economic sustainability of local enterprises. This is an issue of business size: As there is an upper limit to the volume of resources that can be taken off the growth possibilities are naturally limited. This means that most local business operations remain small scale. The value chain perspective contributes to understanding the viability of local business models and helps planning investment carefully. Natural resource managers have to look for

<sup>46</sup> Lal and Sorte, 2011, p.22

possibilities to diversify the sources of income. They need business competence beyond the particular value chain in question. Value chain initiatives can provide advice on the business models and work to improve the skills of local communities and enterprises.

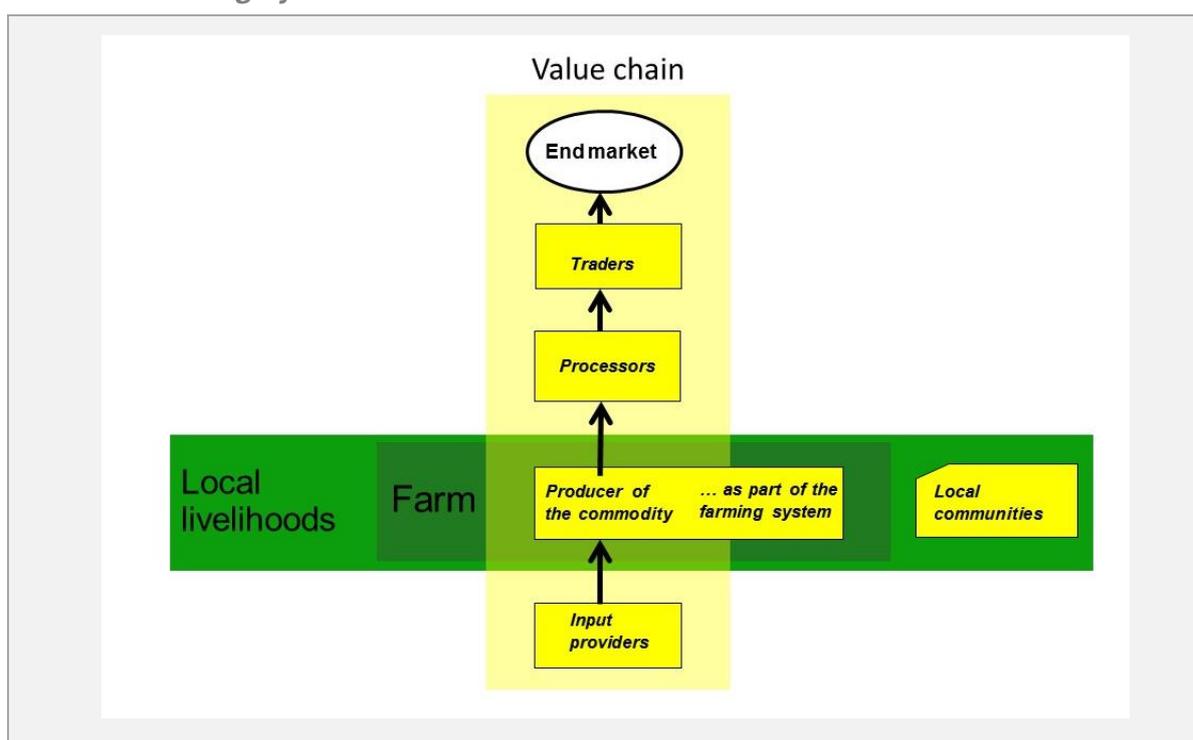
### 1.4.3. Value chains and agricultural development

Besides the territorial development approaches, value chain development is also important for development programs that focus on particular types of enterprises, especially on small farmers and on small and medium-sized enterprises. Agricultural development programs seeking the integration of small farms into commercial markets have to include a value chain perspective. At the same time, they need to address the farming systems, resource endowments and livelihoods of farmers in a much broader sense.

#### *Farmers at the intersection of agriculture and value chains*

Agricultural development programs focus on farmers as their target groups, particularly small family farms. As primary producers, farmers are part of the value chains to which they sell. Value chain development is the key approach to support their market linkages, the adaptation to market requirements and the access to farm technology.

#### *Box 1.4.6: Concept – Crossing perspectives of value chains and small farms or farming systems*



Source: Own concept

However, farms are systems and farmers need to grow a range of different products, manage crop rotations on their fields and a seasonal calendar in line with labor availability and weather risk – all to make sure that income and food availability adds up to make a living year round. Marketing is just one variable to master. At the same time, farmers are embedded in local communities and often pursue non-agricultural activities as well.

Box 1.4.6 presents the concept of two crossing perspectives in which the vertical axis shows the integration of farms into a value chain while the horizontal axis presents the primary production activity as being embedded in the farming system and the social networks at the local level. As a primary producer of a particular crop, the farmer operates at the intersection of two systems. Value chains connect the farm to the world of markets and competition while the farm perspective looks at the constraints at the local level.

The value chain context of a farm differs considerably from its local context. Agricultural development has to address both dimensions.

### ***Value chain development as part of an agricultural development agenda***

Contemporary agricultural development policies address a wide range of factors relevant for sustainable agriculture. Strategies comprise territorial approaches (provision of water, roads and other physical infrastructure, environmental and soil management), policy interventions (providing stability and regulating land rights), public services (technology transfer, health and education and social services, especially for women and vulnerable groups) as well as market and value chain development<sup>47</sup>. They combine the improvement of farming and food security, adaptation to climate change and rural livelihoods on one side, with the integration of farmers into value chains on the other.

The question is how value chain development can best fit into an agricultural development strategy given the fact that value chain development essentially covers one product and market at a time, taking the vertical perspective shown in Box 1.4.6. Contrary to market development and value chain development, agricultural development strategies are for the most part public strategies taken ahead by government, public administration and support service providers working for the public good, such as rural extension services.

Programs integrating the value chain approach into the broader framework of agricultural development have to take the concept in Box 1.4.6 into account, especially if the focus is on securing ecological sustainability and alleviating poverty in large farming communities. Here is a series of recommendations on how to address the challenge:

- *Consider the limits of growth:*  
Value chain solutions have to consider the constraints of farming systems and crop rotations, such as respecting the limit to expanding the area of a field crop.
- *Adjust the scoping of value chains:*  
To the extent that buyers handle different agricultural products at the same time, a wider scope of the value chains targeted may be useful. Value chain development then targets downstream traders and processors who take different kinds of produce from farmers.
- *Expand the selection of value chains to correspond to farm systems:*  
This is only possible where large numbers of farmers follow a similar farming system so that value chain interventions would not become too localized and selective. For example, developing export commodities, such as cotton, can easily combine with support for food crops on the same farms. An example for this approach is Ethiopia where an agricultural development program explicitly selected two different value chains. The case is presented in Box 1.4.7, below.

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<sup>47</sup> Wiggins, 2015

**Box 1.4.7: Case – Innovation Center for the Agriculture and Food Sectors in Ethiopia***Selecting value chains in the “Green Innovation Center”, Ethiopia*

The agricultural production systems in the Arsi region in Ethiopia are characterized by smallholder cereal growing, particularly wheat and barley. The production methods are simple, the productivity low and the production system unsustainable, especially due to inadequate crop rotation leading to decreasing soil fertility and land degradation.

The program Innovation Centres for the Agriculture and Food Sectors aims at improving the income of smallholder farmers, employment and regional food supply through innovation in the agriculture and food system. This involves activities to improve crop rotation, not only aiming at the enhancement of soil quality and reduction in pests and diseases but also at an improvement of food and nutrition security of smallholder households.

An analysis revealed the potentially greatest benefit to smallholder farms in the combined promotion of wheat and faba bean value chains. The intended improvement and expansion of the crop rotation system of wheat and faba beans, which can bring benefits in terms of productivity increases and food and nutrition security, suggests to promote both value chains. Thus, the value chain selection has been expanded to promote two value chains in order to correspond with the local farm systems and the corresponding needs.

*Source: Own compilation, based on information from GIZ Germany*

Module 3 on value chain strategies takes these issues up in more detail. Chapter 3.4 deals with the social dimension of value chain development.

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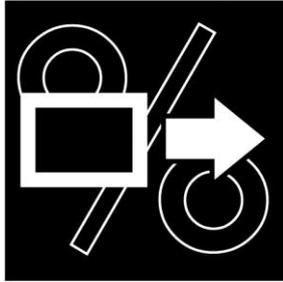
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# Module 2

## Value Chain Analysis

# Contents

<b>Module 2</b>	<b>Value Chain Analysis</b>	<b>58</b>
<b>2.1.</b>	<b>Introduction: How to analyze a value chain</b>	<b>58</b>
2.1.1.	Types and elements of value chain analyses	58
	Elements of value chain analysis	59
	ValueLinks principles for chain analysis	60
2.1.2.	Subsector and value chain reports	60
<b>2.2.</b>	<b>Structural analysis – value chain mapping</b>	<b>62</b>
2.2.1.	Concept of the value chain map	62
2.2.2.	Methodology of value chain mapping	67
	Generic procedures of chain mapping	67
	Zooming in: From overview value chain maps to chain mapping in detail	68
	Quality criteria for value chain maps	68
	Determining one or several end product(s)	69
	Identifying and segmenting end markets	70
	Defining the sequence of business operations and stages of the value chain	71
	Depicting operators and business models	73
	Mapping business linkages	75
	Differentiating the chain into several channels	76
	Mapping operational service providers	78
	Mapping support service providers and government institutions	79
2.2.3.	Spatial analysis	80
2.2.4.	Value chain mapping in different types of industries	82
	Chain mapping in natural resource based value chains	83
	Chain mapping in manufacturing sectors	83
	Chain mapping in service sectors	84
	Mapping of crosscutting value chains of inputs and services	86
2.2.5.	Institutional and governance analysis	87
	Public governance: Legal rules for doing business	88
	Social embedding of value chain operators in informal networks	89
	Private value chain governance	90
	Sustainability governance	90
<b>2.3.</b>	<b>Economic analysis of value chains</b>	<b>92</b>
	The place of market studies in chain development	92
2.3.1.	Size of end markets – total value generated	93
2.3.2.	Composition of the value generated	93
	Distribution of value across markets and channels	96
	Distribution of value added and revenue along the value chain	97
	Difficulties of calculations per unit	98
	The use of value added calculations	99
2.3.3.	Chain competitiveness	100
	Competitive benchmarking	100
	Market efficiency	101
	Indications of excessively high marketing costs	101

Indications of excessive rents	102
Food losses	102
The Rapid Loss Appraisal Tool	103
<b>2.4. Environmental analysis of value chains</b>	<b>105</b>
2.4.1. Value chains and the natural environment	105
2.4.2. Methodology of environmental value chain analysis	107
2.4.3. Modeling the interaction between value chain and the environment	109
Specifying the technical processes along the value chain	109
Specifying ecosystems and natural resource categories	111
Constructing an environmental impact matrix	113
2.4.4. Identifying and characterizing environmental impacts	113
Identifying environmental impacts <u>of</u> the value chain	114
Identifying environmental impacts <u>on</u> the value chain	115
The impact of climate change	116
2.4.5. Environmental valuation tools	119
The economics of ecosystems and biodiversity	119
<i>Subject and methods of valuation</i>	119
<i>Use for environmental analyses of value chains</i>	120
Measures of resource efficiency and ecological footprints	121
<i>Subject of valuation</i>	121
<i>Valuation principle and methods</i>	121
<i>Use for environmental analyses of value chains</i>	122
Measurement against environmental sustainability indicator sets	124
<i>Subject of valuation</i>	124
<i>Valuation principle and methods</i>	124
<i>Use of indicators for environmental analyses of value chains</i>	124
<i>Measuring climate risk and vulnerability</i>	125
A short cut: Identifying the environmental hot-spots	126
<b>2.5. Social analysis of value chains</b>	<b>132</b>
2.5.1. Poverty analysis	132
Poverty mapping – Locating poverty groups in and around the value chain	132
<i>Who classifies as poor?</i>	132
<i>Incidence of poverty in the value chain</i>	133
<i>Spatial incidence of poverty <u>around</u> the value chain</i>	135
<i>Mapping poor consumers</i>	136
Criteria to characterize poverty groups	137
<i>Poverty measures related to welfare — income and assets</i>	139
<i>Characterizing poor wage workers</i>	140
<i>Social criteria indicating poverty</i>	140
<i>Risk and vulnerability of poverty groups</i>	141
<i>Establishing a multi-dimensional view on poverty</i>	141
Describing the livelihood context of poverty groups	142
Young people seeking employment	143
2.5.2. Gender analysis	144
Gender mapping – economic roles of men and women	144
<i>Visualizing gender groups in value chain maps</i>	145
<i>Describing the gender division of labor in the chain</i>	146

Assessing the position of women in value chains	148
<i>Access to and control of assets and resources</i>	148
<i>Characteristics of female employment and women-led enterprises</i>	149
<i>Employment conditions of women and characteristics of female wage workers</i>	150
<i>Representation of women in associations and business organizations</i>	151
Socio-cultural framework conditions relevant for gender equity	151
<i>The reproductive role of women</i>	151
<i>Influence of institutions and the regulatory framework</i>	152
Identifying gender gaps in value chains	153
<b>Resources</b>	<b>154</b>

## Module 2 Value Chain Analysis

### 2.1. Introduction: How to analyze a value chain

This module presents the concepts and tools for value chain analysis — the study of industries organized around particular products and their markets. The value chain concept is used as a model to describe the socio-economic reality. All chain actors, private enterprises in particular, need to understand the value chain they are a part of, its functioning and failures and their own position in it. The results are used to prepare decisions on objectives and strategies. Enterprises can develop a vision of change and determine collaborative strategies based on a shared view on the state of the value chain. Governments and public agencies use value chain analysis to identify and plan supportive action and to monitor impact. Apart from its use in a development context, value chain analysis also helps individual enterprises to inform their business decisions.

Value chain analysis is a situation analysis of a specific value chain at stake. The methodology combines analytical and procedural aspects. The questions of who should take the lead and who is to be involved, the right timing, resources to be invested into the analysis, and the possible external support are very important points that should be clarified upfront. In the context of practical program implementation, the effort has to be reduced to a minimum.

The following chapters focus on the analytical tools. Value chain analysis as a management process is part of program implementation covered in module 4. Chapter 4.4 treats the specifics of a participatory approach to value chain analysis.

#### 2.1.1. Types and elements of value chain analyses

Value chain analysis is a broad field of inquiry which can broadly be classified according to:

- The purpose and clients for whom it is done – scientific community, public sector or private companies
- The use of results – value chain analysis to inform development programs and prepare investment or contribution to scientific research
- The scope – global value chains, national industry and sector surveys or studies on small, local value chains
- The methodology – in-depth expert study or participatory assessments
- The technical focus – economic growth, markets, product quality, natural resource use, external effects or social issues

Value chain analysis is useful in various settings. Two ways of using value chain analysis stand out — value chain analysis as a research instrument, and value chain analysis to inform public decisions, especially in the context of development work. Corresponding to the different purposes of value chain analysis, the choice of methodologies and tools is large. Almost any socio-economic concept can be employed to enrich value chain analyses.

A key reference for value chain research methods that has inspired many handbooks on value chain development is that of Kaplinsky and Morris<sup>48</sup>. Other important materials can be found in the reference list at the end of this module.

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<sup>48</sup> Kaplinsky and Morris, Handbook for Value Chain Research, 2001

The different value chain analysis methodologies have many concepts and tools in common that have become a standard in value chain analysis. Conventional elements of value chain analysis include value chain mapping, market analysis and the assessment of chain governance. The ValueLinks 2.0 methodology for value chain analysis draws on this body of literature paying particular attention to instruments relevant in development practice. The type of value chain analysis presented here is used to inform the planning and implementation of value chain development programs. Existing instruments have been reconstructed to fit the visual language and terminology of ValueLinks. Other tools have been added or adapted to ValueLinks to respond to the growing concern for social and environmental issues.

Value chain analysis as conceived here is not an end in itself but a step in the process of value chain development. It has to feed into decisions and subsequent action. Private enterprises use results of value chain analysis to engage in upgrading value chain processes and to plan investments. Public administration and development projects use value chain analyses for strategy formation, planning and implementation. Value chain analysis is also used to formulate impact indicators and create the basis for monitoring.

### ***Elements of value chain analysis***

Value chain analysis is grouped into four chapters comprising the structural analysis and the different dimensions of sustainable development — economic growth, environmental sustainability and social inclusion:

**Structural analysis (see 2.2):** This means value chain mapping with a visual representation of the value chain system. Value chain maps identify products and end markets, business operations (functions), chain operators and their linkages, as well as the chain supporters. The basic value chain map is a descriptive conceptual model. Value chain mapping is the most essential method and the core of any value chain analysis. All other topics of analysis, such as economic, environmental and social issues, build upon the basic value chain map.

**Economic analysis (see 2.3):** Economic analysis starts by indicating market prices, quantifying the volume of produce and the market shares of particular segments in the chain. The data are used to determine the value added along the stages. The second big subject is the assessment of chain competitiveness. This includes the cost of production and marketing. The economic performance of a value chain can be benchmarked, i.e. the productivity parameters are compared with best practices of competing chains in other countries or similar industries.

**Environmental analysis (see 2.4):** The environmental analysis introduces the ecosystems and natural resource base upon which the economy builds. The main tool is the construction of an impact matrix that allows identifying impacts of the chain on the environment and, vice versa, the impact of environmental degradation and climate change on the value chain. The list of impacts is scrutinized by looking at the limits imposed by the need to keep ecosystems functional and at the resource efficiency of business operations. The idea is to pinpoint the most urgent problems.

**Social and poverty analysis (see 2.5):** Here, the focus is on vulnerable groups in and around the value chain, in particular poor self-employed entrepreneurs, poor wage workers and 'poverty markets' that are important for poor consumers. The methodology entails identifying poverty groups and describing and understanding their livelihood conditions. Similarly, gender mapping helps identifying the gender division of labor and gender relations within the value chain. The analysis reveals the social conditions hindering or supporting women to take part in business.

Depending on the particular interest, specific chain analyses zoom in on any relevant aspect, such as the characteristics of particular groups of value chain actors or certain political, institutional and economic issues.

### ***ValueLinks principles for chain analysis***

A value chain analysis *always* describes the status quo of a value chain first – that is the value chain in its *present* state. The findings provides the starting point for any considerations on development strategies and establishes a baseline against which the subsequent changes can be observed.

Value chain maps are the core of that baseline. A basic overview value chain map can be designed within a day or two, and still be adapted and refined later on.

Building on the descriptive value chain analysis — the diagnosis of the status quo — strategic analyses have to follow in order to deduct the objectives and strategies for development. The strategic analysis is conducted separately as a second step. The assessment of constraints and development opportunities and the respective strategic development options are covered in module 3. Once the strategy is clear, elements of the initial chain analysis can be extrapolated anticipating the desired future state of the chain.

To become useful for decision making and planning, the value chain map has to be complemented by information that allows comparing the current state of the chain with potential alternative states. Therefore, the elements of the chain map are treated as variables which are changing over time. For example, business operations may be performed more efficiently, the number and sizes of operators may increase, contractual relations may be formalized, and chain supporters may change their behavior.

## **2.1.2. Subsector and value chain reports**

There are two ways in which value chain analyses can be performed. In many cases, value chain analysis is an ongoing activity accompanying value chain development. The issues of analysis are picked up one by one as they arise in the process. The degree of detail is chosen according to the current information needs. The value chain map is most useful if it is treated as a living document that is continuously updated.

Another practice is to conduct a subsector or value chain study as a one-off activity providing a more or less complete overview of the value chain at one point in time. Box 2.1.1 provides an example of the table of contents of a value chain study report with keywords for specific points included in brackets. It can be used as a template for defining the terms of reference of a consultant.

Presenting the results in a value chain report has the advantage that the different elements can be clearly structured and systematized. The reference to a study report facilitates understanding and communication among value chain actors.

However, the investment into a value chain study only pays off if the results are actually useful for the different purposes of enterprises and public development agencies. Experience has shown that it is very difficult to foresee the questions and issues arising in the process of value chain development. Therefore, value chain studies for development programs should not be guided by the ambition to provide a complete picture at the beginning of the process but start by laying a foundation only. The methodology should be open to further analyses and complementary content as the need for additional information emerges.

**Box 2.1.1: Tool – Template of a subsector or value chain study****Prototype table of contents**

1. Introduction
  - Purpose and methodology of the study
2. Scope of the value chain/subsector
  - Products and their characteristics
3. Final markets
  - Market analysis (market segmentation, demand trends)
4. Value chain structure
  - Value chain map and geographic location
  - Sector statistics (numbers of enterprises, employment)
  - Economic analysis (value-added and its distribution)
  - Environmental analysis
  - Social and gender issues
5. Policy framework
  - Relevant rules and regulations
  - Support services
6. Opportunities and constraints
  - Economic potential (markets and competitive position, market failures)
  - Needs and potential for greening the value chain
  - Gender equity and social problems
7. Recommendations
  - Prospects of development (strategic options)
  - Need for public support of value chain development

*Source: Own concept*

To avoid that value chain studies end up being shelved, the utilization of the study has to be clear beforehand. Chain actors have to specify their data needs before they commission a study, keep control of value chain diagnosis and follow up actively on studies conducted by external consultants.

## 2.2. Structural analysis – value chain mapping

The structural description of a value chain, that is value chain mapping, is the foundation and pivotal element of value chain analysis. Value chain maps not only provide an overview of the system identifying the position of value chain actors, they also help visualizing many topics of value chain analysis structuring the information according to the functions and stages of a chain. Value chain maps reduce the complexity of economic reality into a comprehensible visual model. Thus, they serve both an analytical and a communication purpose.

### 2.2.1. Concept of the value chain map

A value chain can be characterized by eight generic elements, of which five constitute the basic value chain map at the micro level:

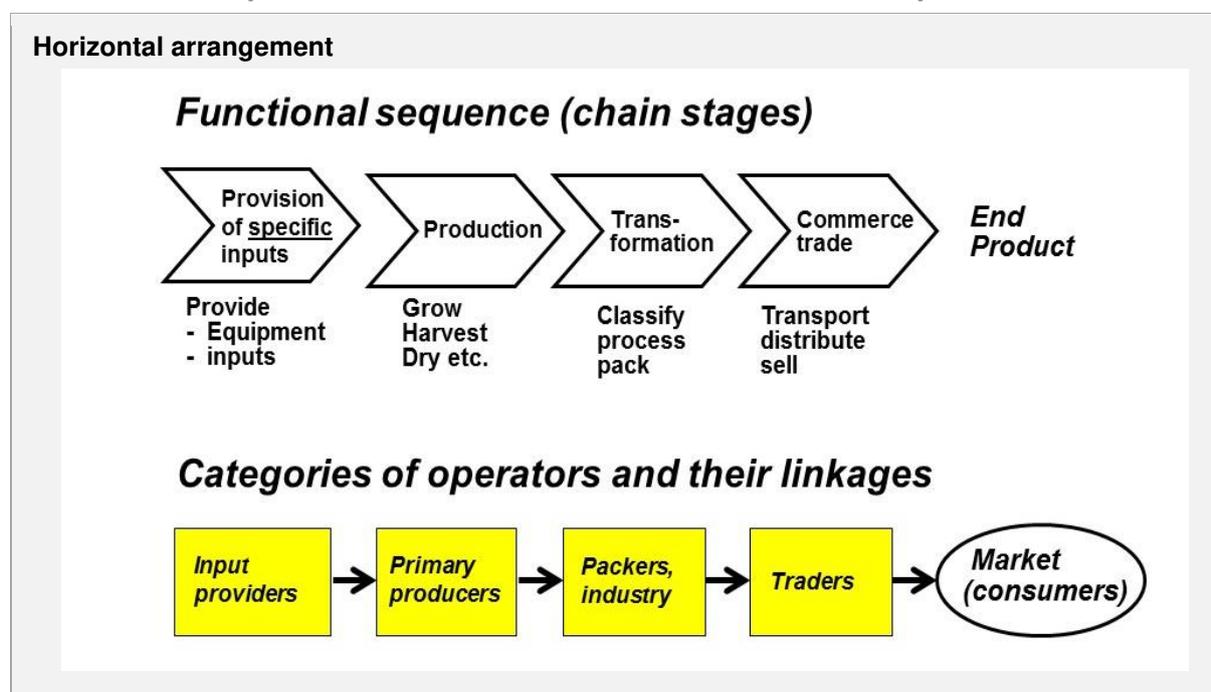
- The marketed product or group of products defining the value chain
- The end market in which the product is sold to customers
- The series of value chain stages through which the product reaches the end market
- The enterprises or chain operators conducting the business operations
- The business linkages between these operators

The remaining three elements in a value chain map are:

- Selected business linkages with subcontractors and operational service providers
- The support service providers at meso level
- Public agencies performing a regulatory function at macro level

In a value chain map, these elements are connected in a visual form. The basic elements of a value chain map at micro level are shown in Box 2.2.1 and Box 2.2.2.

**Box 2.2.1: Concept – Generic elements of a basic value chain map**

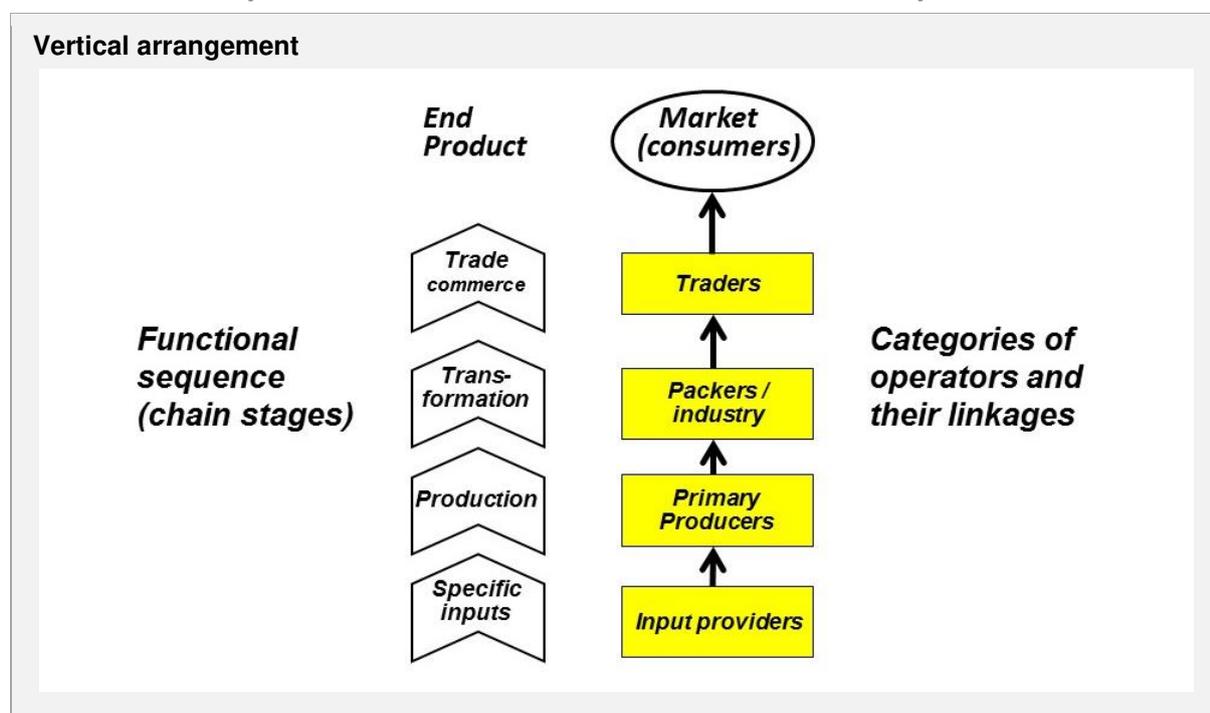


Source: Own concept

The figures in the boxes are only conceptual models demonstrating the connections of the five elements in principle. They do not represent any real value chain. Both the vertical and the

horizontal type of arrangement is used in practice. The difference between the two types is the visualization of the product flow towards the end market. Usually, the direction of business linkages is termed vertical. The arrangement of arrows in Box 2.2.2 thus appears more appropriate. However, the content remains the same. ValueLinks uses both visualization options interchangeably.

**Box 2.2.2: Concept – Generic elements of a basic value chain map**



Source: Own concept

The basic value chain map shows the micro level of the value chain, that is the value chain stages, the different types of operators and their relation to the end market. The value chain operators are the owners of the product along the chain. They buy the main raw material, perform the productive processes and pass on the semi-finished and final products to the consumers in end markets.

It is important to note that the business linkages in the value chain map always refer to the interactions between the value chain operators. Normally, maps do not depict the business relations between chain operators and the suppliers of products and services from *outside* the chain, for example suppliers of energy, transport, or generic services,

However, in some industries specialized operational service providers perform critical functions for the operators. These can be subcontractors in the garment industry, providers of indispensable and specialized technical services for irrigation systems or financial institutions without which the chain would not work. The respective business linkages are only included in value chain maps if they are necessary for a full understanding of the chain. Such operational and financial service linkages are visualized by a different type of arrow to distinguish them from the core sequence of the chain map<sup>49</sup>.

Besides the value chain operators, most value chains also embrace actors that are not directly involved in production and marketing but provide regulatory and support services to particular

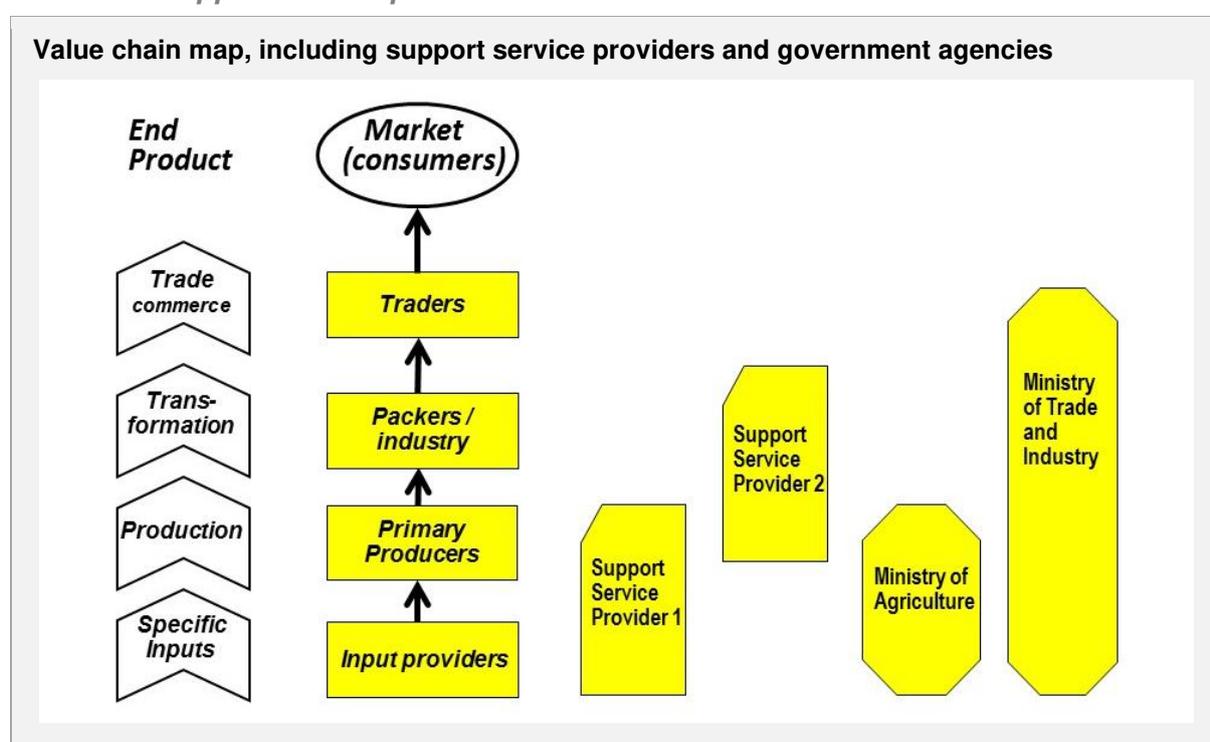
<sup>49</sup> See Box 2.2.4 for the different mapping symbols

groups of operators or to the value chain business community at large. The basic value chain map therefore is completed by information on selected industry-specific actors, including:

- Industry associations, business membership organizations and public agencies, such as technology or training institutes representing the collective interest of the business community and providing support services to the business community at large (value chain supporters)
- Selected government units and public agencies performing regulatory and enabling functions (value chain enablers)

These actors are part of the value chain map to the extent that they perform an important role for its functioning. They are considered as the meso and macro level of the value chain, respectively. Whereas chain supporters are mostly chain-specific, public agencies normally do not cover specific value chains but entire subsectors, such as agriculture or fisheries, or have regulatory tasks for the economy as a whole.

**Box 2.2.3: Concept – Basic value chain map completed with institutions and support service providers**



Source: Own concept

*It is important to note that the business linkages in the value chain map always refer to the interactions between the value chain operators. Normally, maps do not depict the business relations between chain operators and the suppliers of products and services from outside the chain, for example suppliers of energy, transport, or generic services,*

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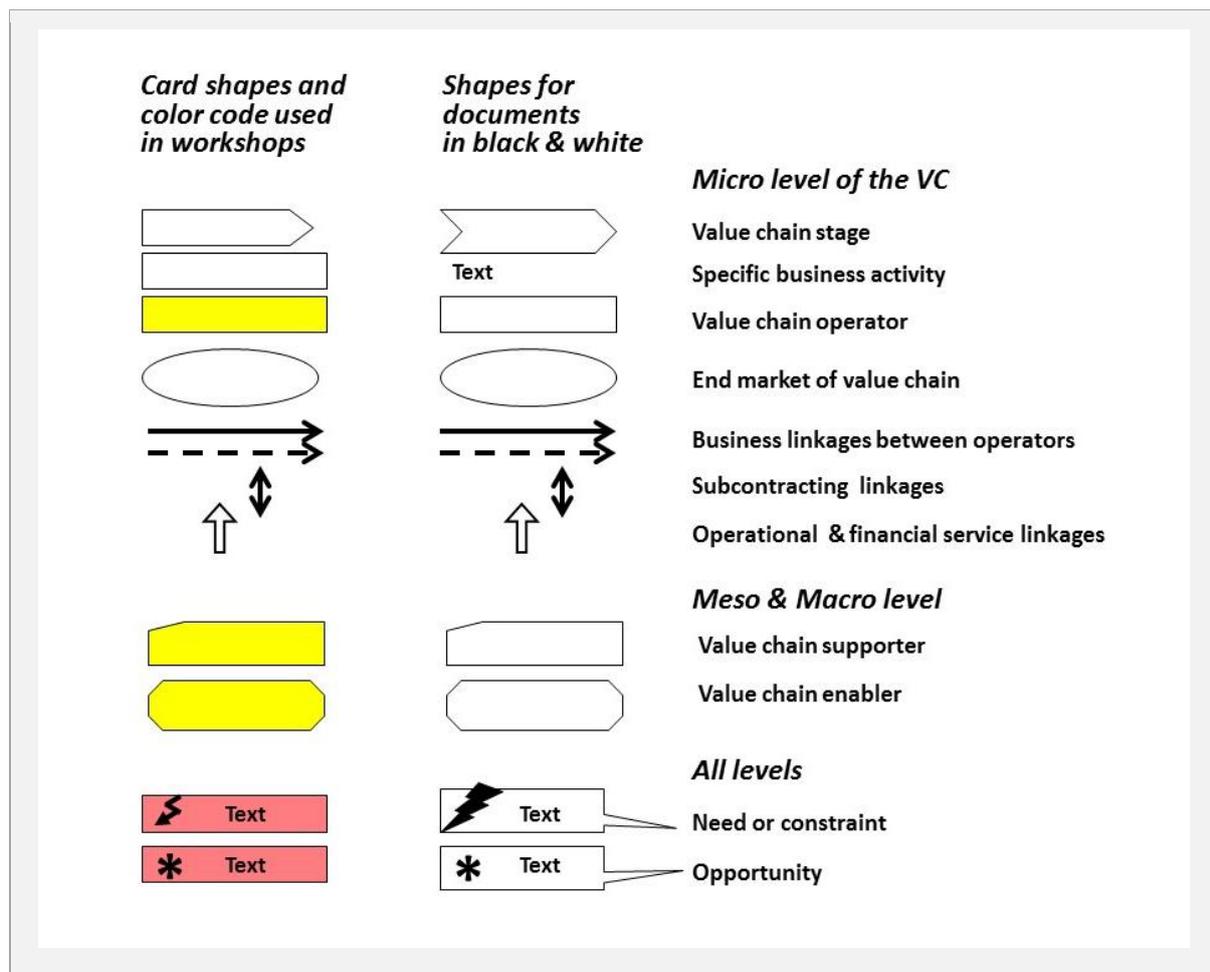
Box 2.2.3 is thus a more comprehensive model of a value chain structure. It includes two support service providers as well as two examples of public agencies performing a role for the value chain. The map is still conceptual and should not be mistaken for a generally applicable template. It is a conceptual model showing the value chain map still in a highly stylized form.

For drawing a value chain map, the ValueLinks methodology applies a series of mapping symbols:

- An oval shape for the end market(s) of the product or services defining the value chain
- Hollow white arrows for the chain links or stages combining the specific functions / business operations
- Yellow boxes for the value chain operators performing the business operations
- One type of arrow for the vertical business links between the operators
- Another type of arrow for links between operational service providers and chain operators
- A modified shape of boxes for support service providers and government institutions

The complete set of chain mapping symbols is shown in Box 2.2.4. It also includes value chain supporters and value chain enablers as well as additional symbols marking constraints, potential and action.

**Box 2.2.4: Tool – Value chain mapping symbols**



Source: Own concept

The symbols are designed to serve the purpose of participatory value chain mapping using pinboards. Paper cards in primary colors can be easily cut into the shapes and labeled with the types and names of value chain actors. Cards are then pinned on a board and shifted around until the value chain map resembles reality.

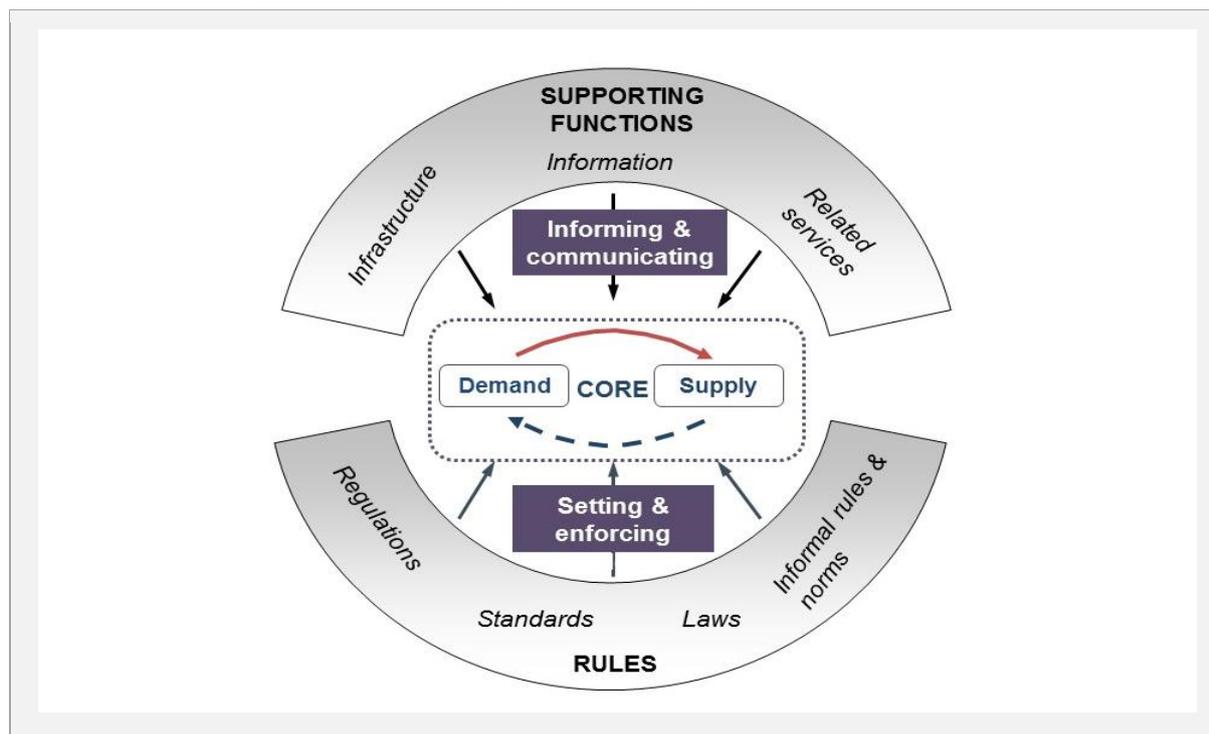
It is important to note that symbols differ both in color *and* in shape. This allows using them for black and white printing as well. Beyond the defining key components, a value chain map can be complemented with numerous other elements and data.

Value chain mapping is the core of value chain analysis. It serves both an analytical purpose and a communication purpose, as chain maps reduce the complexity of economic reality with its diverse functions, multiple stakeholders, interdependencies and relationships into a comprehensible visual model.

The value chain concept has a certain similarity with the concept of the “market system”<sup>50</sup> — another way of visualizing market relations and their context. The figure in Box 2.2.5 presents the idea of a market system as the transaction between two market partners, i.e. demand and supply, for example between value chain operators, such as an input supplier and a producer. The business linkage is the core function, which is embedded in a regulatory context (the rules) as well as in a support system (the supporting functions).

<sup>50</sup> Tschumi and Hagen, 2008

### Box 2.2.5: Concept – The “market system” concept (M4P)



Source: Springfield Centre, 2014

This concept has been introduced by the 'Making markets work for the poor' methodology which is widely used by the Swiss and British development cooperation. It highlights the conditions under which individual business linkages work including the norms and laws determining the business behavior at macro level and the support services providing information and know-how at meso level.

The value chain framework is compatible with the market system concept. Every value chain is a series of market transactions and thus can be seen as being composed of different market systems. The 'demand & supply' core of the market system concept can be replaced by the micro level of the value chain. The supporting functions and rules mostly refer to meso and macro level actors.

One advantage of the market systems concept is that it can be used to understand the specific market linkages poverty groups are involved in. Market systems also include labor markets, land markets and financial markets<sup>51</sup>.

## 2.2.2. Methodology of value chain mapping

Value chain maps can look quite differently depending on the particular type of product and size of the value chain, the scale of the map and its degree of detail, and conforming to their intended purpose. For each value chain, a different and new map has to be produced.

### *Generic procedures of chain mapping*

Drawing a chain map is an art rather than a rigorous method. Nevertheless, there are a few rules to be observed. The main quality criterion of any value chain map is that it should be comprehensible to the enterprises and other actors involved. The decisive point is to reach the

<sup>51</sup> Springfield Centre, 2014

right degree of detail that carries enough information to be useful, but still remains simple enough to be easily understood.

### **Box 2.2.6: Tool – How to proceed in chain mapping**

#### **Sequence of steps in value chain mapping**

- (1) Determining the end product
- (2) Identifying and segmenting markets
- (3) Defining the sequence of stages of the value chain
- (4) Depicting operators and business models
- (5) Mapping business linkages
- (6) Differentiating the chain into several channels
- (7) Mapping operational service providers
- (8) Mapping support service providers and government institutions

*Source: Own concept*

Mapping always starts with drawing a basic value chain map providing an overview of the entire value chain. This overview map should demonstrate the basic structure of the value chain. It should visualize major components using a symbol language. Box 2.2.6 lists the steps to follow in preparing a value chain map.

The generic conceptual maps presented in Box 2.2.1 and Box 2.2.2 show the principle in form of a *generic* template. These templates are not meant to be copied in a one-on-one fashion. Analysts have to keep in mind that types of markets, the division of value chain stages and the categories of actors are specific to every concrete case. As the conditions vary widely, analysts have to take care of the value chain maps fitting the case at hand.

### **Zooming in: From overview value chain maps to chain mapping in detail**

Any chain map should fit on one page. Consequently, the map of an entire subsector can only show a rough overview. To achieve a more detailed resolution, the analyst has to pick out and enlarge a part of the first overview map. That part is elaborated in greater detail and presented on a separate, second page. Detailed mapping is a matter of map scale: As in geographical maps the overview chain map is at a small scale, while detailed maps on specific chain segments or distribution channels use a large scale.

Value chain maps can also cover particular parts of the initial overview map while ignoring others, thus creating detailed thematic maps. For example, a thematic chain map may only show support service providers or it may focus on operational service providers and their interaction with the operators in the main line. Describing a value chain in detail produces a series of thematic maps covering particular aspects. In fact, it is possible to come to a sort of value chain atlas in the end. As chain maps are used for different purposes, we are not talking of just one map per value chain, but of several maps that differ according to their respective purposes and the degree of detail depicted. Each map manifests different aspects and helps pinpointing weaknesses.

### **Quality criteria for value chain maps**

There are a number of criteria to judge the quality of a value chain map. A good value chain map:

- Has a clear purpose and message
- Respects the recommendations laid out in the subsequent sections
- Avoids information overload, it does not try to include all data in one large map
- Is comprehensible to people who were not involved in drawing it up

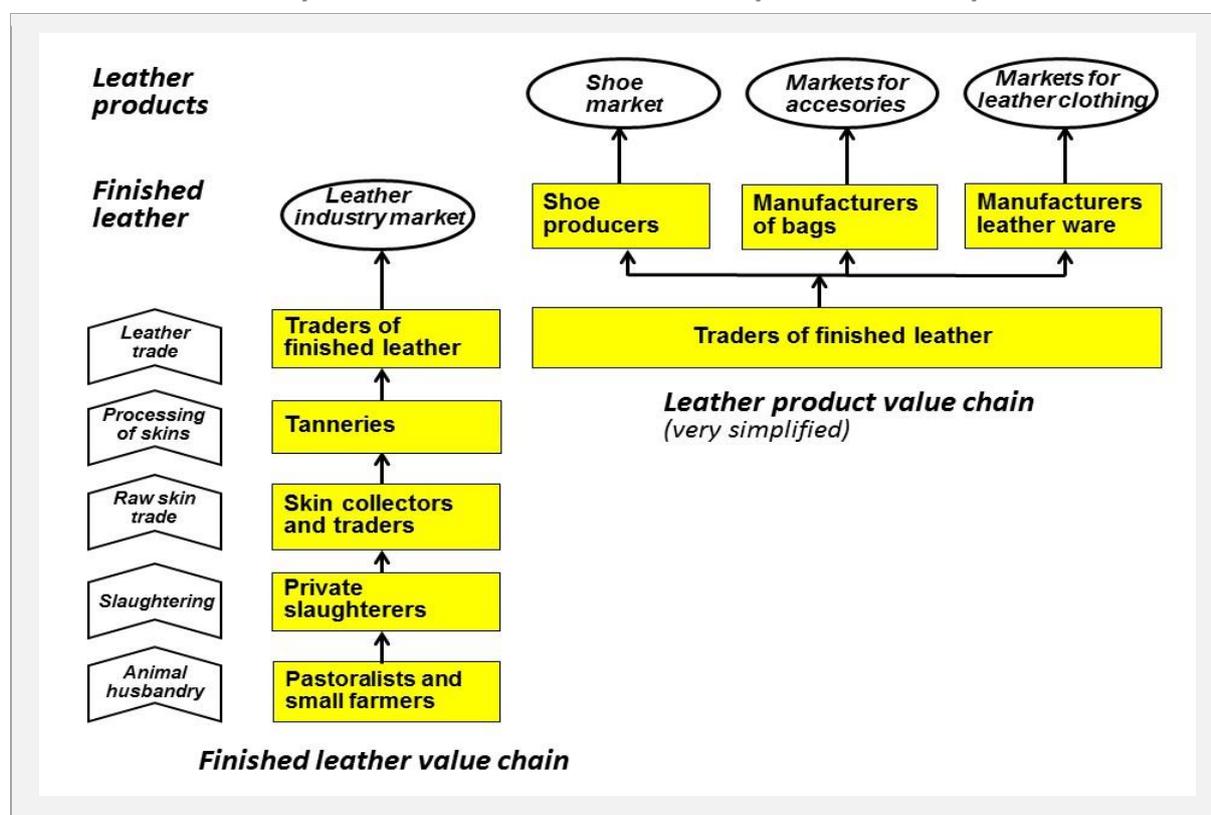
The following examples of value chain maps are rather simple overview maps that show how the structure of the value chain map can best be visualized. Every map in the Box 2.2.7 to Box 2.2.16 highlights a different aspect.

### Determining one or several end product(s)

Chain mapping always starts by determining the end product or groups of products that give the value chain its name. The question is for *which* product(s) the analysis shall be conducted. Depending on the scope of the value chain, the end product can in fact be a group of products when they come in different quality grades and variants. For example, a fruit may be sold fresh or dried, in the form of fruit cuts or as juice or jam. Determining the end product has a lot in common with the scoping of value chains explained earlier in chapter 1.3. Clarity about what to analyze is a precondition for chain mapping. The category of end products therefore has to be clearly specified, in the title or at the top right position of the value chain map.

The end product of the value chain mapped does not necessarily have to be the ultimate final consumer product purchased by private customers. It can as well be an intermediate product that is used as an input in another value chain. For example, the final consumer in a leather value chain is the private buyer of the leather products, such as shoes or belts. However, the value chain mapping exercise does not necessarily have to extend to the leather products and their markets. Unless a specific quality of finished leather is required for the end product, such as ladies' glove made of special fine goat leather, many different consumer products can be made of the same raw material. In such cases, it can make sense to define 'finished leather for export' as the end product of the value chain.

#### Box 2.2.7: Case – Map of finished leather and leather products, Ethiopia



Source: Own concept, based on information from GIZ Ethiopia, 2008

Value chain analysts would 'cut off' the value chain map at the point where manufacturers buy the raw material and take the manufacturers as the end market for the map. The whole chain would then be separated into (a) the value chain of finished leather, and (b) the value chains of the specific products made of that leather, such as a shoe value chain or a value chain for leather jackets.

However, even if the value chain mapping is limited to an intermediate product, the ultimate products should not get completely out of sight, because they have an impact on the market requirements of the manufacturers.

### ***Identifying and segmenting end markets***

Consumer markets are the final destination of the end product, as laid out in the previous step. The market trends and requirements are key to the understanding of the value chain and its development. After all, it is the end consumers who pay the cost of the business operations and transactions along the value chain and hence provide for the income of all operators involved. The incentives to start producing originate in the end markets from where they move upstream through all value chain stages<sup>52</sup>.

The second step in chain mapping therefore is the identification of the markets served. They are visualized by an oval shape at the final point of the value chain map. In most cases, there is more than one end market for a value chain. For one, the end product may come in different variants. The products are often further differentiated according to their quality and the sales prices they obtain. At the same time, the markets of the end product(s) can be subdivided along the types of consumers, their needs, wealth and willingness to pay and purchasing behavior. The end markets of the value chain can thus be defined as the groups of customers that buy and consume the different products of the value chain.

To capture the differences analysts divide the end market of the value chain into several subsets conforming to a series of segmentation criteria. The most important criteria for value chain mapping are:

- Variants of end product (fresh/processed, conventional/organic, loose or packaged)
- Product quality (low/standard/premium)
- Types of consumers (above/below poverty line, private consumers/institutional buyers)
- Type of market place (rural/urban, supermarket/street market)
- Location of buyers or consumers (local/national/foreign)

Accordingly, it is possible to distinguish particular markets of a food value chain, such as the fresh market, the premium market, or the export market. The number of market segments to be included in the value chain map depends on the overall degree of detail wanted. It may suffice to only use one of the criteria to keep the overview. In many cases, between two and four markets fit onto one page easily. If need be, separate maps can be drawn for each of the markets.

The idea behind market segmentation for initial value chain mapping is not yet the identification of a marketing strategy. It is about getting a more complete understanding of the current value chain structure. The identification of market segments also is a foundation for subdividing the chain into channels<sup>53</sup>.

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<sup>52</sup> Easterly, 2002, p.250

<sup>53</sup> For more on market segmentation and value chain channels, see p.76, below

### ***Defining the sequence of business operations and stages of the value chain***

Once the products and markets have been defined, the next task is to establish the business operations and value chain stages leading from the supply of raw materials and inputs to the sale of the end product. The basic sequence of production, transformation and trade activities corresponds with the functional definition of the value chain. The terms function and business operation are used interchangeably in the following.

The functional analysis of the chain means listing all business operations currently performed to create the products and sell them in the end markets defined earlier. The analyst works both upstream and downstream. It can make sense to start from the middle part of the value chain — the production activities before the product enters the wholesale stage — working backwards. It is easier to clarify the supply of raw materials and inputs once the production processes are understood. From production, the analysis continues listing the marketing activities necessary to sell the products on the end market.

The list of business operations should not go into every detail. It is recommended to always take those variants of end products as references that require the largest number of business operations. If the end products include both fresh and processed fruits, the analyst should work on the processed product first and include the processing operations in the functional sequence, even though they are not relevant for the fresh end product. The understanding is that the process sequence for the fresh fruit skips the processing stage.

Subsequently, the individual business operations are grouped into chain links or chain stages, such as primary production, intermediary trade, processing, manufacturing, wholesale trade and retail. The series of hollow arrows represents the chain stages.

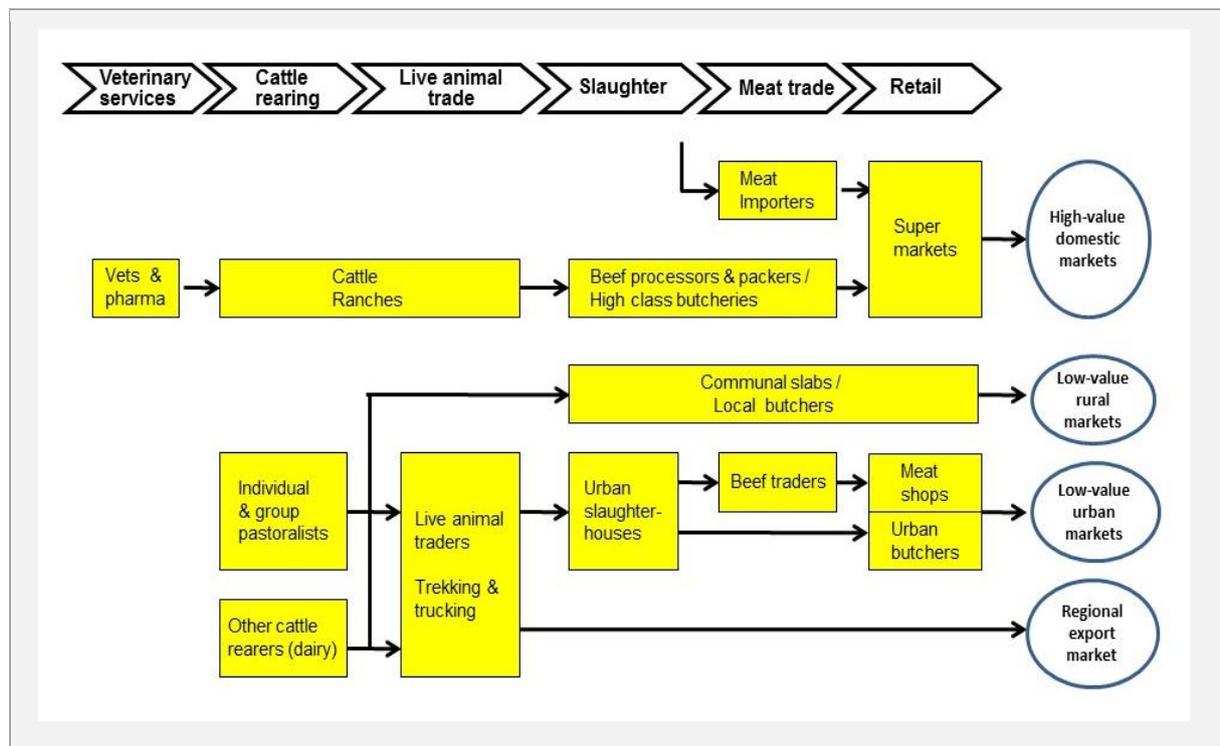
The aggregation of different business operations into one value chain stage has to be checked by referring to the types of operators in the chain. The chain stages respond to the business models of operators which include typical combinations of business operations.

For example, food processors normally buy raw materials from traders, process them, store and package the products and then sell them on to their buyers. In other chains processors buy directly from farmers thus replacing intermediary trade in which case that stage does not exist. In yet other cases, two or three processing and manufacturing steps are performed by different types of operators which means that we also have to differentiate between the respective chain stages. Mapping the sequence of business operations and mapping of operators thus has to be done iteratively.

Box 2.2.8 illustrates the principle at the example of a typical meat value chain. The map contains the information that some operators integrate several value chain stages. The large cattle ranches not only produce animals but also deliver to beef processors directly covering the transport function from farm to slaughterhouse. Similarly, there are local butchers integrating slaughtering and retail. Others, such as the meat importers and the beef traders are active in the meat trade only. Visually, the integration is indicated by a box that extends over two or more value chain stages.

The total number of chain stages is open. A short value chain typically has two or three; long value chains can have seven or more chain stages. It is important to note that we should only differentiate chains stages where this corresponds to the business models of the enterprises. If all operators combine particular business functions, there is no need to split the chain stage.

**Box 2.2.8: Case – Overview value chain map of a typical meat value chain, several countries**



Source: Own concept

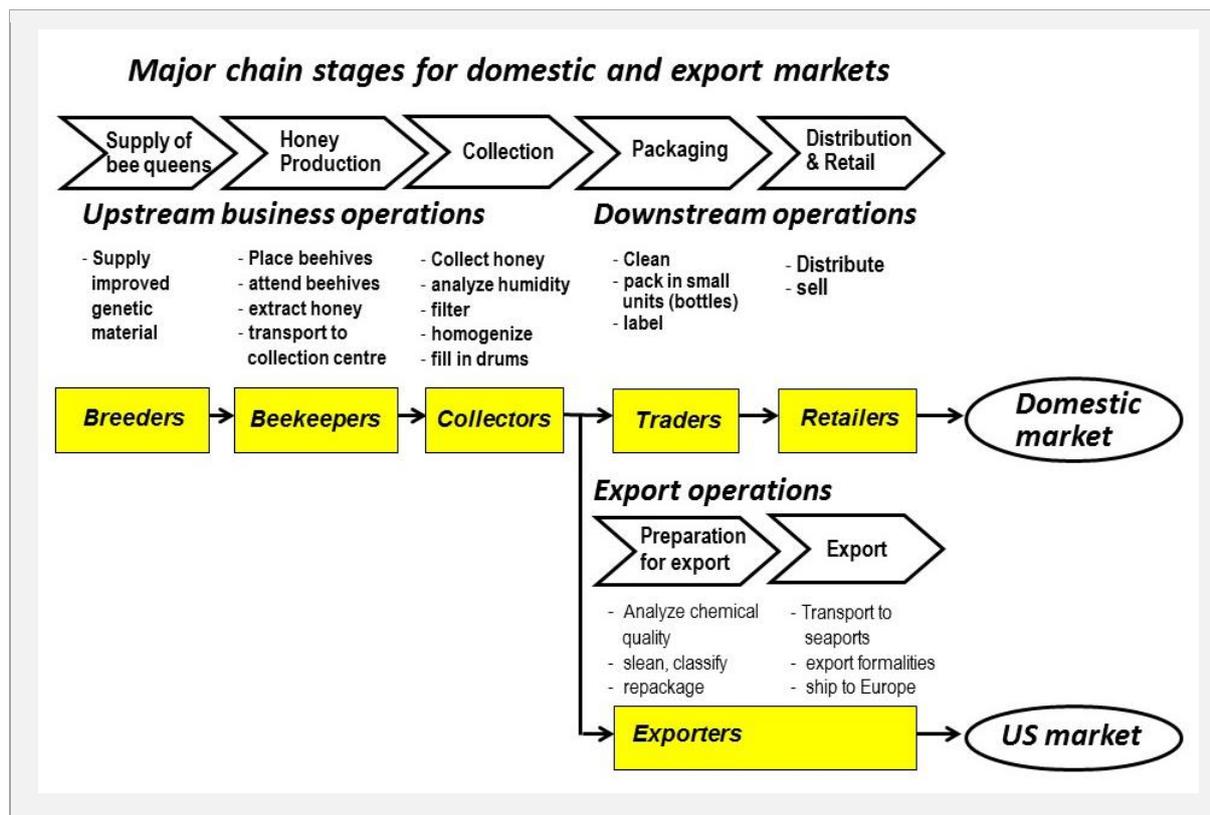
Establishing the functional chain can run into difficulties when the chain map covers several variants of the end product. Within the same value chain map, the technical processes and business operations may differ considerably: Food processing, for example, may imply a few simple manual techniques but can as well mean sophisticated processing for preservation and packaging. In cases where both types of technology are used in parallel, it is better to keep the definition of the chain stages generic so that both possibilities are covered. In the meat example above the slaughtering stage covers in fact the entire process of killing the animal, cutting the meat and finishing the meat products. Still, local butchers perform other business operations than urban slaughterhouses or industrial processors.

In order to not lose the information, the specific functions can be specified further in more detailed versions of the value chain map, for example in form of a second line below the hollow arrow symbols. This idea is applied in Box 2.2.9 which includes the list of individual business operations in the honey value chain.

Yet another option for bringing out differences between sequences of business operations and business models in the same value chain is to differentiate the map into separate channels.

Box 2.2.9 shows the differences between marketing operations for the domestic market versus operations for export markets in the case of honey. For the domestic market, honey is packed in bottles before it is shipped to retailers. By contrast, export honey undergoes special quality checks, is packaged in drums and shipped overseas. Although the raw material is the same, the operations downstream of collection differ considerably. Wherever the functional analysis shows that the sequences of functions differ too much between two types of products, analysts have to construct entirely separate chain maps for each case.

**Box 2.2.9: Case – Overview value chain map of conventional honey, Mexico**



Source: Own concept, based on a GTZ workshop, 2006

Another difficulty can arise at the upstream end of the chain, especially in value chains based on agriculture. Agricultural production uses many different inputs and types of equipment. Here, it is better to restrict the list of business operations to deliver these inputs to those that are highly specific for the end product. Only the delivery of a particular seed variety or other specific technology input needed to make the raw material for the end product is considered, not the external inputs and services of a generic type, such as ordinary farm implements. We deal with this point in the section on mapping of operational services, below.

There are considerable differences between the types of industries. The functions in a natural-resource based value chain can easily be shown as a linear sequence. This is not possible in the case of manufactured products that are made of very different components, each being the result of separate technical processes. Here, it will be necessary to depict two or more functional sequences in parallel leading to a network structure of the value chain map. This can also be a solution for industries in which the raw material is transformed into widely different end products. The coconut industry, for example, delivers the end products oil, copra, wood and fibers, each going through a different technical process, often performed by separate enterprises. For the mapping of manufacturing value chains see section 2.2.4.

### Depicting operators and business models

Below the sequence of chain stages, the chain map shows the enterprises that pursue the business operations — the chain operators. Chain operator is the generic term for categories of enterprises combining a particular set of operations. The term includes *all* businesses involved along the chain, from small farms and informal microenterprises to large companies. The enterprises perform the functions defined earlier passing on the product from one chain

stage to the next. Their position in the chain corresponds to the sequence of stages. The definition of an operator implies that he or she owns the product or any of its precursors at the respective stage of the value chain.

Before including the operators, analysts have to decide on the degree of detail they want to show. The value chain map can show an individual enterprise only if it is a lead firm or one of very few bigger companies present. Otherwise, the enterprises in the value chain are grouped together according to their similarity. For the most part, the map thus shows *categories* of operators. The task is to build useful categories.

An important criterion for aggregating enterprises into categories of operators is the similarity of their business models. The business model of an enterprise is the particular combination of a product (the value proposition), technology and resources utilized, customers and supply partners. See module 5 for an in-depth look into the concept of a business model.

In fact, the business models of particular types of enterprises become roughly clear from their position in the value chain map: The business operations can be taken from the functional sequence. The product, supply partners and buyers are given by the backward and forward business linkages. When several enterprises share the position in the value chain, they can be aggregated to form a category of operators. Thus, in a food value chain primary production is the business of farmers buying from specialized input providers and selling to traders or processors. However, in most cases the simple classification of operators into farmers, processors or traders contains too little information.

The definition of operators has to be refined further by introducing additional elements of their business models, such as:

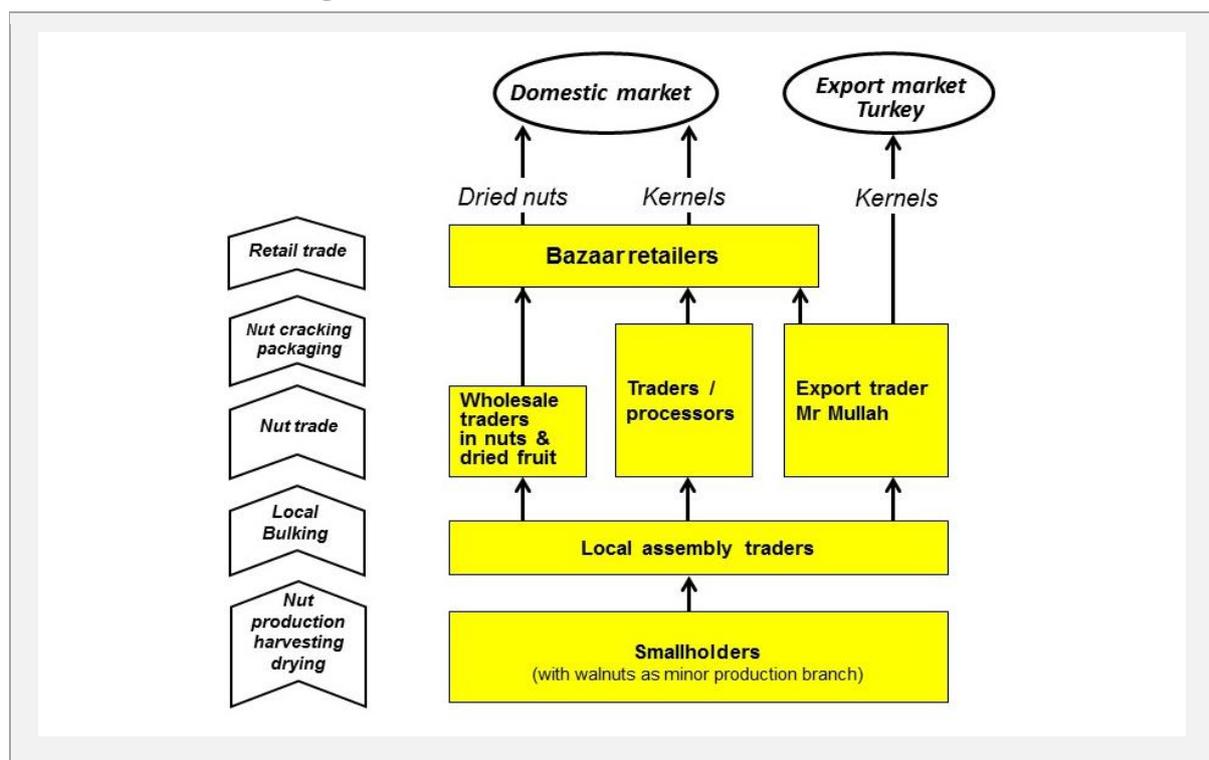
- The size of enterprises (smallholders or large farms, small scale/large scale firms)
- Type of ownership (individual owners, cooperatives or corporations)
- The technology level (artisanal, mechanized, industrial)

Accordingly, there can be different categories of operators in the same value chain stage. The degree of detail has to be decided on pragmatically. The differentiation of the types of operators depends on the importance and the number of enterprises contained in each category. For sure, value chain maps have to show all important companies. It can be justified to form a specific category for just one company that performs essential functions and has a high turnover. In the case of microenterprises, the differentiation into several categories becomes meaningless if the number of enterprises is too small.

The types of operators are depicted by yellow rectangles below the line of chain stages. The decisive point is that the chain map places the symbols for different operators *exactly* below the chain stage or stages in which they are working, so as to show the relation between functions or business operations and the respective type of operator. This allows for a clear reading of the value chain map. Some operators may take more than one function, their business model combining primary production, processing and even trade. In such case, the rectangular box representing them is enlarged to cover the two or more chain stages they are in.

It is important to note that the value chain map only includes operators who become *owners* of the product. If they source out or subcontract particular operations to others, the contract partners are regarded as operational service providers. They may or may not be mapped later.

**Box 2.2.10: Case – Overview value chain map dried walnuts and walnut kernels, Afghanistan**



Source: Own concept, based on information of GIZ Afghanistan, 2012

Box 2.2.10 presents an example of dried walnuts and walnut kernels in Afghanistan. Again, this map is conceived as a general overview map and hence does not go into great detail. Besides the value chain stages on the left side, the map shows different types of traders and processors. In the nut trade and the cracking and packaging stages, we can observe three different business models. There are wholesale traders of dried nuts and fruit who sell to bazaar retailers directly, traders/processors who process and deal in kernels for the domestic market and one large enterprise doing these operations for the export market. Certainly, this is not the full picture. The value chain map can still be complemented by differentiating primary producers and retail traders, let alone walnut *oil* producers and their respective markets.

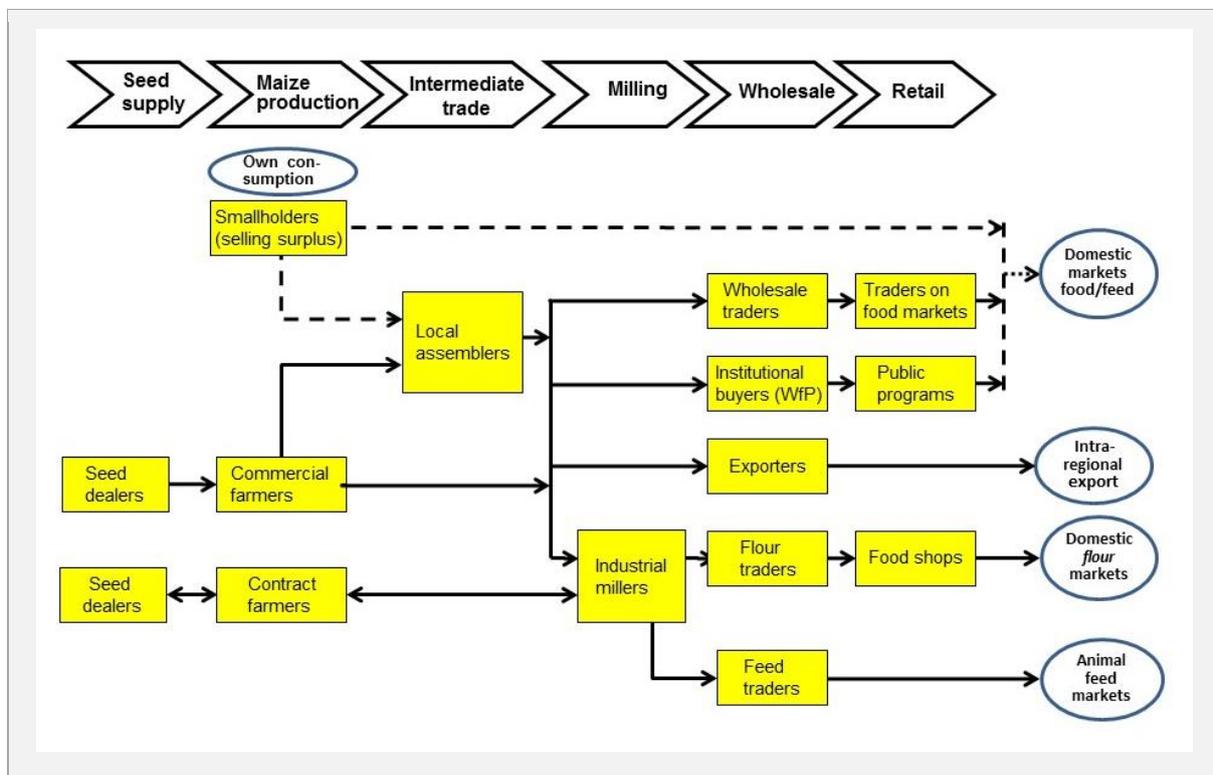
### Mapping business linkages

Business linkages are the connections between chain operators, as indicated by the arrows between the yellow rectangles depicting the groups of operators. The mapping procedure is straightforward. Once the operators have been defined, the lead question is who buys from or sells to which other operator. The direction of the arrow is the flow of produce.

It is important that the illustration of the connections between operators delivers a clear progression from stage to stage with the arrows positioned strictly parallel to the functional sequence above. Arrows branch off from the main line in a 90° angle. Wherever an operator buys from several sources or sells to more than one buyer, the horizontal arrows are connected by a vertical line as shown in the figure below. The case of maize shows several market linkages between commercial farmers and local assemblers on one side, and wholesale traders, institutional buyers, exporters and industrial millers on the other, each selling to and buying from different business partners. The visual arrangement limits the number of individual connections and corresponds to a situation in which the linkages are organized as an intermediate market with many participants.

Generally, arrows should not bend or run diagonally. Apart from being more easily legible, the reason behind this rule is the possibility to compare the market shares of the different linkages. The quantification of volumes and values going through the business linkages is a subject of economic analysis in chapter 2.3.

**Box 2.2.11: Case – Overview value chain map a generic maize value chain, Africa**



Source: Own concept

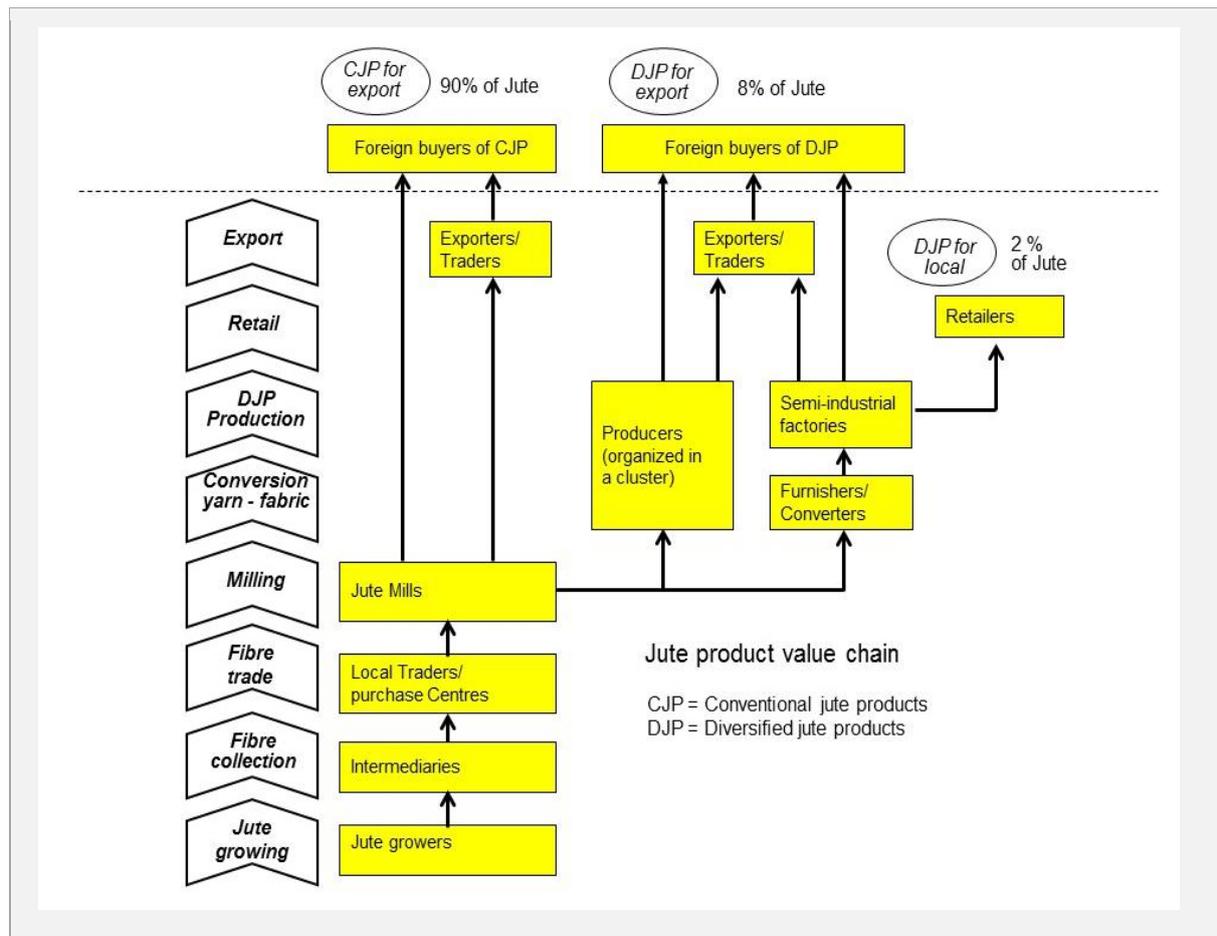
Once the business linkages are established, an optional second step is to characterize the type of contractual relationship. The relation between operators ranges from uncoordinated free market transactions ('arms-length' or 'spot market' relationships), to persistent contract relationships and, at the other extreme, to a binding vertical integration between suppliers and buyers. Box 2.2.11 shows two opposing types of contract relations. The dominant form of business linkage is the spot market indicated by a dotted line. Some industrial millers also engage in contract farming obliging contract farmers to only sell to them. In return, they get exclusive access to improved seed, an input that smallholders are not able to buy. Hence there is no linkage between smallholders and seed dealers.

If certain functions are sourced out in a permanent subcontracting arrangement, the linkage is also indicated by a straight line with arrows at both ends. A detailed treatment of the different types of vertical business linkages follows in module 6 in volume 2. See chapter 6.2.

### **Differentiating the chain into several channels**

As a value chain serves several end markets and includes a variety of business models its structure is differentiated into channels or sub value chains. This is visible in the value chain maps presented in Box 2.2.12 which contains two versions of how the production and marketing processes are organized. In fact, in many cases it will be useful to differentiate the value chain further to show the different supply and distribution channels.

**Box 2.2.12: Case – Overview value chain map of jute products, Bangladesh**



Source: Own concept, based on information of GTZ Bangladesh, 2007

The main criteria for differentiating channels derive from decisions made in an earlier step of the mapping exercise. They relate to the definition of the products, end market segmentation and the classification of operators. An additional criterion to distinguish channels is the value chain organization and the degree of vertical integration — separate firms or integrated production system.

Showing parallel channels in the same value chain map is only useful if at least some part of the value chain map is identical across all channels. Often this applies to the primary production stage remaining the same while different types of processing follow. At the marketing and distribution end, the value chain frequently branches out into a variety of marketing channels. Wherever the differences become too large, it is better to elaborate on a separate map.

Box 2.2.12 presents the example of an overview map of the jute products value chain that is differentiated into two lines of jute products: conventional jute products (CJP) and diversified jute products (DJP). The chain serves both domestic and export markets. The jute example shows how a new sub-value chain branches off from the main traditional sequence. It also shows different marketing channels of the jute products. Note that the sequence of functions remains the same, with some functions only being relevant in one of the channels. Hence, the variation is illustrated by the position of the operators and not by adding parallel functional sequences. The export of conventional jute products simply skips the stages of conversion yarn-fabric, diversified jute production and retail. Some jute mills sell directly to foreign buyers and are actually exporters at the same time. However, they are not depicted as covering the export stage here.

### *Mapping operational service providers*

The value chain operators not only have business linkages amongst themselves, they also deal with service providers that do not take possession of the product and thus are not part of the main value chain sequence. These are named 'operational service providers' in the ValueLinks terminology. They are called 'operational' because they perform business operations on behalf of the chain operators. Typical examples are transporters, repair and maintenance services, suppliers of inputs and equipment that also give instructions for use, advertisement agencies or accountants. The service providers do not become owners of the product at any time but partake in the business operations nonetheless.

Because of this difference, ValueLinks visualizes service linkages with a different kind of arrow than the main business linkages, a hollow arrow.

Operators can decide whether they take on certain business functions themselves or rather pay others for the service. That is the so-called 'make or buy' decision. For example, if a saw mill does not want to ship wood to a furniture maker itself, the saw mill or its client hire a truck or entrust the job to a freight forwarder. The transport company thus becomes an essential partner. Module 7 covers such service arrangements in detail<sup>54</sup>.

Pollutant-free, certified wooden toys is an illustrative case, as shown in the next box. To achieve the desired quality of the product, independent laboratories have to test the paints and varnish utilized. The manufacturer relies on the services of designers and the toys as such need a clearance certificate showing the safety of the product for small children.

Another type of service for the same value chain is provided by subcontracted home workers who take over part of the painting job for the manufacturers, on the basis of renewable contracts per batch. This subcontracting service relation is indicated by a double arrow that has the same shape as the main business linkages. While the labs, designers and certifiers have other clients besides the value chain operators, the home workers are bound by a unique subcontracting arrangement.

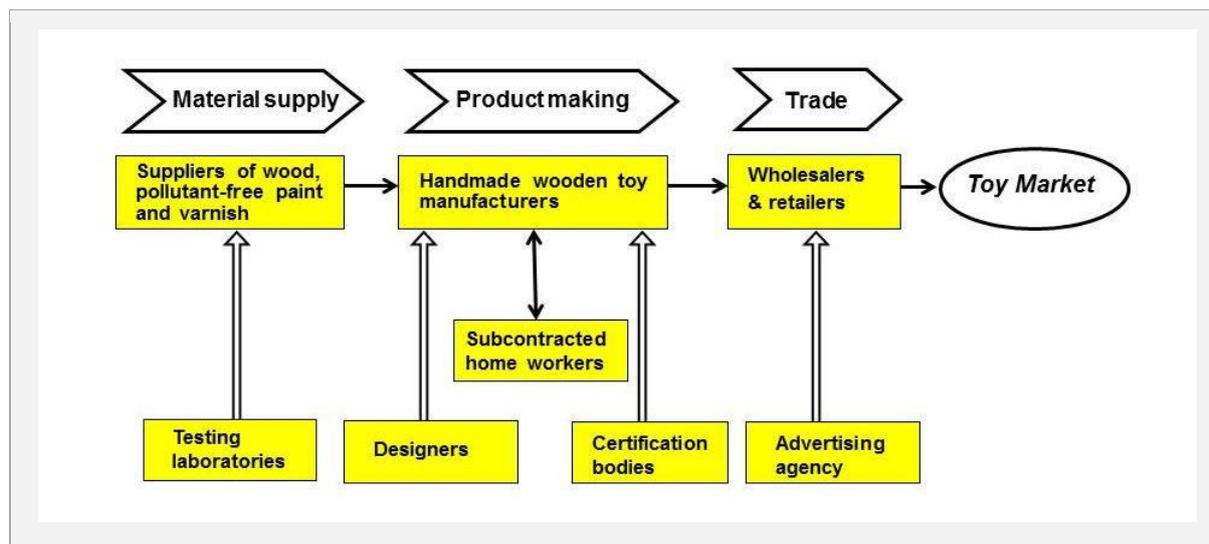
A general question is, whether and which of the operational service providers should be included in a value chain map. The general rule is to only depict those services in an overview map that are indispensable for understanding the business models of the operators and the structure of the value chain. Another motive for showing a particular service is its specificity. If a service is essential for the functioning of the chain but not always available the chain map should point that out.

The ubiquitous and generic services, such as transport, simple repairs, construction or tax consulting are left out. This does not only have to do with the limited space in a value chain map. It is also a matter of setting clear boundaries to the value chain under study. If it turns out that specific services constitute a problem, they can still be mapped in separate specialized value chain maps 'zooming in' on the particular service issues.

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<sup>54</sup> See the treatment of service provision in module 7, in the second volume

**Box 2.2.13: Case – Mapping services in the handmade toys chain, Asia**



Source: Own concept

Another important type of service linkages present in almost every value chain is the financial services of banks and other financial institutions to value chain operators. Although there is no doubt that these services are essential, they are usually not shown in an overview value chain map. Mapping financial institutions should be part of a particular analysis of financing solutions. Module 8 in the volume 2 of ValueLinks 2.0 will provide further insight into the analysis of financing arrangements.

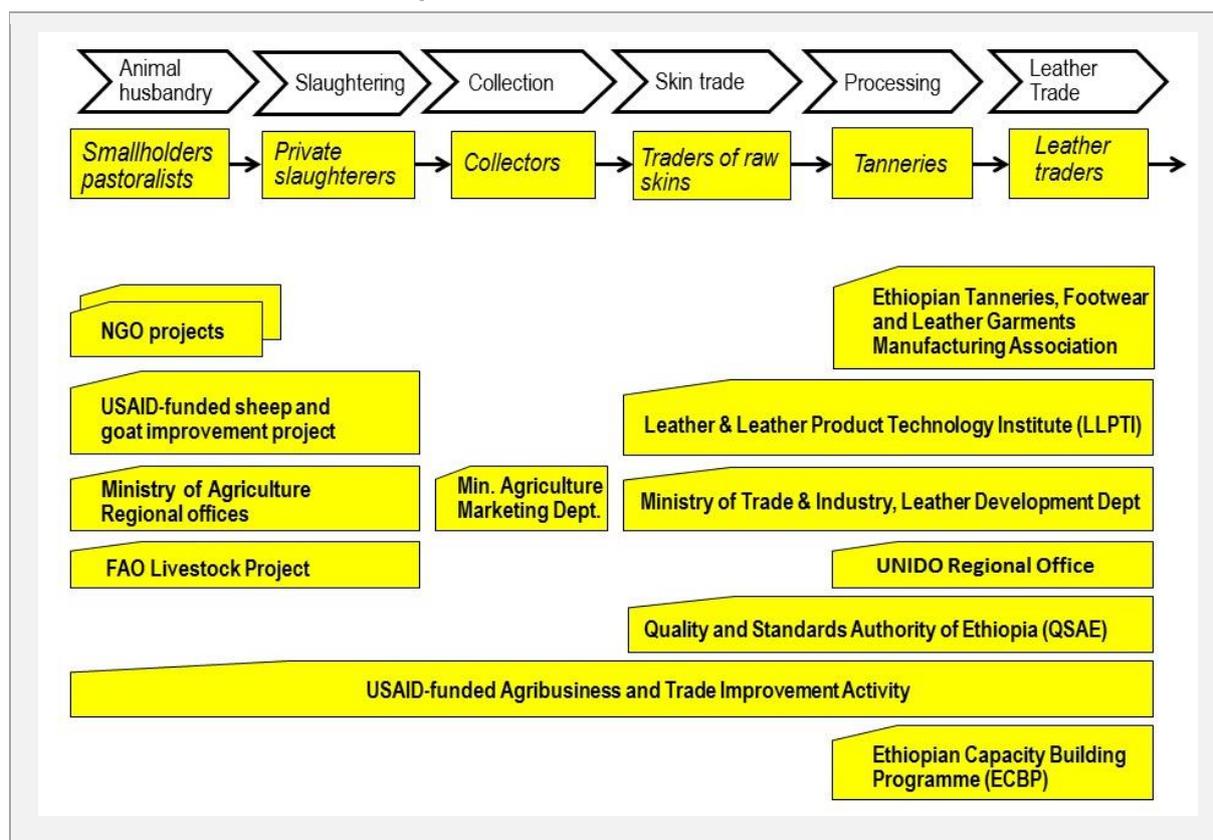
### **Mapping support service providers and government institutions**

The basic functions and chain operators constitute the micro level of the value chain, which includes the enterprises and some of the most relevant operational service providers. Apart from the micro level, value chains can also be described in terms of the chain supporters that are in direct relationship with larger groups of chain operators and/or provide support services to the entire business community.

Box 2.2.14 presents the example of a specialized thematic map showing the most important support service providers of the traditional finished leather value chain in Ethiopia. This map complements the map in Box 2.2.7. The symbol for support service providers uses another shape. ValueLinks indicates support services providers with yellow rectangles with the upper left corner cut off. The reason for using a yellow rectangle simply is the fact that we still talk about value chain actors here. While a color code does not appear clearly in a black and white printout, the difference in shape is immediately recognizable.

The map also shows which parts of the chain the different support organizations cover. As can be seen clearly, the number of supporters concentrates at the beginning of the chain in the animal husbandry and private slaughtering stage, and in the stages downstream. Industrial associations and public agencies cover the processing, trade and distribution stages. The stages between collection, preservation and raw skin trade do not receive much attention.

**Box 2.2.14: Case – Mapping chain supporters of the sheep & goat leather value chain, Ethiopia**



Source: ECBP/GTZ ValueLinks Training workshop in Addis, Ethiopia, August 2006

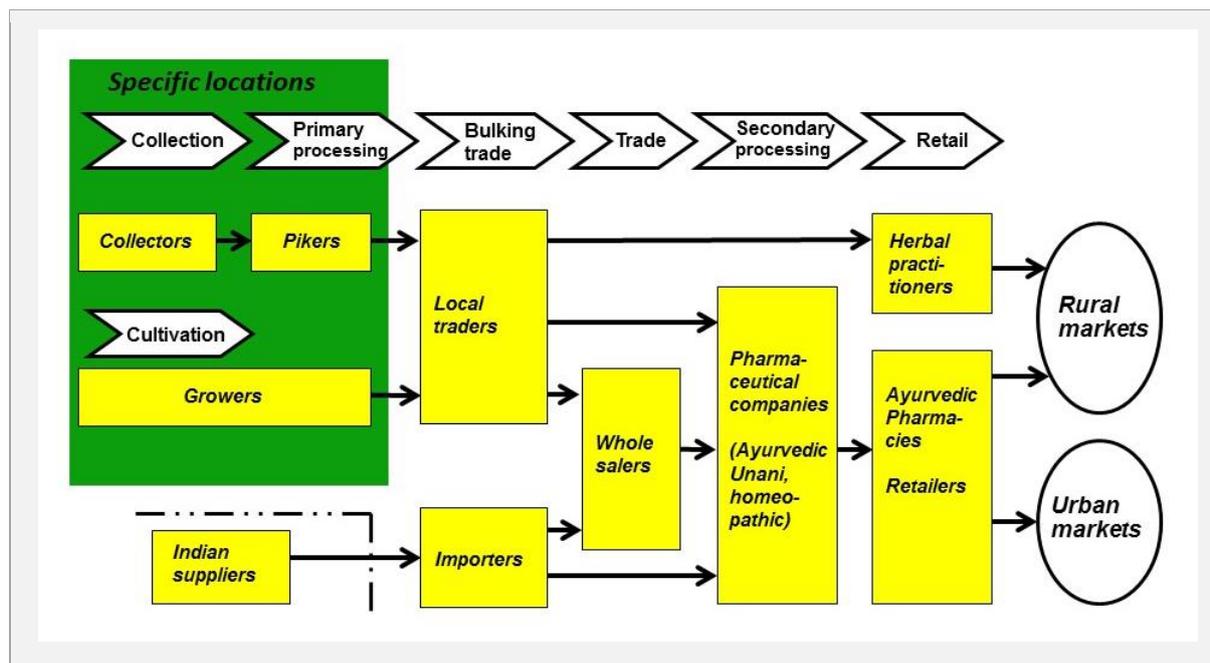
Often, chain supporters cover several value chains, so that the mapping of the meso level cuts across different value chains. Therefore, it is useful to be specific about the tasks and clientele of each organization. This analysis is used to account for the existing support institutions. As the analysis gets into more details, the graphic representation in Box 2.2.14 could in fact be developed into a matrix enumerating the specific services and capacity of each support organization.

The figure also includes ministries and other public bodies responsible for supporting the industry. Analysts should be restrictive when illustrating macro-level organizations as most of them are not value chain specific. The macro level should rather be analyzed in a separate institutional and governance analysis.

### 2.2.3. Spatial analysis

So far, value chain mapping has focused on the analysis of the value chain structure. It is also possible and often necessary to introduce the spatial dimension by adding geographical references. This is done by an overlay of geographical symbols on the value chain map indicating areas, locations and political borders. The value chain map can thus show which part of the value chain is located where. The location of operators is indicated by a shaded area as shown in the boxes below. The example below shows that the collectors of wild herbs are located in specific ecosystems while the pharmaceutical companies are located close to markets. Part of the raw material is imported. Thus, the map also indicates the border line between foreign suppliers and domestic operators.

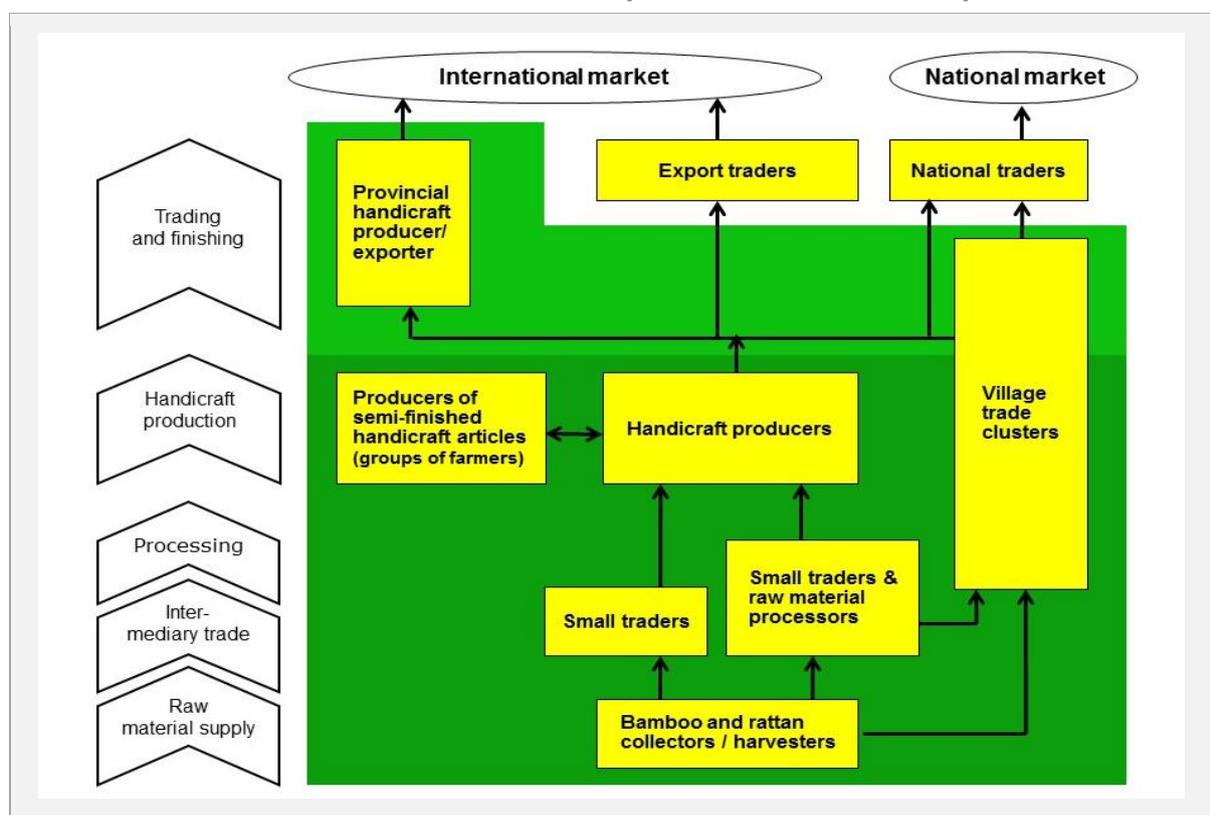
**Box 2.2.15: Case – Overview value chain map of herbal medicine products, Bangladesh**



Source: Own concept

Another example is the bamboo and rattan handicraft value chain in Vietnam (Box 2.2.16). The dark green area shows the location of producers in different project districts. The light green area indicates the provincial level, while the white area locates enterprises operating nationwide.

**Box 2.2.16: Case – Overview value chain map of bamboo and rattan products, Vietnam**



Source: Hieu and Eilgmann, 2010

Another possibility to indicate the location of operators is to project the structural value chain map onto a geographic map. In this case, the geographic map is the dominant layer — the value chain map being an overlay on the geographical map. This allows showing supply routes and distances, location of market places and other spatial characteristics. See module 3, chapter 3.2 for an example.

Adding spatial references to the value chain map provides the link to a whole range of tools for spatial analysis. Clearly, value chain analysis benefits from information on the location where value chain operators are present. An important point is the assessment of the factors of location which determine the potential of local and regional economic development decisively, such as the quality of infrastructure, access to energy, to services and to skilled people at a specific location. Another topic of particular interest is the interaction of value chain operators with the environment and local ecosystems. To correctly assess environmental impacts on and of the value chain, analysts have to look at the landscape and watershed within which the enterprises operate. See chapter 2.4 on this point.

The question is how far the value chain analysis should go addressing the spatial dimension, given the fact that value chain stages and operators are located at many different places. The degree to which the scope of analysis should be expanded ultimately depends on the utilization of the results.

The question leads back to the context in which the value chain approach is used. Programs working in defined geographical areas as in the case of regional development or natural resource management need a spatial picture of the value chains. The concept of visualizing the crossing of value chain and spatial perspectives is particularly relevant for combined program designs discussed in module 1, chapters 1.4.1 and 1.4.2.

### 2.2.4. Value chain mapping in different types of industries

The mapping procedures differ between economic sectors. Instead of being value *chains*, maps can also be structured as value *networks* as is the case in manufacturing sectors, or still differently in the case of service products. This has consequences for the methods of mapping, which is the subject of the following sections.

As has been said earlier, the very first step in value chain analysis is to determine the end product(s) for which the value chain map is drawn. In fact, there are systematic differences between the structure of value chains depending on the types of products. The type of end products that are mapped most frequently are products derived from natural resources – raw materials provided by agriculture, forestry and fisheries. The respective value chains are linear, dominated by a specific kind of commodity. The structure of industry organization for manufacturing products is fundamentally different. Manufactured products are typically made of a multitude of ingredients and components taken from a wide variety of sources. In contrast to these physical products, service products are immaterial and can only be provided in direct contact with a customer.

Accordingly, we can distinguish three basic types of industry structures:

- Natural resource based value *chains*
- Manufacturing value chains and *networks*
- Service value chains

Value chains and value networks can further be classified according to their geographical scope. The industry structure looks differently for *global* value chains or networks and value chains serving domestic or local markets. The special feature of global production networks in

manufacturing is the fact that they entail trade in intermediate products between many countries.

### ***Chain mapping in natural resource based value chains***

Chain maps of natural resource-based products and commodities provide a clear and easy to understand linear structure. These are the classic value chain maps and most of the cases presented in the literature on value chains belong to this category.

The value chain structure typically has the following characteristics:

- The end product (e.g. orange juice) has a high content of one type of raw material (oranges)
- The sequence of functions is linear moving from producing the key raw material via one or more transformation stages to the sale of some processed form of it
- The value of the key raw material (oranges) dominates the value of other ingredients (sugar and packaging in the case of orange juice)
- In the case of commodities (green coffee, sugar, mined minerals etc.), the value of the primary (agriculture or mining) raw material has a relatively high share in the value of the internationally traded product

Most of the examples of value chain maps presented in previous sections of this chapter refer to natural resource based products; and many more can be found in the literature. This has to do with the fact that agriculture, forestry and mining still dominate the economy of low-income countries. All too often, economic development relies on locally available resources.

### ***Chain mapping in manufacturing sectors***

As opposed to natural-resource based products, manufactured products are composed of inputs from different sources. After all, a dress is more than processed cotton, even if it is made of 100% cotton. An upholstered armchair certainly is more than processed wood. The critical point is that many components and services are needed to make furniture, garments or mechanical equipment. There is no single dominant input that could be used to characterize the value chain.

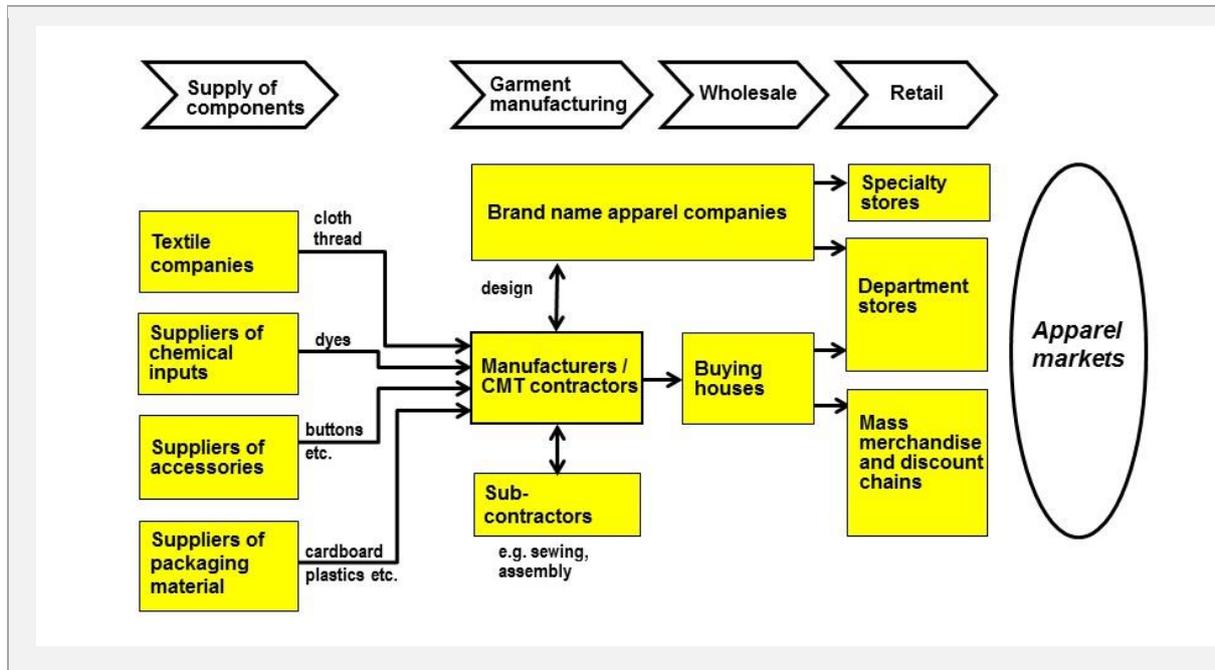
Before mapping manufacturing value chains, analysts should be clear about the scope. For example, mapping the value chain of hand-made Christmas decorations does not include detailing the value chains of the wood, paint, straw or glue that are needed as inputs. Hence, the value chain sequence begins with the coordinated provision of *all* inputs that have to be in place before producers can assemble them.

The principle of mapping is shown in Box 2.2.17 that presents a generic map of the garment sector. The value chain starts on the left with the series of suppliers of components to the manufacturing companies. Here, the list is still limited. There are far more complicated industrial products assembled from hundreds of components. To understand the system it is not necessary to expand the garment value chain backwards to also include the value chains of cloth, thread, dyes, buttons, zippers and so on. However, key ingredients, such as organic cotton may of particular interest and the respective value chains included in the analysis.

Box 2.2.17 also shows another arrangement that is frequently found in manufacturing — the subcontracting of particular functions. This can be derived from the position of the brand name apparel company that appears on top. In the 'cut, measure and trim' (CMT) system, the apparel company places orders with garment manufacturers. In turn, the manufacturers often source out particular functions to subcontractors and home workers. The finished product is handed

over by the contractor according to the conditions stipulated in the contract. The apparel company provides the design and markets the product. At the same time, garment manufacturers also may produce own series, and sell them to buying houses.

**Box 2.2.17: Concept/case – Chain mapping in the garment sector**



Source: Own concept

In any case, the manufacturers constitute the core of the system. As a consequence, the structure of manufacturing industries resembles a value *network* of suppliers and subcontractors, rather than a linear value chain.

### Chain mapping in service sectors

Service products have an increasingly important role in economic development. Important commercial services include, for example, call centers, tourism, advertising and information technology services.

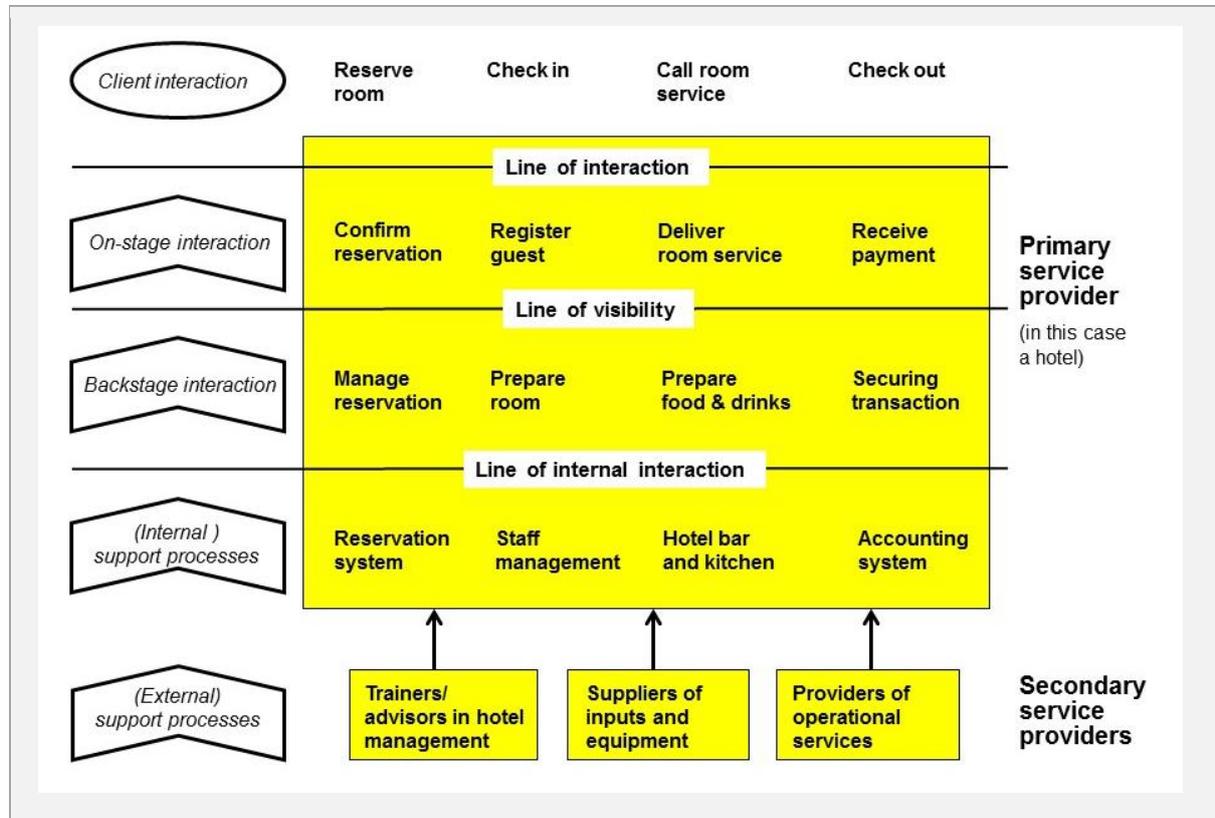
Value chain mapping of service products uses an entirely different model. The difference between physical and service products is the fact that a service is delivered directly to the customer. Although services may be linked to physical goods, they are essentially intangible and cannot be transported or stored. This means that the value chain map does not depict the flow of the product as it is gradually made, but shows the service interaction with the customer.

Box 2.2.18 takes the case of the hotel business. The figure is an adapted version of the service blueprint tool. The large yellow rectangle in the center is the operator symbol and stands for the hotel. The service is 'produced' at the top level in the interaction between guests and hotel staff (on-stage interaction), with the client action being an essential element of the service process. Below the line of visibility are the internal backstage and support processes enabling the service company to perform. They can be complemented by also mapping external, secondary service providers at the bottom of the scheme. The service value chain thus is the sequence of functions from bottom to top. It contains the delivery of physical products as well.

Similar analyses can be conducted for other service products, such as medical services, the haircut offered by a barber shop, management consultancy or transport services. The primary

service provider always delivers directly to the customer. In every service value chain, secondary service providers supply the primary service provider with skills, technology and the physical equipment needed to perform the service.

**Box 2.2.18: Case – Visible and invisible functions and operators in service provision**



Source: Own concept, based on the service blueprint concept

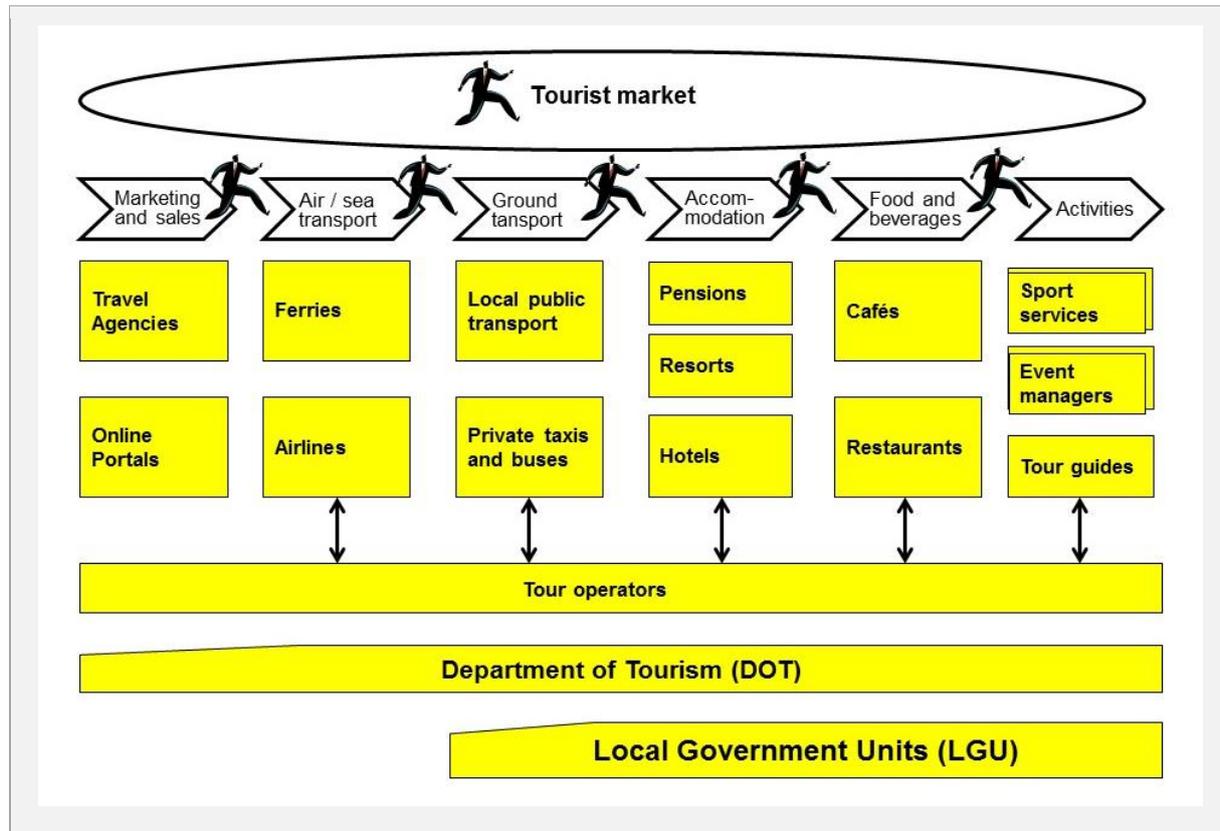
The individual services, such as restaurant meals or accommodation, are part of a much larger service industry. Tourism is the case in point.

In the tourism sector, several services have to be combined to serve customers. The complete tourism product, i.e. the journey of a tourist, is the sequence of consecutive individual services as shown in Box 2.2.19. This value chain is in fact an itinerary, in which the customer moves through a series of interlinked services. The system only works if all services are available, at the right time and in the right quality.

The obvious difference with product value chains is the fact that it is the customer who is 'processed' rather than a physical commodity. This idea is indicated by the little figure representing the tourists. For each service that the tourist consumes along the itinerary further secondary service providers are required, such as schools for hotel management, catering services or maintenance workshops. Hence, mapping the entire system of a product, such as beach tourism at location xyz may get fairly complex.

The figure in Box 2.2.19 also includes the coordination services provided by a tour operator, who has forward contracts with individual enterprises to ensure that the entire journey works for the client. Further, the map includes examples of tourism value chain supporters at the bottom.

### Box 2.2.19: Concept – Chain mapping in the tourism sector



Source: Own concept, based on information of GIZ Philippines

Similar service systems exist in advertising which consists of related individual services as well — designing the publicity campaign and promotional materials, producing ads, such as posters or leaflets and printing them. Often, an advertising agency coordinates the sequence as a whole.

### **Mapping of crosscutting value chains of inputs and services**

The structural value chain analysis often also considers the external suppliers of the most critical inputs and services. To understand the role of these suppliers and service providers, it is important to note that they in fact belong to *other* value chains than the value chain at stake. External suppliers obtain the products from their own suppliers and provide their inputs and services to several value chains in parallel. The market of the fertilizer industry is the farmers. The customers for the manufacturers of processing equipment are the mills and pack houses. This is why we term them 'crosscutting' value chains. Analysts have to conduct separate studies on them, such as the fertilizer value chain, seed value chain or the value chains of specialized farm machinery and processing equipment supplying the food sector. Crosscutting value chains are complementary to a particular food value chain but constitute systems of their own. So, mapping them is an additional task.

The question is under which conditions the analysis of a value chain should be complemented by additional maps of crosscutting value chains. One argument is the degree to which external suppliers specialize in the particular value chain under study. As has been argued earlier, the providers of inputs that are highly *specific* to the value chain should in fact be included. Examples are specific seed varieties, chemicals and ingredients and specific equipment, such as wine cellar equipment for the wine value chain.

In some cases, it may also be useful to study crosscutting value chains that provide less specialized products but still are highly important for the value chain at stake. Examples include:

- Packaging material
- Transport services
- Fertilizer

The value chain analysis of these products can dig up information on the reasons why the needed products may not be available in sufficient quality and volumes. Methodologically, the mapping of crosscutting value chains is not different from any other mapping method set out above.

### 2.2.5. Institutional and governance analysis

The business linkages along the value chain are not limited to a simple transaction of product against money. For market exchanges to work, operators need to be accepted by others as business partners; and they have to be sure that the commitments made by their suppliers and buyers are kept. Unless operators can rely on each other and keep control of the risk, they have no reason to invest and produce. Therefore, value chains are always embedded in an institutional context that makes the behavior of business partners predictable, reduces uncertainty, provides orientation, and generally brings structure and stability to society<sup>55</sup>.

There are different ways to ensure the reliability of business transactions:

- The formal legal framework
- Social embedding in informal networks
- Value chain governance

The first and most important is the formal legal framework of the country — laws that formalize and enforce contract relations, regulate business licensing, secure property rights, define weights and measures, control product safety and impose restrictions on businesses. The regulatory framework sets explicit rules for doing business that market participants have to abide to. If a partner breaks the contract, the other party can go to court. However, the legal framework often is just this – a *framework* that is only on paper but not very effective in practice. Apart from the fact that the legislation may be incomplete and even contradictory, taking legal action is always costly. Wherever law enforcement is weak relying on formal rules is full of risk.

This can lead to a situation where extra-legal 'rules of the game' in conjunction with social benefits or sanctions become decisive for doing business. Business relations are shaped and controlled by social networks based on kinship, ethnic and political relations and personal contacts. The social relations effectively set up and enforce informal rules which determine the behavior of value chain operators beyond the realm of law. As business relations are based on social ties and mutual trust, they are not easily accessible to enterprises outside established social networks. This reduces their efficiency and the prospects for economic growth.

The third possibility to enable and stabilize business linkages is a system of internal governance for a specific value chain based on a business standard. Lead firms exercise market power to set up and control particular supply chains making sure that other operators abide by their rules. Some of these rules derive from the requirements of final customers that are cast in industry-wide codes of conduct and quality standards. Value chain governance in this sense

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<sup>55</sup> SIDA, 2005, p.20

goes beyond individual firms and constitutes a quasi-legal framework or soft law for the operators. However, this is only relevant in global value chains serving customers that demand high standards.

The following sections go through the different institutional set-ups. The question is which of the institutional set-ups, or combinations of them, apply to the value chain under study.

### ***Public governance: Legal rules for doing business***

The first step in the institutional analysis of value chains assesses the functionality of the legal framework for the value chain at stake. Important fields of legislation are, for example, commercial and contract law, business registration, cooperative law, property rights, land tenure and inheritance laws, regulations of land and water use, technical safety regulations, and a wide range of other rules. In principle, the legal rules for doing business in the country extend to the whole economy but not all laws and regulations are relevant for the value chain at hand.

Apart from the legal framework, there are sector-specific regulations, such as food safety laws in food value chains, rules for 'access and benefit sharing' in biodiversity-based value chains, and a variety of technical standards for manufacturing and construction. A particularly critical field of regulation is property rights which "are found to be one of the most important institutional factors for economic growth. By property rights we refer to a bundle of rights related to property, including ownership, user and tenure heritage rights. Property may include land, real estate, urban squats etc. as well as collective and common property"<sup>56</sup>.

Legal regulation has the principle advantage that it is open to all enterprises including new entrants to the business, regardless of their background. Creating a level playing field facilitates competition and innovation. A functioning judicial system lowers the transaction costs of the business.

The main issue of analysis concerns the relevance and functionality of the legal framework in practice. Lead questions to ask include:

- Are there any important value chain specific issues that are not regulated adequately, or not regulated at all? Is the regulation clear and free of contradictions?
- To what extent do operators actually observe the formal rules?
- Are rules enforced and sanctions imposed?
- Are operators able to make legal claims in case of conflict? What are the prospects to succeed and obtain justice?

It is advisable to go through the value chain map, including its spatial dimension, qualitatively screening the conditions along the value chain to find answers to the above questions. The assessment refers both to the value chain at large and to particular value chain stages, types of operators and specific locations. The differences between groups of operators count. While it may be relatively easy for a commercial farmer to claim his or her rights vis-à-vis a buyer or a public authority, the same regulatory system can impose difficult hurdles for a poor farmer.

Often, findings demonstrate a regulatory deficit, particularly in countries that rank low on the 'ease of doing business' index of the World Bank<sup>57</sup>. As a consequence, operators have no trust in the existing public regulation or simply have no access to it. This has consequences for the design of policy instruments.

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<sup>56</sup> SIDA, 2008, p.13

<sup>57</sup> World Bank, Doing Business Economy Rankings: <http://www.doingbusiness.org/rankings>

### ***Social embedding of value chain operators in informal networks***

The second type of institutional set-up derives from the social and cultural context of the value chain. Cultural norms, political and social relations are always decisive for business behavior. Any regular business linkage reaches beyond the mere purchase and sale of products and builds on personal contacts, reputation and trust between value chain actors. The formal rules are firmly embedded in the social fabric.

However, in the absence of functioning formal regulations, operators are left with the informal rules only and have to revert to social networks to gain security for their business decisions. Instead of relying on legal rights, operators have to build their business on social relations based on kinship, religious and ethnic ties, and on personal and political protection. On the positive side, such informal institutions create and facilitate trust-based relations under adverse conditions by lowering the risk and transaction cost of small-scale operators. Informal rules adjust more easily to the needs of poverty groups and the conditions of informal business. In fact, many business linkages can only exist if they are secured by politically and economically powerful people.

The second step in the institutional analysis of value chains therefore is the assessment of non-economic institutions underlying economic activities. The lead questions are:

- Which informal and traditional rules determine commercial transactions?
- Do particular groups of operators belong to social networks based on kinship, religious or ethnic ties?
- To what extent do business linkages depend on (long-term) social relations involving mutual commitments?
- Do certain types of business need *political* protection to succeed?
- Do business links that are embedded in social relations get in conflict with formal rules?
- Do operators abuse a political or social power position to gain additional rents?

The analysis should go through the value chain map again placing the focus on the operators and their business linkages. If necessary, the value chain map can be complemented by third parties that play a role in securing the business. Their observations are then organized according to the types of operators and types of linkages in the value chain map.

The assessment shows to what extent the economic linkages overlap with social and political relations or connect with social networks beyond the scope of the value chain. The existence of such overlaps is not problematic as such. The issue is whether they facilitate economic development or not, and what the distributive outcomes are. One criterion is whether informal governance opens up new opportunities.

Analysts should judge the risk that mixed politico-economic business models degenerate into systems of exploitation that hinder development. Supposed friends and family clearly have an incentive to turn political power into economic rents and capture productive assets. The overlap of formal administrative regulation on one side with traditional systems on the other also leads to rent-seeking, favoritism, corruption and extortion, such as informal payments at road blocks. Under such conditions economic development becomes very difficult.

The third type of institutional set-up is based on business networks. It is a type of regulation in which companies establish their own rules of the game for the particular industries they operate in. Private regulation is motivated by two considerations. Both have to do with the need to organize the value chain in order to control cost and satisfy market requirements.

### **Private value chain governance**

The first and main point is the need to keep transaction cost low, which means making sure that the right quantities of products are delivered in the correct quality and at low cost. Lead companies impose rules on their suppliers seeking control over their supply chain in order to achieve reliable commitments and compete on chain efficiency. A well-organized system facilitates the product flow and thus saves cost. The governance mechanism is the contracting between operators that can extend up to the vertical integration of the value chain. Whether companies have the incentive to take over coordination and control functions vis-à-vis other operators depends on the type of product. Coordination is more important where highly specific market requirements need to be fulfilled.

Close coordination of the chain is particularly important for global value chains because business transactions span several countries and a wide variety of suppliers. The notion of *global* value chain governance goes back to the seminal publications of Gereffi, Humphrey, Schmitz and Sturgeon<sup>58</sup>. The types of global value chain governance differ according to the degree and the forms of integration of the value chain. Following the terminology defined by Gary Gereffi and others<sup>59</sup>, we can distinguish the five types of governance: Markets, modular value chains, relational value chains, captive relationships and hierarchy or vertical integration. Market governance means that products change hands in a once-off interaction. In a modular value chain an independent supplier makes products according to buyer specifications. Captive relations and vertical integration are forms of governance in which small suppliers depend on a much larger lead company.

Lead questions of the analysis are:

- Do market requirements call for the integration of business operations along the value chain?
- Do any companies in the value chain actually take over coordination and control functions vis-à-vis other operators? Where does the power lie in the value chain?

Market governance reaches and links all operators, while the form of vertical integration is specific to the dominating lead company managing its own supply chain.

### **Sustainability governance**

The second motivation for private chain governance is the fact that companies need to respond to rising concerns for ecological problems and the labor conditions in their industry. Consumers, civil society and the media demand that products have to satisfy criteria of sustainability. Sustainability governance includes setting, monitoring and enforcing norms and rules addressing the common concerns for sustainability. Standard systems specify codes of conduct and sustainability standards and include a mechanism to verify whether companies stick to them. This institutional set-up is supposed to be industry-wide but often covers part of the value chain only. The assessment of value chain governance extends to the value chain at large. Chapter 9.3 in module 9 of the second volume of this manual provides guidance on how standard systems work and the criteria to assess their functionality.

The task at this stage is to determine which codes of conduct or sustainability standards apply to the products and markets under study, and which environmental and social issues they

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<sup>58</sup> Global value chain governance: <https://www.microlinks.org/good-practice-center/value-chain-wiki/value-chain-governance>

<sup>59</sup> G.Gereffi, J. Humphrey and T. Sturgeon, 2005, p.85pp

cover. The second question is whether any sustainability standard is presently utilized for the governance of the value chain in question.

If the answer is positive the analysis continues clarifying the actual coverage of a standard and identifying the support service providers involved. Governance mechanisms do not necessarily cover the entire industry. Markets and channels with strong contractual arrangements exist alongside with others that remain unregulated. Tropical wood, for example, is both traded as a good certified by the FSC standard and under conditions of unregulated markets and corruption at the same time. Analysts have to assess how far a private governance mechanism reaches, which operators are included and which are excluded.

Generally, private governance of value chains has the advantage that it emerges from the needs of business practice. There are clear economic incentives to create and apply rules because they pay off. However, no value chain standard can regulate all aspects of sustainability. Many environmental and social issues have to do with land use, with societal problems, with institutions and policies at different levels. Thus, value chain governance necessarily interacts with other governance systems organized around communities of people who are interested in resolving a common problem or promoting a common goal that cuts across different value chains. Issues, such as natural resource management, can only be addressed in conjunction with public policies. The analysis of value chain governance therefore has to include the connections with public governance mechanisms at local, regional and national level that address the same issue. To the extent that such connections exist, we can speak of co-governance.

## 2.3. Economic analysis of value chains

Value chain is short for ‘value added chain’, which points to the fact that the value chain is a system that adds value at every stage. The subject of the economic analysis is the creation of value and its distribution along the chain. The economic analysis of the value chain includes:

- The calculation of total value added
- Its composition of value added along the value chain
- The assessment of parameters of chain competitiveness and efficiency

Economic analysis means attaching numbers to the elements of the value chain map — end markets, operators and business linkages. The numbers can be placed into the value chain map as an overlay of quantitative information. Obviously, this presupposes the availability of data. As important as economic analyses are, they are challenged by the need for hard data that are difficult to come by. The respective techniques for data collection and management will be described in module 11 (chapter 11.2 in volume 2). In any case, economic analyses that are used to prepare business decisions bearing income risks for the operators should be left to trained specialists.

### *The place of market studies in chain development*

Many value chain methodologies include end market studies as a specific tool of economic analysis. There can be no doubt that market studies are of utmost importance to value chain development. Market orientation is at the core of the value chain approach. The assessment of market demand trends has to be taken up at the very beginning of any value chain project — even before a value chain is selected for promotion.

Therefore, market studies are not just part of the economic analysis. Markets are a pervasive issue in value chain analysis that is taken up at many points. In fact, the analysis of markets is present in several chapters in both volumes of this manual:

- Definition and segmentation of end markets, in module 1
- Prices, volumes and total value added, in this chapter, below
- Composition of value added, in this chapter, below
- Location of market places and supply routes, in section 2.2.3 on spatial analysis
- Chain competitiveness, in this chapter, below
- Analysis of demand trends and market opportunities, module 3, chapter 3.2
- Quality requirements of markets, module 9, chapters 9.1 and 9.2 in volume 2
- Business linkages and export marketing, module 6, chapter 6.2 in volume 2

Market studies thus are an integral part of the wider value chain analysis and strategy formation. They are not treated as a separate instrument here. However, the bullet points above can be used to compile the market related information contained in chain studies.

The procedure is different when it comes to conducting market studies as an input into the design of specific business plans. Information on customers and their demand is a key element of business models. Market studies of individual enterprises have to combine all important aspects for the enterprise in one go. The formats and contents of studies on market demand for business plans can be found in module 5 as part of the analysis of business models<sup>60</sup>.

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<sup>60</sup> see Volume 2 of the ValueLinks 2.0 manual

### 2.3.1. Size of end markets – total value generated

Economic analysis starts by determining the value added created by the chain, for which we will use the term 'total value generated' in the following. The calculation is based on the sales price and the volume sold. The formula to calculate total value generated is straightforward: It is the volume of produce sold in the end market multiplied by the price paid by customers. Total value generated (or value added) is the single most important number in the economic analysis of value chains:

$$(\text{Total value generated}) = (\text{end price of product per unit}) \text{ multiplied by } (\text{number of units sold})$$

This figure represents the sales value of the value chain as a whole, i.e. the total amount of money that final customers are paying for the products provided by the chain. Total value generated is the sum of money that pays for all expenditures and profits of all enterprises in the entire chain. Other terms used for the same concept are 'chain revenue', 'market size', 'value chain turnover' or 'value consumed'.

As a matter of course the calculation of total value generated depends on the scope of the value chain under study. If the scope of analysis includes several product variants and different groups of customers, the total value is obtained by aggregating the figures across the different market segments. The figures can be placed into or close to the oval shapes indicating end markets in a value chain map as is shown in Box [2.3.4](#). Expressed as percentages we obtain the market shares of each end market segment.

The value generated by each market segment can be further broken along the different channels of the value chain as will be explained in the following section.

'Total value generated' is synonymous with 'total value added'. In national accounting, value added is a measure for the wealth created in the economy. According to the definition used in systems of national accounting, the gross domestic product is equivalent to the total value of all services and products produced in the economy for consumption and investment, net of depreciation. The total value added by a value chain minus depreciation is a macroeconomic figure. It represents the share of the value chain in gross domestic product.

### 2.3.2. Composition of the value generated

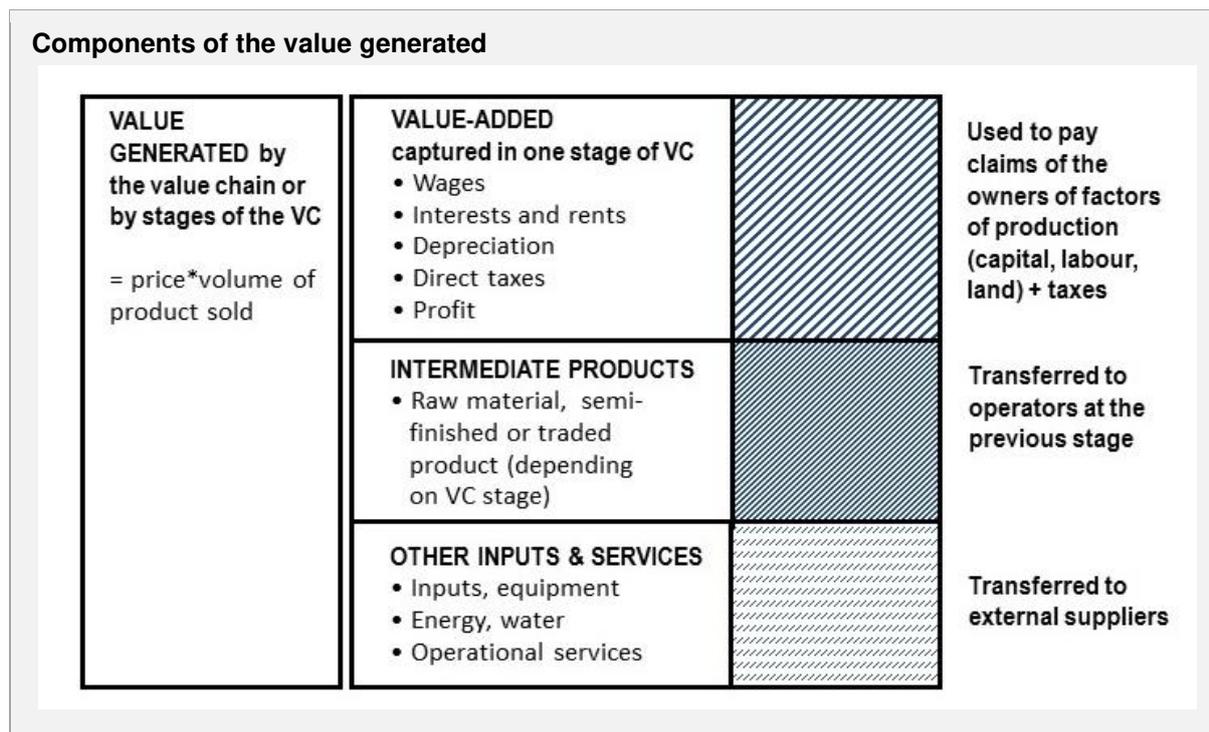
Clearly, only part of the value generated by the chain or by any of its stages is kept by the final sellers. Part of the value generated in the end market is the value of the intermediate goods delivered by operators at preceding stages of the value chain or by enterprises which are not part of the core sequence of the chain.

A large share of the value generated is transferred from retailers to internal and external suppliers. It is split between value added, the semi-finished or finished intermediate products supplied by operators in the previous value chain stage, and the inputs and services supplied by other, external enterprises. To arrive at the value actually captured by chain operators, the cost of bought-in materials, components and services has to be deducted from the value generated.

This amounts to the value added or value captured. The formula is:

$$(\text{Value added}) = (\text{Value generated}) - (\text{value of intermediate products}) - (\text{value of other inputs and services})$$

**Box 2.3.1: Concept – Template showing the composition of value added**



*Source: Own concept*

Box 2.3.1 shows the composition of the value generated in visual form. The value generated is composed of the value of the intermediate goods that operators at one stage of the value chain obtain from their suppliers, the value of other inputs and services they utilize, and the value added. Value added includes wages, interests and rents, depreciation, taxes and profits that stay with operators. Value added is used to pay for the production factors labor, land and capital as well as for the owners and management of the enterprise – in the form of profits. To be clear, income or profits of chain operators make up only part of the value added. A large share in value added does not automatically imply high income.

This principle is applied to each stage of the value chain. The following box places the calculation template into the value chain map. It shows the composition of the value generated by operators at one stage of the value chain as a grey shape. Part of the value generated is transferred to other enterprises, either to the supplier at the preceding stage of the chain or to other enterprises, that is the suppliers and operational service providers that are external to the value chain.

If the value chain operator in Box 2.3.2 is the final retailer selling to the customers in end markets, he actually realizes the *total* value generated by the chain and distributes it to his suppliers. The operators at earlier stages of the value chain thus generate a part of the total value that is equivalent to the value of the intermediate products. Box 2.3.3 are conceptual in nature meant to clarify the principle. Analysts can apply the concept to concrete cases filling in the template with real numbers.



The value added is a highly important parameter that shows the value captured by the operators at each stage. Please note that the sum of the five stripe-shaded areas indicating value added equal the total value generated by the chain and consumed in the end market.

Thus, the total value generated by the value chain eventually equals the sum of the value added by each group of operators in the value chain map.

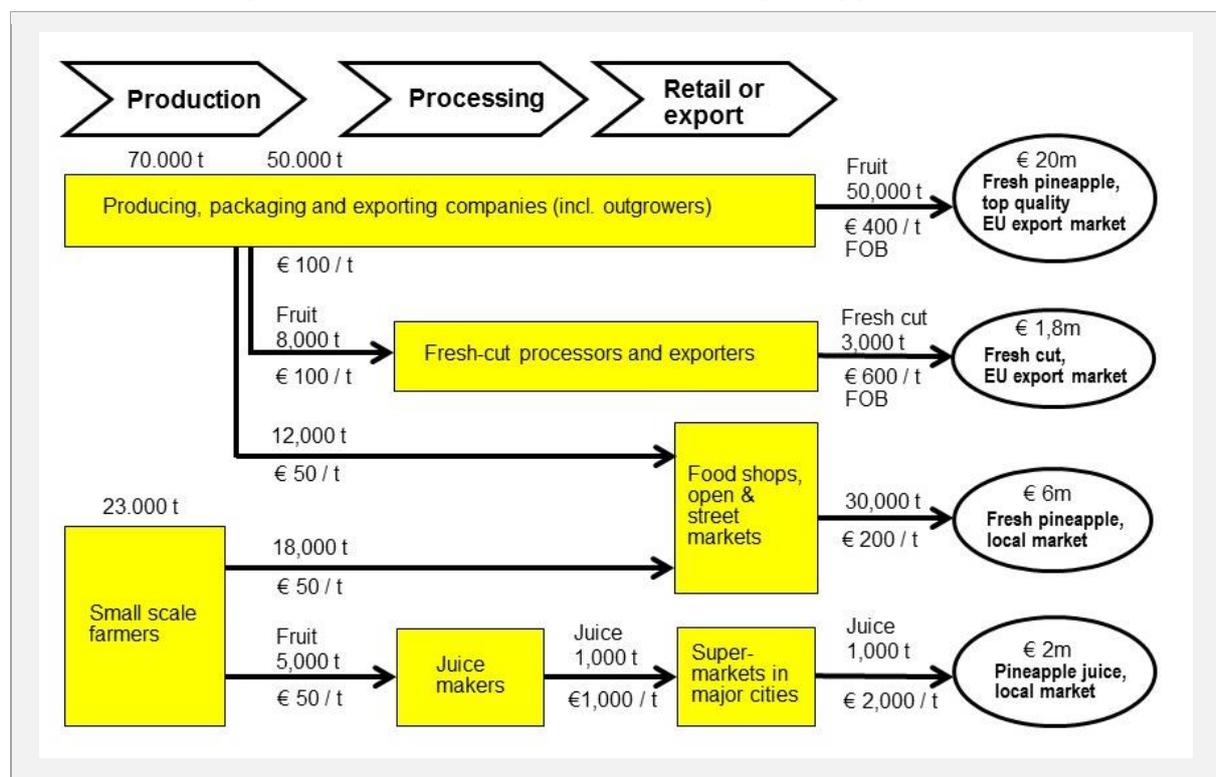
### Distribution of value across markets and channels

The template in Box 2.3.1 can be used to quantify value streams. To calculate the distribution of total value across stages and along channels of the value chain, analysts have to find out the volumes and prices according to the flow of produce towards end markets – the arrows connecting groups of operators. The calculation is based on:

- Sales prices and volumes in end markets
- The transfer prices of the intermediate product from one stage to the next
- The volumes moving from one stage to the next, separated by channels

The map and figures in Box 2.3.4 show an application to the pineapple value chain in Ghana. The first information is the value generated in the four end market segments which deliver a total value generated by the chain of 29.8 million Euro. This value accrues to four channels and the respective value chain stages. The numbers are inserted into the value chain map so that the relative importance of markets and value chain stages is visible immediately.

Box 2.3.4: Concept/case – Distribution of value in the pineapple value chain, Ghana



Source: Own concept, based on FAO, 2013, Kleemann, 2011 and information of GIZ Ghana

It can be seen that the large producing and packaging and companies generate 20 million € exporting 50,000 tons of fresh fruit, mainly to the EU, which accounts for two thirds of the value generated by the Ghanaian pineapple value chain. 30,000 tons of fresh fruit are consumed locally which corresponds to a value of 6 million €.

The sales value of the production stage is much smaller. The total value generated by farmers is 7.55 million €, of which 1.15 million € belong to small scale farmers, who sell 18,000 tons of fresh fruit to local retailers and 5,000 tones to juice makers, both at a price of 50 € per ton. The large producers get 100 € per ton for export quality fruit, either exported directly or as fresh cut. NB: The farm gate price of 100 € for the large farms is an internal transfer price derived from the actual sales price of fresh pineapple to the fresh-cut processors and exporters.

It should be noted also that the map in Box 2.3.4 only shows a simplified picture of the pineapple industry in Ghana. Figures are rough estimates for the purpose of illustration. The data are rounded averages for the period 2004 to 2012, combined from different sources.

Collecting and managing correct data for such calculations is a challenge<sup>61</sup>. But whether the numbers are exactly right or not, even rough estimates are useful to determine the relevance of different markets and channels. For example, the figures in the box show the share of *processed* pineapple products (fresh cuts and juice) which has been going after Ghana lost part of its export market for fresh whole fruits. They also allow to visualize the origin of different products. Data can be checked by locating the operators geographically.

### ***Distribution of value added and revenue along the value chain***

A question of great strategic interest is the distribution of value added, income and profits between the different groups of operators along the chain. Answering this question is more challenging than the calculation of market shares as it requires a lot more data.

The principle of calculating is shown in Box 2.3.5. The presentation of the table is in form of a stack chart measuring value per unit of product. The length of the columns in the box corresponds with figures taken from the case of the amla products value chain in Northern India. Amla is the fruit of the amla tree (*phyllanthus emblica*), cherry-sized berries which can be processed into a variety of products ranging from amla pickles, amla mouth-freshener and amla candy to amla-based ayurvedic medical drugs. The numbers in the case example refer to the value chain of amla *candy*.

The box shows two steps of calculating the value distribution along the chain in visual form:

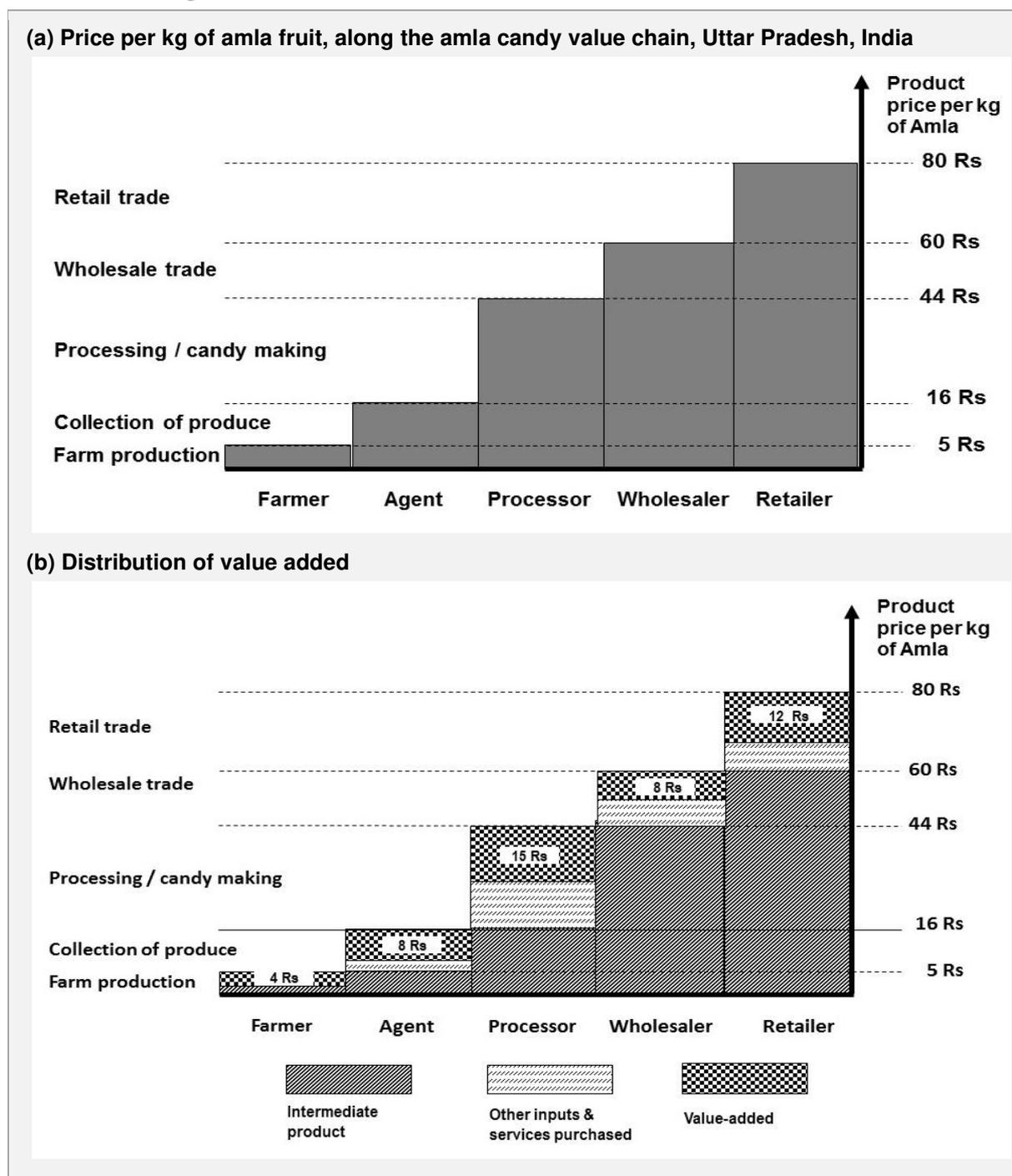
The first graphic, above, is an account of the prices paid at each stage of the value chain. The calculation in the example is *per unit* of the raw material used, in kg of Amla fruit. In this case, two kg of amla fruit are needed to produce one kg of amla candy, the rest being sugar. The columns show the share of value chain stages in the sales price of the end product. The differences between the columns thus do *not* equal profit margins. This first diagram is the easiest to produce but it is only a starting point and not particularly meaningful.

The second step is the calculation of value added and its distribution. To calculate value added, we have to subtract a) the value of intermediate products from suppliers within the value chain and b) other inputs and services purchased from suppliers outside the value chain. The shares of value added and purchased goods can only be derived from a cost per unit calculation of the value chain operators concerned. In the case of a fruit preparation, such as amla candy, the items to be subtracted include the value of ingredients, such as sugar and spices, and the value of packaging material.

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<sup>61</sup> Some hints on methods for data collection follow in module 11, in volume 2 of this manual.

**Box 2.3.5: Concept/case – Distribution of value added, wage income & profits along a value chain**



Source: Own concept

### Difficulties of calculations per unit

A correct calculation of the distribution of value added implies deciding on a unit of reference. The greater the value of purchased ingredients or components that go into making the end product, the lower is the share of the raw material, in this case the amla fruit in the candy. In fact, the prices in the diagram refer to different kinds of products. The unit of reference for the value chain stages from product making to final sales is the end product, i.e. packaged candy, while the unit between primary production and processing is the specific raw material of interest, the amla fruit. To deliver a comparable set, analysts have to decide which of these units

to use as reference. Using the final product as reference throughout the value chain only makes sense for commodities undergoing little transformation because the raw material still has a considerable share in the value of the end product. The fact that amla candy contains 50% sugar and 50% fruit means that one kg of amla candy represents  $\frac{1}{2}$  kg of amla fruit. The unit change from fruit to candy can be adjusted accordingly by dividing the price of amla fruit by two. If the value of one specific type of raw material is less than half of all ingredients or components in the end product, it is better to separate the parts of the value chain upstream and downstream of the product making stage. This separation is indicated by the gap between the columns in the second chart.

### **The use of value added calculations**

The distribution of value added along the value chain is mainly used to show the sources of economic growth. In natural resource based value chains value addition generally grows faster in the downstream stages of the value chain. In the European Union, the share of agriculture value added in the food supply chain value added has decreased by 7% in the period 1995-2005. This share has been taken up by the food industry with a plus of +2% on average and by the distribution sector with a plus of 6%<sup>62</sup>.

However, the distribution of *value added* does not say much about the *income* of the different types of operators. Their revenue depends both on the size and the composition of the value added. The strategically most interesting is the share of the poor, which is the wages of poor workers and profits of small enterprises. The question is: Does the value chain provide poverty groups with living wages or adequate sales incomes? To answer the question, the calculation cannot be limited to a per-unit calculation but has to include the volumes of products and the number of small enterprises. A small profit margin per unit does not necessarily result in a low income if an enterprise handles large volumes.

A theoretical possibility is to determine the shares of wages in value added and multiply the wage cost per unit of product with the volume of produce sold. This delivers a wage sum which then has to be divided by the number of workers. In the case of small business owners the profit per unit is needed. In practice, such calculations pose a major challenge and are sometimes difficult to interpret.

To analyze income, it is more appropriate to shift from the macro-economic analysis of the value chain to specific business models<sup>63</sup>. Anyway, the major source of economic data is the enterprise level. Apart from financial calculations, several non-economic instruments are available to assess the social question in the value chain which is the subject of the social analysis of value chains, dealt with in chapter 2.5 below. Ultimately, it is the livelihood and the competitiveness of small business owners that determine the social outcomes of value chain development. Another limitation to the use of value added calculations is its disregard for environmental cost.

In any case, economic analyses presuppose data on cost structure. Calculating exact numbers is only feasible if a very good data base exists or if industry specialists can provide reliable estimates. In fact, not many companies at processing or trading level are willing to share data on their cost of production while small enterprises often do not have these data. Value chain analysts have to be content with rough estimates and indications. The problem of data collection and possible ways to overcome it will be a key subject in module 11 in volume 2.

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<sup>62</sup> Commission of the European Communities, 2009, p.8ff.

<sup>63</sup> See module 5 for the financial assessment of business models

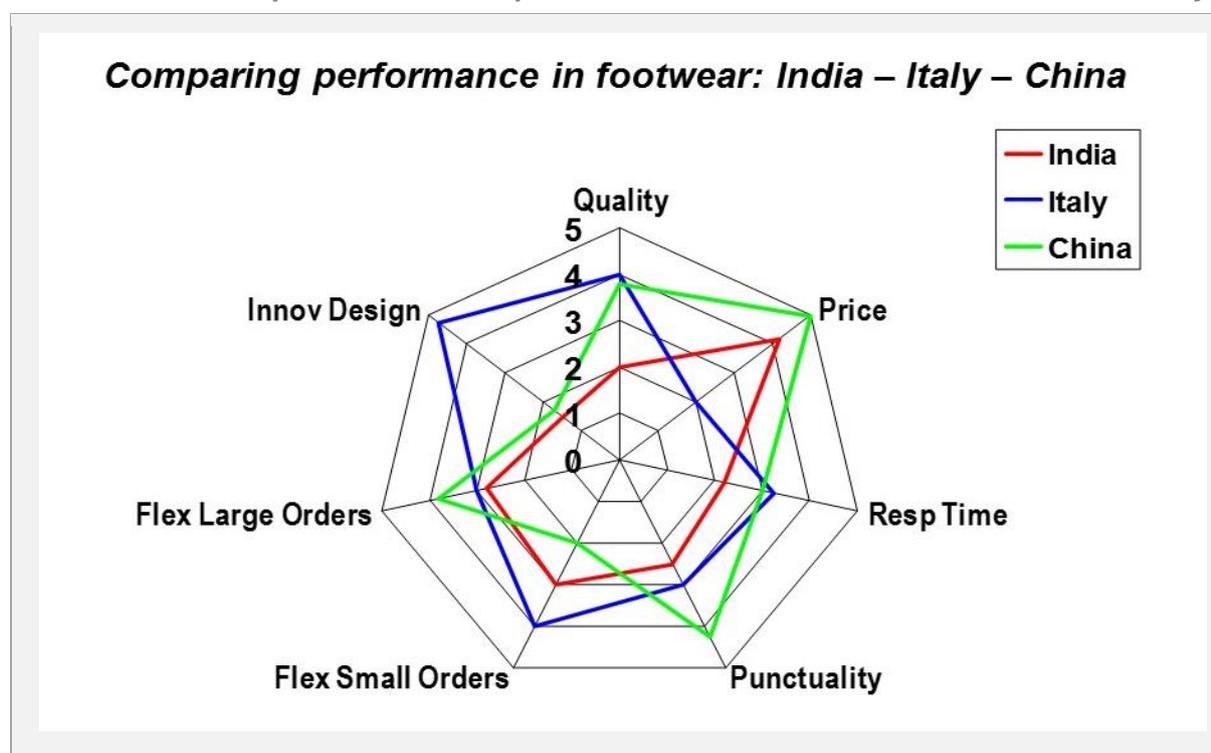
### 2.3.3. Chain competitiveness

The second and closely connected topic of economic analysis at chain level is the assessment of chain efficiency and chain competitiveness.

#### *Competitive benchmarking*

The function of benchmarking is a quick assessment of the value chain in terms of its economic performance. The question is how the value chain under study compares to value chains in other places using industry specific indicators, such as the number of pieces made by a worker per day, the production per ha or technical parameters. Analysts use this information to determine whether a value chain serving domestic markets can compete with imports or to compare export chains of different countries.

#### *Box 2.3.6: Tool – Spider web of competitiveness benchmarks in the footwear industry*



Source: Schmitz and Knorringer, 2000

A tool widely used for a benchmarking is the spider web diagram. As a first step, the most relevant performance criteria for a certain value chain are defined. In the example in Box 2.3.6, these criteria are quality, price, response time, punctuality, flexibility to accept small orders or large orders, and innovative designs. For other value chains, there will be other relevant criteria. The performance of the value chain to be analyzed is compared to that of other countries. In the example below, the footwear value chain in India is compared with a high quality Italian competitor and with a mass producer located in China. Data can be compiled based on a survey and interviews with key informants, such as importers and wholesalers.

In many cases, soft factors, such as reliability, flexibility, innovation are as important as hard factors, such as quality or price. The competitiveness is compared on a scale of 1 to 5 where 5 means highly competitive. The spider web diagram immediately shows both weaknesses and strengths of the value chain. The competitiveness assessment can serve as a basis to

later on draw conclusions in two directions: To improve areas with particularly weak competitiveness or to strengthen further areas in which the country already has competitive advantages.

Particular points to look for in agricultural value chains are competitive advantages in terms of access to natural resources and cost of production in farming as a result of scale, technology, and organization. Unique product quality features, specific skills or technologies used and the overall volume of production are important factors as well. In terms of the business environment, a favorable location, proximity to markets, reliable government policies or specific subsidies are important.

Chain efficiency measures how well the value chain is organized, which is an important competitiveness factor. Industry specific parameters can be compared to benchmarks, such as technical efficiency of processes, number of pieces of a product made per worker and day or loss rates from one stage to the next. Points to look for are resource efficiency in terms of raw material or labor use, loss rates from one stage of the value chain to the next, and volumes handled.

### ***Market efficiency***

The term market efficiency concerns the cost of bringing products from primary producers to end markets, and the correlation between the product prices paid in the end market and the prices paid at the farm gate, i.e. the so-called price transmission. The parameter to assess is the market margin, which is the difference between end market price and farm gate price, and its evolution over time. The parameter is used to assess the performance of agricultural value chains, particularly value chains of bulky, unprocessed commodities, such as staple foods in Africa.

The market margin is determined by the geographical distance, by the marketing costs for items, such as transport, storage and handling, and by the rents of the traders. When market margins are high, the question is to what extent this is due to high costs of marketing or to traders charging margins that exceed the actual marketing cost<sup>64</sup>.

The market margin thus gives an indication of logistical efficiency and at the same time can point to a problem of market concentration. The assessment is important because weak market efficiency is a reason behind low investment of both farmers and traders. High costs of marketing can lead to spatial pockets where local markets are isolated from global or regional trading patterns, price volatility can be high and competition among traders low<sup>65</sup>.

The calculation of the market margins is relatively straightforward as both end market prices and farm gate prices of an agricultural commodity can be collected easily. The market margins of different supply regions and marketing channels can be compared to find out where they are particularly high. Whether this indicates efficiency problems has to be clarified by looking into the composition of costs.

### ***Indications of excessively high marketing costs***

In order to calculate the composition of marketing costs, analysts need detailed survey data based on interviews and observations in the value chain at stake. In development practice, such studies are not often feasible.

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<sup>64</sup> Nyoro, Kiiru and Jayne, 1999, pp.5-6

<sup>65</sup> International Livestock Research Institute and AGRA, p.25

However, qualitative observations on cost components typically driving up market margins can provide hints:

- High number of loading and reloading points
- High cost of transport in \$ per t/km (trucking)
- Elevated loss rates
- Efforts to invest in making and supervising commercial deals
- Amount of road taxes, market fees, and other local taxes

The marketing cost is also influenced by the size of volumes traded. Supervision of contracts and some of the taxes are fixed costs so that the cost per ton goes up in small markets. Studies and data on marketing costs can be found in the materials provided by the African Agricultural Markets Program<sup>66</sup>. An interesting source of analysis has been published by Gabre-Madhin. Transport costs have been studied by Anyango<sup>67</sup>.

### ***Indications of excessive rents***

In a value chain with many suppliers and buyers, market margins approximately reflect the marketing costs along the value chain, however weak the market efficiency may actually be. Under conditions of imperfect competition, this is not the case. Part of an excessively high market margin can be due to:

- Oligopolistic market structure with few large traders, who have the power to affect market prices
- Existence of cartels effectively blocking access to trade points
- Thin markets, that is low volumes and value of produce offered and traded

Excessively high marketing cost and rents indicate market failures that may be addressed by a value chain development strategy. More on this subject in the section on market failure in module 3, chapter 2.3.2.

### ***Food losses***

A highly important efficiency parameter in food value chains is food losses. Globally, an estimated 1.3 billion metric tons of food are lost or wasted every year, that is 30% of the total food produced, varying among regions and crops<sup>68</sup>.

The term food loss refers to the decrease in the mass of edible food throughout the value chains of food for human consumption<sup>69</sup>. Food loss occurs along the entire chain. It not only reduces the food available for human consumption but also negatively affects societies in form of resources wasted and emission of greenhouse gases. Food losses occurring in the retail and final consumption stages of the value chain are called food waste<sup>70</sup>.

FAO classifies the types of food losses and food waste according to five stages of the food value chain. Box 2.3.7 lists the most important causes of losses and waste in each subsystem, clustered in vegetable and animal commodities and products.

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<sup>66</sup> African Agricultural Markets Program: <http://fsg.afre.msu.edu/aamp/>

<sup>67</sup> Gabre-Madhin, 2001; Anyango, 1996

<sup>68</sup> FAO, 2011, p.4ff.

<sup>69</sup> FAO, 2011, p.2

<sup>70</sup> Parfitt et al., 2010, p.3066

The exact quantitative assessment of losses and waste throughout the food chain is costly. It demands differentiated data at all value chain stages and allocation factors to determine the share of the produce used for human consumption and not for animal feed. Nevertheless, food loss is an essential parameter of economic and environmental efficiency.

**Box 2.3.7: Concept – Causes of food losses along the value chain**

Value chain stage	Vegetable products	Animal products
<i>Agricultural production</i>	Harvest losses <ul style="list-style-type: none"> <li>- Mechanical damage and spillage during harvest operations</li> <li>- Crops sorted out after harvest</li> </ul>	Production losses <ul style="list-style-type: none"> <li>- Animal deaths during breeding</li> <li>- Fish discarded after the catch</li> <li>- Production decrease due to animal diseases</li> </ul>
<i>Post-harvest handling and storage</i>	Post-harvest losses <ul style="list-style-type: none"> <li>- Spillage and degradation during handling, storage and transport</li> </ul>	Handling losses <ul style="list-style-type: none"> <li>- Animal deaths during transport</li> <li>- Condemnation at slaughterhouse</li> </ul>
<i>Processing</i>	Processing losses <ul style="list-style-type: none"> <li>- Transformation losses during industrial processing</li> <li>- Unsuitable material sorted out</li> <li>- Process interruptions and accidental spillage</li> <li>- Degradation during storage.</li> </ul>	Processing losses <ul style="list-style-type: none"> <li>- Trimming spillage during slaughtering and additional industrial processing</li> <li>- Spillage during milk treatment</li> <li>- Degradation during storage.</li> </ul>
<i>Distribution</i>	Marketing losses <ul style="list-style-type: none"> <li>- Degradation during handling and storage</li> <li>- Unsold products discarded</li> </ul>	Marketing losses <ul style="list-style-type: none"> <li>- Degradation during handling and storage</li> <li>- Unsold products discarded</li> </ul>
<i>Consumption</i>	Storage and processing losses <ul style="list-style-type: none"> <li>- Losses at household level</li> <li>- Waste of products not consumed</li> </ul>	Storage and processing losses <ul style="list-style-type: none"> <li>- Losses at household level</li> <li>- Waste of products not consumed</li> </ul>

*Source: compilation based on FAO, 2011*

**The Rapid Loss Appraisal Tool**

The rapid loss appraisal tool pretends to be more easily manageable in development practice than precise measurements of food losses in every business operation and all value chain stages. The objective of the rapid loss appraisal tool is the determination of hot-spots of losses and waste in the value chain. The approach is based on participatory methods to estimate approximate the loss rates.

Ostermann suggests the following steps<sup>71</sup>:

- Desktop study
- Key expert workshop (1 day)
- Stakeholder workshop (1 day)
- Focus group and key informant meetings (3 days)
- Debriefing workshop (0.5 day)

The specific tools include transect walks with farmers and stakeholders, direct observations at potential loss points, a loss perception matrix, in which participants gauge loss rates, and specify precisely the bio-physical measurements if necessary. The main source of information is the experience of operators. Data were collected from farmers, marketers, millers and processors as well as local government. The study on post-harvest losses of rice in Nigeria offers an illustrative example, see Box 2.3.8.

**Box 2.3.8: Case – Food losses along the parboiled rice value chain, Nigeria**

**Results of the study ‘Post-Harvest Losses of Rice in Nigeria and their Ecological Footprint’**

The study shows major hot-spots along the parboiled rice value chain in Nigeria during harvesting, threshing, parboiling and milling. The estimated total postharvest losses of the Nigerian rice value chain amount to Nigerian Naira (NGN) 56.7 billion (24.9%) before reaching consumers’ tables.

The food losses occurring at production level are highest with NGN 34 billion (17.6%) based on an annual production of 4,830,000 tons. These losses include damaging paddy panicles during harvest worth NGN 8.4 billion (4.35%) and threshing and winnowing of paddy to the value of NGN 9.2 billion (4.98%) which occur due to manual operations, such as harvesting with a sickle and threshing of rice. Transport of dried paddy to the farm, drying costs of NGN 0.4 billion (0.23%) and storage costs of NGN 2.4 billion (1.37%) increase these losses. Transporting the dried rice then to the market leads to additional losses of NGN of 0.4 billion (0.23%).

Parboiling causes losses of NGN 2.0 billion (1.16%) including the damaging of rice grains during the processing, the drying process after parboiling 6.0 billion NGN (3.53%), storing parboiled and dried rice (0.49%), and transportation of the parboiled rice to further processing (2.45%). In sum the losses occurred so far reflect a total value loss of 34 billion NGN.

Storing the milled rice means additional losses of 3.4 billion NGN (1.08%) and further transportation leads to an increase in losses of 2.27 billion NGN (0.73%), adding up to a total of 2.2% which is equivalent to a value loss of 6.8 billion NGN.

Marketing of the parboiled and white rice leads to a total loss of 5.1% causing a value loss of NGN 15.9 billion for the marketers, including transportation from the market to the shop worth NGN 6.8 billion (2.2%) and further storage there costs NGN 9.1 billion (3.0%).

*Source: Karina Brenneis, based on the study of Ostermann (2015)*

Considerations on how to reduce food losses follow in module 3, chapter 3.2. The solutions mainly relate to business models and business linkages in the value chain.

<sup>71</sup> Bundesministerium für Wirtschaftliche Entwicklung, 2015, p.17

## 2.4. Environmental analysis of value chains

The economic performance of the value chain is the basis for its success, but that success may not last long if it is detrimental to the natural environment. Economic or financial accounting is only one part of the equation. Financial figures need to be complemented by an assessment of the impact of production and consumption on natural resources, on changes in ecosystem stability and on climate change. At the same time, businesses have to be aware of the rising environmental and climate risks threatening many of their industries.

The environmental analysis places the value chain into an ecosystem context to identify negative environmental impacts of the value chain on the environment as well as, vice versa, the impact of natural resource scarcity and climate change on business operations. A clear view on the environmental problems along the value chain also is the basis for identifying new business opportunities that come with the need to transform businesses to build a 'green value chain'.

To undertake an environmental analysis, the scope and structure of the value chain have to be clear and the value chain map available. The environmental analysis has three steps:

The first task is to visualize the interaction of business and technical processes with the ecosystems at the places where the value chain operators are located. The interaction between the value chain and its natural environment allows identifying critical environmental impacts along the chain in a second step. This includes climate proofing. Finally, analysts use valuation tools to assess the severity of the environmental impacts and to prioritize them.

### 2.4.1. Value chains and the natural environment

All value chains are rooted in the natural environment without which the production of goods and services would not be possible. Operators source materials and energy inputs from nature and feed them into the business processes. In addition, they benefit from ecosystem services that are provided for free. Marketable goods and services are not the only value chain output. Other outputs are the waste and emissions of operators with their multiple impacts on ecosystems at the places where they are located. Another category is the waste generated by the consumers of the product. Emissions can affect downstream water systems and contribute to climate change.

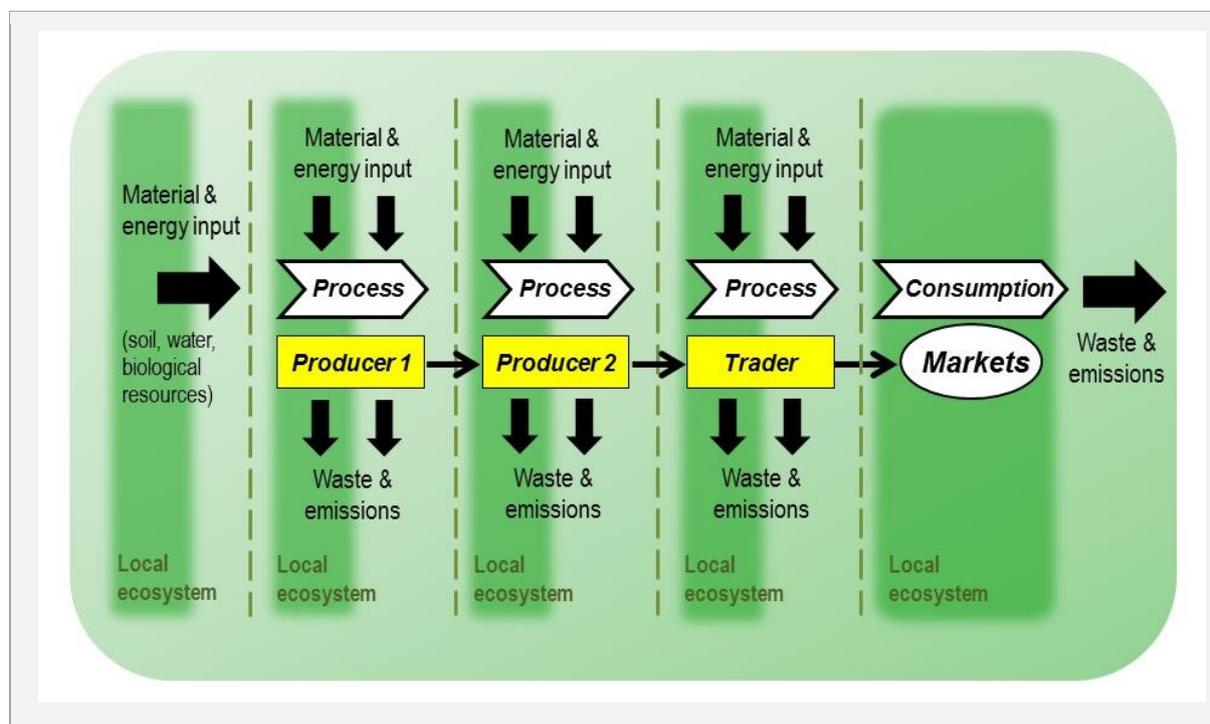
The embedding of value chains in the environment is visualized in the following graphic that combines the value chain map with the flow of resources, waste and emissions through the value chain. The different ecosystem levels are indicated by the dark and light green areas underneath the stylized value chain map. The light green color stands for natural resources traded at global level, especially fossil fuels and mineral resources, and the emissions into water systems, the oceans and the atmosphere. Dark green indicates the local ecosystems.

It is important to note that both the economy and nature constitute systems — value chain systems and ecosystems. The figure in Box 2.4.1 shows the interaction of value chains with the natural environment:

The resource flows enter the value chain processes from above. The arrow on the left side in each stage is the resource input of *local* ecosystems into the value chain. The embedding of value chains in different local ecosystems makes it necessary to locate the operators in the respective local ecosystems. This is very obvious for the primary production stage (agriculture, forestry, fisheries and mining), which uses land and local ecosystems directly. But it is also true for other value chain stages, such as the use of fresh water for processing, cooling or cleaning.

The other arrow connects the value chain with the *global* natural capital providing fossil energy, minerals and climatic conditions. Every value chain benefits from fossil fuels and production materials that are extracted and transported around the world. The share of one value chain may be small but matters nevertheless.

**Box 2.4.1: Concept – Interaction of the value chain with the environment: natural resource flows**



Source: Own concept

The black arrows below and to the right of the value chain sequence stand for the waste and emissions going back into both global and local ecosystems. The picture describes the usual conditions in a value chain where operators do not care much for the resource consumption and waste generated. A comparable graphic in module 3<sup>72</sup> shows how resource and waste flow should be redirected to close the loops and bring down resource consumption. The black arrows in the box above also provide an indication on the direction of environmental impacts between value chains and the environment. We can differentiate two main types of environmental impacts:

- Negative environmental and climatic impacts of value chains (type 1)
- Impacts of climate change and environmental degradation on value chains (type 2)

Type 1 refers to the waste and emissions, type 2 is the effect of climate change and degradation on the material and energy input including the impact of climatic conditions that can be interpreted as an input as well.

<sup>72</sup> See Box 3.3.1

The table in Box 2.4.2 provides examples for both types of interactions. The table also has a column to the right which introduces a third category of interaction – the potential contribution of a value chain compensating the emissions and saving resources:

- New services and marketable products that help greening the economy by saving water, energy and materials and by reducing waste.

**Box 2.4.2: Concept – Interaction between value chains and the environment**

Interaction between value chains and the environment	Negative impact of the chain on the climate and the environment	Value chain affected by climate change and environmental degradation	Value chain compensating for emissions or contributing to a green economy
<b>Issues</b>	<ul style="list-style-type: none"> <li>• Production, marketing and consumption damage the environment (soil erosion, pollution, etc.)</li> <li>• High, uncompensated greenhouse gas emissions (CO<sub>2</sub>, methane, and others)</li> <li>• Wasteful utilization of scarce resources (especially water)</li> <li>• Generation of harmful waste</li> </ul>	<ul style="list-style-type: none"> <li>• directly:               <ul style="list-style-type: none"> <li>- Reduced productivity</li> <li>- Increasing production costs and risks</li> <li>- Food insecurity</li> </ul> </li> <li>• indirectly:               <ul style="list-style-type: none"> <li>- Rising resource prices (water, energy, raw materials, waste disposal)</li> <li>- Changing consumer demand</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• CO<sub>2</sub> sequestration and sale of carbon credits</li> <li>• Supply or use of products and services conducive to a green economy (environmental technology, technology for renewable energy production and services, organic agriculture, eco-tourism)</li> </ul>
<b>Key concepts</b>	<ul style="list-style-type: none"> <li>• Life-cycle assessment,</li> <li>• Ecological footprint</li> <li>• Carbon footprint</li> </ul>	<ul style="list-style-type: none"> <li>• Risk or vulnerability assessments</li> <li>• Climate proofing</li> </ul>	<ul style="list-style-type: none"> <li>• Value chain development for               <ul style="list-style-type: none"> <li>- Carbon credit markets</li> <li>- Green products and services</li> </ul> </li> </ul>

*Source: Springer-Heinze and Finkel, 2012*

The interactions are not mutually exclusive. In fact, the same value chain may be affected by climate change and environmental degradation and be the cause of negative external effects on ecosystems and the climate simultaneously.

The third column has strategic significance: Wherever environmental problems exist, they also constitute an opportunity for businesses supplying “green technology”.

## 2.4.2. Methodology of environmental value chain analysis

The environmental analysis makes environmental problems visible to value chain actors who tend to ignore the damages they cause. Detecting the critical environmental issues also makes them aware of the impact of climate change and increasing resource scarcity on their businesses.

The environmental analysis introduces again the spatial dimension into value chain analysis. The methodology therefore has to start by:

- Conceptualizing the interaction between the value chain at stake with the environment. This includes specifying the value chain map as a technical process chain on one side and the ecosystems delivering the needed natural resources on the other. This leads to an environmental impact matrix.

This matrix is then used for:

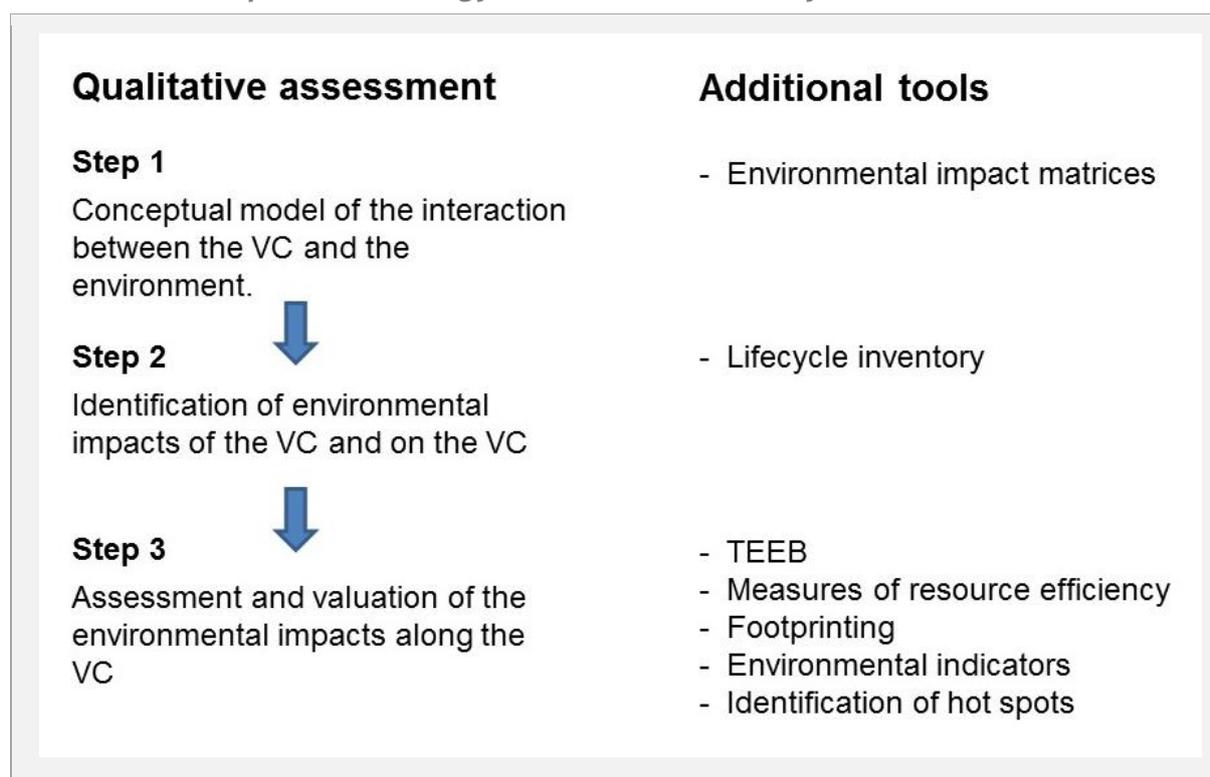
- Identifying the critical environmental impacts of the value chain and on the value chain – at the meeting points between the value chain and its environment. This delivers a list of impacts.

Finally, the environmental impacts along the value chain have to be assessed by:

- Valuing their economic and ecological significance. To the extent possible and useful, valuation means calculating the environmental and resource costs in monetary terms, but it can also be qualitative.

The three elements are shown in Box 2.4.3. The basic procedure is the sequence of the steps as shown on the left side of the figure in the box below.

**Box 2.4.3: Concept – Methodology of environmental analyses of value chains**



*Source: Own concept*

These three steps are generic and can be found in a variety of environmental assessment methods, notably in the life-cycle analysis, the most important tool for assessing the environmental impacts of value chains<sup>73</sup>.

<sup>73</sup> See, for example, the guide of the United Nations Environment Programme (UNEP) “Towards a Life Cycle Sustainability Assessment”, 2012

A life-cycle analysis explicitly assigns environmental impacts to a marketable product. Its first step is to extend the value chain to cover the complete life-cycle of a product beyond markets including the use and disposal stages. Next is a life-cycle inventory from which a list of environmental impacts is derived. The final step is to assess the damage to human health, ecosystem quality and resources. Life-cycle analysis is a legally recognized tool, regulated by the ISO 14040 norm<sup>74</sup>. Although the life-cycle analysis has been used frequently in industrial countries, its application can only be recommended wherever private companies have the interest and willingness to pay for it<sup>75</sup>.

In other cases, the environmental analysis of value chains should be simplified in line with the available time and capacity. The analysis can be done qualitatively using available information and expert judgment as sources. This delivers a minimal environmental value chain analysis that allows determining environmental problems in broad terms. Each step will be explained in the following sections.

Depending on the available data, each step can be deepened and refined by using additional analytical and valuation methods. The basic procedure of ValueLinks can thus be combined with specific instruments of the life-cycle analysis or general environmental assessment tools, such as the calculation of footprints, the use of environmental indicator sets, climate proofing and others. Some of the available tools are mentioned on the right side of Box 2.4.3.

The following sections 2.4.3 to 2.4.5 cover each step in detail.

Once the environmental impacts of the value chain have been identified, strategic considerations on how to deal with them have to follow. The strategic options for greening the value chain are covered in module 3 which also addresses the business opportunities around green products and services.

### **2.4.3. Modeling the interaction between value chain and the environment**

Analysts have to build a conceptual model for every value chain separately describing the interaction of the value chain in question with its environment. Interaction means the *physical* exchange of energy, emissions, natural and man-made materials, and services that takes place during all production and marketing processes along the value chain. To visualize the interaction, both sides, value chain and environment, have to be shown clearly.

The environmental analysis of value chains is more complicated and challenging than value chain mapping or economic analysis: The interactions between business operations and the local to global ecosystems are manifold. Not only are value chains embedded in different ecosystems at the same time, the interaction is determined by the functioning of ecosystems on one side and the logic of economic systems on the other.

#### ***Specifying the technical processes along the value chain***

The first step uses the functional sequence in the value chain map to identify production, transformation, transport and other technical steps in which enterprises interact with the environment. Not all business processes imply the use of energy and materials or produce waste. Therefore, the focus is on *technical* processes of production, processing and transport, not on the value adding activities per se.

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<sup>74</sup> See the website of the International Organization for Standardization (ISO): [www.iso.org](http://www.iso.org)

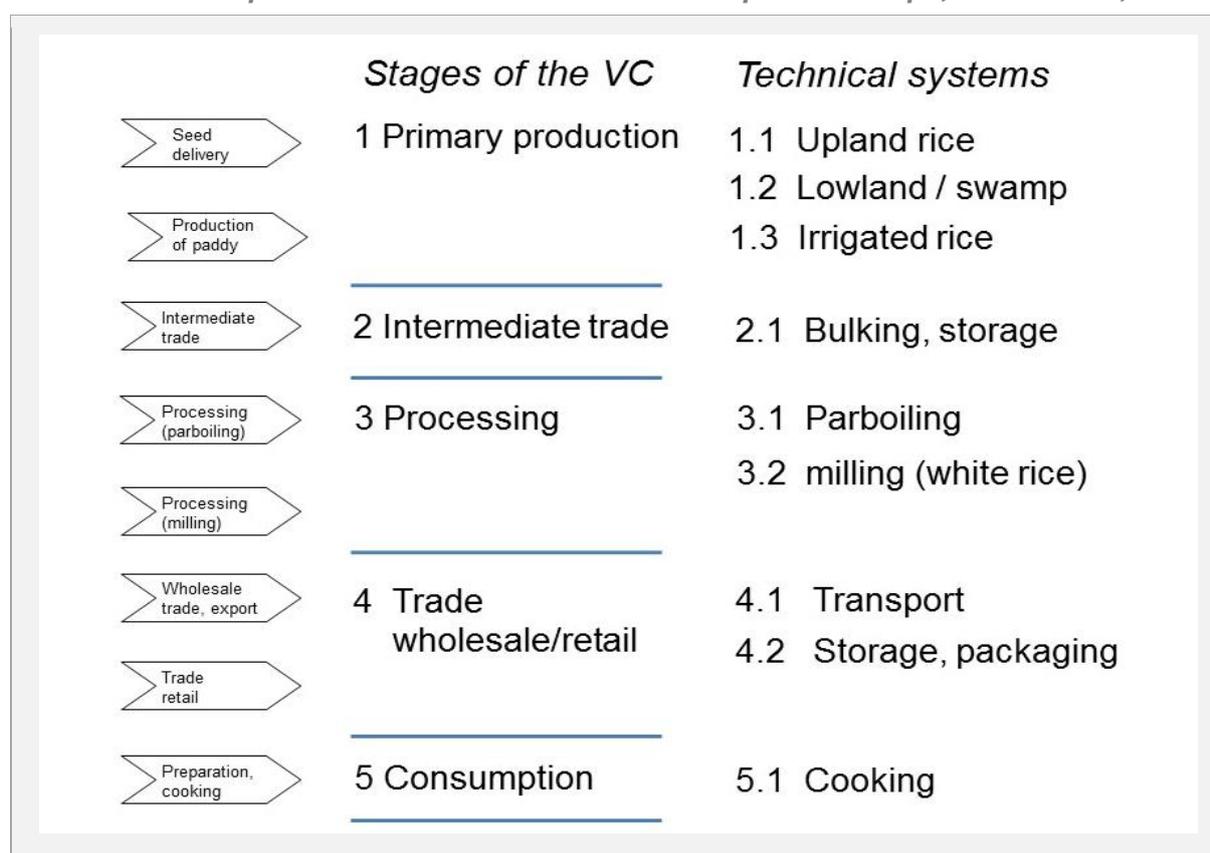
<sup>75</sup> Springer-Heinze, A. and T. Finkel, 2012

Box 2.4.4 shows how the functional sequence of the value chain map can be translated into a classification of technical processes that organize the flow of natural resources in one way or another. Each technical process behind production and marketing takes materials and water from ecosystems, burns fuel and discharges emissions and waste. Please note that the sequence of value chain stages is complemented by the consumption stage which also consumes energy and produces waste. The environmental value chain analysis sets up an expanded model of the value chain. The principle is to show the sequence ‘from the cradle to the grave’ of the end product in line with the life-cycle concept. The stages of the value chain are redefined as life-cycle phases.

The value chain stages are those of the rice value chain in Benin that will also serve as an example in subsequent sections.<sup>76</sup>

In one and the same stage of the value chain, different technologies may be in use. It is important to bring out the differences between them. For example, food processing can be done manually, with the help of light equipment or in a fully automatized system. For example, rice production systems can be differentiated into irrigated, lowland and upland farming. Each technology has a different level of natural resource inputs and waste outputs.

**Box 2.4.4: Concept/Tool – Identification of technical process steps, case of rice, Benin**



*Source: Own concept*

<sup>76</sup> The example has been adapted from a study by Springer-Heinze et al., 2013

### ***Specifying ecosystems and natural resource categories***

If the technical systems in the value chain represent the economy, the question remains how the environment of the value chain should be classified. Analysts have to find the right categories to specify the relevant natural resources and ecosystems.

The first approach takes nature as a bundle of natural resource inputs into productive processes. Common classifications of basic categories of natural resources include the 'MECO', i.e. materials, energy, chemicals and other resources<sup>77</sup>. Another is the classification of natural resources into land, water, material and carbon absorption capacity, as in the analysis of environmental footprints. To this the absorption capacity of soil, water, the oceans and the atmosphere for waste is added. Resources can further be classified by distinguishing abiotic minerals from biological material, or fossil fuels from renewable wood and biogas. The idea behind the classification is to capture the resource flows between ecosystems on one side and economic systems on the other so as to compare different levels of resource consumption.

The classification of natural resources is related to the ecosystems. Differences in scale and location are important. Fossil fuel, for example, is taken from many places and traded internationally. Burning fossil fuels has an impact on the atmosphere and global climatic stability. By contrast, wild plants are collected from their small local habitats and fresh water is available from local or regional watersheds. Accordingly, the impact is felt locally, in the landscape or watershed, nationally or globally.

Therefore, the environment of the value chain has to be specified using two classification principles:

- The individual natural resource inputs taken from nature, such as fossil fuels, minerals, biological material and water
- The ecosystems at the locations where the value chain operators are active — harboring biodiversity and providing ecosystems services

The difference between the two categories is in the perspective taken: While the natural resource categories are used to measure inputs into the economy, ecosystems capture the embedding of economic activities in the surrounding landscape.

The idea is visible in the two boxes following below. Box 2.4.5 presents the environment as a list of resources many of which have process and are traded in markets.

The subsequent Box 2.4.6 presents the ecosystems context. Ecosystems have to be intact to deliver ecological services. A tropical forest ecosystem, for example, is more than a bundle of resources. It is a living system that can only be understood as a whole. It therefore cannot just be treated as an input. It provides the very foundation upon which human activities have to build. The ecosystem perspective introduces, again, a spatial dimension into value chain analysis as the value chain interacts with the ecosystems at the place where operators are located. The spatial units range from local to regional according to ecosystem boundaries, such as watersheds, forests or coastal wetlands. Understanding *how* productive activities interact with the ecosystem is essential to addressing issues, such as biodiversity loss, the local impact of climate change and local water availability.

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<sup>77</sup> Pommer et al. "Handbook on Environmental Assessment of Products", 2000, p.69ff.

**Box 2.4.5: Concept – Natural resource categories and related issues in the case of rice**

<p><b>Water</b> Pollution, price hikes (pumping cost, drought/decreasing water table, late rains/extended dry season, irregular rainfall)</p> <p><b>Energy</b> Fuel price inflation, blackouts, access to fuel wood, charcoal</p> <p><b>Materials</b> Chemical and natural fertilizer, packaging, waste</p> <p><b>Biodiversity</b> Loss of biodiversity, loss of local varieties</p> <p><b>Climate</b> Excessive heat, violent rains, flooding, strong winds</p>
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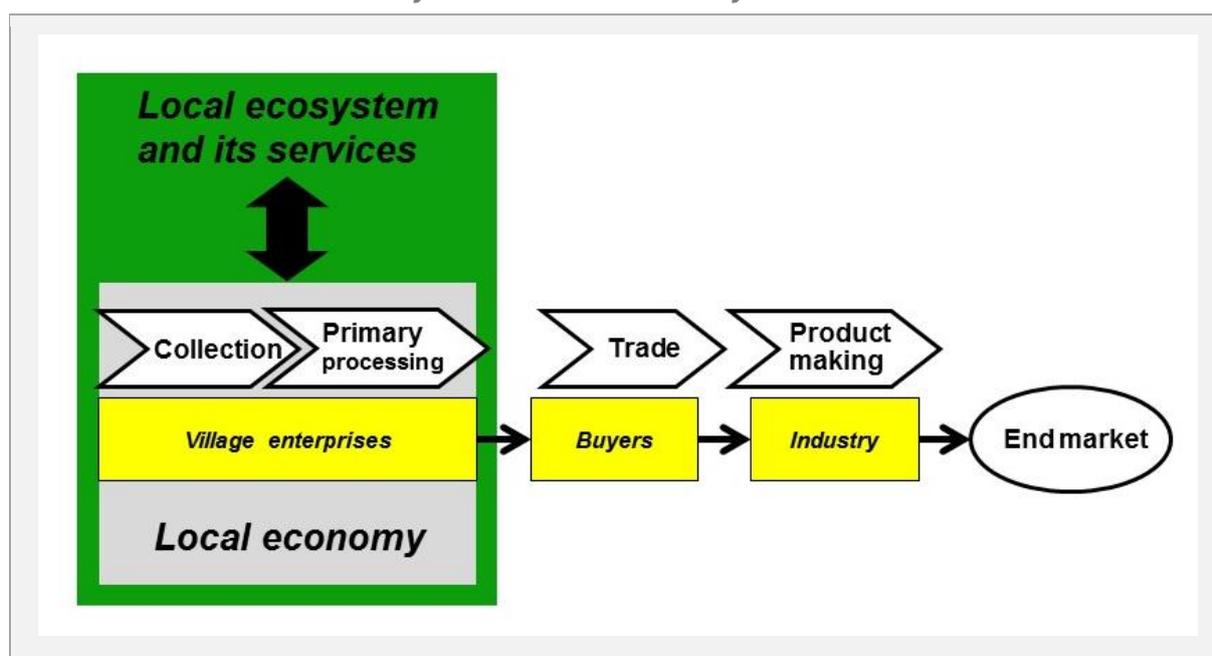
Source: Own concept

Subdividing the basic categories should follow pragmatic criteria and has to be adapted to the specific value chains.

The next box shows the ecosystems dimension as the space in which operators are located. Identifying the impact on ecosystems builds on the spatial analysis of the chain specifying the ecosystems at each location. In many cases, the focus of attention is on the primary stages of natural-resource based value chains. But other stages may also be affected. Processing companies or transport businesses may cause a negative impact on ecosystem services used by local populations and other enterprises.

In principle, analysts would have to identify all locations and ecosystems in which value chain operators are present. However, this is not always practical or useful. Specifying the ecosystems is of particular relevance for the primary production stage of agricultural and biodiversity-based value chains.

**Box 2.4.6: Case – Local ecosystems in a biodiversity-based value chain**

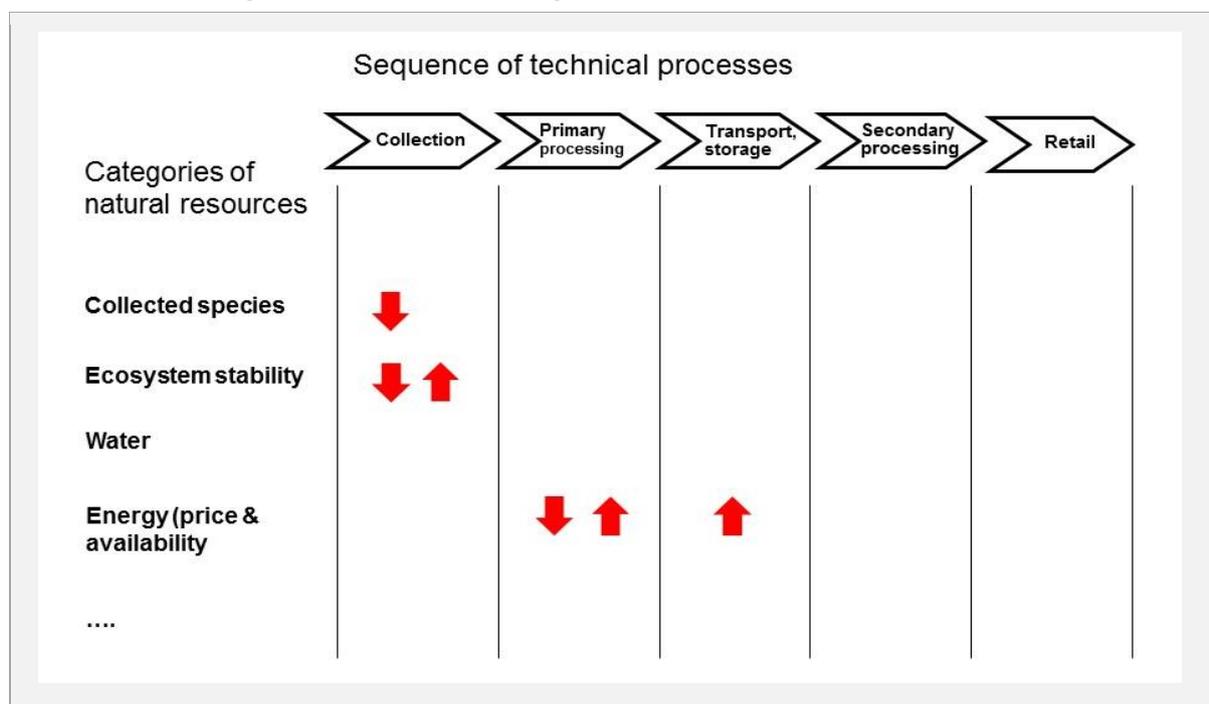


Source: Own concept

## Constructing an environmental impact matrix

Once technical-economic systems on one side and natural resource categories or ecosystems on the other have been identified, both dimensions are combined to form an environmental impact matrix for the value chain at stake. This matrix can be used to study impacts operating in both directions.

### Box 2.4.7: Concept – Environmental impact matrix for the value chain, case of rice



Source: Own concept

For example, as value chain enterprises utilize water they affect its quality and availability. At the same time, the availability, price and quality of water has an impact on the efficiency of value chain operations. By unsustainably utilizing fuel wood, operators deplete local resources while at the same time they are likely to suffer from rising wood energy prices. Burning fossil fuels generates greenhouse gas emissions and thus depletes the absorptive capacity of the atmosphere. Climatic instability, on the other hand, has a severe impact on climate-sensitive chain operations.

The red arrows in Box 2.4.7 represent environmental impacts. Arrows pointing downwards indicate an impact of the technical process on natural resources. Arrows pointing upwards visualize impacts of natural resource changes on the functions of the value chain. The content refers again to the rice value chain in Benin.

The directions of impact are often connected, especially in agricultural value chains. Agriculture suffers from soil degradation and water scarcity caused earlier by unsustainable agricultural production methods.

## 2.4.4. Identifying and characterizing environmental impacts

The second step of the environmental analysis uses the environmental impact matrix to identify critical interactions of the value chain and its environment. As the impact is mutual, both types of environmental impacts have to be included depending on the direction of influence:

- Type 1 environmental impacts – Negative impact of the value chain on the environment
- Type 2 environmental impacts – Environmental impact on the value chain

The methodology consists of checking the intersection points in the impact matrix asking the question whether and how a technical process in the value chain is affected or affects a resource category. Taking the conceptual matrix in Box 2.4.7, the first question is whether there is a connection at all, which can be indicated by the arrows as in the box. If the answer is yes, analysts describe the nature and severity of the impact at the respective crossing point in the matrix.

### ***Identifying environmental impacts of the value chain***

To utilize the environmental impact matrix, analysts need relevance criteria. The mere fact that a technological system utilizes land, forests, energy or water does not yet constitute an environmental problem. The question is whether the interaction is sustainable. Before entering into calculations of the true cost and long-term availability of the resources in relation to the economic value created, analysts can start by making a qualitative judgment on two relevance criteria identifying a likely negative impact of the value chain on the environment:

- (1) Damage to local ecosystems (up to their complete destruction)
- (2) High resource intensity (input of resources per unit of value generated)

**Ad (1)** = The damage to ecosystems is a problem if it leads to the loss of valuable and irreplaceable habitats and biodiversity. Particularly problematic are changes in land use, such as deforestation and conversion of wetlands or mangroves (e.g. into shrimp farms) through which the respective ecosystem services (flood control, fresh water supply, and others) are lost. These impacts are negative external effects of the business operations. Value chain operators normally do not pay for the damage they cause and thus do not immediately feel the environmental problems. However, a polluting industry undermines its own market success in the medium to long term.

**Ad (2)** = High resource intensity can be judged by estimation of the materials and energy inputs that go into making and using the product. The more resources are utilized compared to other value chains or in relation to technical alternatives, the more significant is the impact. If quantitative data are available, resource intensity is measured by technical parameters, such as the use of water, energy, and other resources per unit of production volume, or in absolute terms. See next section for measurement and valuation tools. High resource use intensity also indicates high environmental costs because the volume of materials and energy used roughly corresponds with the volume of waste and emissions generated.

All interactions between the value chain and the environment that fulfill one or both criteria are recorded as an environmental impact that needs closer attention. To be sure, the application of the relevance criteria only indicates that there is a problem. It may still be the case that high resource consumption is justified by the economic value generated. Clearing land and changing land use can be justified if the economic benefit clearly outweighs the environmental damage. However, such conclusions are only possible after a careful assessment of all environmental costs and benefits. In most cases, a qualitative expert judgment on the damage risk can be rated as evidence.

### **Identifying environmental impacts on the value chain**

The opposite direction is the impact of the environment *on* the value chain. The procedure is the same as in the first case. Impacts are identified by assessing two relevance criteria:

- (1) Loss of the local ecosystem services on which the value chain builds
- (2) Declining availability of natural resource inputs or rising market prices

**ad (1)** = Wherever operators depend on local ecosystems for raw materials, fresh water, soil fertility or other ecosystem services, the depletion of the ecosystem puts the entire value chain at risk. This is particularly relevant in natural-resource based value chains where overexploitation of ecosystems, water shortages and declining soil productivity pose serious problems. The functioning of the ecosystem becomes an *absolute* necessity for value chains building on the collection of biological material or wild species. Ecosystem degradation also can have important social consequences for communities that depend on them for their livelihoods. Climate change is another important topic here. It deserves special attention and is treated separately in the following section.

**ad (2)** = A high resource intensity of the value chain does not only cause negative impact on the environment, it also renders the value chain sensitive to the economic consequences of resource depletion affecting its competitiveness. The severity of the problem is related to the share of natural resource inputs in the total cost of the value chain: The more energy and materials are used, the greater the cost and financial risk for value chain operators when resource inputs become scarce and market prices rise.

One example of an environmental impact matrix used in the private sector is the following table used by the retailer REWE to identify environmental hot-spots in the supply chain of the products it sells. Here, the resource categories include both inputs, such as material and energy consumption as well as outputs, such as greenhouse gas emissions and air pollution.

**Box 2.4.8: Case – Example: REWE template for the hot-spot analysis**

	Raw material, agricultural production	Industrial production (processing)	Distribution, wholesale, retail trade	Consumption and waste disposal
Material consumption	...	...	...	...
Energy consumption	...	...	...	...
GHG emissions	...	...	...	...
Water consumption	...	...	...	...
Land erosion, pollution	...	...	...	...
Air pollution	...	...	...	...
Water pollution	...	...	...	...
Waste	...	...	...	...
Biodiversity	...	...	...	...

Source: Biengen et al., 2010

For the purpose of illustration, the matrix has been filled in with statements on environmental impacts providing an overview of the issues considered. The list of environmental impacts for each of the value chain stages is the main result of environmental analysis. Although the information is in qualitative terms only, it provides orientation on the ecological limits.

The identification of environmental impacts is based on a qualitative judgment in the first place. However, the quality of that judgment improves with the access to more detailed, quantitative information. To the extent possible, analysts should utilize valuation techniques to assess the criteria with more precision. See Section 2.4.5 on valuation below.

### **The impact of climate change**

The changing climate can cause important environmental impact on value chains. Identifying these impacts is the subject of climate proofing. Climate proofing of value chains means screening the cause-effect relations between climate trends and the efficiency of value chain processes and operators. Not all impacts of climate change are felt at the present stage when the climate proofing is done. To a large extent, the analysis refers to potential future impacts and increasing risk, so as to draw conclusions for risk management and an enhanced adaptive capacity.

The procedure for climate proofing of value chains presented in the following builds on a tool developed by the GTZ project 'Climate Proofing of Local Development Planning in Tra Vinh

Province in Vietnam. The method has later been adjusted by German development cooperation in Cambodia<sup>78</sup>.

The starting point is the change in climatic conditions at the places where the value chain is located, both the current climate variability and expected future climate change. The first point to consider is the exposure of the value chain to the ongoing change. To which of the observed climate trends is the value chain exposed? Issues to look for include, for example:

- Changes in rainfall patterns
- Climate variability
- Changes in temperature
- Risk of extreme weather events

By themselves, the observations on climate change do not yet constitute problematic impacts. Whether and to which degree climate change affects the value chain, is a matter of its sensitivity. The question is: “Which characteristics make the value chain susceptible to changing climate conditions?”<sup>79</sup> These may be:

- The dependence of production on the stability and reliability of climatic conditions, such as onset and length of the rainy season
- Land use patterns
- Existence and effectiveness of systems for water management, storage, irrigation
- Strength and weakness of infrastructure, especially roads, buildings, storage facilities
- Flexibility of technical processes

Taken together, both exposure to climate change and sensitivity to it lead to the identification of a potential impact on the value chain. Such impacts could be:

- Limitations to cultivating coffee, grapes or other fruit in particular locations
- The reduction of land productivity causing yield losses in agriculture and forestry
- Damage to productive infrastructure inflicted by extreme weather events
- Interruption of water and energy supply
- Beach erosion and disappearance of wildlife reducing the attractiveness of tourism destinations

The potential impacts and potential impacts of climate change can be included in the impact matrix presented above, complementing the environmental analysis of the value chain. There are differences to the other environmental impacts in the matrix, however. For one, climate change is an ongoing process that may not yet have materialized. It is the increasing risk that counts. Another difference is the fact that climate change is irreversible. While some of the environmental impacts can be corrected — for example by prohibiting the use of toxic materials or by reducing waste — climate change alters the biophysical conditions under which enterprises operate for good.

This is the reason why climate proofing also considers the adaptive capacity of the value chain. The severity of the impact is also determined by the ability of the value chain operators to respond to the changing conditions by adapting their technical processes and business models. The adaptive capacity shows in the available know-how, technology and financial means, the existence and competence of support service providers and generally in the structure and institutional set-up of the value chain. To the extent that the chain actors have these resources, enterprises can invest into new technology, switch to other markets or compensate temporary losses. The capacity of actors to engage in chain development and implement adaptation

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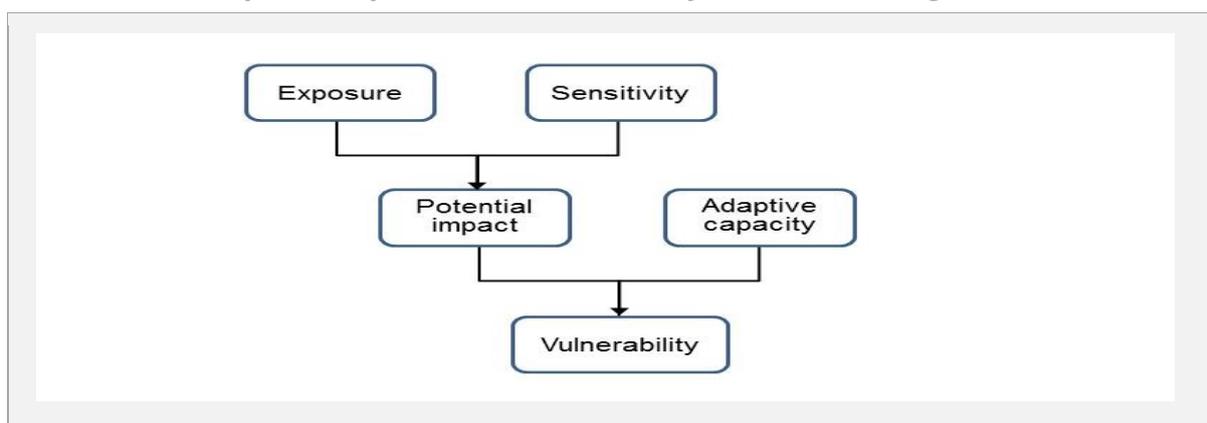
<sup>78</sup> Till Below, 2011; GTZ, 2010; Fritzsche et al., 2014

<sup>79</sup> Fritzsche et al., 2014, p.56

measures contributes to reducing their sensitivity to climate change. Where adaptive capacity is high, the impact of climate change is less threatening.

The impact of climate change thus varies considerably. Not just the climate change as such has to be considered but the vulnerability of the value chain to it. Vulnerability to climate change has been defined by the Intergovernmental Panel on Climate Change (IPCC) as “the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change”<sup>80</sup>. “Vulnerability is a function of climate change to which a system is exposed, its sensitivity, and its adaptive capacity”<sup>81</sup>. The connection of the different elements is shown in the figure of Box 2.4.9 below.

**Box 2.4.9: Concept – Components of vulnerability to climate change**



Source: Fritzsche et al., 2014

Some experts prefer risk to vulnerability as the key concept to study the impacts of climate change. However, the difference in terminology is not relevant in principle. Box 2.4.10 sums up the steps in climate proofing of a value chain.

**Box 2.4.10: Tool – Climate proofing of value chains**

**For every value chain undergoing climate proofing, these are the steps to follow:**

- Identify climate trends and expected climate change
- Determine the exposure of the value chain to climate trends
- Determine the sensitivity of the value chain
- Identify the impacts of climate change on technical processes and value chain operators
- Review the existing adaptive capacity

Source: based on Below, 2011 and Fritzsche et al., 2014

NB: The type of climate proofing suggested here is a qualitative screening exercise that only provides an overview of the issues. More elaborate climate proofing tools deliver quantitative data on the extent of climate impacts. The section on vulnerability assessments of the value chain below provides some hints and references on quantitative indicators.

<sup>80</sup> Intergovernmental Panel on Climate Change (IPCC), 2007, p.6

<sup>81</sup> Intergovernmental Panel on Climate Change (IPCC), 2007, p.21

## 2.4.5. Environmental valuation tools

To assess the environmental impacts with more precision, it is necessary to apply more detailed criteria measuring the costs of natural resource depletion and ecosystem damage. This section presents four sets of tools that help evaluating the environmental problems of the value chain and formulate measurable indicators to guide the search for solutions. They include:

- The Economics of Ecosystems and Biodiversity (TEEB)
- Measures of resource efficiency and ecological footprints
- Sets of environmental and sustainability indicators
- Climate change vulnerability analyses

These are all quantitative tools selected from a wide range of environmental assessment methods. Given the complexity of the issues every method puts the focus on specific aspects. TEEB is an economic approach measuring the monetary value of ecosystems. Ecological footprints are the last two used indicators measuring the severity of environmental impacts against a predefined standard.

The precise valuation of environmental costs is difficult: The choice of methodology to carry out environmental assessment is a decision problem in itself for which no optimal solution exists<sup>82</sup>.

### *The economics of ecosystems and biodiversity*

TEEB is short for The Economics of Ecosystems and Biodiversity. It is a United Nations project and an approach to systematically appraise the economic contribution of biodiversity and ecosystem services to human well-being. TEEB aims to make the economic values of biodiversity and ecosystem services explicit to enable consideration and mainstreaming in development planning and decision making. The methodology is documented extensively on the website<sup>83</sup>.

#### *Subject and methods of valuation*

TEEB measures the impact of economic activities on ecosystems, in our case on the ecosystems where value chain enterprises are located.

This is done by putting economic values on biodiversity and ecosystem services. TEEB classifies these services into four categories:

- Provisioning services, such as food, raw material, fresh water
- Regulating services, such as nutrient recycling, pollination, flood prevention and mitigation of extreme events
- Cultural services, such as recreation, tourism, aesthetic appreciation
- Habitat services for genetic diversity, species

The TEEB approach starts by determining a field of application, especially the different levels of policymaking — from international to the local. Here, the most relevant field of application is the private sector. The TEEB for Business report addresses individual companies in the first place but also talks to entire economic sectors, such as agriculture, fisheries, tourism or manufacturing.

After the unit of analysis has been clarified, TEEB offers a variety of tools to measure the value of the losses or gains of ecosystem services and suggests the most appropriate method to

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<sup>82</sup> Springer-Heinze and Finkel, 2012

<sup>83</sup> TEEB: <http://www.teebweb.org/>

use. The criterion of valuation is monetary wherever possible, complemented by non-monetary criteria. Economically speaking, the idea is to show that the economic value of the value chain 'doesn't tell the truth' as enterprises do not take the value of the natural resources properly into account. The visible economic value generated needs to be corrected by subtracting the value of the mostly invisible ecosystem services lost.

Biodiversity and ecosystem services generate different types of value. One is the *direct* use value of provisioning goods and some of the cultural services that generate value in the form of marketable products and services. The regulating services mainly have an *indirect* use value in the sense that they cannot be sold on markets but help enterprises save money by reducing risk and lowering cost. Finally, there are intangible *non-use* values that people attach to the preservation of an ecosystem for future generations. Detailed descriptions of the valuation tools and techniques are found on the website [teebweb.org](http://teebweb.org).

#### *Use for environmental analyses of value chains*

TEEB is concerned with ecosystems and thus refers to the spatial dimension of value chains. The use of the valuation methods advocated by TEEB presupposes that impacts of the value chain on ecosystems have already been identified qualitatively. The question is to what extent the value chain affects the availability of ecosystem services to the people at the locations where the value chain is present. In principle, valuing ecosystem services along the entire value chain is possible if it is clear which ecosystems are concerned, where they are located, and which of them are the most relevant to the people depending on them.

However, the monetary valuation of ecosystems and ecosystem services is highly demanding. Assessing all ecosystems touched by a value chain would be very costly. Usually, the scope of TEEB studies does not cover entire value chains as defined by ValueLinks. The available studies refer to primary production where the greatest impact is observed<sup>84</sup>. In fact, there are three types of value chain impacts on ecosystems where economic valuation is particularly important:

- Change in land use from natural ecosystems to agriculture, mining or industrial activities, such as conversion of wetlands and deforestation
- Excessive exploitation of ecosystems, such as logging, extraction of species and of materials
- Overuse and pollution of surface and ground water, such as nutrient overloading

For these impacts the economic valuation of the ecosystem services lost or damaged often results in very high figures. It is a striking economic argument if the calculation shows that just five ecosystem services (timber, fuelwood, non-timber forest products, carbon sequestration, and recreational services) from 10 square kilometers of the Western Ghats mountain forests in India are worth over US\$ 387,000<sup>85</sup>.

Analysts can utilize such numbers to inform the environmental analysis of value chains. In fact, many valuation studies on ecosystems and industries provide data to build on. One source of information is the World Wide Fund For Nature (WWF) quoted in Box 2.4.11.

The TEEB studies on the agriculture and food sector provide information on the environmental externalities and dependency on the ecosystem services of the key subsectors rice, livestock,

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<sup>84</sup> TEEB Reports, 2015a and 2015b

<sup>85</sup> Singh, 2015

palm oil, inland fisheries, maize and agro-forestry<sup>86</sup>. Another source is the Integrated Biodiversity Assessment Tool<sup>87</sup>.

Apart from measuring negative impacts on ecosystems, TEEB shows the economic benefits of ecosystem services that have market value. This is particularly important in the case of biodiversity based value chains and biotrade projects. See for example TEEB, 2010, chapter 5.

#### **Box 2.4.11: Case – Commodities which are most damaging for biodiversity**

##### **Results of a study of the World Wide Fund For Nature (WWF) on the most damaging commodities**

WWF selected 35 priority places for biodiversity around the world and analyzed the threats to the biodiversity in those locations. The greatest pressure on those places, by far, was coming from the production of food and fiber. It turned out that 15 globally traded commodities present the most significant threats across the board to the world's most ecologically important places. The 15 commodities included palm oil, cotton, soy, sugarcane, biofuels, beef, dairy, pulp and paper, timber, tuna, white fish, farmed shrimp, farmed salmon, wild-caught shrimp, fishmeal and oil.

*Source: World Wildlife Fund (WWF), 2012, and Jason Clay, 2014* <sup>88</sup>

#### **Measures of resource efficiency and ecological footprints**

A key concept of environmental assessment of value chains is resource efficiency or eco-efficiency. Resource efficiency is the amount of natural resources utilized and consumed per unit of volume or value produced<sup>89</sup>. The volume of waste and emissions discharged per unit is a closely related measure.

##### *Subject of valuation*

The subject of valuation is the natural resource inputs into value chain processes conventionally classified into the main categories materials, energy and water. See the explanation on specifying ecosystems and natural resource categories in section 2.4.3.

These resources are often traded. They have a market price and are therefore part of the internal cost of enterprises. Valuation means measuring the quantity of natural resources consumed by the value chain. Resource efficiency measures can be compared to the amount of natural resources available, and to the absorptive capacity of soils, water and the atmosphere. This allows a judgment on the severity of environmental impacts of a value chain.

##### *Valuation principle and methods*

Resource efficiency is an aggregate eco-efficiency indicator, an input/output ratio that relates a specific natural resource or set of resources to a particular product. The calculation is the quantity of resource input or emissions divided by a standard volume (kg/ton) or single unit of end product. Depending on the resource considered, there are different types. Some are also called the ecological footprint of the product. Important resource efficiency measures or footprints are:

<sup>86</sup> TEEB Reports, 2015a and 2015b

<sup>87</sup> Integrated Biodiversity Assessment Tool: <https://www.ibatforbusiness.org/>

<sup>88</sup> Jason Clay: "What I've learned about food and sustainability, see : <https://www.worldwildlife.org/magazine/issues/fall-2014/articles/what-i-ve-learned-about-food-and-sustainability>

<sup>89</sup> Resource efficiency is understood as resource intensity here

- Material input per unit of service (MIPS), also called material footprint, which is calculated by adding the amounts of different abiotic and biotic materials used per kg or unit of the product
- Water footprint or virtual water, that is fresh water consumed per unit of product
- Energy efficiency: Here, the usual measure is the carbon footprint of the product (greenhouse gases emitted per unit of end product because it is the impact on the climate that counts most. The term energy efficiency is reserved for the energy consumption of machinery and electrical appliances

To calculate a footprint, analysts have to measure the quantities of resource input or the emissions into every technical process along the chain and add them up. The effort depends on number of processes to consider. While some inputs are only used in one stage, carbon emissions emerge at every step from input delivery to final consumption. Resource efficiency ratios enable comparisons between different products and product variants. The more efficient the production, the better.

However, such efficiency measures are still not sufficient to capture the environmental impact. The decisive point is that there are limits to the total amount of resources that can be consumed. Therefore, we also need information on the maximum amount of resources and emissions permitted. This leads to the concept of biocapacity which is the capacity of ecosystems to produce biological materials and to absorb waste<sup>90</sup>. Biocapacity is measured in global hectares which are calculated by multiplying the productive area in a country by its yield and equivalent factors. The different footprints of a value chain can be aggregated into the same scale and also be expressed as the number of global hectares used. The ecological footprint of a product can be put in relation to the number of global hectares allotted to every human being. The idea is that every consumer is theoretically able to assess his or her footprint and take care not to exceed the limits.

#### *Use for environmental analyses of value chains*

Resource efficiency ratios and footprints are of particular interest for environmental analyses because they help detecting critical points along the value chain. To do so, measures of resource efficiency are disaggregated according to the value chain stages. Box 2.4.12 presents examples of indicators of resource efficiency at different stages of a natural resource based value chain.

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<sup>90</sup> Global Footprint Network: <http://www.footprintnetwork.org/en/>

**Box 2.4.12: Tool – Examples of measures of resource efficiency along the value chain**

Primary production	Processing	Trade/distribution	Disposal
<ul style="list-style-type: none"> <li>- Cubic meters of water per ton of raw material produced</li> <li>- Agricultural yield per cubic meter of water or per hectare</li> <li>- Percentage of usable material per ton of biotic material collected from the wild</li> </ul>	<ul style="list-style-type: none"> <li>- Loss rate or transformation rate per ton of raw material processed</li> <li>- Energy (in kW) per ton for each processing operation or per ton of raw materials processed</li> </ul>	<ul style="list-style-type: none"> <li>- Fuel consumption per million Euros of turnover</li> <li>- Volume of packaging material per ton</li> </ul>	<ul style="list-style-type: none"> <li>- Volume of waste per ton/unit of final product</li> </ul>

Source: Based on Springer-Heinze and Finkel, 2012

Another indicator of efficiency is the food miles of a product, which is the number of miles the ingredients of a product and the end product itself have to be transported before the end product reaches the consumer.

Calculating resource efficiency ratios serves several purposes:

- For one, it allows assessing the severity of environmental impacts — by detecting resource inefficiencies along the value chain and by comparing the resource consumption of the different technical processes used with the most efficient available alternative.
- The second point has to do with the fact that markets increasingly require information on the footprint of a product. Sustainability standards include the calculation of footprints as well. See module 9 in volume 2.

Resource efficiency ratios and footprints are aggregate measures. The effort to invest depends on the number of technical processes that have to be included. Constructing a carbon efficiency measures means detecting *all* sources of carbon along the entire value chain. This means specifying the technical processes in detail and calculating the emissions at each point. The procedure is similar for the other measures. Fortunately, analysts can rely on a variety of data sources available on the world-wide web.

The Wuppertal Institute provides a database of the material intensity factors of different commercial products that can be used to construct material inputs per unit of service<sup>91</sup>. Indications on the water footprint of different products can be found on [waterfootprint.org](http://waterfootprint.org)<sup>92</sup>, which has a product gallery providing data on the water footprint of a variety of foods, agricultural commodities and biodiesel. There are also several databases of emission factors, which is the volume of emissions of greenhouse gases per activity, such as transport, cooling or milling of grains. An example is the FAO study on greenhouse gas emissions from the dairy sector<sup>93</sup>.

<sup>91</sup> Wuppertal Institute: <http://wupperinst.org/en/>

<sup>92</sup> Water footprint: <http://waterfootprint.org/>

<sup>93</sup> FAO, 2010

## ***Measurement against environmental sustainability indicator sets***

The most comprehensive approach to assessing the severity of environmental impacts is the measurement of indicators describing the desired state of a sustainable value chain. This is the principle behind a large number of sustainability standards for value chains. Sustainability standards are covered in detail in module 9 of volume 2. Here, the issue is the utilization of standards for environmental valuation.

### *Subject of valuation*

The subject of valuation is the degree to which a value chain fulfills a defined set of criteria for environmental sustainability. The method is qualitative. Criteria differ according to the standard applied<sup>94</sup>.

### *Valuation principle and methods*

Valuation is based on indicator measurement. Analysts assess the individual environmental impacts of a value chain against a series of indicators. Generally, sustainability standards integrate many sustainability issues combining qualitative and quantitative parameters. A normative standard is created by aggregating the different environmental indicators into a common scale. Sustainability indicators are dimensionless meaning that the measurement delivers a value between 100 and 0, or categories, such as good, moderate or weak.

### *Use of indicators for environmental analyses of value chains*

Sustainability indicators sets and standards are versatile assessment tools. As normative standards they allow describing the current state of the chain. At the same time, they provide guidance to value chain development.

Using an indicator set for the valuation of environmental impacts means that the impacts identified in step 2 of the environmental analysis have to be related to the sustainability issues included in the standard. To be useful, a standard has to provide all relevant criteria, so that analysts can find the corresponding indicator for any of the environmental impacts identified earlier easily. In fact, the list of indicators can already be used to inform the environmental screening in which case the correspondence does not pose problems.

As it stands, the majority of product and value chain-specific standards concern natural-resource based value chains. A very comprehensive indicator set of use for food value chains is the SAFA framework (Sustainability Assessment of Food and Agriculture Systems)<sup>95</sup>, which FAO defines as a holistic global reference framework for the assessment of sustainability along agriculture, forestry and fisheries value chains<sup>96</sup>. It presents a total of 118 indicators classified according to the economic, environmental, social, and governance dimensions of sustainability. The environmental dimension is structured into five resource categories (atmosphere, water, land, materials and energy, biodiversity) plus animal welfare, each of which contains between five and 14 separate indicators. The SAFA indicator list gives explanations on units of measurement, specific criteria and sources of information for each indicator facilitating the es-

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<sup>94</sup> Module 9, chapter 9.3 in volume 2 will presents and discusses examples of value chain specific sustainability standards

<sup>95</sup> Sustainability Assessment of Food and Agriculture Systems (SAFA): [www.fao.org/nr/sustainability/sustainability-assessments-safa/en/](http://www.fao.org/nr/sustainability/sustainability-assessments-safa/en/)

<sup>96</sup> FAO, 2014, p.3

timation of a score. Generic sustainability indicator sets, such as SAFA also provide the foundation for developing reference frameworks measuring environmental sustainability in specific value chains.

### *Measuring climate risk and vulnerability*

The impact of climate change on value chains is the subject of the climate risk and vulnerability assessments. Beyond screening the potential climate risks qualitatively, the assessment has to clarify the cause and effect relationships in detail. GIZ's Vulnerability Sourcebook shows a standardized approach to vulnerability assessments covering a broad range of sectors as well as different spatial levels<sup>97</sup>. The formula for vulnerability assessments can be summarized as follows:

$$\text{Vulnerability} = \text{Climate impact (Sensitivity + Exposure)} - \text{Adaptive Capacity}$$

To operationalize the formula, analysts have to complement the variables by indicators and rules with which to collect empirical data. The sourcebook provides tools to quantify the causal connections between biophysical processes and socio-economic conditions.

The quantification of vulnerability is the basis for tracking the impact of climate change over time. This approach can be used for projects as well as for the purpose of national monitoring. If the assessments are repeated on a regular basis using the same methodology, they can serve as a valuable tool for monitoring the effectiveness of adaptation actions.

### **Box 2.4.13: Tool – Operationalizing climate vulnerability assessments**

#### **Contents of modules 2, 3, 4 and 5 within the Vulnerability Sourcebook**

*Developing Impact Chains:* Impact chains are the backbone of vulnerability assessment methodology. They systematize the factors that are assumed to influence the vulnerability of a value chain and visualize the cause and effect relationships between the different vulnerability components, exposure, sensitivity and adaptive capacity. The impact chain helps to recognize the relevant links between the factors involved.

*Selecting Methods to Assess Vulnerability Components:* The vulnerability factors have to be quantified in order to assess the magnitude of vulnerability. The quantification can be based on existing data sets and expert opinions as well as on relevant models, such as a hydrological model. Other factors are covered by proxy indicators.

*Data Management:* The necessary data need to be collected and prepared for the assessment. The process includes data acquisition, data quality checks and data normalization, i.e. the transfer of indicators to a common scale or unit.

*Weighting and Aggregation of Data:* The different vulnerability components in the impact chain have to be weighted according to their influence on the magnitude of vulnerability. To determine the overall magnitude of vulnerability, the indicators have to be aggregated for each vulnerability component.

*Source: Fritzsche et al., 2014; Below, 2011*

Whichever method of valuation is used, it is important to consider the absolute amount of resources consumed by the value chain. The environmental cost per unit of a product is one thing. The total cost depends on the volume of produce. Thus, the size of the value chain counts. A relatively small environmental problem in a large-scale operation may be more important than a resource efficiency problem in a niche market.

<sup>97</sup> Fritzsche et al., 2014

### ***A short cut: Identifying the environmental hot-spots***

The quantitative tools presented in the preceding section require accurate measurement. The valuation of environmental cost is demanding and time intensive. Therefore, the use of these techniques is in itself an economic question. Where budgets are limited, quantitative environmental studies are hard to justify and the purpose of the analysis may also be reached with less effort.

One way out is the qualitative assessment of the list of environmental impacts established in the second step of the environmental analysis. The idea is to identify the most critical environmental problems related to inefficient resource use, pollution and destruction of ecosystems faced by the value chain — that is the hot-spots. Hot-spot identification is a rapid qualitative assessment tool.

The hot-spot analysis was originally introduced by the Wuppertal Institute to identify the points of highest resource intensity in a value chain: “Hot-spot analysis ... intends to be a qualitative assessment instrument that estimates the resource intensity of a product along its value chain... (It is) a qualitative approach based on stakeholder involvement”<sup>98</sup>.

In Germany the method has been adopted, among others, by the retail company REWE. The hot-spot analysis of the Wuppertal Institute uses two criteria to rank the environmental impacts. One is the intensity of resource utilization and the severity of the impact at one stage of the value chain. The second is used to rank the importance of the life cycle stage, i.e. the value chain stage in terms of its part in the overall consumption of resources. The combination of both allows a judgment on the points where the ecological footprint of the value chain is the greatest.

Building on the original hot-spot analysis, different possibilities of hot-spot valuation have been proposed. The following framework is another variant. Users are invited to adjust it to their needs. ValueLinks suggests the following principles for the valuation of environmental hot-spots of value chains:

- Keeping the assessment of the two types of environmental impacts separate
- Referring both to the resource intensity of the value chain and to the ecosystems where operators are located
- Taking into account criteria and insights derived from the different environmental valuation tools

The assessment is qualitative in the sense that it dispenses with an explicit accounting of the amount of resources utilized or the calculation of the monetary value of environmental costs. Instead, it categorizes the environmental impacts into degrees of severity using a scale of (1) to (3), with each degree corresponding to a qualitative description.

The identification of hot-spots has three steps. In the case of the type 1 environmental impacts, the first step classifies an environmental impact in terms of its consequences for the environment. One criterion is the level of resource consumption, the resource intensity, compared to technical alternatives and to other value chains. Another criterion is the damage done or the potential damage to local ecosystems. The second step estimates the significance of the impact for the environment: The significance is greater, the higher the share of the resource consumption is in relation to the stock of the resource available at local, national and global levels. Analysts also determine whether the damage to ecosystems is acceptable given the ecological limits. The criteria are summarized in Box 2.4.14 below.

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<sup>98</sup> Bienge et al., 2010, p.1-3

In the third step the results of the preceding steps are combined. To determine a hot-spot, analysts multiply the numbers of both rankings — the points assigned to resource consumption and the points assigned to the ecological capacity. The result is a number between 1 and 4, 6, or 9. Conventionally, results of 6 or 9 are considered to be ‘hot-spots’.

For example, the primary production of milk in the dairy value chain has the highest water consumption per kg of product compared to any other food product. The water intensity therefore is very high, and the classification is 3. This is the first step. The second step looks at resource availability. Water access is not much of a problem in Germany, where most milk producing regions have ample access to fresh water (degree 1), but it is a severe issue in semi-arid regions where fresh water resources are already overused (degree 3). The final assessment is reached in step 3: The higher of the two numbers assigned in the first two steps are multiplied, which gives a final classification of 3 for milk production in Germany and a 9 for the semi-arid location.

An example for an environmental impact affecting ecosystems is the conversion of a wetland area. If an ecologically valuable wetland is converted to make space for commercial development, this classifies as a complete loss (degree 3). By itself, this is not yet a hot-spot. It depends on the importance of the ecosystem services provided by the wetland area. If water supply is only marginally affected and the species can also be found elsewhere, this would mean a degree of 1 or 2. However, if this area has crucial importance for the quality of fresh water supply in a nearby city, the classification has to be a 3. Accordingly, the environmental impact would be classified anywhere between 3, 6 or 9 depending on how analysts rate the value of the wetland.

An interesting point concerns environmental impacts affecting global resources, in particular fossil fuels and the earth’s atmosphere. The United Nations Climate Change Conference held in Paris in December 2015 reached an agreement that requires *all* nations to limit their greenhouse gas (GHG) emissions so that global temperature will not rise more than 2 degree Celsius above the long-term average. This goal corresponds to a target concentration of 415 ppm of carbon in the atmosphere which translates into a global emission budget for carbon and other GHG — the amount of carbon that can still be released into the atmosphere<sup>99</sup>. The ecological capacity for absorbing emissions from burning fossil fuels has thus been clearly defined.

The question is how the remaining “emission budget” shall be distributed between countries. At this point arguments of social and economic fairness apply: In the past, most emissions originated from industrialized, wealthy countries. It is these countries that should reduce their consumption of fossil fuels and emissions, so that the remaining ecological capacity can be utilized by poor countries that still need to expand their productive capacity to satisfy their basic needs<sup>100</sup>.

As a consequence, the table in Box 2.4.14 contains the possibility of correcting the assessment of the resource availability for the value chain. The number assigned to the resource availability in the upper right cell can be modified by making a social judgment: If the resource consumption taps into a limited *global* budget as in the case of burning fossil fuels, maintaining the local consumption level may still be justified if it serves poor people and basic needs. This can be expressed by simply multiplying the value with 0. An example is methane emissions from lowland and irrigated rice production. While it is true that irrigated rice produces significant amounts of methane which is a very potent greenhouse gas, for which it should get a 3, the

<sup>99</sup> See <http://newsroom.unfccc.int/paris-agreement/>

<sup>100</sup> Similar considerations apply to abiotic materials of which a limited volume remains, such as phosphate.

narrow limitations of methane emissions should not apply to poor rice farmers in Africa and thus get a 0. Methane emissions from African rice fields would therefore not be considered as a hot-spot. The social aspect does not apply when the local or regional resource capacity is concerned which may be shared by other poor people. The following table presents the generic arguments for the classification of the environmental impacts.

**Box 2.4.14 Tool – Determining type 1 environmental hot-spots**

Step 1 - Assessing the level of resource utilization (demand on resources)	Step 2 - Assessing the significance for the environment (ecological capacity)	Step 3 - Identification as “hot spot”
Criterion 1: Resource intensity (water, energy/carbon emissions, materials ) used per unit of product , in comparison with other VCs and technical alternatives:  - High resource intensity (3) - Medium resource intensity (2) - Low resource intensity (1)	Resource consumption in relation to the stock of resources available at local, national, or global level  - Resources used (almost) completely (3) - Competition for resources (2) - Reserves still available (1)  modified by social considerations - Competition with other local needs (1) - Priority of local needs over global goals (0)	
Criterion 2: Potential damage to local ecosystems (deforestation, pollution, loss of biodiversity/ ecosystem services)  - Complete loss of ecosystem service (3) - Significant damage (2) - Interference with ecosystem (1)	Potential damage in relation to the local limits of ecosystem use  - Damage unacceptable (3) - Damage can be compensated (2) - Damage within limits, fully reversible (1)	
<b>The higher number of both criteria (between 1 and 3)</b>	<b>The higher number of both criteria (between 1 and 3)</b>	<b>Product of numbers in steps 1 and 2</b>

*Source: Own concept using the hot-spot analysis of the Wuppertal Institute*

Conventional hot-spot analysis focuses on type 1 impacts of the value chain. The type 2 environmental impacts on the value chain should also be ranked according to their severity. In fact, increasing resource scarcity becomes a hot-spot precisely because of its direct impact on business activities. The problem may be due to climate change or to the damage caused by others. But it may also originate in the chain itself. Often, operators in a value chain overuse a resource that they themselves need to continue producing. In such cases, type 1 and type 2 environmental impacts are closely related. A case in point is the collection of wild herbs or other biological material: Excessive exploitation not only damages the ecosystem, it also falls back on the collectors whose productivity goes down as a consequence.

Whatever the reason for an environmental problem, the first step again is the assessment of its severity, the impact on the technical processes concerned, such as shortages in the supply of the resource and rising production costs or risks. Again, the range of degrees is between 1 and 3.

A falling groundwater level not only drives up irrigation cost, it may mean that pumping stations fall temporarily dry. If vegetable production can become unprofitable as a consequence, this would be rated as a 3. Similarly, beach erosion due to rising sea levels would also be a 3 if it

renders services for beach tourism impossible in the medium term. The severity of an increasing scarcity of firewood or charcoal can be assessed with a 1, 2 or 3 depending on the price level that makes drying or processing operations uneconomical. In all these cases, the question is how vulnerable the technical process is.

As for the type 1 environmental impacts, the first step is not enough to determine the existence of a true hot-spot because the value chain may in fact be able to react and adapt. The line of reasoning follows the principles of assessing climate change. See Box 2.4.13.

If operators are able to save the resource, switch to a different source or replace it altogether, the scarcity problem can be solved. Therefore, the assessment applies a second criterion that rates the adaptive capacity of the value chain and of its business models. If the resource is indispensable so that operations cannot continue without it, the adaptability criterion is rated 3 and urgent action would be needed. Otherwise it is a matter of availability and price. If firewood prices go up gradually operators have time to think about using a different technology and source of energy.

Again, the two steps of valuation are combined in a third step. The higher of the two numbers is multiplied to deliver the final result. For example, the diminishing regrowth of biological material collected in the wild with severity level 3 clearly is a hot-spot. It is rated as 9 if a biotrade value chain depends on it and cannot adapt, so that the low adaptive capacity is rated 3. On the other hand, many severe water and energy problems may turn out to be solvable with better technology and because of the ability to adapt. The following box summarizes the criteria and procedure to follow.

**Box 2.4.15 Tool – Determining type 2 environmental hot-spots**

Step 1 - Assessing the impact on VC operations	Step 2 - Assessing the adaptive capacity	Step 3 - Identification as "hot spot"
Criterion: Exposure and sensitivity of VC operations to the environmental impact: <ul style="list-style-type: none"> <li>- Severe shortages / high cost / high risk of production losses (3)</li> <li>- Significant shortages, cost and risks (2)</li> <li>- Minor impact, medium to long term (1)</li> </ul>	Possibility of adapting to resource scarcity: <ul style="list-style-type: none"> <li>- Low adaptability – resource or ecosystem service is indispensable and the value chain cannot compensate shortages (3)</li> <li>- Medium adaptability – adaptation is possible at high cost (2)</li> <li>- High adaptability – the resource or ecosystem service can be easily replaced; adaptation possible at acceptable cost (1)</li> </ul>	
Number between 1 and 3	Number between 1 and 3	Product of numbers in column 1 and 2

*Source: Own concept using the hot-spot analysis of the Wuppertal Institute*

It is clear that the assessment of hot-spots is qualitative and subjective. Nevertheless, the judgment can and should benefit from existing numbers and studies. The more information becomes available, the better it will get. The assessment thus has to build on studies and scientific literature, and on the knowledge of experts and the value chain actors themselves.

Box 2.4.16 below presents the assessment of the hot-spots in the rice value chain in Benin. It was completed within one week. The same case has been used earlier in this chapter. Box

2.4.4 on page 110 shows the technical process steps of the rice value chain and Box 2.4.5 presents the natural resource categories.

The table below contains the complete list of environmental impacts identified during the study, of which 11 are type 1 impacts of the rice value chain, and 12 are type 2 impacts on the rice value chain.

**Box 2.4.15: Case – Results of the hot-spot assessment, rice value chain, Benin**

Value chain stage	Technical processes	Type 1 environmental impacts <u>of</u> the value chain	Type 2 environmental impacts <u>on</u> the value chain
<b>Primary production</b>	Upland, rainfed rice production	- <i>Water pollution</i> - <i>Downstream silting</i>	- <i><u>*Increasingly unreliable rainfall</u></i> - <i>Erosion, loss of soil fertility</i>
	Lowland/swamp production	- <i>Lowering of water tables</i> - <i>Loss of biodiversity and ecosystem services of swamps</i>	- <i><u>*Temporary flooding</u></i> - <i>Iron toxicity</i> - <i>Loss of soil fertility</i>
	Irrigated rice	- <i>Water scarcity aggravated</i> - <i>Methane emissions</i> - <i>Plastic waste</i>	- <i>Inefficient irrigation, variable water supply</i> - <i>Plastic waste in fields</i>
<b>Intermediate trade</b>	Bulking / storage	<i>./.</i>	- <i>Increased variability of climate conditions</i>
<b>Processing</b>	Parboiling	- <i><u>*Overexploitation of wood</u></i> - <i>Air pollution</i>	- <i>Rising fuel wood prices</i> - <i>decreasing water availability</i>
	Milling	- <i>High carbon emissions</i>	- <i>Inefficient use or high energy cost (operating below capacity)</i>
<b>Trade</b>	Transport	- <i>High carbon emissions</i>	<i>./.</i>
	Storage/ packaging	<i>./.</i>	- <i>Losses due to inefficient storage</i>
<b>Consumption</b>	Cooking	<i>./.</i>	<i>./.</i>

*Note: Asterisks and underlined – identified hot-spots, Source: Own concept*

The hot-spot prioritization delivered three urgent issues to consider, underlined and marked with an asterisk in the table above:

- Increasingly unreliable rainfall threatening upland rice systems that depend on them
- Temporary flooding of lowland systems that can destroy crops
- Overexploitation of wood around parboiling stations operating on charcoal

The third problem may not actually be a hot-spot because fuel wood can be easily replaced by other sources of energy. Another problem is the low energy efficiency of milling operations.

This does not constitute an environmental hot-spot per se but an important field of improvements benefitting the milling operators and the environment.

Involving value chain actors in hot-spot valuation helps creating awareness and a common understanding of the issues. The resulting list of environmental impacts and of hot-spots can be used to prioritize upgrading solutions. Companies and value chain supporters can thus act quickly even if detailed environmental valuation studies and ecological footprint measures are not available. At the same time, a quick analysis can be a first step towards a more detailed environmental analysis of the value chain later on.

## 2.5. Social analysis of value chains

The public promotion of the private sector is only justified if it generates social benefits and contributes to reducing poverty. Value chain development seeks to support market-driven economic development that is inclusive of the poor and other vulnerable social groups and provides them with better income opportunities.

The social analysis of a value chain starts with getting to know the vulnerable groups in and around the value chain — the people below the poverty line, women and the young. Each of these groups has different disadvantages in economic life and faces discrimination for different reasons. This section provides tools to detect and describe the main groups affected by social exclusion and discrimination in value chains. The first part covers poverty groups in general, the second looks at the gender dimension and poor women in particular. A chain-wide social assessment shows that conditions and patterns of economic exclusion often coincide.

### 2.5.1. Poverty analysis

This chapter is a guideline to identify poverty groups and poverty problems regarding a specific value chain. The task is to analyze and describe value chains from a social perspective assessing the incidence of poverty in a value chain as well as around it, i.e. poor people not actively participating in the value chain activities but living in regions where the chain operators are located. This analysis is descriptive. The strategic options to address poverty in value chains are a subject of module 3 which discusses and anticipates poverty reduction effects of value chain development.

#### *Poverty mapping – Locating poverty groups in and around the value chain*

##### *Who classifies as poor?*

The obvious first question in any analysis of poverty in value chains is to define the poverty line below which people shall be regarded as poor. The most widely used international standard is the poverty lines defined by the World Bank, standing at US\$1.25 per day for extreme poverty and US\$2.00 per day for moderate poverty, based on 2005 prices<sup>101</sup>. The monetary criterion should be an income below the defined *national* poverty line which may differ from the international standard. Other poverty measures are the 'living income' which is the cost of a minimum set of goods needed for a decent life and the food poverty line which is the cost of a basket of products to satisfy minimum calorie intake and other basic needs.

However, these monetary terms are difficult to measure. The poor are often more easily recognized by observable indicators concerning their level of education, health status, housing, ownership of consumer durables and assets, such as land or livestock. The respective indicators vary from one country to another. They also vary between rural and urban areas. Hence, the definition of poor is dependent on the context and the value chain at hand. USAID has developed a poverty assessment tool that contains key indicators to look for. This is a generally applicable tool described in a manual<sup>102</sup>.

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<sup>101</sup> See also [www.un.org/millenniumgoals/poverty.shtml](http://www.un.org/millenniumgoals/poverty.shtml)

<sup>102</sup> Poverty assessment tool: <http://www.povertytools.org/tools.html> and [www.povertytools.org/implementation.html](http://www.povertytools.org/implementation.html)

To distinguish the poor from the non-poor in a particular country, analysts should also utilize other poverty criteria and indicators as employed in conventional poverty studies in the country and region of the study.

Conducting detailed poverty studies is costly. Before getting engaged in any poverty surveys, it is advisable to first draw a poverty-oriented value chain map to identify those groups of value chain actors that are most likely to belong to poverty groups. This allows stratifying the samples and focusing on particular groups in further studies.

#### *Incidence of poverty in the value chain*

In contrast to poverty studies on the population as a whole, the poverty analysis of a value chain is done for particular groups of chain actors separately. Within a value chain, poverty groups may be found in three broad categories of actors, all characterized by low incomes generated with their activities in the specific value chain:

- Poor small-scale and self-employed operators supplying the markets including primary producers, processors, collectors and traders
- Poor wage workers in agriculture, agroindustry and business, that is the 'working poor'
- Poor consumers of cheap staple food and basic goods in the markets served by the value chain

All three groups can be mapped showing their place in the value chain. Poverty mapping of the value chain complements conventional chain mapping highlighting those operators in the value chain which are poor themselves or which employ poor workers. Poverty mapping also identifies the market segments relevant to poor consumers. It is a qualitative method.

The first step is to locate poverty groups within the value chain, starting with the poor operators, i.e. groups of small farmers, informal service providers and microenterprises who receive only very low incomes from their business activity within the specific value chain.

Next, the analysis identifies types of enterprises and business models who currently employ low-wage workers. The analysis has to make sure to include temporary, migrant and part-time workers who are particularly prone to poverty. Poverty mapping should not exclude operators and workers *above* the poverty line of extreme and moderate poverty as indicated by the World Bank poverty lines.

Box 2.5.1 presents a simple way of indicating the position of poverty groups in a value chain map. It is based on qualitative information providing a general overview. The red shapes indicate poverty groups. They include poor operators indicated by rectangular margins in red color as well as poor wage workers employed by enterprises shown as red circles placed into the symbol of operators.

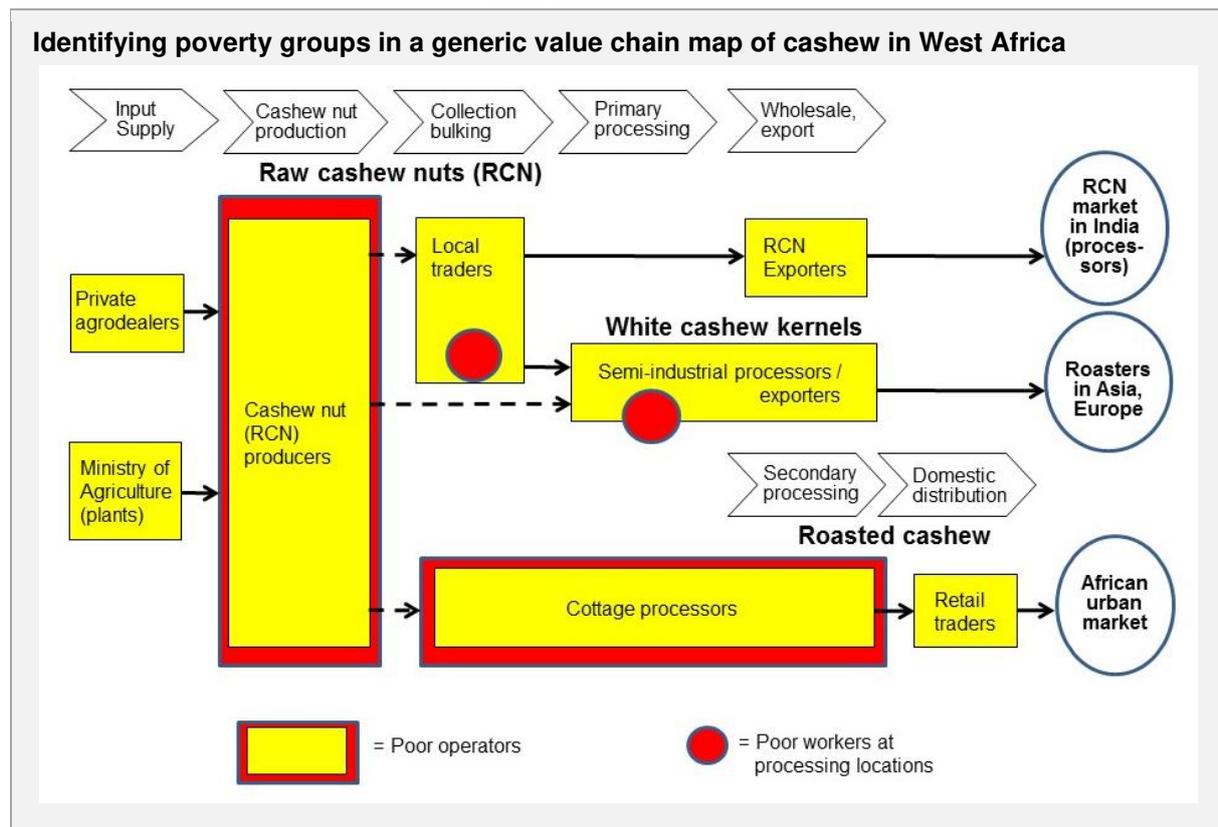
The simplified cashew value chain map identifies the cashew nut farmers and cottage processors as the two major groups of poor micro entrepreneurs along with two groups of low-paid wage workers in processing firms and trade houses. Other examples of poverty maps are shown further below.

Each category of operators that has been singled out as a poverty hot spot should be further differentiated. The scale of an overview value chain map is still too large and the resulting analysis not detailed enough to identify and target specific poverty groups.

Thus, the general poverty mapping of the value chain moves on to identifying particular critical groups of poor people asking questions, such as:

- Can the poor operators be further classified according to their size, production techniques, assets, their degree of social organization (e.g. village groups versus individuals), volume of produce and contractual relations to buyers?
- Do the poor operators have other sources of income and which ones?
- Are there differences between members of the workforce, such as between permanent and temporary workers and do wage workers have other sources of income, and which ones?

### Box 2.5.1: Case/Concept – Poverty mapping



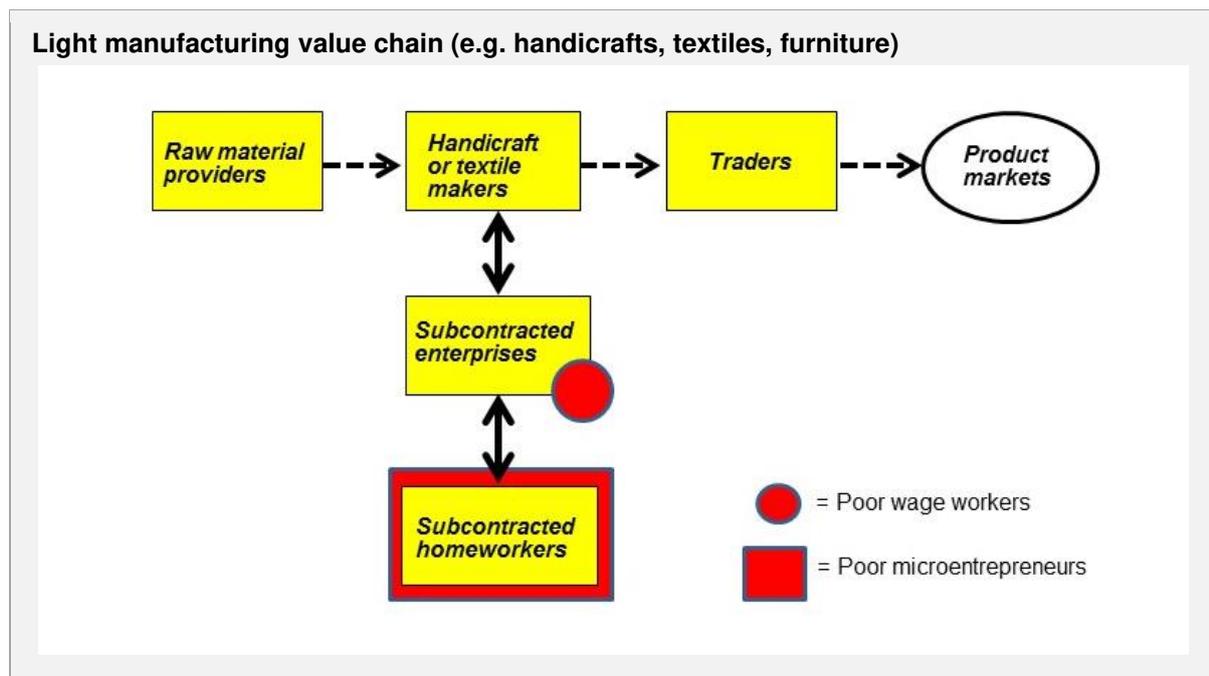
Source: Own concept

Following the result of this qualitative analysis, the broad categories of actors can be broken down into smaller groups. Value chain mapping goes on to zoom in. For example by differentiating small-scale cashew farmers into separate smaller poverty groups. This process is similar to differentiating the value chain map into channels representing different business models. See the generic methods of value chain mapping in chapter 2.2.

Besides economic considerations, a poverty mapping exercise should use social criteria to differentiate the value chain map drawing the attention to particular groups.

Tracing particular poverty groups has to focus on particular channels, business models and markets. The following graphic shows how poverty groups in a manufacturing value chain may be hidden in supplier arrangements. While the main channel has no poverty problem, homeworkers have to live with insecure employment conditions and low incomes.

### Box 2.5.2: Tool/Concept — Poverty groups in subcontracting arrangements



Source: Own concept

#### *Spatial incidence of poverty around the value chain*

By definition, the poverty mapping visualizes groups of people who are included in the value chain and take part in the business, albeit at unfavorable conditions. It does not show the unemployed *outside* the chain. The poor unemployed and many migrant temporary workers remain 'invisible' as a consequence. The ambition to make value chain development more inclusive calls for identifying poverty groups around the value chain as well. They do not appear in the value chain map but might benefit from its development later.

Extending poverty mapping to include these groups involves two steps:

- Identifying operators that offer employment for poor people
- identifying the regions with high poverty incidence where such operators are located

The first step is to look for those enterprises which might provide additional employment opportunities with low entry barriers accessible to the poor. Methodologically, this is achieved by marking the potential target positions of the poor in the value chain map. An indication is the businesses in the value chain already employing poor wage workers. The previous identification of poor wage workers (indicated with red circles in the graphic above) indicates where job opportunities with low entry barriers exist already. Additionally, value chain mapping can identify enterprises who do not harbor poverty groups at the present stage but who may hire poor people if their business grows.

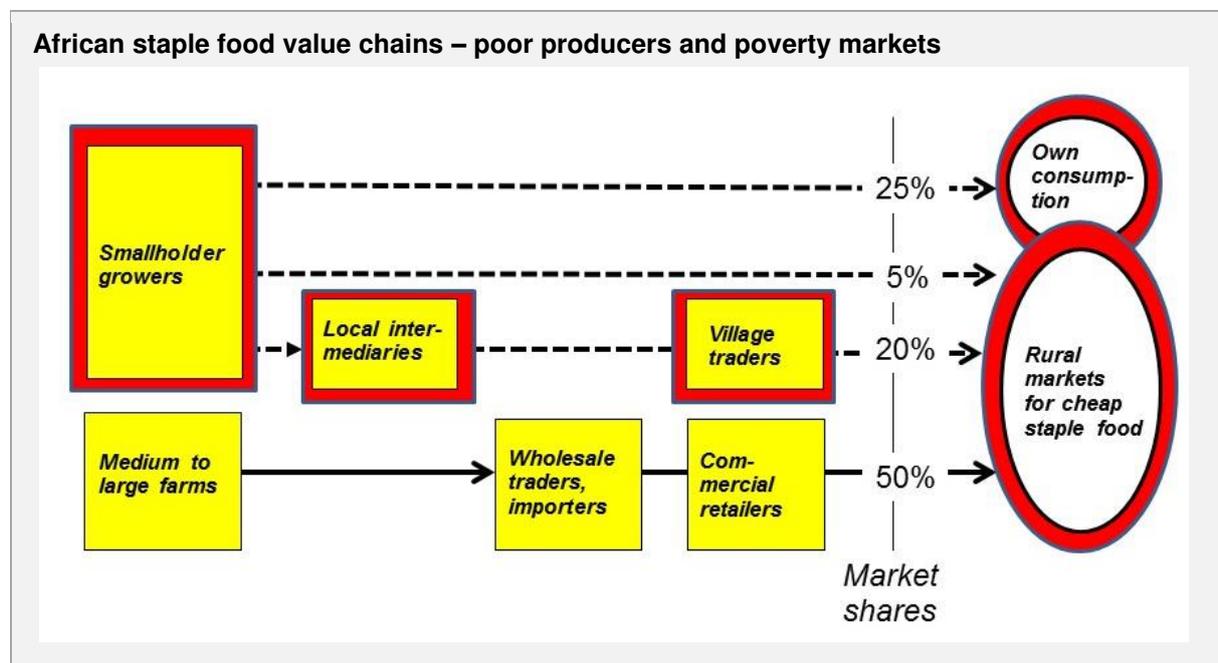
The second step introduces the spatial dimension. Poverty mapping has to extend to the regions where the value chain operators are located that have the potential to create jobs and where the poverty incidence is high at the same time. The value chain map is complemented by geographical indications locating the operators in particular regions. Building on this information, analysts can look for groups of poor unemployed or underemployed people living close to important market places and processing centers. The idea is to identify particular poverty groups whose profile might match the potential labor demand of enterprises in the chain. The analysis can rely on spatially organized poverty data which can be found more easily than sector-specific data.

Essentially, this is a form of local labor market analysis. It also serves the growth and efficiency objectives. It may turn out that agricultural processing plants could create jobs accessible to the poor but at locations that are far away from the places where people need those jobs most.

### *Mapping poor consumers*

Besides workers and poor value chain operators, such as smallholders, microenterprises, another category of poor in value chains are the consumers of end products. Poor consumers are affected by the functioning or failure of the product markets providing for their basic needs. To the extent that these markets deliver the products inefficiently or fail to serve clients with a very limited budget, they cause a poverty penalty for consumers: Poor consumers are likely to pay higher unit prices for products and services when they only demand small quantities or if low-cost products are simply not on offer. Poor consumers are also severely affected by price volatility.

### **Box 2.5.3: Tool/Concept – Mapping rural poverty markets**



*Source: Own concept*

The first approach to analyzing the position of poor consumers is the identification of ‘poverty markets’ which means consumers that depend on low-priced products to satisfy basic human needs. The concept of the ‘poverty market’ relates the value chain map to poor consumers. In view of the value chain at stake, the question is: What kind of products or product variants do poor people buy, and where? The definition of a poverty market simply states that it supplies poor consumers with products they can afford. This can be derived by looking at the income of consumers or the types of products they buy. In most cases, the type of product counts. In that sense, a poverty market can also be attractive to the non-poor as staple food markets are essential for everyone.

Poverty markets are indicated by a red margin around the oval market symbol. The following value chain map shows a staple food value chain typical for some regions of Africa. The value chain serves poor consumers in the first place. Two observations can be made:

One is that smallholder growers often are not able to produce a sufficiently large and steady surplus of affordable food to poor consumers. In part, this is due to the fact that a substantial

part of the produce is consumed by farmers themselves. The own consumption is indicated by the circular symbol on top, which does not stand for a market transaction but has been placed here in order to integrate figures on how the market is supplied.

Secondly, the fictitious percentages given in the box illustrate the fact that it often is *non*-poor producers and traders who supply substantial volumes of low-priced staple food.

Thus, the map also shows that the rural poor are not a homogenous group: Poor producers and poor consumers have a number of opposing interests.

A second method to mapping poor consumers takes the poverty groups in society as a starting point. The idea is to determine the consumption patterns of different poverty groups in a region: The analysis is based on a survey that specifies a category of goods or services and determines to what extent poor consumers have access to it. For example, a study focusing on healthy food, such as fruit and vegetables would classify poor consumers according to whether they:

- Have year-round access to a range of affordable fruit and vegetables
- Temporary access during a particular season
- No access at all

The distribution of percentages shows the supply situation for each group included in the survey. For each category, the products and consumption levels have to be specified. Here a few examples of categories:

- Clothing: new clothes from tailors or shops, used clothes of relatives, or no access at all
- Rice: clean or packaged, loose, loose broken rice or no access
- Drinking water: piped, trucked, local wells or surface water

If the data contain geographical references, the spatial distribution of access to products can be mapped as well. This concept has become known as the market heat map of access to different kinds of products and services<sup>103</sup>. The term 'heat' refers to the possibility to present the consumption figures in bar graphs or geographic maps using different colors. This allows visualizing consumption patterns very clearly. The method has been introduced by UNDP<sup>104</sup>.

Market heat maps provide data that can be related to the value chains concerned. This does not only help to identify groups of poor consumers but also adds valuable market information for producers and suppliers.

### ***Criteria to characterize poverty groups***

After the different poverty groups have been identified in the value chain map, the subsequent task is to verify whether and how these groups can be classified as poor.

Measuring income levels alone is not sufficient to understand poverty. Whether and how poor people can benefit from value chain development depends on location, ownership of assets, education, social relations and access to networks, health status, age, gender and other attributes that determine the ability to participate in economic life. Apart from the widely used

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<sup>103</sup> For heat maps see also: <http://www.growinginclusivemarkets.org/publications/global/heat-maps/>

<sup>104</sup> UNDP, 2008a, 2008b

monetary measures of poverty, there are many other poverty conditions that need to be considered. Poverty is about more than just low incomes. Analysts agree that poverty is multidimensional. Deprivations exist in multiple domains and are often correlated<sup>105</sup>.

The poverty analysis of value chains therefore has to recognize the multidimensional nature of poverty and characterize the profiles of the different poverty groups in and around the value chain with different sets of criteria. The assessment of poverty groups includes their living conditions in a broad sense and has to cover different dimensions of poverty, wealth criteria as well as the non-monetary, social criteria.

For poor people it is more important than for others to relate to different markets and value chains. Therefore the poverty analysis has to extend beyond the specific value chain under study. Of particular importance is the livelihood analysis. The social analysis thus takes a horizontal, multi-chain perspective that aims at understanding poverty problems in the local context going beyond the specific value chain.

#### **Box 2.5.4: Tool – Overview of criteria to identify and characterize poverty groups**

##### **a) Identifying poor value chain actors**

###### *Poor operators / micro-entrepreneurs*

Negative criterion: Operators are not poor if they receive an income above the poverty line from their participation in the chain. Poor operators are positively recognized by an income below the poverty line (where possible) or by welfare and social indicators.

###### *Working poor*

They should first be categorized according to their employment status (= unemployed / agricultural and non-agricultural daily wage worker / salaried employee). The criteria to identify poor workers include a wage level below the poverty line, a low level of required skills, and irregular (e.g. seasonal) employment (low-skilled, low wage jobs)

###### *Poor consumers*

Poor consumers are not defined by their incomes but by products and consumption habits. "Poverty markets" can be defined by low quality, low-price market offers

##### **b) Characterizing poor value chain actors**

###### *Welfare indicators describing economic status*

- Income (hard to determine)
- Ownership of productive assets and property rights

###### *Social indicators*

- Consumption and living conditions
- Education and health status
- Social relations

###### *Livelihoods*

- Livelihood strategies, livelihood stability

*Source: Own concept*

Characterizing poverty conditions is a complex and demanding task. In principle, a separate survey has to be done for every poverty group identified in the value chain map. Drawing sam-

<sup>105</sup> Ferreira and Lugo, 2012, pp.2-3

ples from large numbers of households and conducting interviews with all kinds of entrepreneurs and workers is costly. The appropriate amount of effort to be invested into data collection and analysis depends on the specific purpose. Initially, a broad classification of farmers and workers as proposed in the section on the main poverty groups in value chains as above will suffice to create an overview and inform the general direction of the value chain development strategy.

The design of a value chain project and of the particular solutions for value chain change requires more detailed analyses. The question whether or not a particular business model is in fact pro-poor can only be answered if the living conditions of the poverty groups concerned are known well enough. The methodology depends on the scale of a program: A local value chain project covering a few villages can conduct intensive participatory assessments, national programs require social surveys. Module 4 chapter 4.2 has some recommendations on how to shape the respective planning processes.

Social assessment of value chains and value chain development is an iterative process. Decision-makers have to come back to the issue during the entire process of implementing a chain project. More tools and considerations can be found in module 3, chapter 3.4 and in module 5, chapter 5.2 and 5.4 in volume 2. A generic set of criteria to assess the livelihood conditions of the poor in value chains is presented in Box 2.5.4 above, after summarizing the identification criteria of poor value chain actors. The following sections provide the basic criteria to conduct poverty assessments and characterize poverty groups.

#### *Poverty measures related to welfare — income and assets*

The first set of criteria to describe the poverty groups identified in the mapping exercise is monetary. The main welfare criterion is personal income. It defines the poverty line — that is the income needed to cover basic needs. This measure is somewhat arbitrary. Besides the internationally agreed poverty lines, further levels can be distinguished<sup>106</sup>, such as:

- Moderate poor – below 2.00 US\$/day
- Extreme poor – below 1.25 US\$/day, i.e. the international poverty line
- Subjacent poor – below 1.00 US\$/day
- Ultra poor – below \$0.50 US\$/day

The obvious and decisive question is how value chain analysts can actually measure the income level of a particular group. Household income surveys exist in many countries but these data refer to the national and subnational levels and cannot easily be disaggregated to poverty groups in particular value chains. USAID provides methodological hints on using the poverty lines as criteria to assess poverty<sup>107</sup>.

Instead of attempting to measure income directly, analysts can take the business models in the value chain as a reference: The analysis of the typical current business models of micro-enterprises and farms can provide a proxy for the average annual income earned – derived from the volume of products sold and the sales prices received. Module 5, chapter 5.3 provides an overview on cost calculation and some financial measures. The own consumption of food products is subsequently added. Income estimations of derived from business models and wage levels are faced with the difficulty that poor people often receive income from sources in

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<sup>106</sup> Ahmed et al., 2007

<sup>107</sup> USAID, 2008 and other documents on the Poverty Assessment Tools website [www.poverty-tools.org](http://www.poverty-tools.org)

different value chains plus pensions or foreign remittances. Analysis also has to take into account that household income from sales and wages is likely to vary from year to year.

A more stable criterion measuring welfare is the ownership of productive assets: “Wealth holdings are central to the measurement of vulnerability of households in times of economic crisis as they will determine the extent to which families can smooth consumption in periods of low income”<sup>108</sup>. Ownership of house, land, livestock, equipment and other physical assets are indicators of welfare that are easier to observe than the monetary income. Similar indicators are property rights providing people access to water, wood and other natural resources.

Yet, the observation of assets and property rights will still not allow ascertaining the poverty status precisely. What it can do, though, is to identify poverty groups indirectly by determining who can definitely be regarded as *non-poor*. This leaves the remaining groups as candidates for a more detailed analysis that looks at social indicators and consumption patterns.

### *Characterizing poor wage workers*

In the case of wage workers, the level of daily wages paid by the farms and companies in the value chain may be a more straightforward measure of poverty. Apart from wages, workers can be characterized according to the characteristics of their jobs. Here are a few criteria<sup>109</sup>:

- *Location*: Stationary or migrant labor
- *Skills requirements*: Unskilled or low-skilled
- *Period*: Day labor, temporary labor, permanent employment
- *Status*: Family or hired labor

However, it is important to note that wage employment often is a temporary or partial occupation only. In fact, wage workers may pursue entrepreneurial activities at the same time, such as petty trade or services. Hence, the quick classification of a poverty group as poor wage workers may be misleading. It has to be verified by looking at the livelihood context.

### *Social criteria indicating poverty*

To establish a complete profile of poverty groups, poverty assessment has to recur to social criteria pointing to the non-monetary aspects of poverty. There is a large number of poverty indicators that can be utilized for that purpose. A broad classification of criteria describing the poverty status is given below. Each criterion has a range from low or problematic to adequate. The data can be generated via direct observation or through interviews with representatives of the poverty group in question:

- Consumption level (number of meals per day, clothing)
- Educational status (years of schooling, training, literacy, skills)
- Health and nutrition status (height or weight for age of children, teeth, chronic illness, psychological factors, such as confidence and trust)
- Housing conditions, sanitation and utilities (domestic water supply, electricity)
- Household size and dependency ratio (economically active/non-active members)
- Stability of social relations (membership in self-help, family and neighborhood networks, participation in political decisions at local level, ownership of mobile phone)
- Location of the household (remoteness, access to roads and infrastructure)
- Access to social services (health care, child care, community services)

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<sup>108</sup> Azpitarte, 2010, p.2

<sup>109</sup> Compare Making Markets Work for the Poor and ADB, 2008, p.61

A combination of low scores on several of these criteria reliably indicates poverty and helps to ascertain the status of poverty groups identified in the value chain map. The generic criteria can be complemented by specific criteria for poor farmers or micro-entrepreneurs, poor workers and other poverty groups as well as the unemployed. The profile is complemented with information on the average age, gender and ethnic origin, which is criteria that do not indicate poverty as such but provide important additional information.

### *Risk and vulnerability of poverty groups*

Another set of criteria related to poverty is related to vulnerability and risk, i.e. the exposure to natural hazards and climate change, to economic shocks and personal risks. Vulnerability and exposure to risk are important aspects of poverty and are directly related to the potential for economic development<sup>110</sup>.

One set of factors explaining vulnerability refers to the poverty conditions of the household. Many of the poverty characteristics listed above also determine the vulnerability or resilience of poor households to external shocks, such as the ownership of assets or the stability of business models. The analysis has to look for the specific risks a poverty group faces: How variable and insecure is the income and employment situation? Can assets, such as housing, water supply, access roads, resist natural calamities? Vulnerability and resilience also reside in properties of the entire value chain, such as the competitiveness of the end product, price volatility, and the quality of infrastructure and services.

In response to the problems of vulnerability and risk, value chain development would not just look for strategies to alleviate poverty but also include possibilities enhancing the resilience of poverty groups against environmental risks and economic shocks. We deal with these questions again in module 3, chapter 3.4.

### *Establishing a multi-dimensional view on poverty*

The point in poverty assessments, and not only in social value chain analyses, is to find characteristic combinations of welfare attributes, social attributes, vulnerability, and other features of poverty groups, such as their age, gender, geographical location and ethnic origin. Often, the welfare, social and psychological criteria coincide providing insight into the complex nature of poverty problems in and around the value chain. Poverty often constitutes a syndrome in which the different aspects become manifest simultaneously.

Rather than focusing on income, value chain analyses should describe the poverty conditions determining the capability of performing economic tasks. Illiteracy, bad health conditions, lack of productive assets or any other of the poverty criteria listed above limit the ability of poor households to take business risk. Therefore, value chain development has to build on a comprehensive understanding of poverty.

The multi-dimensional concept of poverty is the subject of index-based methodologies for poverty assessment. One is the Multidimensional Poverty Assessment Tool of IFAD<sup>111</sup> that specifies six components describing fulfillment of fundamental needs and four components on assets, exposure and equality. They are broken down into 31 subcomponents measuring poverty. The Multidimensional Poverty Assessment framework is applicable to poverty groups in value chains as well. Another valuable source of analytical tools is the handbook on poverty

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<sup>110</sup> Philip and Rayhan, 2004

<sup>111</sup> Cohen, 2009

and social analysis of the Asian Development Bank<sup>112</sup>. The analysis can be substantiated further by using the livelihoods approach.

A possible shortcut enabling a quick assessment is the classification of poverty groups according to broad categories. One such classification is offered by the OECD<sup>113</sup>. It distinguishes five rural worlds:

- (1) Large-scale commercial agricultural households and enterprises
- (2) Traditional agricultural households and enterprises with market access
- (3) Subsistence farm households and microenterprises
- (4) Landless rural households and microenterprises
- (5) Chronically poor and destitute people, the old, ill or handicapped

Each “rural world” combines a particular set of conditions. While poverty can be found in the rural worlds (2) to (5), its degree of severity increases, thus reducing the possibilities for the respective groups to participate in markets.

#### *Quantifying poverty groups in the value chain*

Once the profiles of different poverty groups are known better, another task is to establish their importance in the value chain. The social analysis also has to include a quantification of the value chain map in terms of poverty incidence: At the least, the analyst should establish the number of enterprises or households, and the number of wage workers in the different channels of the value chain. The poverty profiles of value chain groups are used to assess their possibility of actually participating in a value chain upgrading process. It does not really matter whether certain groups are clearly below the poverty line or slightly above it. What counts is a description of the poverty conditions and livelihood strategies of clearly identifiable groups of value chain actors who can be specifically targeted and whose development can be made a subject of monitoring.

Because of the particular importance of gender, the gender groups are subject to a separate analysis. See the section 2.5.2 on gender analysis.

#### ***Describing the livelihood context of poverty groups***

To conceptualize the connection between value chains and poverty, value chain analysis can be combined with a livelihoods approach. While the value chain map positions the poor vertically in the market, a livelihood analysis looks at the horizontal embedding of households in diverse social and economic networks at the local level<sup>114</sup>.

The combination of vertical and horizontal lines of analysis takes account of the fact that the poor live on diverse sources of income. Cash income from market integration in one value chain may be combined with income, services and goods obtained from participation in other chains or from local ecosystems. People may be farmers, shopkeepers and itinerant laborers at the same time. Box 2.5.5 visualizes how the households of poor people connect to different value chains.

The livelihoods approach is a methodology to create a comprehensive picture of the living conditions of the poor, centered on households. A livelihood “comprises the capabilities, assets

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<sup>112</sup> ADB, 2012

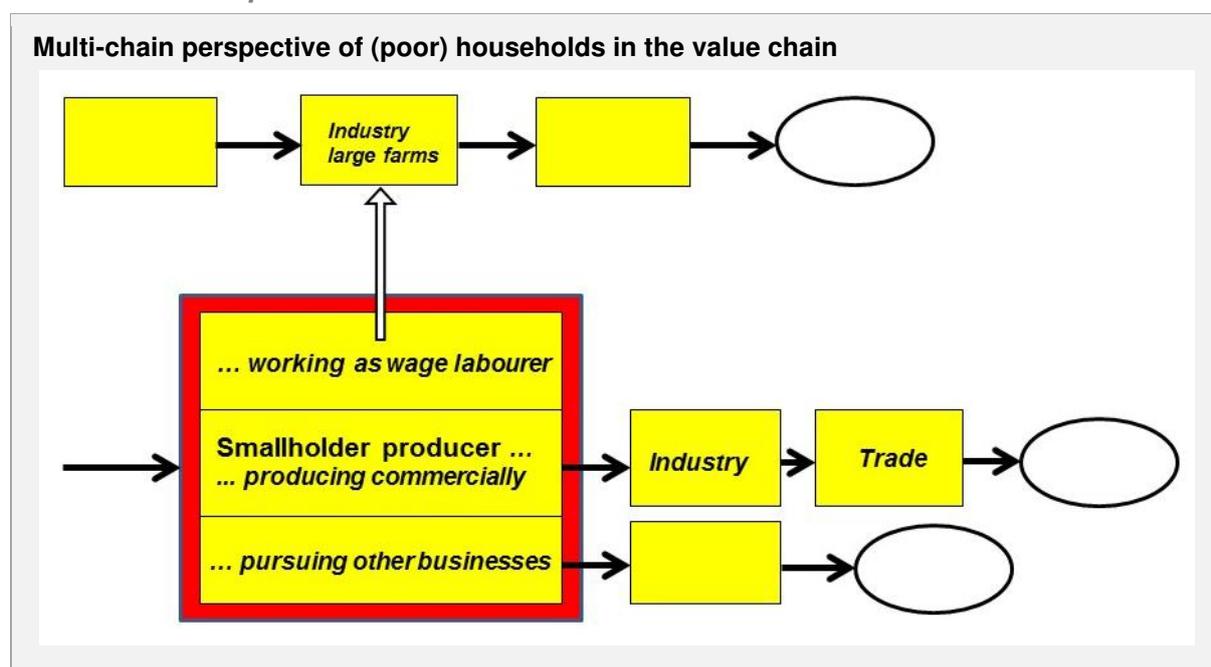
<sup>113</sup> OECD, 2006

<sup>114</sup> Bolwig et al., 2008, p.21

and activities required for a means of living”<sup>115</sup>. Livelihood analysis does not offer a fixed definition of poverty but uses participatory methods to elicit the own perceptions and interpretations of the people at stake. Different versions of the methodology exist<sup>116</sup>. All include the analysis of the assets in a household — classified into five categories of capital: natural, physical, financial, human and social capital — as well as an analysis of the livelihood context, the economic, political and cultural environment.

Assessing the livelihood strategies is a precondition for understanding the likely significance and impact of value chain upgrading on the livelihoods of poverty groups. The problem may be less in the additional risks associated with commercial development than in the resistance to upgrading solutions that have not been thought through well enough.

**Box 2.5.5: Concept – Value chains in a livelihood context**



Source: Own concept

Examples of a combined value chain and livelihood analysis can be found in the studies by Mohan and Kanji<sup>117</sup>. The question how the information on livelihoods can be utilized in value chain strategy design is a subject in the section on value chains, livelihoods and nutrition security in module 3.

**Young people seeking employment**

A particularly important group to study in value chain analyses is young unemployed people aged 16 or 18 to 25. Physically fit, flexible and amenable to education and training, young adults score better on some poverty attributes than older people. Obviously, young adults are better employable than older people with many dependent family members or health problems. On the other hand, youth has less property rights and access to physical, financial and social capital.

<sup>115</sup> Chambers and Conway, quoted in Carney, 1999, p.8

<sup>116</sup> See Carney, 2003

<sup>117</sup> Mohan, 2013; Kanji et al., 2005

Whether or not the young actually are poor, they constitute a quantitatively and politically highly important target group for economic development policy. The public and political interest in the problem of youth unemployment is great. Value chain development can make an important contribution to mitigating it.

The analysis of youth unemployment is of general importance and mostly independent of specific value chains. Nevertheless, some observations on the behavior and preferences of young people are of importance to value chain development, particularly in rural areas. Analysts should check on the implications of:

- *Urbanization*: Young people tend to leave village life behind seeking employment in the city. Particular incentives may be necessary to attract people to rural areas.
- *Cultural change and modernization*: Despite the demand for young farm workers, young men tend to keep distance to traditional smallholder agriculture and low-paying manual labor.
- *Education level*: Better education raises expectations regarding the quality of jobs.

### 2.5.2. Gender analysis

ValueLinks places the gender question in the social dimension of sustainable value chain development and at the same level as the analysis of poverty problems and poverty groups. The social status of entrepreneurs and wage workers in a value chain also depends on their gender, as well as on their age. Often, different social characteristics combine. The poverty risk of women is generally higher than that of men, especially if they are single mothers caring for small children. The target groups of public development policy are the poor. Thus, in most cases, the gender analysis looks at *poor* women who are afflicted by gender discrimination and poverty at the same time.

Nevertheless, the gender analysis of value chains is a separate task and a specialized field of inquiry. Value chain analyses use a 'gender lens' to gain a thorough understanding of the gender issues. This is necessary to make sure that value chain strategies respond to social realities and the implementation of development programs becomes gender-sensitive. For the strategic consideration see section 3.5 in module 3.

There is a close nexus between gender and value chains: For one, economic development cannot be thought of without the participation of 50% of the population. Women occupy key roles in the value chain, partly as entrepreneurs and qualified workers — though nowhere near half of them — and partly by contributing to family enterprises, as well as by securing nutrition and livelihoods. With eliminating gender discrimination and organizing the economic participation better, value chain performance can be much enhanced.

The identification and analysis of the different gender issues has to be based on the practical experience of stakeholders. A key tool to understand the social reality is focus group discussions with representatives of gender-specific groups along the value chain. The procedural side of gender studies is treated in module 4 in the chapter 4.5 on process design and facilitation. Procedures for gender-related studies and gender-sensitive project design are provided by GIZ and OXFAM<sup>118</sup>.

#### **Gender mapping – economic roles of men and women**

The gender analysis of the value chain includes gender mapping, the analysis of gender roles and the gender division of labor, the assessment of the position of women in the chain and the

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<sup>118</sup> Wältring et al., 2012

institutional and legal framework. It has the purpose to disaggregate the value chain structure and quantification according to gender differences.

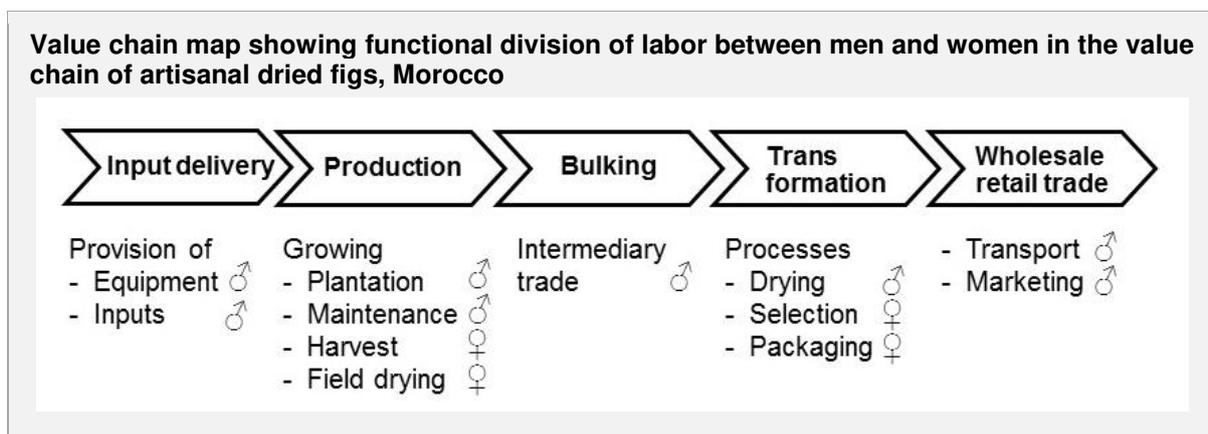
The starting point is the identification and visualization of gender-specific groups in the value chain. Handbooks with tools are provided by Agri-ProFocus<sup>119</sup>, USAID<sup>120</sup>, and World Bank, FAO and IFAD<sup>121</sup>.

### Visualizing gender groups in value chain maps

The tool to visualize gender roles in a value chain is a gender mapping of value chain functions and activities or of chain operators and service providers. The gender mapping of value chains uses and builds on the general value map developed earlier.

Value chain maps show which functions and economic positions are taken primarily by men and women. For easy reading, graphics can use the gender symbols (♀ ♂). The first option is to determine male and female occupations along the functional sequence of the chain. This is relatively straightforward in agricultural and food value chains, as shown in the graphic in Box 2.5.6 which shows the case of traditional dried figs in Morocco.

### Box 2.5.6: Concept/Tool – The ‘gendered’ value chain map (1): Chain stages



Source: GIZ Morocco

The graphic combines different economic positions, including entrepreneurs as well as laborers. It does not allow making the distinction between hired wage workers and working family members. Thus, it is a first step largely applicable to a traditional rural context.

The functional gender mapping as in the box above is not sufficient in bigger and more differentiated value chains that have different channels, technology levels and business models. Gender mapping can reveal the differences between artisanal food processing enterprises, often led by women, and the industrial models which are often in the hands of men. It can also show gender differences between the end markets served and the channels.

This is captured in the following Box 2.5.7, which is an attempt to ‘gendering’ the rice industry in Nigeria. The important insight is the fact that there are notable differences between the channels and in the business linkages. Women serve primarily the local rural markets.

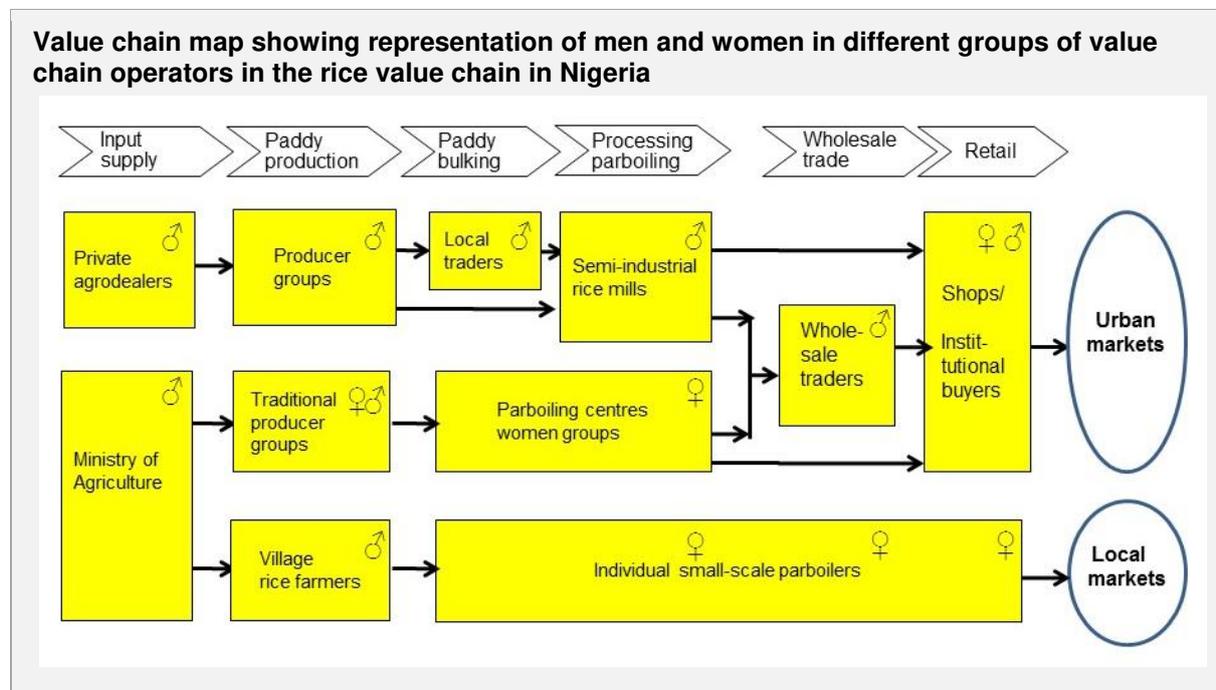
<sup>119</sup> Sender et al., 2013

<sup>120</sup> Rubin et al., 2009

<sup>121</sup> World Bank, FAO and IFAD, 2012

The step subsequent to value chain mapping is the quantification of the map with gender disaggregated data. This can be done with real number for each business model or in the form of a table. It can also use a symbolic version to indicate rough order of magnitude. Other tools linking gender relations to value chain operations are provided by USAID<sup>122</sup>.

**Box 2.5.7: Concept/Tool – The 'gendered' value chain map (2): Chain operators**



Source: Own concept, based on information from GIZ/CARI

**Describing the gender division of labor in the chain**

The identification of gender groups in the chain provides a first indication of the division of labor between men and women along the value chain. In some value chains, marked differences can be noted. One example is the traditional artisanal dried fish value chain in Sierra Leone and other African countries in which functions are clearly separated. The coastal or lake fishing is exclusively done by men who also take care of the boats and the fishing gear. Fish processing and trade is entirely in the hands of women. Fishermen sell the fresh catch to the village women who proceed to smoking or drying the fish and engage in selling and trading the dried fish. Interestingly, the fishermen also sell to their wives establishing an intra-household business linkage. Taking care of their children, women also involve the youth in the processing tasks. Some women have been able to save enough money to buy their own boats operated by male crews. This gender division of labor is a long-standing traditional pattern<sup>123</sup>. Similar patterns, though not as clear cut, can be observed in Asia, such as in the shrimp value chain in Bangladesh.

African women traditionally occupy an important role in trade, the most famous example being the 'Nana Benz' of Togo who engage in the wholesale trade of imported cloth and textiles and other goods and sometimes earn enough to even afford a big car. Women traders in imported

<sup>122</sup> USAID, 2010

<sup>123</sup> Browne, 2002

goods are now common in many African countries. They increasingly import directly from China. Typical male domains are migrant farm work, transport, logistics and construction.

The gender mapping is complemented by the description of the gender division of labor at each of the value chain stages. This is particularly relevant in primary agricultural production. Farm work is often shared between male and female household members each contributing to particular operations.

Box 2.5.8 is a tool to establish a gender activity profile of the value chain. The sequence of functions and the main activities are listed in the first and second column of the table — according to the specific case. The example in the box uses the typical sequence of value chains for rural products. The remaining columns allow specifying who does what including the tasks that are shared between gender groups, old and young. The information can be qualitative or in terms of time input in hours per unit of produce. Calculating days or hours of work indicates how the workload is distributed.

**Box 2.5.8: Tool – Harvard matrix determining who does what in the value chain**

Stages and activities in the chain		Men	Boys	Women	Girls
<b>Primary production</b>	Activity 1 – land preparation	x	x		
	Activity 2 – weeding			x	
	Activity 3 – harvesting	x	x	x	x
	...				
<b>(Food) processing</b>	Activity 1 – manual processing (cleaning, cutting, cooking, packing)			x	
	Activity 2 – transport and storage	x			
	Activity 3 – administration & accounting	x		x	
	...				
<b>Wholesale Trade</b>					
<b>Retail Trade</b>					

*Source: Adapted from Flores Cruz and Lindo, 2006*

Another important descriptive criterion is the gender employment ratio, i.e. the percentage of women and men working in paid jobs of the formal economy. In industrial and commercial companies the typical gender patterns can be observed as well.

Besides performing tasks in business, women are also in charge of reproductive tasks. In the traditional rural setting, the market-oriented and reproductive activities are closely intertwined. This traditional division of labor tends to be continued in a monetary and market-driven economy. Typically, men take up the paid jobs and engage in business activities, while women maintain their reproductive role including household chores and the care for children and the

old. Thus, the productive paid work is largely undertaken by men at a commercial workplace while the reproductive unpaid work is done within the private confines of the household, largely by women<sup>124</sup>.

Most of the reproductive activities are not immediately visible to analysts who tend to underestimate their importance. However, within the analysis of the gender division of labor they cannot be left out. The conventional reproductive role of women has consequences for the division of labor in a modernizing context.

### **Assessing the position of women in value chains**

Once a value chain map has been 'gendered', the next analytical task is to create profiles of the different gender groups in the value chain. The following box presents a number of questions guiding the analysis of the economic position of women.

#### **Box 2.5.9: Tool – Assessing power differences of men and women in a value chain**

##### **Guiding questions for the gender analysis**

###### (1) General questions

- Who owns the enterprises and companies in the chain? Who owns the productive assets within a farm or enterprise, disaggregated by gender?
- How is income distributed according to gender groups in the value chain?
- How is the proportion of male and female business leaders/managers in enterprises?
- Do gender-specific industry associations exist? How are women represented?
- Are there any gender-specific economic policies?

###### (2) Position of women-led enterprises

- What is the number and market share of women-led enterprises?
- How is the access of women-led enterprises to services, technology, information?
- Do women-led enterprises experience specific disadvantages and obstacles limiting their competitiveness and growth potential?
- To what extent does the ongoing upgrading and modernization of the value chain affect gender groups differently, such as by replacing women-led enterprises by male dominated businesses?

###### (3) Position of female wage workers and employees

- What are the social benefits afforded to female and male personnel, such as maternity leave)? Are female workers discriminated against?
- How are gender wage gaps?

*Source: Based on information from GIZ Nicaragua (MASRENACE) and GIZ Philippines (SMEDSEP)*

#### **Access to and control of assets and resources**

Ownership of economic resources is the key determinant of economic power and income potential. The gender analysis has to establish how capital and ownership of property are distributed between men and women. The assessment goes through the types of operators in the value chain map asking the first three guiding questions in Box 2.5.9 above.

In family-owned and community-based businesses, the analysis differentiates between gender categories within the business model. Besides formal ownership, it is an important question who takes the decisions in a family business, not only on the use of assets and resources but also on the expenditures.

<sup>124</sup> Barrientos, 2014, p.3

A tool to systematize the gender analysis of assets in family businesses is in Box 2.5.10, below, which summarizes information on asset ownership taking the fresh fish industry in Asia by way of illustration.

**Box 2.5.10: Tool – Assessing distribution and control of assets in fresh fisheries**

Asset/Resource	Owner of the asset	How the asset is utilized	Decision over the use	How the income is spent	Decision over expenditures
Fishponds	♂♀	Fish production for sale and own consumption	♂	Own food consumption	♀
Fishing boats	♂	Commercial fishing	♂	Inputs, fuel Investment repair	♂
Fishing gear	♂	Commercial fishing	♂		
Jeepneys	♂♀	Delivery of catch to market Family purposes,	♂♀	Education, Family needs Food	♂♀

Source: Adapted from GIZ Philippines (SMEDSEP)

The left part of the box establishes asset ownership and control at the level of a fishing community. The middle and right parts look at the economic decision making within households. The decisive point is whether and under what conditions male household members can make appropriate gains without the consent of their women.

Gender-related power disparities and unequal shares of income and value added realized by women also exist due to institutional and cultural factors, such as a lower level of education and other factors, we come back to further below.

#### *Characteristics of female employment and women-led enterprises*

What is the profile of women entrepreneurs identified in gender mapping? A general observation is that women-owned businesses tend to be informal. According to ILO more women than men are employed in the informal economy: 60% of women workers in the developing world outside agriculture are in informal employment. In sub-Saharan Africa this figure is 84%, in Latin America it is 58%.<sup>125</sup> Women-owned enterprises also tend to be smaller in size.

The criteria to describe female businesses in the value chain can be taken from the generic business model canvas that is explained in detail in module 5, in the second volume of this manual. The analysis should look for the typical features of female entrepreneurship placing emphasis on:

- Formal vs. informal types of business (cottage industries, home-based or self-employed occupations vs. formal enterprises)
- Size of the enterprise (measured by turnover and number of employees)
- Key activities and technology used (household manual tools vs. mechanized equipment)

<sup>125</sup> ILO, 2002

Markets and value chains in which female entrepreneurship has a tradition include:

- Trade, especially retail, but also wholesale trade
- Processed and prepared foods and beverages
- Handicrafts (soap, baskets, decoration)
- Textiles and garments
- Horticulture (fresh vegetables, fruit, spices)
- Biodiversity products (made from collected plants and animals)
- Food services (cook shops, restaurants)
- Domestic and other services

The description of profiles should consider the social aspects as well, such as the school education, marital status, number of children and age. The FAO Gender in Agriculture Sourcebook has regionally specified information on the features of women entrepreneurs. For example, in the Middle East and North Africa, the majority of women entrepreneurs are married and most have children. Women identified their most difficult challenge to be achieving an appropriate work-family balance<sup>126</sup>. The social aspects in the profile are relevant because of the interaction between economic and reproductive roles.

#### *Employment conditions of women and characteristics of female wage workers*

General observations on the employment situation of women, substantiated by ILO data, show that for women unemployment rates are higher and the labor force participation rate lower than that of men. The most important aspect is the gender wage gap: Women regularly receive lower wages than men<sup>127</sup>. For example, in Peru, average wages for women are 74 per cent of men's wages<sup>128</sup>. Women are also more likely to work part-time, in vulnerable and seasonal employment<sup>129</sup>. More than 60% of female employment is still in the informal economy including unpaid work in low-productivity family farms and domestic services.

This is even true in Asia where large numbers of young women are employed as wage workers in export-oriented assembly factories that require manual dexterity. While the garments and electronics export industries in Asia and Latin America are an important source of employment for young women, these jobs only pay low wages. The employers in the ready-made garment industry of Bangladesh prefer young (average age of 20.4 years) and unmarried women, obviously because they are "more docile and averse to joining trade unions"<sup>130</sup>. Generally, gender analysis should assess the employment conditions: Are the recruitment and employment policies of companies aligned with the principles of gender equality?

Industrial subcontracted homework also is a female domain — more than 80% of industrial homeworkers are women<sup>131</sup>. Jobs as unqualified workers and homework are not a very stable form of employment. Young women not only risk being dismissed when they get pregnant, their jobs are also cut quickly in times of economic crisis<sup>132</sup>.

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<sup>126</sup> World Bank, FAO and IFAD, 2012, p.194

<sup>127</sup> ILO, 2011

<sup>128</sup> USAID, 2006, p.10

<sup>129</sup> Mayoux and Mackie, 2008

<sup>130</sup> Rahman and Islam, 2013, p.7

<sup>131</sup> ILO, 2002

<sup>132</sup> ILO and ADB, 2011

Elaborating the profile of female workers in a value chain should build on these general observations and verify the conditions in the value chain at stake. The criteria describing the characteristics of jobs taken by women include:

- Wage level of jobs taken by women in comparison to average payment
- Types of occupations (industrial assembly, services)
- Degree of qualification required and training received
- Conditions of employment (part time vs. full time, temporary vs. permanent employment, access to social benefits and insurance)

The social aspects characterizing groups of wage workers, such as age, marital status and number of children, should be added. ILO offers tools and training material for the analysis of female employment and labor on its website<sup>133</sup>.

### *Representation of women in associations and business organizations*

A final point of assessing the position of women in a value chain is their representation in cooperatives and in organizations at the meso level. The cooperation for commercial interests should be visible in gender mapping, which should highlight the organization of gender-based self-help groups and cooperatives. Women entrepreneurs also have an interest in forming networks to promote their collective economic interests. Female wage workers form unions and organizations defending their social interest. The question is which gender-specific organizations exist, what their objectives are and how strong they are.

The other important point is the representation of men and women in value chain organizations that are not gender-specific, such as chambers of commerce and industry, business organizations, professional associations and trade unions. In mixed organizations, the key question is the adequate representation of gender groups according to their shares in the labor force and the participation in decision-making<sup>134</sup>.

### ***Socio-cultural framework conditions relevant for gender equity***

The gender analysis of value chains has to be complemented by looking at the socio-cultural context. By definition, the socio-cultural framework conditions are not specific to a value chain. They determine and shape gender relations in general.

#### *The reproductive role of women*

The first element in this analysis is the reproductive role of women in society. Practically everywhere, social and reproductive activities are the domain of women. The gender division of labor is rooted in the traditional subsistence economy, where women take care of the household, their children, food security and elderly family members, and fetch water and wood, while men fell trees, prepare fields, build houses, and catch fish. Economic development means that men increasingly engage in commercial and off-farm activities while the traditional role of women is often maintained.

The reproductive role is not visible from chain mapping and may easily be overlooked. However, understanding the social responsibilities of women is of utmost importance to value chain development as they interact with the economic role of women in markets. The reproductive and social tasks — household chores and social care — imply a considerable workload and

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<sup>133</sup> ILO: [www.ilo.org/public/english/region/asro/mdtmanila/training/homepage/mainmenu.htm](http://www.ilo.org/public/english/region/asro/mdtmanila/training/homepage/mainmenu.htm)

<sup>134</sup> see module 6, chapters 6.3 and 6.4 in volume 2 for the analysis of different forms of horizontal cooperation.

demand the flexible allocation of the time budget. Thus, they restrain the entrepreneurial and professional possibilities of women. The gender analysis thus has to clarify the expectations women are faced with in society and determine the extent to which they are compatible with economic roles. On one side, the interaction between reproductive and economic tasks depends on conditions in society. Here, the analysis has to identify:

- Traditional cultural norms and obligations
- The behavior of men and women in rural and urban settings
- Relevant social policies alleviating the burden

The insights have to be compared with the demands imposed by entrepreneurial positions and better paying jobs on the other side, such as:

- Long working hours and permanent availability
- Mobility (both in paid jobs and entrepreneurial occupations)

The expectations related to the two roles may entail conflicts that have to be brought to light.

#### *Influence of institutions and the regulatory framework*

The second set of considerations concerns the legal and cultural norms under which women engage in economic activities. Again, these conditions cut across the economy and value chains. The inequalities, gender-specific norms and constraints characteristic of society in general also determine the conditions for economic development, and the possibilities and limitations of women within a value chain. Many social institutions put women at a disadvantage.

Legal norms affect particular industries and value chains differently. In agriculture and other rural industries, the traditional institutional framework often is particularly restrictive. Typical disadvantages of rural women in many countries, particularly in Africa, are related to:

- Customary inheritance laws
- Rules regulating land tenure
- Property rights of women, for example to livestock ownership
- Rules regulating access to communal land and water

These institutional arrangements often imply considerable gender inequities excluding women from adequate access to land and to productive resources. Traditional inheritance rights and land tenure discriminate women placing widows and divorced women in a particularly vulnerable position<sup>135</sup>. The other gender gaps, such as the limited access to inputs and services and weaker property rights tend to further reinforce the institutional problems. The efforts to reform inheritance institutions have not yet led to significant improvements. In fact, the “statutory and customary laws combine, overlap and sometimes contradict each other in problematic ways”<sup>136</sup>. A source of information on prevailing “areas of concern” regarding gender equality is the country reports published by the UN ‘Committee on the Elimination of Discrimination against Women’<sup>137</sup>.

Cultural factors also affect gender relations in chains and industries outside the rural world. An important point is mobility. “In some Hindu and Islamic societies that strictly enforce purdah

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<sup>135</sup> FAO, 2005

<sup>136</sup> Cooper, 2010, p.11

<sup>137</sup> See the website of the Office of the United Nations High Commissioner for Human Rights, [www.ohchr.org/EN/HRBodies/CEDAW/Pages/CEDAWIndex.aspx](http://www.ohchr.org/EN/HRBodies/CEDAW/Pages/CEDAWIndex.aspx)

women are excluded from participation in cultivation, direct negotiation in the market for labor and inputs and trading the produce”<sup>138</sup>.

Besides the property rights, other elements of the institutional framework affect the participation of women in economic life and have to be considered in the gender analysis of chains:

- Limited access to education and professional training
- Cultural restrictions on mobility
- Rules limiting the access to credit and financial services
- Legal rights to employment
- Laws requiring women to obtain permission of husbands before taking jobs or starting a business

A useful tool to screen the institutional and cultural factors is the ‘Gender Dimensions Framework’ of USAID<sup>139</sup> that summarizes the relevant factors in different categories, such as access to assets and laws, policies, and institutions.

### ***Identifying gender gaps in value chains***

The gender analysis of the value chain delivers a series of general gender gaps and constraints affecting the value chain at its present state. This delivers another set of social hot-spots. The typical gender gaps in value chains lead to an unfair distribution of economic gains and to disadvantages for women in business. These refer to:

- Women entrepreneurs owning smaller and often informal enterprises
- Lower wages and disadvantages of female wage workers
- Limited access to assets and services
- The double burden of women in business and household
- A much weaker representation in economic life and decision-making in general

The descriptive information on the gender dimension feeds into the strategic considerations and options for gender-sensitive value chain development. The handbook by AgriProFocus: “Gender in Value Chains: Practical toolkit to integrate a gender perspective in agricultural value chain development”<sup>140</sup> provides a good overview of tools and formats to organize that analysis.

The gender analysis helps to identify the reasons behind the gender gaps and constraints. They have to do with the role of women in society, the fact that women have to do most of the reproductive work, the many institutional and legal restrictions impeding their business activities, and lower levels of education and social organization. The gender gaps are exacerbated by conditions of poverty.

The analysis of gender gaps is the starting point for value chain strategy formation. It helps to inform the detailed analysis of the potential, constraints and opportunities of value chain development that follows in module 3.<sup>141</sup>

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<sup>138</sup> Coles and Mitchell, 2011, p.5

<sup>139</sup> Gender Dimensions Framework, USAID, 2009

<sup>140</sup> Senders et al., 2013, AgriProFocus

<sup>141</sup> See chapter 3.5

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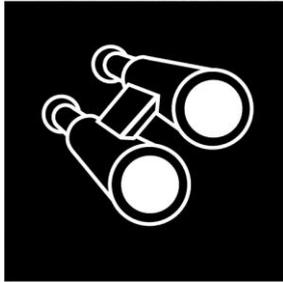
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# Module 3

## Value Chain Development: Objectives & Strategies

# Contents

<b>Module 3</b>	<b>Value Chain Development: Objectives and Strategies</b>	<b>163</b>
<b>3.1.</b>	<b>Introduction: Goals and strategy development</b>	<b>163</b>
3.1.1.	Economic objectives of value chain development	164
3.1.2.	Environmental objectives of value chain development	164
3.1.3.	Social objectives of value chain development	165
3.1.4.	Preparing strategies for value chain development	165
	The approach to strategy formation	165
	Tasks in strategy formation	166
	Questions guiding strategic considerations	168
	<i>Strategic questions around economic growth</i>	168
	<i>Strategic questions around environmental sustainability</i>	168
	<i>Strategic questions around poverty alleviation and social benefits</i>	168
	Determining strategic options	169
	Value chain solutions	169
<b>3.2.</b>	<b>Strategic considerations for promoting inclusive growth</b>	<b>170</b>
3.2.1.	Assessing the growth potential	170
	Identifying market opportunities	170
	<i>General drivers of market change</i>	170
	<i>Significance for the value chain</i>	171
	<i>Understanding the requirements of market access</i>	172
	Market appraisal tools	172
3.2.2.	Assessing the competitiveness of the value chain	173
	Sources of competitive advantage	174
	<i>Advantages based on access to natural resources</i>	174
	<i>Advantages based on production cost, efficiency and technology</i>	174
	<i>Advantages based on social embedding</i>	175
	<i>Advantages based on the business environment</i>	175
	Competitive advantages on global markets	175
	<i>Advantages based on low cost of production</i>	175
	<i>Advantages based on natural resources</i>	175
	Competitive advantages on domestic and regional markets	176
	<i>Advantages on local markets</i>	176
	<i>Advantages on regional markets</i>	176
	Determining a strategic direction for upgrading	176
3.2.3.	Gaps in chain performance	177
	Assessing chain performance against market requirements and benchmarks	178
3.2.4.	Market failure	179
	Assessing market failure impeding value chain development	179
	<i>Generic types of market failure</i>	179
	<i>Coordination failure</i>	180
	<i>Poverty traps</i>	182

3.2.5.	Strategic options addressing economic growth	182
	Strategic option 1: Value chain upgrading and innovation	183
	<i>Upgrading local and domestic value chains</i>	185
	<i>Integrating into global value chains</i>	185
	Strategic option 2: Making markets work	186
	<i>Coordination of value chain actors along the supply line</i>	187
	<i>Investment corridors</i>	189
<b>3.3.</b>	<b>Strategic considerations for ecological sustainability</b>	<b>190</b>
3.3.1.	Greening the value chain: Eco-efficiency	191
	<i>Decoupling growth from environment and resource use</i>	191
	<i>Creating a circular economy</i>	191
3.3.2.	Observing the ecological limits	193
	<i>Protecting the resource base of local, especially rural value chains</i>	193
	<i>Exit from markets</i>	194
3.3.3.	Transition to an eco-efficient value chain	194
	Exploring win-win conditions	195
	Balancing conflicts between economic and environmental interest	195
	<i>Trade-offs between resource categories</i>	196
	Resource efficiency and resilience to climate change	197
	<i>Adaptation capacity</i>	197
3.3.4.	Strategic options for environmental sustainability	197
	Strategic option 3: Management of natural resources and ecosystems	198
	Strategic option 4: Improving resource efficiency	199
	<i>Innovation of technology and business processes</i>	200
	<i>Greening the business models in the value chain</i>	200
	<i>Capturing the opportunities in the business of greening</i>	201
	Strategic option 5: Environmental regulation policy	201
	<i>Key environmental issues</i>	202
	<i>Greening at different levels of the value chain</i>	202
<b>3.4.</b>	<b>Strategic considerations for promoting social benefits</b>	<b>203</b>
3.4.1	Opportunities and constraints of poor producers	204
	Competitiveness of poor entrepreneurs	204
	<i>Barriers to market entry</i>	205
	<i>Position in the value chain vis-à-vis competitors</i>	206
	Bargaining power	206
	Countervailing power	207
	Vulnerability of microenterprises to ecological and economic risk	208
	<i>The poverty trap</i>	209
3.4.2	Poor wage workers: Possibilities to access decent employment	209
	Competitiveness of poor job seekers	209
	<i>Factors influencing low-entry employment opportunities</i>	210
	<i>The effect of technological change</i>	212
	Living wages and decent employment conditions	212
	<i>Strategic considerations on the possibility of living wages</i>	214

	<i>Balance between low-entry and low-wage employment</i>	214
3.4.3	Access of poor consumers to affordable goods and services	215
	<i>Consumption goods to satisfy basic needs</i>	215
	<i>The poverty penalty</i>	216
3.4.4	Value chains, livelihoods and nutrition security	218
	The nexus between value chains and livelihoods	218
	<i>Opportunities of value chain development for livelihood improvement</i>	218
	<i>Risks of value chain development for the livelihoods of the poor</i>	219
	Interactions between value chain development and nutrition	220
	<i>Contribution of value chain development to food and nutrition security</i>	221
3.4.5	Strategic options addressing poverty issues	222
	Strategic option 6: Business models benefitting the poor	223
	<i>Promoting business models relevant to poor producers</i>	224
	<i>Business model offering jobs for the poor</i>	227
	<i>Promoting business models benefitting poor consumers</i>	227
	Strategic option 7: Regulation and social policies in defense of the poor	227
	<i>Strengthening resilience</i>	228
	<i>Regulating labor markets – the decent work agenda</i>	229
	<i>Addressing market failures discriminating against the poor</i>	230
<b>3.5.</b>	<b>Gender-sensitive value chain development</b>	<b>231</b>
3.5.1	Principles of gender-sensitive value chain development	231
	Gender-related opportunities and constraints in value chain development	232
	<i>Disadvantages and opportunities of women entrepreneurs</i>	232
	<i>Disadvantages and opportunities of female wage workers</i>	233
	<i>Intra-household distribution of workload, costs and benefits</i>	233
	<i>Addressing institutional and socio-cultural framework conditions</i>	234
3.5.2	Strategic options for gender-sensitive value chain development	235
	Strategic option 8: Gender-sensitive value chain development programs and projects	235
	<i>Gender criteria for the selection of value chains to be promoted</i>	236
	<i>Impact of business model development on women</i>	236
	<i>Gender equitable organization and governance of cooperatives and associations</i>	237
	<i>Access of women to adequate public and private services</i>	237
	<i>Gender criteria in standard systems</i>	237
	<i>Policies and regulatory improvements in favor of gender equity</i>	237
	<i>Social policies and public services</i>	238
	<i>Gender-based social work at community level</i>	238
	<i>Institutional and legal reform</i>	238
	Strategic option 9: Economic empowerment of women and the young	239
	<i>Developing female entrepreneurship</i>	239
	<i>Supporting female wage workers and subcontracted homeworkers</i>	241
<b>3.6.</b>	<b>Elaborating value chain development strategies</b>	<b>242</b>

3.6.1	Strategic synthesis	243
	The nature of systemic social change and its consequences for planning	244
	Determining a realistic level of ambition	245
	<i>Managing trade-offs and synergies</i>	246
	<i>Analyzing trade-offs</i>	246
	<i>Conflicts between private and public interests</i>	247
	<i>Winners and losers in economic transformation</i>	247
	Essential elements defining the quality of value chain strategies	248
3.6.2	Tools for strategy formulation and programming	249
	SWOT analysis	249
	Formulating a value chain development objective	251
	Selecting and combining strategic options	252
	Value chain solutions — The building blocks of value chain strategies	254
	Operationalizing the strategy: Choosing value chain solutions	255
	<i>Connections between value chain solutions</i>	257
	<i>Business models – linkages – financing solutions</i>	257
	<i>Policy instruments and service arrangements</i>	257
3.6.3	Anticipating change: Impact hypotheses of value chain development	258
	<b>Resources</b>	<b>261</b>

## Module 3 Value Chain Development Objectives and Strategy

### 3.1. Introduction: Goals and strategy development

ValueLinks takes off from the idea of sustainable development that is the foundation of the 2030 Agenda for Sustainable Development of the United Nations<sup>142</sup>. The key concept is the equal consideration of the economic, ecological and social dimensions of sustainable development — caring for prosperity, planet and people simultaneously. The ValueLinks methodology applies the idea to value chain development and is designed to promote the transition towards a green and inclusive economy. There are three main goals:

- (1) Building economic structure that generates growth
- (2) Greening value chains to keep production and consumption within the ecological limits
- (3) Promoting social inclusion to reduce poverty and inequity

All dimensions are closely interlinked. They can be summarized by the concept of a ‘green economy’ that is “characterized by improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities”<sup>143</sup>.

The general goals need to be specified to become operational for value chain development. This is the subject of the following module 3. The box below summarizes what the sustainable dimensions could mean for value chains and presents generic objectives of sustainable value chain development.

#### *Box 3.1.1: Concept – Objectives of sustainable value chain development*

Sustainability dimensions	Generic objectives of value chain development
Economic	<ul style="list-style-type: none"> <li>- Economic growth — more value generated and captured</li> <li>- More jobs</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>- Improved energy, water and material efficiency</li> <li>- Lower pollution and greenhouse gas emissions</li> <li>- Protection of biodiversity and ecosystems</li> </ul>
Social	<ul style="list-style-type: none"> <li>- Business models that integrate poor micro-entrepreneurs and workers</li> <li>- Enhanced economic opportunities for women and young people</li> <li>- Decent work conditions and wages</li> </ul>

*Source: Own compilation*

All three dimensions of the green economy idea are equally important. Planners of value chain development policies and projects have to consider them simultaneously and seek their complementarity. A green and inclusive value chain development is not limited to preserving the

<sup>142</sup> Resolution of the United Nations General Assembly “Transforming our World: the 2030 Agenda for Sustainable Development” adopted on 25 September, 2015

<sup>143</sup> UNEP: [www.unep.org/greeneconomy/AboutGEI/](http://www.unep.org/greeneconomy/AboutGEI/)

natural capital but aims at promoting a more productive use of it. It seeks the mobilization of human talent for creating wealth rather than to simply redistribute. And it aims at utilizing the wealth to promote ecological and social ends.

### **3.1.1. Economic objectives of value chain development**

Economic growth, a higher output of goods and services, is a precondition for poverty alleviation. This is particularly true in low-income countries where the productive capacity is small and government does not have the means to mitigate poverty problems by redistributing wealth or not enough tax income to provide health services, education and social security to the poor. People in low-income countries simply need more 'man-made capital', i.e. infrastructure, machinery and equipment to increase labor productivity, generate higher per-capita income and have better lives. Economic growth is also required to keep up with population growth. The economic objective of value chain development is not the monetary success per se, but a qualified, 'intelligent' growth in which ecology, economy and social capital build on each other. As a matter of course, economic growth has to be both environmentally sustainable and socially inclusive<sup>144</sup>.

The growth objective is measured in terms of the chain revenue. The total value generated by the chain is the volume of product units sold on final markets multiplied with the sales price per unit. The objective is to increase value added, that is a higher sales volume or better prices obtained in final markets. Put simply, the 'pie has to grow' so that big enough pieces of it can be distributed to upstream value chain enterprises. This is a straightforward objective and the basis upon which further considerations have to build.

Part of the value generated by the value chain is generated by inputs received from other industries or on imports from other countries. Another measure of economic growth therefore is the value captured indicating the part of the value added that actually remains at the disposal of chain operators. The growth of value captured is more difficult to measure, though.

### **3.1.2. Environmental objectives of value chain development**

The growth rate of the Gross National Product at industry level does not take into account the depletion of natural resources that it may imply. Economic growth is diminished to the extent that it happens at the expense of natural capital, i.e. the depletion of soil, water, energy, ecosystems and biodiversity, the climate and other resources. The loss of natural resources is particularly detrimental to poor people who depend on them for their living. Hence, value chain development has to pursue the objective of maintaining the natural capital on which the value chain is based. Increasing natural resource productivity is imperative for value chain development, everywhere.

The essential point is to utilize the natural capital more sustainably and productively. The objective of value chain development is to reduce the amount of natural resources used to generate one unit of economic value. This applies to the different categories of resources according to their importance, and to fossil energy in particular value chain development has to seek greater energy and water efficiency practically everywhere. Depending on the case, soil fertility, the productivity of forests, pasture and hydrological resources, and the efficiency of utilizing materials have to be enhanced. Apart from lower resource intensity, value chain development has to make sure to limit pollution and greenhouse gas emissions.

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<sup>144</sup> UNESCAP: <http://www.greengrowth.org/?q=static-page/sat-10012011-1104/about-green-growth>

### 3.1.3. Social objectives of value chain development

Empirical evidence shows that, generally, absolute poverty rates are going down in fast growing economies. However, there are significant differences between value chains in terms of their anti-poverty impact.

Social objectives of value chain development expect economic growth to translate into higher incomes for poor farmers, microenterprises and wage workers in the value chain. Growth is economically inclusive if it leads to the creation of additional jobs for low-skilled unemployed poor, especially women and the young, and the poor at the bottom of the pyramid. Value chain development also seeks the inclusion of poor producers and laborers at favorable terms. Poor consumers are expected to get better access to essential goods at lower prices.

The downside of value chain growth is that it may also entail structural change to the detriment of the poor, especially if labor-intensive enterprises are driven out of business or if too much business risk is shifted to microenterprises and smallholders. Value chain development should therefore include the objective to minimize the social drawbacks of value chain upgrading.

Another aspect of value chain development is related to the fact that economic development is embedded in a social and cultural context that needs to be taken into account. Cultural and technical traditions, local knowledge and social networks are part of the human capital on which economic progress relies. It provides informal social protection, access to finance or mutual help that is not accounted for in economics. It is important for value chain development to maintain and build up this human capital. This includes not only education and vocational training but also the creation of conditions that allow people to pursue new opportunities. More equity, especially an equitable access to these resources is not only desirable from a public perspective; it is also a factor that drives growth as available talents can be made productive and quality jobs and living wages provide incentives. Hence, another social objective of value chain development is to enhance the social and human capital.

### 3.1.4. Preparing strategies for value chain development

This module presents considerations, tools and options to elaborate strategies for sustainable chain development. Value chain strategies anticipate the possible change of a value chain and provide an answer to the question how the value chain could move from its present state towards an improved state in future, thus providing orientation and guiding action.

In the following chapters, the unit of analysis remains to be the entire value chain. The idea is to highlight the possibilities for contributing to all dimensions of the sustainability goal. We take a holistic perspective on the development of the chain including all parties interested. Building on a common understanding of chain development, the different lead actors — government, development agencies and private entities — can develop individual value chain policies or programs in line with their own objectives, interests and available resources.

#### *The approach to strategy formation*

The design of a strategy for value chain development cannot rely on linear cause and effect relationships. As has been argued in module 2, chapter 2.2, value chains are complex economic systems which evolve as a result of the interaction of markets, enterprises and public

actors.<sup>145</sup> Solutions and innovations emerge over time as chain actors learn and adapt to a highly dynamic environment, and to each other. Forecasting economic change is next to impossible given the complex and dynamic nature of economic development. After all, we refer to the idea of a market economy that builds on creativity and the freedom of choice. Therefore, strategy formation should not be misunderstood as constructing a plan with which to control and direct value chain development<sup>146</sup>. No single chain actor is able to actually determine chain development. Instead, value chain strategy is conceived here as a process that provides direction for value chain actors and structures the course of action. Strategy formation helps companies make investment decisions and helps governments and public agencies find suitable interventions.

While there are no formulas to deduce development plans for value chains, strategy formation can still utilize experience, provide criteria to guide strategic thinking, and look for typical patterns of value chain development. The value chain structure is characterized by 'organized complexity' which implies that change is never completely at random.

### **Tasks in strategy formation**

Strategy formation for value chain development is conceived to consist of three tasks:

- Elaborating the goal and general objectives of sustainable value chain development
- Diagnosing the possibilities for change in a specific value chain, i.e. strategic considerations on the sustainability dimensions and strategic synthesis
- Programming: Setting realistic objectives and tracing the course of action of the value chain development project or program

These tasks do not exactly follow one another. Often, patterns of change only emerge during implementation, just as the objectives may have to be adjusted. Strategizing has to be done iteratively. At any point, the process of translating the goals into strategic objectives and solutions can be turned around questioning whether the objectives are realistic. Strategists switch between analyzing the issues and refining the objectives accordingly.

ValueLinks module 3 provides generic insights into chain development strategies for the three dimensions of the sustainability goal. The following chapters 3.2 to 3.5 build on the vision of sustainable value chain development discussed above. They help project planners to identify patterns and formulate hypotheses on the likely impact of interventions in a particular value chain project. Instead of presenting ready solutions, the treatment of strategic analysis presents generic considerations around typical patterns observed in value chain development. They should be considered as material to work with, and certainly not as recipes for impact. Chapter 3.6 is devoted to strategic synthesis and provides further considerations on how to get to a strategic orientation.

The elements of strategy formation are presented in the following Box 3.1.2 which shows the structure of this module indicating the numbers of chapters.

The graphic also shows how strategy formation and programming leads on to formulation of particular value chain projects. The middle part of the graphic is intentionally left white because the generic strategic considerations in chapters 3.2 to 3.5 are just inputs into formulating a concrete objective. Decision-makers need to understand the situation but there are no rules or

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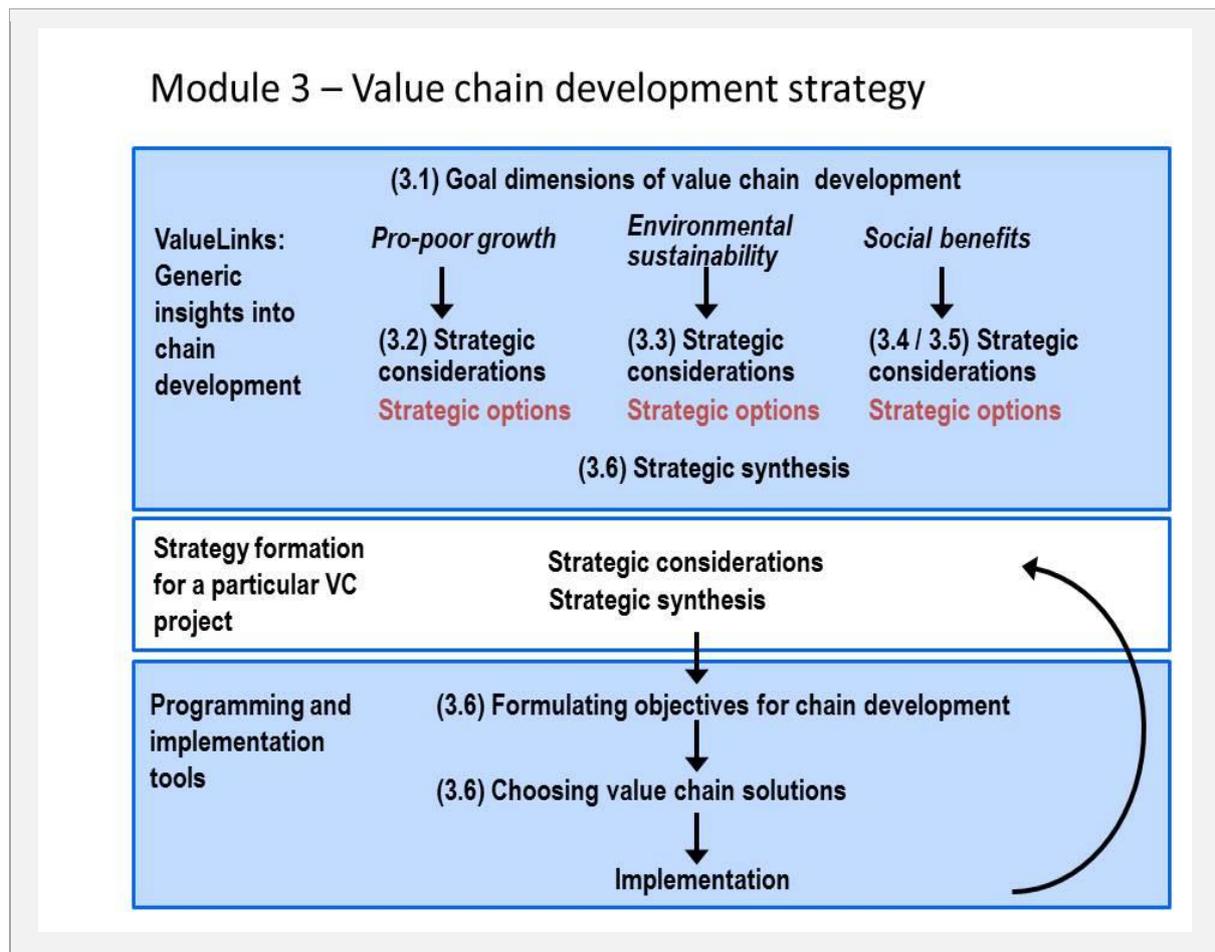
<sup>145</sup> The implications of complex socio-economic systems for strategy formation are increasingly recognized in the development literature.

<sup>146</sup> Cunningham and Jenal, 2013

recipes for setting the objectives exactly right. Good planning takes into account many factors and is based on personal experience, not algorithms.

To facilitate the practical programming tasks, chapter 3.6 also includes tools to formulate project objectives and to choose solutions for a particular value chain project. Most value chain projects will select and support particular value chain solutions. Given the restrictions of time and budget, chain projects can well pursue limited objectives as long as they contribute to the sustainable development of the value chain at large.

**Box 3.1.2: Concept – Procedure to elaborate strategies for chain development**



Source: Own concept

Elaborating strategies for value chain development cannot be done without the intensive participation and consultation of the value chain actors. It has to be clear that planners making detached decisions at the drawing board can and will not arrive at useful value chain strategies. While the present chapter concentrates on the conceptual and technical matters, the procedural side of strategy development is a subject in module 4<sup>147</sup>, which provide tools for facilitation and multi stakeholder collaboration.

<sup>147</sup> Chapters 4.4 and 4.5

### *Questions guiding strategic considerations*

The strategic analysis covers the three dimensions of the sustainability goal. It always starts with the economic dimension followed by the social and environmental dimensions. The growth and competitive issues have to be addressed first — from the perspective of the private operators. Next are the social and environmental aspects of value chain development. Every dimension is analyzed with a specific set of criteria and tools.

Strategists analyze the underlying constraints, the conditions and requirements for realizing the development potential. The considerations are guided by a series of strategic questions. Once the critical issues are understood, decision-makers formulate value chain development objectives and specify the necessary innovations and solutions.

#### *Strategic questions around economic growth*

The main strategic issues are the market demand for the product on one side and the competitive advantage of the value chain on the other. Together they determine the growth potential. If the strategic analysis finds that the value chain has the potential for economic growth, two sets of questions are posed leading to strategic options:

- What specific problems and requirements need to be addressed to unlock market development? What specific combination of private investment and public goods is needed?
- Why has the economic potential not yet been realized? What are the factors behind stagnation and the patterns of market failure hampering development?

#### *Strategic questions around environmental sustainability*

The strategic analysis relates to the environmental impacts in the value chain. The main issue is the possibility of harmonizing economy and ecology. This requires answer the following strategic questions:

- Can the value chain keep going in the face of absolute resource limits? Which are these and who should bear the cost of adjusting to them?
- Which direction should greening take and which resources should get priority?

#### *Strategic questions around poverty alleviation and social benefits*

These strategic considerations concern the factors affecting economic exclusion or inclusion of the poor in the value chain. It implies both factors related to value chain structure as well as the characteristics of poverty groups discouraging or encouraging their inclusion at favorable terms. Specific strategic questions that guide the development of strategic options are:

- Under what conditions can poor people benefit from the economic growth and at what points in the chain?
- How does economic development interact with livelihoods, food security, the position of women and the social fabric in general? What precautions need to be taken to safeguard vulnerable groups?

Answering these questions allows pinpointing the issues and problems to address. The strategic analysis uses the chain map as reference, along with the results of other value chain analyses. The data generated in the chain analysis provide a baseline against which the anticipated change can be made clear. Therefore, strategic consideration can only be as concrete and detailed as the available baseline information.

The strategic considerations are also highly useful for the selection of value chains in the first place. In fact, the criteria for value chain selection in module 1 summarize the considerations in value chain analysis and strategy design.

### ***Determining strategic options***

The strategic questions help operationalizing the economic, environmental and social objectives of value chain development. For each sustainability dimension, ValueLinks identifies a number of strategic options for development. These options are derived from the analysis of opportunities and problems and show possible patterns of change. Every strategic option stands for an impact hypothesis and this helps building the case for value chain development. Decision-makers go through a process of synthesis to arrive at the formulation of a strategic goal for value chain development that includes one or several options.

### ***Value chain solutions***

Once the goal and general strategy is clear, the lead actors in value chain development continue by analyzing the specific needs, constraints and opportunities to address and identifying the solutions to go for. This should still be done in collaboration.

Subsequently, each individual program and value chain initiative has to define its own field of action and set realistic objectives in line with the available resources and time. Ideally, all value chain development actors refer to the common goal and strategy for the value chain at large, even if each program has its own planning logic and covers a particular field of improvement. In principle, every lead actor can go back to the strategic options and the related impact hypotheses. This is already a question of implementation which is the subject of module 4. Chapter 4.5 deals with the processes for planning concrete programs and projects.

## 3.2. Strategic considerations for promoting inclusive growth

The economic growth strategy derives from a comparison of the market potential of the value chain on one side with the current and potential competitiveness of value chain operators on the other. The analysis refers to the scope of the value chain as it has been delimited and described in the value chain analysis. The value chain map provides a basic description and the unit of analysis. It is important to note that the strategic considerations take off from the potential, not from a problem analysis.

The strategic considerations go through a series of steps as presented in Box 3.2.1 below. The first three steps cover the question which specific requirements need to be addressed to unlock the market development potential. The last step addresses the market failures preventing the utilization of the potential.

### *Box 3.2.1: Tool – Strategic assessment of economic development potential*

#### **Steps in the strategic assessment**

- Assessing the growth potential: Which factors drive demand growth in general? How important are they for the value chain? Which opportunities for growth do exist?
- Assessing competitive advantages: Can the value chain actually respond to the market trends and requirements? Which competitive advantages does it command?
- Assessing the gaps: How does the position of the value chain compare with the possibilities for economic growth? Which constraints, needs and opportunities have to be addressed and how big is the gap?
- Why has the economic potential not yet been realized? What are the factors behind stagnation? Do we see patterns of market failure and dysfunctional business linkages hampering development?

*Source: Own concept*

The possibilities of economic development are taken from a comparison of the growth potential on one side and the problems related to competitiveness and market failures on the other. Accordingly, the two main strategic options are to improve value chain performance and to cure market failures.

### **3.2.1. Assessing the growth potential**

Economic value chain development unlocks the growth potential that lies in unmet market demand. The first task is to identify the business opportunities in end markets.

#### ***Identifying market opportunities***

##### *General drivers of market change*

To identify new market opportunities analysts have to understand the factors driving change in the living conditions, preferences and needs of final consumers of value chain products. The needs are related to the ongoing social, cultural and economic change in society.

Important drivers determining the number of consumers and their behavior are:

- Growing population with an increasing share of urban dwellers
- Growing average incomes
- Changing preferences for high-quality products and greater product safety
- Growing concern for sustainability
- New technological possibilities reducing cost and using by-products
- Better information technology and information availability

The evolution of these and other parameters drives market change — the demand for products in terms of quality and quantity and the willingness of consumers to pay. Socioeconomic change has a general impact on market demand.

#### *Significance for the value chain*

To understand what that means for the value chain under consideration, analysts have to relate the key market drivers to the evolution of the value chain and assess the consequences. This can be done with a matrix that compiles the drivers on one side and assesses their likely impact on demand in the end markets of the value chain.

The question is to what extent the market drivers are affecting the value chain, whether and to what extent markets are already saturated and which product innovations and new forms of marketing are coming up. The procedure is to describe the observable market trends in the end market(s) specified in the value chain map. The analysis of market trends looks at the evolution of key parameters for the value chain. This includes:

- The trends of market prices and volumes sold
- Differences in the shares of end markets and types of final consumers
- New product variants

The same analysis can be done for alternative markets that are not yet included in the value chain map but could be targeted by the operators.

Typical market trends in food and handicrafts are:

- Growing volume of trade in standard agricultural commodities above the increase in population, albeit at low and highly volatile prices
- Even stronger increase of demand for fruit and vegetables, nuts, meat and milk products and organic food with increasingly stringent quality standards
- Increase in few specialty and niche products that command a premium price
- Increasing concern for food and product safety.

Other trends are:

- Growing demand for intermediate products and components in manufacturing sectors
- Unsatisfied demand for cheap products and services serving poverty groups in rural and urban areas
- New opportunities in the business of greening value chains, see chapter 3.3 below

Comparing the evolution of the big market drivers with what is going on in the value chain provides an idea of the market opportunities. In many cases no hard figures will be available and the assessment remains qualitative. Nevertheless, the exercise provides orientation on what consumers may be looking for. Do market trends point to lower prices, to a demand for new variants of the end product and higher quality? Or are alternative products available?

### *Understanding the requirements of market access*

Generally, trade liberalization opens new opportunities for least developed countries that have duty-free access to EU and US markets and to regional markets within economic communities in Africa or the Caribbean. Whether or not these trends actually offer opportunities for the enterprises in the value chain depends on the actual presence of buyers. Any business opportunity remains theoretical without the tangible interest of business partners.

Another essential element of assessing the growth potential is a clear picture of the entry barriers to markets, particularly in the export business.

One is trade policy. The framework is defined by international trade agreements, such as the Economic Partnership Agreements (EPA) of the European Union, concluded with the three Regional Economic Communities EAC, ECOWAS and SADC in Africa in 2014 and with CARICOM in the Caribbean<sup>148</sup>. Particular conditions, safeguard measures and tariffs are available on the website of the European Commission<sup>149</sup>. Useful generic information and the conditions for access to US markets can be found on the website of the US Trade Representative<sup>150</sup>. Both the US and Europe provide preferential access for poor countries. The African Growth and Opportunity Act (AGOA)<sup>151</sup> of the United States allows all marketable goods produced by African countries to enter the US duty-free, with exceptions for garments. Similarly, the European Union provides duty-free access for least developed countries in Africa and around the world through its 'Everything but Arms' initiative. The existence of these trade agreements has a positive impact on the exports of poor countries.

However, non-tariff barriers to market entry remain to be of great importance. Market access to the European Union, the US and other trade zones requires compliance with the respective quality and technical standards issued by Governments. To these add the benchmarks applied by lead companies and the sustainability standards regulating particular industries. More detailed information on these requirements can be found in module 9 in the second volume of the ValueLinks manual.

The other factors constraining the entry to markets have to do with the competitiveness of the value chain and the competition situation. Even if all requirements can be fulfilled, the position and offers of competitors from other countries may still be stronger effectively locking out newcomers.

### **Market appraisal tools**

The core elements of market appraisals include information on the market actors, value chain structure and marketing channels, supply and demand, trade and consumption of the products, price formation, and the market outlook.

ValueLinks provides tools for these topics in module 2 on value chain analysis, especially value chain mapping and quantification, and in the present section on the strategic considerations for promoting economic growth. More tools, the outline and methodology of market studies have been published in the internet.

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<sup>148</sup> European Commission: <http://ec.europa.eu/trade/policy/countries-and-regions/development/>

<sup>149</sup> European Commission: <http://ec.europa.eu/trade/>

<sup>150</sup> US Trade Representative: <https://ustr.gov/trade-topics/trade-toolbox/>

<sup>151</sup> United States: <http://trade.gov/agoa/>

The available tools and methodologies can be classified according to the size of the industry under study. In a local development context, low-cost tools are required that enable judgments under conditions of limited data. Of particular interest are guidelines for participatory and rapid market research at the community and enterprise level that serve the positioning of local value chains and enterprises.

Some methods of rapid market appraisal are:

- Ferris, S., Kaganzi, E., Best, R., Ostertag, C., Lundy, M. and Wandschneider, T. (2006): “A Market Facilitator’s Guide to Participatory Agroenterprise Development”, Cali: Centro Internacional de Agricultura Tropical (CIAT).
- Miehlbradt, A. and Jones, L. (2007): “Market Research for Value Chain Initiatives – Information to Action: A Toolkit Series for Market Development Practitioners”, Waterloo: Mennonite Economic Development Associates (MEDA).
- Helvetas (2009): “Clients First! A Rapid Market Appraisal Tool Kit”, Experience and Learning in International Co-operation, No. 3.

Another set of guidelines goes beyond the local level and provides methodologies for market research in the entire industry. Here, market analyses are part of the broader value chain analysis. See the references to value chain methodologies in module 2.

A guidebook specializing in market studies is:

- Henning, R., Donahue, N.A. and Brand, M. (2008): “End Market Research Toolkit. Upgrading Value Chain Competitiveness with Informed Choice”, Washington: The United States Agency for International Development (USAID).

Detailed trade data and five market analysis tools can be found on the website of the International Trade Centre<sup>152</sup>. The dissimilar conceptual setting of ‘linking smallholders to markets’, the book by Vermeulen et al. offers useful tools to analyze local markets. To capture the general market trends and opportunities the tools *Mapping drivers, trends, issues and opportunities* and *mapping future scenarios* are recommended.<sup>153</sup>

### 3.2.2. Assessing the competitiveness of the value chain

Identifying promising market opportunities is the first concern and a precondition for any growth strategy. The second and decisive question is: Can the value chain actually take the opportunities and benefit from them?

This is an issue of actual and potential competitiveness. Competitiveness can be defined as the ability to generate value added and to keep or capture a significant share of it<sup>154</sup>. In order to be competitive, enterprises and value chains must at least be as efficient as their competitors and competing chains. This means operators should have access to productive resources and be able to produce at a cost that is below the market price.

However, to be able to capture the value generated and invest into future growth, enterprises need to have a competitive *advantage*, an edge over competitors. The question is: What can an enterprise do better or cheaper than others? And which resources does it have available to them that others do not? The scarcer the resource or the capability in the markets, the greater is the advantage. Competitive advantages refer to business models in the first place but the

<sup>152</sup> International Trade Centre: <http://legacy.intracen.org/marketanalysis/default.aspx>

<sup>153</sup> Vermeulen et al., 2008

<sup>154</sup> See chapter 2.3 for the concept of generating and capturing value added

concept also relates to the value chain at large. After all, it is the capacity of *all* businesses taken together and their collaboration that leads to market success. An export value chain competes with value chains from other countries, domestic value chains with imports.

The competitive advantage protects enterprises to some extent from competition. Enterprises and value chains with a competitive advantage earn more than competitors that do not command the same advantage. The difference in income is called *rent*.

Kaplinsky distinguishes two different categories of rent. One is derived from conditions that are 'exogenous' to the value chain, the other is based on competitive advantages that are 'endogenous', i.e. created by the industry itself<sup>155</sup>:

- The exogenous rents are based on resources, such as a favorable climate and fertile soils, a forest nearby or on mineral deposits, as well as infrastructure and the institutional and policy framework.
- Endogenous rents are benefits based on efficient technology, skilled workers, good organization and functioning business linkages and a product quality or design that cannot easily be copied.

The concept is a key to explaining impact on income. According to Kaplinsky and Morris sustained income depends on the capacity to exploit and generate rents, to appropriate rents and to protect rents<sup>156</sup>.

The concept of competitive advantage and rent can also be utilized to determine the extent to which particular groups of enterprises benefit from economic growth of the value chain: Competitive advantages decide who in the chain captures the value added and which part of it. This aspect returns in chapter 3.4 in the treatment of business opportunities for the poor.

### **Sources of competitive advantage**

Competitive advantages derive from the access to resources, from distinctive capabilities and from the business environments enabling enterprises and value chains to offer products at lower prices or higher quality than competitors.

#### *Advantages based on access to natural resources*

- Access to fertile soil, water
- Access to ecosystem resources, such as forests, water bodies and renewable energy
- Mineral resources

#### *Advantages based on production cost, efficiency and technology*

- Cost advantages compared to competitors because of low wages and energy cost
- Cost advantages based on scale, technology, organization that are combined in a good business model
- Unique product features, such as valuable, rare, difficult to copy or substitute features
- Specialized capabilities enabling the participation in global value chains, i.e. special skills, knowledge experience

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<sup>155</sup> Kaplinsky, 2005, p.62pp

<sup>156</sup> Kaplinsky and Morris, 2001, p.3

*Advantages based on social embedding*

- Knowledge of customers, good reputation
- Appeal to socially and environmentally conscious consumers
- Products that tell a story

*Advantages based on the business environment*

- Favorable location, proximity to market
- Access to know-how and skilled people, i.e. social capital
- Infrastructure
- Preferential access to foreign markets
- Reliable government policies, rule of law
- Political protection and subsidies

Cost advantages arise not only through a good performance of enterprises in production or processing or the access to natural resources but in the efficiency of the entire industry, the linkages and the marketing efficiency along the entire value chain. Similarly, the quality of the final product is not only determined by primary and secondary producers but by the quality management along the chain from raw materials to retail. There are differences between export-oriented industries connected to global value chains and the domestic value chains.

Utilizing a competitive advantage enables value chain operators to generate and capture a larger part of the value (i.e. a rent, see above), thus increasing their income. Therefore, analysts have to systematically screen the competitive advantages of a value chain and the enterprises within them in order to identify an opportunity for growth.

To be clear: Growth opportunities are a starting point, but from the perspective of sustainable development, it is the social outcome that counts. The search for competitive advantages refers to value chains and their enterprises as a whole. Industry advantages do not necessarily translate into advantages for the wage workers and self-employed micro-enterprises in and around the chain. They determine the potential for value *creation* including the rents but not the final *distribution* of value added. The distribution aspect is the subject in the strategic considerations on poverty alleviation in chapter 3.4, in which the question of competitive advantage and distribution of rents will be dealt with.

***Competitive advantages on global markets***

The resource-based value chains in low-income countries typically benefit from the following competitive advantages.

*Advantages based on low cost of production*

- A cost advantage is derived from low wages: Low labor cost is a competitive advantage for value chains of handicrafts, textiles or furniture.

*Advantages based on natural resources*

- A traditional resource advantage is a warm climate that allows the production of tropical and out-of-season products. The advantage is however limited as tropical commodities are produced by an increasing number of countries.

- Variants of tropical commodity products based on specific quality features and geographical indication provide an advantage over competitors. The commodity becomes a specialty product, and ceases to be a conventional commodity, a process called 'de-commodification'. An example is the case of fine aromatic cocoa in Ecuador<sup>157</sup>.
- Advantages based on special ecosystems resources include local specialty products based on natural raw materials, such as Lokhta bark paper in Nepal, pinya fiber textiles in the Philippines or biodiversity products from the Amazonian. These are products for small, niche markets.

The main competitive advantage of manufacturing industries in low-income countries is the low cost of labor. The economic development of the newly-industrialized countries in Asia and Latin America has started when international companies shifted labor-intensive business processes away from high-wage USA and Europe. The motivation behind integrating manufacturing companies from low-income countries into global value chains was to benefit from a cheap labor force.

### ***Competitive advantages on domestic and regional markets***

Apart from a low cost of production and easy access to resources, enterprises serving domestic and regional markets can also rely on their location and local knowledge as factors of competitiveness:

#### *Advantages on local markets*

- The proximity to markets, a location close to customers reduces marketing cost.
- Know-how on local preferences and the acquaintance with the needs of people in the neighborhood are a unique advantage, such as traditional products or food specialties that cannot be substituted by imports.
- There are local opportunities in poverty markets at the 'base of the pyramid', such as low-cost energy solutions, low-cost housing, cell phone applications.

#### *Advantages on regional markets*

Beyond local markets, operators have opportunities in the food markets of neighboring countries building on favorable local conditions of production and on regional specialization. A case in point is the time-honored trade between the Sahel and coastal regions of West Africa. Farmers in Niger and Mali produce onions and cattle meat, while farmers along the coasts have tubers, palm oil and wood.

### ***Determining a strategic direction for upgrading***

The identification of market opportunities on one side and the competitive advantages or potential competitive advantages on the other allows drawing a first strategic conclusion: The growth strategy of the value chain should go for the best fit of opportunities and strengths.

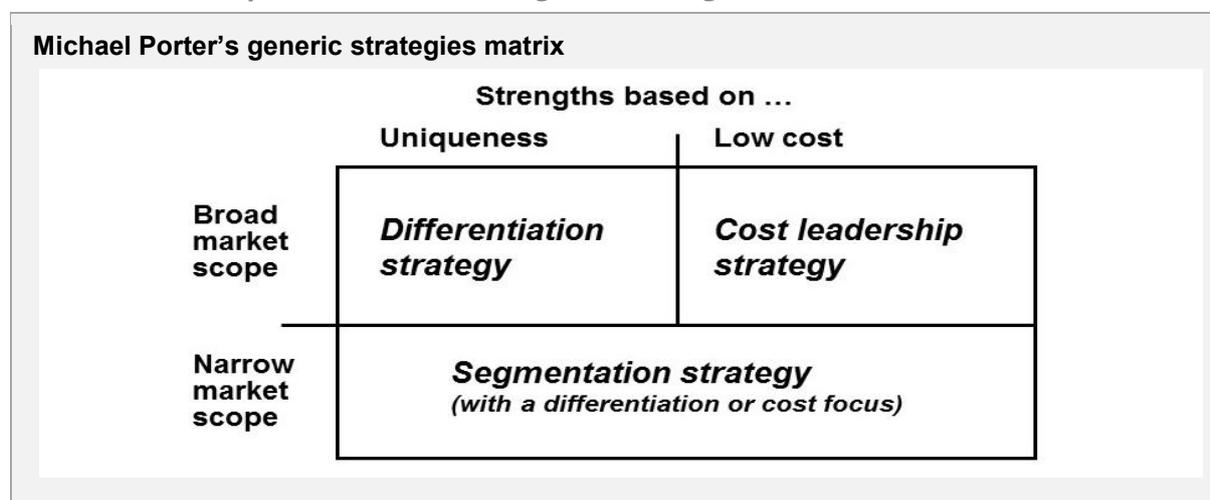
The management literature offers a number of useful tools to determine the best fit combining both aspects. Strategic management thinking can also be applied to determine the broad strategic direction of value chain development. A classic and widely quoted instrument for strategy choice is reproduced in Box 3.2.2 below.

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<sup>157</sup> Lehmann and Springer-Heinze, 2014

Michael Porter's generic strategies matrix combines the market potential with competitive advantages. The strategy thus starts from the potential of the value chain and not from any current problems.

**Box 3.2.2: Concept – Porter Matrix to guide strategic orientation**



Source: Adapted from [http://en.wikipedia.org/wiki/Focus\\_strategy](http://en.wikipedia.org/wiki/Focus_strategy)

Porter's matrix distinguishes two broad strategic orientations according to the relative competitive strengths of a firm or subsector, either the *uniqueness* of the product or a *cost* advantage. Accordingly, the strategy refers to product differentiation, such as quality improvement or product innovation, or to cost reduction because of better operational efficiency. These are two alternatives in a broad market with a large turnover. A third type of strategy or vision is about the specialization on market segments focusing on the needs of particular market niches. In this case, increasing competitiveness requires product innovation as well as an adequate operational efficiency.

The matrix above provides broad and generic strategic directions that growth strategies for value chains can take. Slightly reformulated, these are:

- Cost leadership strategy: This strategic option aims at higher production volumes and sales by keeping production cost low — a strategic option for low-cost producers in growing markets.
- Differentiation strategy: This is a strategy that builds on specific product features and quality products and seeks entry in markets for high-value products.
- Segmentation strategy: This means capturing more value in an existing market by specializing, innovating products or by reducing cost.

Building on the assessment of market opportunities and the different types of competitive advantage these basic directions need to be worked out in more detail. Whether and to what extent they can be successfully implemented depends on the performance of operators, their ability to actually bring a competitive advantage to bear. This means assessing current the performance of the value chain.

### 3.2.3. Gaps in chain performance

The basic strategic orientation for value chain development becomes clear by looking at markets and competitive advantages. However, this is not the end of the story. The question is how far the value chain is from actually responding to the challenge. The third step in the

strategic considerations concerns the current performance of the value chain as compared to what would be needed.

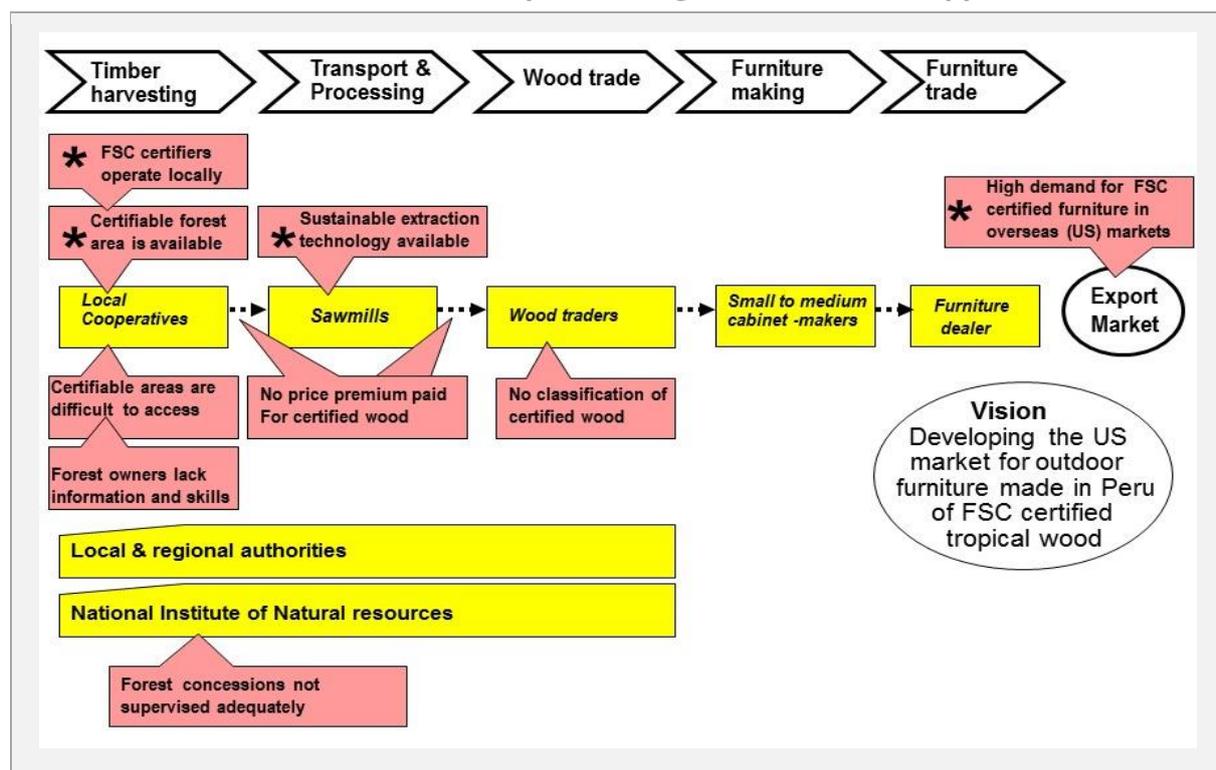
### Assessing chain performance against market requirements and benchmarks

Economic growth only happens if all necessary conditions are fulfilled in parallel. Value chain performance is a question of its systemic competitiveness — the smooth coordination of investment, production and distribution between value chain operators.

The task is to assess the current value chain performance in view of a possible growth strategy: It can be measured in terms of compliance with the requirements of the target market, the ability to make the necessary technical and organizational changes to produce the quality required, and to control production and marketing cost. Another measure of current performance is the benchmarks set by competing value chains in other countries.

The comparison between targets and actual performances can be done in a table format. Yet, it is much better to present the information in a visual form that is directly usable in collaborative decision-making. The most straightforward possibility for listing and visualizing constraints and opportunities is by introducing descriptive statements into the basic chain map as is shown in Box 3.2.1 below.

Box 3.2.1: Case – Furniture chain map indicating constraints and opportunities, Peru



Source: Own concept, based on a case developed in the ValueLinks Training Course, Quito, Ecuador, March 2006

The example stems from a workshop exercise: First, a preliminary strategic objective for the outdoor furniture value chain in Peru was formulated. In this case, it is a differentiation strategy that seeks to position certified furniture on the US market. The overview map of the chain is used to indicate performance issues related to the strategy that have been identified during a study and the discussions with value chain actors. During a strategy workshop, the issues are

noted on red cards and placed next to the arrows and boxes in the value chain map they refer to. Red cards marked with a star and placed above the sequence of operators stand for opportunities. Others, marked by a flash and placed below signify problems or needs. The results have been created on a pinboard that is subsequently transferred into a computer-generated chart.

The strategy of value chain development can be derived by looking at the prerequisites for growth and answering the question: How should the value chain look five years from now?

In order to come up with solutions, planners go through the critical points attached to functions, actors and relationships in the system — in light of the objectives for its development. It is important to note, that the objectives should not just be inferred from *current* chain problems but also from the opportunities and the necessary change implied by the strategic orientation. Based on the results of the value chain analyses, symptoms and underlying reasons of constraints should be discussed.

Both the chain map as well as the analysis of opportunities and constraints are simplified for the purpose of illustration. Nevertheless, even the short analysis of opportunities, needs and constraints shows that the major bottleneck is the supply of certified wood as there are no price premiums paid, forest owners lack skills and the raw materials are not properly traced. This information is highly valuable for strategy formation.

A second option to identify issues is to utilize industry benchmarks, such as productivity ratios, average production cost, delivery times etc. of the industry<sup>158</sup>. Benchmarks also indicate requirements of end markets. The question is where the value chain performance stands, in relation to competing chains elsewhere, and how parameters have to change in order to keep up with competitors.

### 3.2.4. Market failure

We can specify the changes and investment needs to grasp new opportunities but one big issue and subject of strategic consideration remains: Why has the economic potential not yet been realized earlier? What are the deeper reasons for economic stagnation? Are there any governance issues hampering development?

#### ***Assessing market failure impeding value chain development***

An important reason why growth opportunities are not taken by value chain operators is market failure and dysfunctional business linkages. Market failures are major obstacles to value chain development that explain why the economic potential is not realized as well as coordination failures and asymmetries along the value chain. The analysis has to find out why markets and value chains do not work properly, and to what extent market failures reduce economic performance.

#### *Generic types of market failure*

Market development suffers from the problems compiled in Box 3.2.2, which presents examples of the different types of market failures encountered in economic development that help explaining why growth opportunities are not pursued. The table can be used as a checklist to identify market failures along value chains.

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<sup>158</sup> See the economic analysis of value chains in module 2, chapter 2.3 on industry benchmarks

The list is not complete because it does not speak about negative environmental impacts that affect climate change or have long-term repercussions that are not immediately felt by neighboring enterprises. Environmental issues are also a result of market failure. The respective strategic considerations follow in chapter 3.3.

### Coordination failure

A general requirement of successful value chain development is the collaboration of actors to enable complementary investments: Setting up a packhouse facility for fresh fruit presupposes a parallel investment into the orchards. Building hotels does not make sense unless the tourist attractions are developed and transport is available. If the parties do not work together, no one benefits. Here, the problem is a failure of the market mechanism. Market governance does not lead to the coordination of business activities between private enterprises. Coordination failure describes a situation under which several problems combined block market and value chain development. The different problems reinforce each other leading to a vicious circle. It manifests itself in different ways:

- Lack of investment, as operators wait for others to move and invest first
- Lack of trust and transparency

### Box 3.2.2: Tool - Checklist to identify market failures

Market failure	Examples	Impact on value chain development
Indivisibility of capital goods and technical processes  Natural monopolies	<ul style="list-style-type: none"> <li>- Fixed size of a container that has to be filled by the supplier</li> <li>- Technical upgrading comes in discrete steps (big difference between a simple village rice mill (around 2,000 US\$) to the next- higher technology level (multi-stage mill at a minimum investment cost of 20,000 US\$<sup>159</sup>)</li> <li>Minimum investment required to build up telecommunication and energy supply is not profitable at remote and sparsely populated locations</li> </ul>	<ul style="list-style-type: none"> <li>- Small producers cannot sell to buyers because they don't have enough volume to fill a container at one time</li> <li>- The initial investment and technological steps are too large for some entrepreneurs</li> <li>- No access to basic utilities</li> </ul>
Market failure	Examples	Impact on value chain development
Asymmetric information	<ul style="list-style-type: none"> <li>- Enterprises cannot verify the quality of products / absence of information about product attributes, e.g. of (agro-) chemicals, seed, equipment, product safety</li> <li>- Imperfect information on market prices, absence of grades and standards</li> </ul>	<ul style="list-style-type: none"> <li>- Enterprises as well as consumers refrain from buying products they need but cannot trust</li> <li>- Enterprises produce less or hold back produce</li> </ul>

<sup>159</sup> Rice Knowledge Bank: <http://www.knowledgebank.irri.org/>

<p>Incomplete or non-existent property rights, inability to appropriate goods &amp; services</p>	<ul style="list-style-type: none"> <li>- Investment in staff skills is lost once employees move to competitors</li> <li>- Fixed investment in land (e.g. plantations) may get lost if land tenure and property rights on buildings cannot be enforced</li> <li>- Capital goods and market linkages in the informal sector, e.g. of trade women, cannot be used as collateral</li> </ul>	<ul style="list-style-type: none"> <li>- Companies invest less in skills development than required</li> <li>- Farmers refrain from investing into their land</li> <li>- Underfunding of value chain business operations, growth of informal enterprises remains limited.</li> </ul>
<p>Monopolistic behavior</p>	<ul style="list-style-type: none"> <li>- Concentration / excessive buyer power of traders in a region</li> <li>- Monopolies of producing companies at a particular location</li> </ul>	<ul style="list-style-type: none"> <li>- Buying (selling) prices higher (lower) than under conditions of competition reducing the incentives to invest</li> <li>- Unfavorable contracts</li> </ul>
<p>Insufficient or missing public goods</p>	<ul style="list-style-type: none"> <li>- Inadequate public infrastructure (roads) and absence of social services (education and health care, public services) not provided by markets because of their public good nature</li> </ul>	<ul style="list-style-type: none"> <li>- Enterprises without access to basic infrastructure and public services</li> <li>- High transaction and transport cost</li> </ul>
<p>Negative external effects</p>	<ul style="list-style-type: none"> <li>- Leather tanneries and carpet manufacturers polluting fresh water</li> </ul>	<ul style="list-style-type: none"> <li>- Adjacent food producers have higher cost or are driven out of business (tourism operators)</li> </ul>

*Source: Own compilation, based on the table in Meyer-Stamer and Wältring, 2007, p.25*

The first causal mechanism leading to non-cooperation starts with weak public infrastructure and missing services. Bad roads, missing market places and storage capacity bring up the production and marketing cost of agricultural products. As a consequence, traders do not have many incentives to penetrate that region which remains marginalized. With no access to inputs and reliable marketing options farming is discouraged leading to low productivity and diminished marketable surplus. Agricultural supply is fragmented and the cost of collecting produce from scattered producers increases further making the region even less attractive for traders. The result is a stagnant, thin market with volumes below the potential.

Often, mistrust prevails and enterprises limit their business relations to ethnic and trust-based networks effectively excluding others. The possibilities and incentives for upgrading the value chain are seriously restrained. In a situation of coordination failure, neither the supply nor the demand side move without a conscious and targeted effort enabling cooperation.

### Box 3.2.3: Case – Market failure problems in the potato value chain in Kenya

#### A description of the potato value chain in Kenya

“Potatoes are marketed through a fragmented chain characterized by many handlers, hardly any cooperation, no integration ... which result in high supply risks, high transaction costs, price inefficiencies and quality losses. Analyzing the chain, critical issues become evident and are often associated with weak rural-urban linkages: Firstly, the predominantly smallholder production is confronted with failing input markets. In addition, potato production is affected by poor quality and unreliable availability of seed potatoes. Secondly, scattered farms, limited storage facilities, poor road network, and insufficient transport facilities damage the potatoes and affect the post-harvest quality. Thirdly, the market value of potatoes is subject to very limited negotiation, given that almost all farmers sell to middlemen at the farm gate. In the absence of standardized packing and weighing scales, middlemen developed a tendency to enlarge the bag sizes but to keep the prices per bag steady.”

Source: ECAPAPA, 2006, p.3

The coordination problem between private enterprises can be related to a government failure to provide the complementary public goods needed for investment. The private-private coordination failure thus may be connected to a wider private-public coordination failure.

#### Poverty traps

The vicious circle is further exacerbated by the social situation of the poor. Poor farmers and micro entrepreneurs do not have many alternative sources of income and often are forced to stay in a business that has little to offer. Even if farming or artisanal occupations mean self-exploitation and only yield minimal returns, poor operators would still continue producing and selling. With low productivity, no money and little interest in intensification and economic investment, the coordination failure problem is perpetuated and develops into a trap for the poor. Development traps as a reason for economic underdevelopment have been analyzed by Collier and Easterly<sup>160</sup>.

### 3.2.5. Strategic options addressing economic growth

Value chain development builds on the strategic considerations set out in preceding sections — market opportunities and competitive advantages on one side, and the need to correct and balance market failures on the other. The strategy has to address the underlying problems and seek viable solutions. The considerations lead to the formulation of two strategic options.

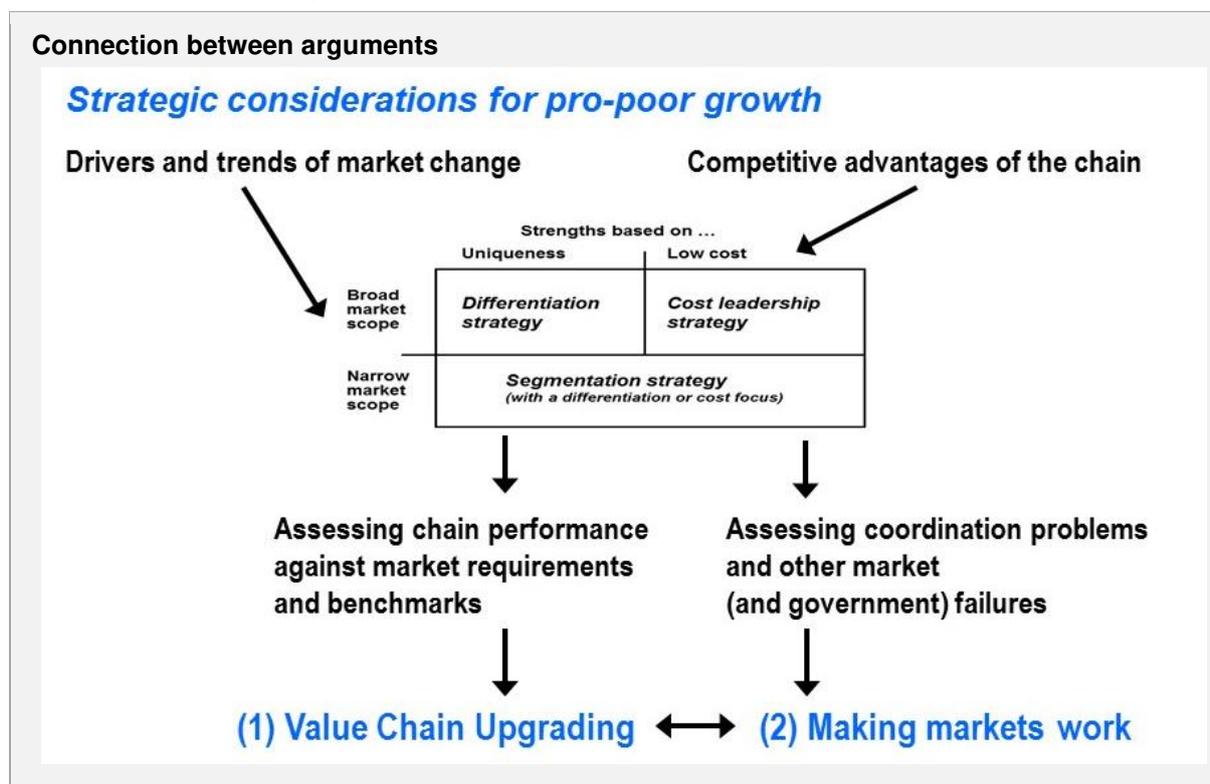
Depending on where the value chain stands, we can distinguish two options:

- The first is ‘value chain upgrading’ addressing the needs and requirements to better comply with market demand and live up to industry benchmarks.
- The second is ‘making markets work’ the building of a functional value chain.

The chart in Box 3.2.4 shows the lines of argumentation

<sup>160</sup> Collier, 2007, and Easterly, 2002

**Box 3.2.4: Concept – From strategic considerations to strategic options for economic growth**



Source: Own concept

The following two sections elaborate on both possibilities. For sure, both options are connected and not mutually exclusive. The idea is to trigger a virtuous, self-sustaining circle of economic growth.

**Strategic option 1: Value chain upgrading and innovation**

The first option can be regarded as a classic approach to value chain development. To play out the competitive advantages of a value chain it is necessary to translate the growth potential into real business change. The approach is value chain upgrading — i.e. implementing the necessary improvements along the chain to achieve growth. Upgrading relates to all enterprises, business processes and linkages that have a bearing on competitiveness and performance. By upgrading, the chain lifts its competitiveness, catching up with competing value chains or even surpassing them.

Based on the general direction of the growth strategy (cost reduction, differentiation/quality improvement or segmentation/value-adding), the strategic option is elaborated by answering lead questions, such as:

- Which growth opportunities are within reach?
- How would the value chain look five years from now if the (potential) competitive advantages were brought to bear?
- Which are essential elements of the value chain that definitely have to change?

The answer uses the information on market requirements, relevant benchmarks and the comparison with the current structure performance of the value chain.

Upgrading a value chain means introducing innovations and acquiring new capabilities. The most widely used classification of types of upgrading has been developed in the literature on global value chains<sup>161</sup>. Four major categories can be distinguished:

- Process upgrading: improving the efficiency of production
- Product upgrading: improving the quality of end or intermediate products
- Functional upgrading: taking up new, more sophisticated business activities
- Intersectoral upgrading: moving into other industries and value chains

This basic classification can be broken down into specific aspects. For example, process upgrading includes improvements in linkages and coordination, in technology or service provision. Product upgrading can refer to end products as well as to intermediate products. In any case, change and innovation have to happen at many points in the value chain.

ValueLinks organizes the value chain innovations into six categories: business models, vertical and horizontal linkages, services, chain financing, quality and standards, and regulatory improvements. A chain upgrading strategy can include any of the topics comprised in ValueLinks modules 5 to 10. Each module includes different upgrading solutions that may be combined to enhance overall value chain performance.

A useful concept for consolidating a value chain upgrading strategy is the classification of business strategies shown in Box 3.2.5. The Ansoff matrix presents combinations of innovations relating to the product and to the target markets. The matrix helps to assess which combination of current or new products and markets stands the best chance of succeeding. In order to select a strategy, analysts have to assess the likely success of a product in different markets and the risks involved.

**Box 3.2.5: Tool – The Ansoff matrix**

<b>Igor Ansoff: product / market matrix</b>		<b>Current products</b>	<b>New products</b>
<b>Current markets</b>	<b>Market penetration strategy</b>	<b>Product development strategy</b>	
<b>New markets</b>	<b>Market development strategy</b>	<b>Diversification strategy</b>	

Source: See the "12 Manage" website<sup>162</sup>

The actual strategy for any particular chain will always be a combination of upgrading solutions that is highly specific to the type of value chain and the context.

<sup>161</sup> Gary Gereffi, Hubert Schmitz, John Humphrey.

<sup>162</sup> '12 Manage', see [www.12manage.com/methods\\_productmarketgrid.html](http://www.12manage.com/methods_productmarketgrid.html)

The categories in the Porter and Ansoff matrices, Box 3.2.2 and Box 3.2.5, provide basic categories of upgrading strategies that are generally applicable. The Ansoff matrix can be used to differentiate these strategies further:

- The market penetration strategy focuses on expanding production and reducing unit cost. This means upgrading the production capacity to operate at a bigger scale. Lower production cost means being able to sell at lower prices. Economic growth is achieved by larger volumes.
- The product development strategy is about improving product quality. Here, the focus is on new and better products that are more competitive and command higher sales prices.
- The diversification strategy moves to entirely new products and markets innovating products, production technology as well as marketing. Growth is achieved in terms of volume and interesting sales prices.

Furthermore, a distinction has to be made between strategies for:

- The upgrading of domestic resource based value chains
- Integration of producers of one country into global value chains

From the perspective of low-income countries, the tasks are quite different. The reason is economic geography: Resource-based or 'additive' value chains originate in low-income countries and the value chains serving domestic and local markets are mainly comprised in the national economy. The business community and the national government therefore have the leverage to generate structural change. This is different in the case of global value chains and production networks that are governed internationally. Domestic enterprises are only active in a particular segment of a global production network. The governance and functioning of the global value chain is out of reach for the domestic firms and government. Therefore, value chain upgrading is limited to the specific business activities at national level that feed into the global value chain.

#### *Upgrading local and domestic value chains*

Most public value chain development programs cover value chains that are based in one country. It is this type of value chains that the concept and tools of ValueLinks refer to in the first place. This focus has to do with the fact that most African and a number of poor Southeast Asian countries are not integrated into the global economy. Local enterprises are only able to compete domestically as market entry requirements tend to be lower. At the same time, domestic demand is growing and provides opportunities for the national economy. Improving chain efficiency poses less of a challenge than global value chain integration.

The complete set of instruments for value chain development applies. Value chain development of resource-based and domestic value chains strengthens the economic structure in low-income countries in a broad sense including the development of local linkages and of regional exports to neighboring countries. To compete regionally, the food chains have to work better at national level first. Domestic value chains therefore may be a better training ground for new entrepreneurs.

#### *Integrating into global value chains*

The global value chain approach deals with the integration of developing countries into the global economy, particularly the participation of local firms in global manufacturing networks in the garment, footwear, toys and electronics industries. Global value chains are governed by multinational companies and increasingly by companies in large emerging economies, such as China or Brazil which cover the entire value chain. The key issue is whether and under what

conditions enterprises in small and poor countries can be integrated into global value chains. The challenge is enabling national firms to obtain contracts from international companies building the capabilities to perform particular functions and business processes. The possibilities of poor countries to enter and move up global value chains have been studied at the Center for Globalization, Governance and Competitiveness at the Duke University, North Carolina<sup>163</sup>.

Strategically, this option of value chain development is primarily concerned with the conditions of market entry. The range of relevant upgrading solutions focuses on:

- Industry policy. See module 10
- International industry standards. See module 9 in forthcoming volume 2
- Arrangements for public support service provision, especially skills development and capacity building of national enterprises. See module 7 in forthcoming volume 2
- The agreement on sustainability standards for different global industries and the instruments for implementation and enforcement, which is the most important value chain development strategy certainly. See module 9, sections 9.1 and 9.2 in forthcoming volume 2

At the same time, an export oriented value chain strategy has to make sure to avoid immiserizing growth that is a process of increasing economic activity with declining real incomes<sup>164</sup>. This may happen if the country expands its production capacity along with other suppliers to the world market. Economic globalization has, in part, resulted in falling prices of commodities and simple industrial products and the worsening of the terms of trade.

In itself, the economic upgrading of both domestic and global value chains may not be sufficient to generate a positive social or environmental impact. From a development perspective, chain development cannot solely be based on the competitive advantages of the value chain but has to be pro-poor at the same time. Hence, the economic development approach has to be complemented with strategies ensuring that the additional chain income is distributed across poverty groups. The complementary strategic options addressing poverty are covered in chapter 3.4 below.

### ***Strategic option 2: Making markets work***

The second strategic option is relevant in cases where value chain development is blocked by market failures — despite the existence of market opportunities and competitive advantages. The market coordination problems described above apply to domestic value chains in the first place, and very often to food chains.

Market development means more than fixing different market failures individually. It means making markets work in a broader sense. Wherever the market incentives to invest and produce are blocked, the solution to market development is in the governance structure<sup>165</sup>. To overcome market failures coordination along the value chain to be improved by networking of operators, and by government regulation and public steering of private investment. The strategy to make markets work builds on partnerships and a targeted co-investment of private and public actors. 'Making markets work for the poor' (M4P)<sup>166</sup> is a well-known approach to address dysfunctional markets.

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<sup>163</sup> For publications see <http://www.capturingthegains.org/> and <https://globalvaluechains.org>

<sup>164</sup> Kaplinsky and Morris, 2014, p.3

<sup>165</sup> See module 2, chapter 2.2.5 on value chain governance

<sup>166</sup> For M4P see <https://beamexchange.org/>

It is very important to keep in mind that market failures can be the consequence of policy failure as well. Simply relying on government intervention is risky as public administration may be part of the problem. Solutions have to include incentives for private enterprises as well as public agencies. On the private side, there should be:

- A clear picture of the opportunities and promising business models. See module 5 in forthcoming volume 2
- How the models could be financed, module 8 in forthcoming volume 2

The public side has to:

- Understand its role in economic development. See module 10 in forthcoming vol. 2
- Provide the requisite support services. See module 7 in volume 2

Leadership can be taken by both sides. The scope for value chain coordination ranges from single investment projects to chain-wide projects spanning regions and corridors. To overcome coordination failure and render the value chain functional, different investments and chain improvements have to be combined. The improvement of business linkages is at the core. It needs to be complemented by business model innovations and by public investment.

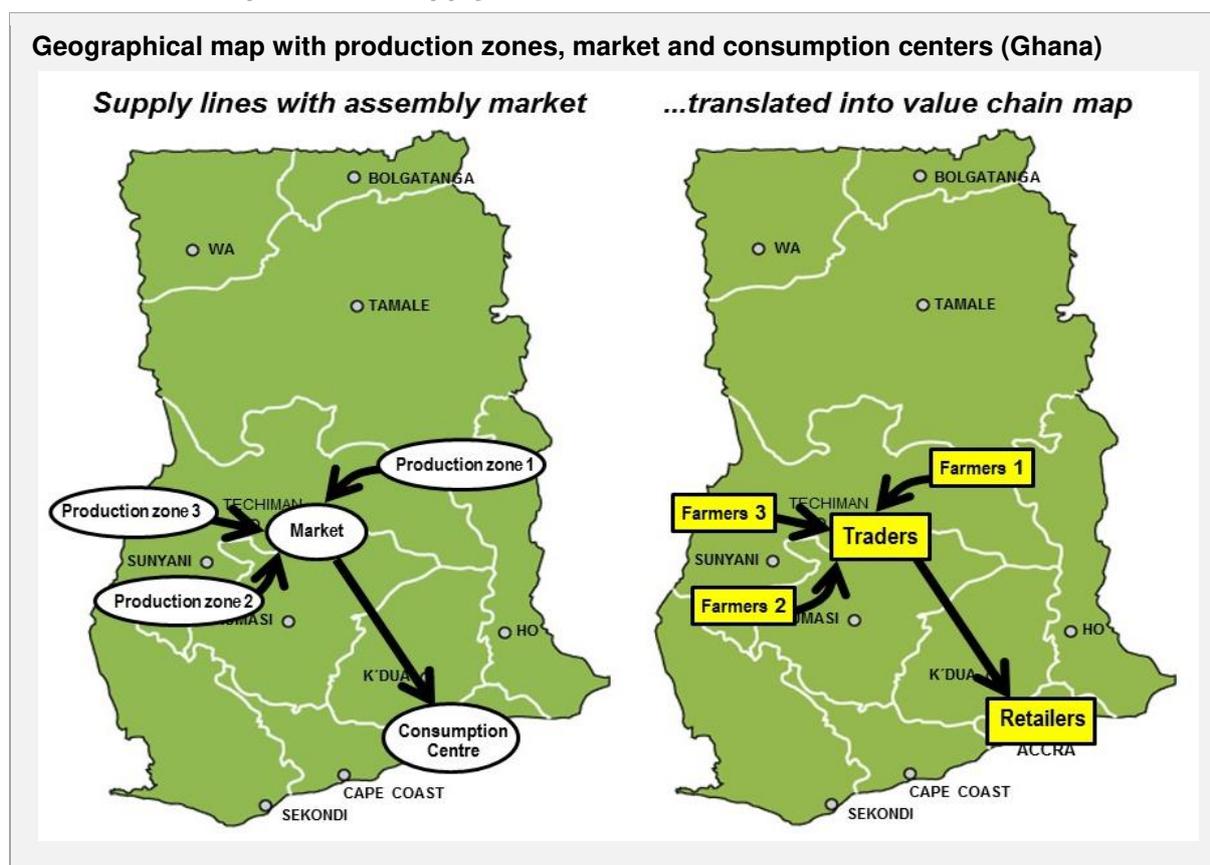
Often, the improvement of raw material and input supplies can only be achieved by working on the marketing end of the value chain at the same time. Bringing up sales in end markets indirectly generates a demand-pull effect on the input markets. Input supply companies therefore have an interest in collaborating with processing firms and traders to make sure that the technology they sell actually delivers the expected financial benefit and the loop is closed. An example is the fertilizer company Yara that supports the coordination in value chains, either in the framework of government-led value chain programs or in partnership with other companies.

#### *Coordination of value chain actors along the supply line*

The coordination of value chain actors along a value chain has a physical dimension — overcoming the distance between operators. The business linkages can be projected onto a geographical map showing the connections between enterprises at different locations. Box 3.2.6 shows how producers, traders and consumers are lined up along a traditional supply route connecting surplus regions with consumption points, the major cities using the case of maize in Ghana.

The map shows production zones and the location of markets and consumption centers linking this information to the elements of a conventional value chain map. Attaching information on the geographical location to the categories of operators, the value chain can be shown as a series of points on a geographical map. Thus, physical connections and distances become visible. Please note that the example in the box presents a stylized pattern that is only loosely related to the reality on the ground.

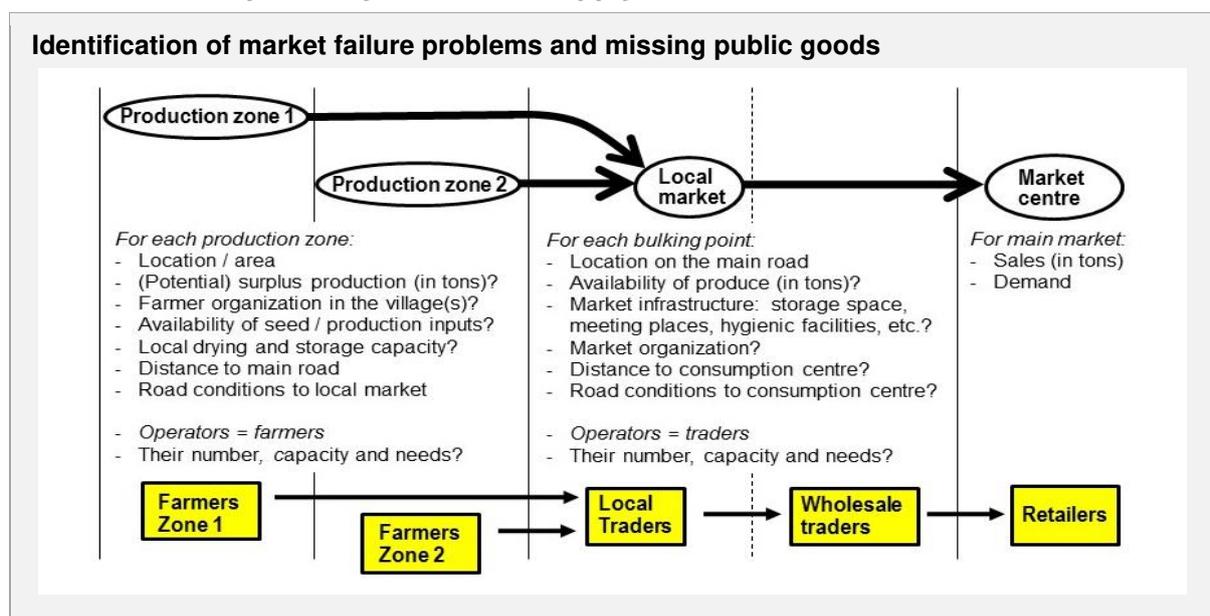
**Box 3.2.6: Concept – Maize supply routes in Africa**



Source: Own concept

Combining the geographical map with the structural value chain map allows visualizing the problems both in their relation to value chain actors and the territory. The list of market failure issues and missing public goods is placed into the value chain map. See Box 3.2.7 below.

**Box 3.2.7: Concept – A stylized maize supply chain in Africa**



Source: Own concept

The information is the basis for a strategy to coordinate operators better. The key point is the explicit reference to location. Private business models are bound to a particular location. For private investment to be viable, marketing security and cost need to be under control. The strategic focus is on mending the coordination failure along the supply lines. It consists in identifying buyers, sellers and service providers along supply lines, sharing the information and facilitating new linkages. The government strategy enabling private investment is to build the necessary access roads connecting farms and markets, and provide public utilities and market infrastructure at the right location. This strategic option can be applied to informal, traditional food value chains. Little additional funds are needed if the strategy limits itself to a more targeted allocation of the *available* public funds to given production zones and along the *established* marketing routes. Apart from the value chain development instruments, this public strategy also requires regional policies and planning instruments.

It should be noted that the strategy targeting chain governance make is also highly relevant for poor producers who are particularly affected by market failures. This strategic option is also useful to generate benefits for poor producers. Nevertheless, this implies adjusting their business models as well. See chapter 3.4.5.

#### *Investment corridors*

The principle of coordinating investment along roads and within spatial boundaries can be used at different scales. At a much larger scale than the existing supply lines are government-led (agri-)business investment zones or economic corridors. These programs are meant to coordinate large public and private investments. An economic corridor approach has an industry focus as well as a spatial orientation — the corridor connecting production areas to ports and big cities. For example, in an agricultural corridor, investment into agricultural processing is linked to raw materials supply and to the construction of basic public infrastructure, such as roads or irrigation parameters<sup>167</sup>.

The public infrastructure provides private companies the incentive to realize their own investment projects. The more farmers and traders invest and expand the lower get the average transaction costs — such as through more efficient transport, input delivery, storage, handling or IT solutions. The value chain along the corridor becomes more competitive, as a whole benefitting all participants. Examples for the implementation of this approach to promoting market development are the Southern Agricultural Growth Corridor of Tanzania (SAGCOT)<sup>168</sup> and the Beira Agricultural Growth Corridor<sup>169</sup> in Mozambique. Comparable approaches in non-agricultural sectors are cluster initiatives and industrial zones. See module 10 in volume 2 for more detail.

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<sup>167</sup> World Bank, 2013

<sup>168</sup> SAGCOT: <http://www.sagcot.com/>

<sup>169</sup> Beira Corridor: <http://www.beirainformation.com/>

### 3.3. Strategic considerations for ecological sustainability

The second goal of value chain development is the ecological sustainability of business processes<sup>170</sup>. The starting point is the result of the environmental analysis of the value chain and the list of environmental impacts identified earlier<sup>171</sup>. To recall, there are two types of environmental impacts: The first is the impact of the value chain on the natural environment – the negative external effects on the environment and ecosystems emanating from business activities, i.e. type 1. The second type describes the impact on the value chain caused by climate change or environmental degradation. Both types of environmental problems put economic development at risk, either directly by undermining profitability and resilience or indirectly once consumers and public policy call the business models into question.

Given the pervasiveness of the environmental problems there is only one general direction for business development: The objective is to make value chains ‘green’ or at least greener than before. The principle of *green economic development* is to take full account of environmental costs and seek the balance between the ecological footprint of the value chain and the bio-capacity it uses. The issue at stake is no less than resolving or at least mitigating the conflicts between economy and ecology. Therefore, the following strategic considerations are of concern to all chain actors.

#### **Box 3.3.1: Tool – Strategic assessment of the possibilities for greening the chain**

##### **Steps in the strategic assessment**

- *Ecological limits*: Do the environmental hot-spots indicate that the value chain crosses ecological limits, be it the capacity of local ecosystems or the limits of natural resource availability?
- *Eco-efficiency*: Which possibilities to enhance resource efficiency exist in the value chain? How can conflicts over resource utilization be handled?

*Source: Own concept*

The strategic considerations first have to answer the fundamental question if the value chain entails environmental hot-spots. The most serious hot-spots may in fact indicate that certain business processes are unacceptable and operators have to discontinue them. This would mean fundamental change for the value chain switching to new products and technologies. Unsustainable business activities have to be stopped.

Other environmental impacts may be cured by a gradual transition to more sustainable practices. The second considerations is on the extent to which value chain development can promote the transition to a green economy. Greening can be achieved smoothly if economic and environmental interests converge, that is if solving environmental problems saves money at the same time. Where this is not the case, external interventions have to guide business behavior.

<sup>170</sup> Parts of the text in this chapter are taken from the GIZ concept note “Greening value chains” by Springer-Heinze and Finkel, 2012

<sup>171</sup> See module 2 chapter 2.4

### 3.3.1. Greening the value chain: Eco-efficiency

The economy and every value chain depend on natural resources and healthy ecosystems to function. Economic growth cannot be achieved at the expense of natural resources, such as water, energy, materials, the absorption capacity for waste and emissions — at least not in the medium to longer term. A greening strategy for value chains has to seek solutions that keep the consumption of natural resources steady, at the very least. In most value chains, resource consumption will have to be reduced producing more value from less resource input. The resource consumption, i.e. the footprint of the chain, should not exceed the supply of natural resources, the biocapacity.

Eco-efficient value chain development builds on two basic principles – decoupling economic growth from resource use and the creation of a circular economy.

#### *Decoupling growth from environment and resource use*

The first concept is about increasing eco-efficiency. The idea is to decouple economic growth from resource consumption and emissions. A well-known concept elaborating this idea is the 'factor five' formula for sustainable growth — producing the same economic value with only 20% of the current resource input<sup>172</sup>. In their seminal book, Weizsäcker and Hargroves argue that increasing resource productivity five times is both necessary and possible at the same time. "The basic premise is that fundamentally people do not want barrels of oil or cars, kilowatt-hours or (...) steel tins and aluminium cans. Rather, people are interested in the services that these products provide, such as mobility, energy, lighting and a container in which to store food and drink"<sup>173</sup>. The point is that economic development should always seek to 'de-materialize' growth reducing the material input needed to provide the desired service unit. The authors apply the 'factor five' to different economic sectors, such as buildings, heavy industry, agriculture and transport, showing many possibilities for increased energy, water and material productivity.

#### *Creating a circular economy*

The second concept goes beyond the *linear* reduction of resource utilization and puts the economy in its ecological context. A truly sustainable economy is *circular*: In a circular economy, the flows of material and energy are structured into 'closed loops'<sup>174</sup> which means the flow of energy and materials that goes through the value chain (as shown in the chart Box 2.4.1 in module 2) is turned into a circular movement, recycling and reusing the waste produced. Biological materials are fed back into natural nutrient streams and the technical materials are kept in a permanent cycle avoiding their downcycling so that very little or even no waste is generated. The two main concepts are:

- The idea of a circular economy<sup>175</sup>
- The 'cradle to cradle' concept (c2c)<sup>176</sup>

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<sup>172</sup> Weizsäcker et al., 2009

<sup>173</sup> Von Weizsäcker: [www.naturaledgeproject.net/factor5.aspx](http://www.naturaledgeproject.net/factor5.aspx)

<sup>174</sup> Fücks, 2013, p.168

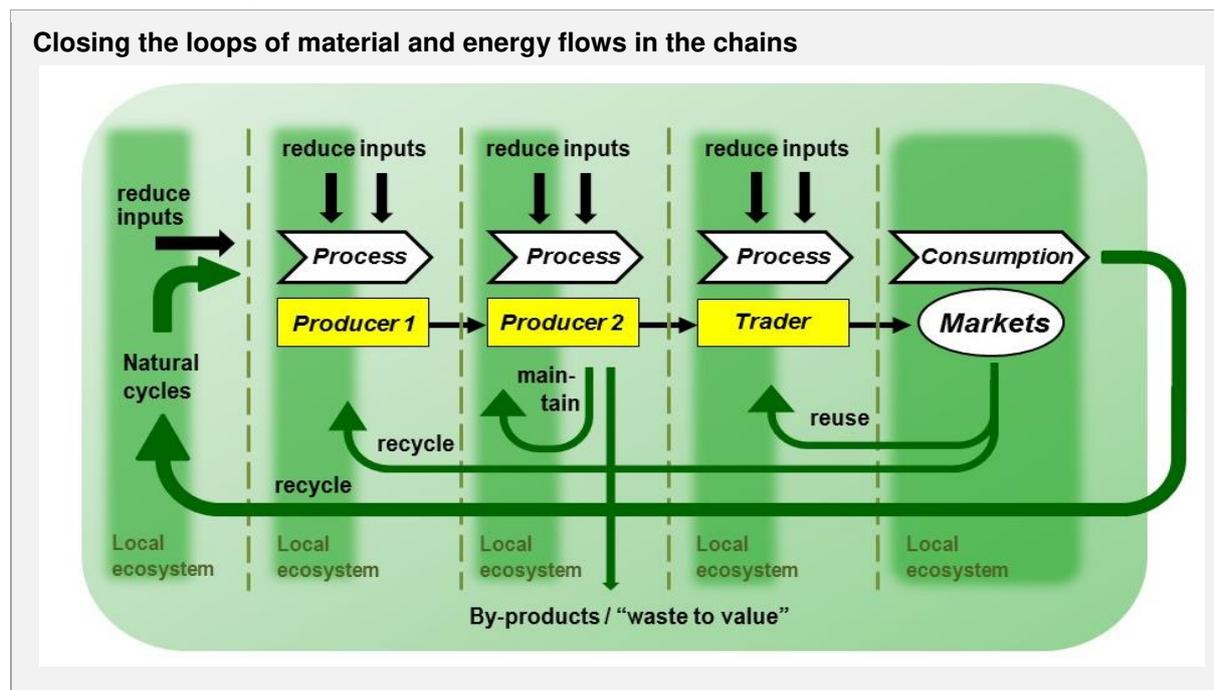
<sup>175</sup> For publications see: <http://www.ellenmacarthurfoundation.org/publications>

<sup>176</sup> McDonough and Braungart, 2003

A similar idea applied to food production is the ‘Water, Energy and Food Security Nexus’<sup>177</sup>.

The different concepts are applied to an idealized value chain that is organized as a circular economy. The chart in Box 3.3.1 can be compared to the similar chart of a conventional value chain in Box 2.4.1. In the improved version below the value chain is transformed by reverse channels through which materials are reused, refurbished or recycled. The input of external resources is reduced.

**Box 3.3.1: Concept – Value chain in a circular economy**



Source: Adapted from TCE report, 2013, p.29

Closing the cycles of material flows refers both to the interaction with local as well as with global ecosystems. The ecosystems at the places where the chain operators are located are indicated by the dark green areas. Here, the circular economy concept means that operators engage in the reuse and recycling of water, local materials and nutrients. The circular value chain reduces the global resource flows, such as fossil fuels, channels the used metals and other materials back to the providers or reutilizes them internally.

Green solutions are in production technology, organization of business processes and consumption habits that aim at *reducing* inputs, *reusing* material, *maintaining* equipment and productive capacity and *recycling* waste. By-products are not considered as waste but as raw materials that enter another value chain thus capturing value from waste.

Essentially, greening the value chain is about utilizing every possibility to enhance eco-efficiency, *and* about maintaining the natural resource base on which the value chain builds. The strategic considerations carry on from the list of environmental impacts delivered by the environmental analysis. See module 2, chapter 105. They identify opportunities enabling the value chain to adapt to and compensate environmental impacts, especially for the most urgent hot-spots.

<sup>177</sup> Water, Energy and Food Security Research Platform: <http://www.water-energy-food.org/>

### 3.3.2. Observing the ecological limits

Applying the principle of greening value chains meets with the difficulty that there is no clear definition of when a value chain can be positively considered green. The opposite, a chain that clearly is 'non-green', can be recognized more easily: Any value chain that is directly based on finite ecosystems resources, such as catch fisheries, collection of wild plants has to respect the capacity for regrowth to be sustainable. Similarly, agriculture will not continue for long if it relies on fossil water or on the mining of soil fertility. The first strategic question therefore is: What is the development perspective for a value chain that faces absolute resource limits? Should one invest massively to keep it going or rather exit from the market? The answer to this question is the first step. It is covered in the section on minimum productivity of ecosystems.

The first strategic consideration refers to essential ecosystem services and natural resources that are of critical importance for a value chain and that are threatened by severe environmental problems — the hot-spots. The criterion is the dependence of a value chain on a natural resource that is in danger but cannot be substituted for. It is these critical hot-spots that should get strategic priority. Critical environmental problems of this nature emerge within the value chain as a result of the overexploitation of productive resources. The classic example of a problem arising from within is the extinction of resources collected in the wild. In the medium to long term, overexploitation of wild plant and animal species or wood to make charcoal destroys the value chains building on them, just as overgrazing or nutrient mining.

The risk of losing a critical resource also results from factors outside the chain, especially climate change. Most examples are from agriculture, where increasing temperatures make production of fruit or wine obsolete at particular locations. Coffee production cannot survive at certain altitudes as climate changes. Tourism that relies on intact landscapes or the existence of wild animals is another example. If the limits for the utilization of such resources are not kept, tourism operators will lose their business at some point. Seaside tourism is no longer possible when beaches are lost to erosion.

Highly critical hot-spots are also caused by competing industries that utilize the same resource. Carpet or leather production causing severe water pollution may itself not directly be threatened but makes vegetable production on downstream river shores impossible. Logging has similar effects on collected forest products. Poor populations need healthy ecosystems for their livelihoods. These include a variety of ecosystem services, such as water, building materials, collected wood, wild fruit, which are used for subsistence or as a source of market income.

#### *Protecting the resource base of local, especially rural value chains*

What is the development perspective for a value chain that is confronted with or causes absolute resource limits? If the hot-spot results in the loss of an essential productive resource in the same or in a neighboring value chain, the respective business model can no longer be sustained. Can and does the value chain have to be kept going in the face of the limits or should the business be discontinued?

The answer to this question depends on the importance of the product and on the significance of the value chain as a source of livelihoods. The relevance of the issue is particularly evident in marginal and poor communities that have no alternative but relying on local ecosystem resources. Poor countries typically are natural-resource-based economies. Rural producers in particular often depend entirely on local resources and environmental services. As these users of the resources cannot avoid the constraint or leave the location, the strategy must be to stabilize ecosystem productivity at a level that secures the livelihoods of local smallholders and rural enterprises. The strategies for the value chains concerned must define and secure the

minimum level of local ecosystem sustainability. The resource base of a value chain which is essential for local livelihoods has to be properly managed. At the same time, the resource use of that chain has to be made sustainable. In any case, vulnerable communities should get preferential access to the resource base while other business activities that deplete the same resources have to stop.

#### *Exit from markets*

Even if a polluting industry does not recognize its environmental impact at the present stage, it clearly undermines its own market success in the medium to long term. An enterprise that loses its profitability once it has to account for and compensate environmental cost, has to change its business model as a consequence. This can go as far as giving up production and exiting completely from the value chain. The strategy is a managed exit reorienting businesses to other products and markets thus securing business continuity.

Exiting from markets and value chains is an option that has to be considered seriously. In order to facilitate the exit, governments may have to provide support to finding alternatives and developing business activities and value chains for other markets.

### **3.3.3. Transition to an eco-efficient value chain**

The second strategic issue beyond observing the absolute limits to resource use concerns environmental and resource problems which can be mended by technological change and investment. The general principle of value chain greening is to minimize the resource intensity of production. Given the increasing resource scarcity and the fact that the carrying capacity of ecosystems has already been exceeded in many places, the only way forward is reducing the ecological footprint of the final product. Improving resource efficiency is the core of green growth. All major concepts for greening the economy consider resource efficiency as the key variable to work on<sup>178</sup>.

For the transition to a green economy<sup>179</sup> it is imperative that value chain development utilizes all opportunities for enhancing resource productivity along the chain. The strategy should generally go for the most innovative resource-saving technology. This is also true for poor countries. Value chains with a relatively small ecological footprint should keep that footprint small when they upgrade. Low-input value chains should in fact leap-frog directly to an eco-efficient value chain and avoid copying resource-intensive technologies from the North.

The particular greening strategy depends on the costs and benefits and the possibility of harmonizing economic and ecological interests. The strategic considerations have to determine the direction of the transition to a greener economy. How much should be invested into improving natural resource efficiency and which resources should get priority? Accordingly, the pathways towards eco-efficiency differ, depending on the cost effectiveness of investing into resource efficiency. Win-win conditions have to be distinguished from situations in which economic and environmental objectives are in conflict.

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<sup>178</sup> See von Weizsäcker et al., 2009; [www.unep.org/resourceefficiency](http://www.unep.org/resourceefficiency), and Fücks, 2013

<sup>179</sup> A comprehensive overview on the transition strategy is provided by ten Brink et al., 2012; also see the website <https://transitionnetwork.org/>, by Rob Hopkins

### ***Exploring win-win conditions***

Wherever both environmental and commercial objectives can be attained at the same time, we have a win-win situation. Practically all value chains have a potential for reducing their resource consumption. In many cases, the investment into resource-saving technology is in fact profitable. This potential still tends to be overlooked.

As long as the greening of the value chain is financially attractive, environmental problems can be addressed relatively easily. This is achieved by introducing technological modifications that serve both objectives. For example, introducing energy-saving technology reduces carbon emissions and saves money at the same time. Both the environmental and commercial objectives thus can be attained at the same time. The increasing resource efficiency pays for itself.

However, the factor time matters, as in any investment. The financial implications are less comfortable if the investment is financially neutral or pays off only in the long term. One possibility is to rank resource-saving investment opportunities according to their financial attractiveness and start from the top of the list. The resource costs saved by the attractive investments can subsequently be used to pay for the less obvious improvements.

Generally, value chain resilience to environmental stress grows with the integration of the value chain, better organization of the industry and increased knowledge about markets and technology. Value chain development increases adaptive capacity to climate change. Hence, the general objective of value chain development — improved competitiveness and economic growth — implicitly serves the greening concept at the same time. This is another type of win-win condition worth exploring.

### ***Balancing conflicts between economic and environmental interest***

The strategic situation is far more complicated when the win-win condition is not fulfilled and the additional investment to enhance resource efficiency cannot be covered by higher returns. Individual enterprises cause negative environmental impacts as they only calculate their own cost but not the cost of others affected by the business process. Typically, environmental costs are externalized, i.e. the costs of resource degradation and climate change are borne by all members of society. Carbon emissions are a case in point: The mere price of fossil fuels does not account for the cost of climate change inflicted on everyone. As long as the business models of a value chain generate negative effects they do not have to account for the economic costs and there is no incentive for greening.

Where economic interests are in conflict with environmental needs, value chain operators have no incentive to actually support the greening strategy. This situation is particularly evident if the resource use causes pollution and other negative external effects. See Box 3.3.2 below. Improving resource efficiency is not interesting for a polluter because at least part of the benefits, such as less pollution and lower resource cost would be captured by others.

To be clear: In the long term, the environmental cost of production will have to be accounted for in any case. After all, a non-sustainable industry undermines its own market success in the medium to long term. But in the short term chain operators have no incentive to pay for negative external effects generated by their business model. As long as enterprises neither benefit themselves nor have to face any disadvantages on markets, there is no reason for investing. Mitigating the environmental cost may drive up production costs to a level beyond financial viability.

### Box 3.3.2: Concept – External costs

#### Concept of external costs or ‘negative externalities’

External costs are costs imposed upon a third party when goods and services are produced and consumed. Economists explain the existence of environmental problems by the difference between the internal costs and profit of a company and the true cost of using natural resources and environmental goods. Individual enterprises can cause negative external effects on the economy as they only calculate their own costs and not the cost of others affected by the business activity. Environmental costs are typically ‘externalized’, i.e. the cost of resource degradation and pollution is borne by other people. Carbon emissions are a case-in-point: The price of fossil fuels does not account for the cost of climate change inflicted on everyone on the globe.

Source: [www.econation.co.nz/external-costs/](http://www.econation.co.nz/external-costs/)

The classic strategic response is public intervention and regulation. Green value chain development must change the incentives for economic behavior before green business solutions can be developed. In fact, tightening the environmental policies and private standards is a key strategic orientation. Regulatory improvement precedes effective investment into resource efficiency. See the strategic option 5 below.

#### *Trade-offs between resource categories*

Another strategic issue relates to the fact that it is hardly possible to improve the efficiency of all resources used in the value chain at the same time. For example, water efficiency in horticulture can be improved by using polyethylene tunnels. However, this innovation raises the energy input, because the production and transport of polyethylene is energy-intensive.

Similar effects occur when soil fertility is improved by applying mineral fertilizer, such as nitrogen or when renewable firewood is replaced by fossil fuel to save forests. In all these cases, one resource, such as water, soil, biological resources is replaced by energy bearing resources. While the resource efficiency of the first move up, energy efficiency may in fact go down. To overcome local resource scarcities, new infrastructure may be required, such as irrigation, land improvement, fencing, or new buildings that all require additional material, land and other resources. Even if the investment is highly useful, it nevertheless means more resource consumption, very often in form of a higher energy input. The strategic question is whether such technical solutions are justified and which types of resources and resource efficiencies should be given priority.

Both in the case of negative external costs and in the decision on innovations that save resources on one side but contribute to emissions on the other, an economically correct answer would derive from careful environmental and resource accounting. In principle, the different resource categories have to be made comparable by economic valuation so that an optimal allocation becomes possible<sup>180</sup>. However, economic valuation of resources is highly demanding as it has to take into account the many factors determining their value in different economic and social settings — in a highly dynamic situation where the technical parameters are in constant change because of innovation. Apart from these methodological challenges, the practical conditions under which greening strategies are formulated normally do not allow definite and precise answers. To provide direction to the greening effort, analysts have to recur to a qualitative assessment.

<sup>180</sup> See module 2, chapter 2.4.5 on environmental valuation, such as calculating footprints

Another trade-off to consider concerns the social dimension of sustainability. Under conditions of poverty, improving the efficiency of local productive resources has priority over savings of global resources. In the interest of the poor it is justified to work on the problem of local resource scarcity first, even if this implies higher greenhouse gas emissions. Strategy formation has to take into account that microenterprises in poor countries have fewer possibilities for absorbing, i.e. 'internalizing' environmental costs.

Again, there are no definite rules for resolving the trade-off. One possibility is to complement the resource-saving investment of the value chain by an improved management of the local natural resources.

### ***Resource efficiency and resilience to climate change***

Where the value chain is passively affected by climate change and the related environmental degradation (type 2 environmental impacts), operators have to respond and adjust. The foundation for greater resilience is the balance between ecosystem productivity and the climatic conditions on one side and the economic activity on the other. To improve the resilience of the value chain to climate change, farms and enterprises have to reduce their dependence on the biophysical environment, and particularly on the natural resources affected by climate change. Higher resource productivity helps reducing risk directly. The main strategic option and the technical key to resilience is, again, improvements in resource efficiency. Other technical measures derive from the assessment of specific climate risks and vulnerabilities.

#### *Adaptation capacity*

The challenge effecting the necessary technical change is in the capacity to detect and anticipate climate change risk. To enable technical innovations, awareness and know-how have to improve so that operators have the knowledge and the incentive to include climatic and environmental risk into their business decisions. Often this presupposes joint action and the organization of the value chain.

Generally, value chain resilience to environmental stress grows with the integration of the value chain, better organization of the industry and increased knowledge about markets and technology. Improved economic competitiveness implies an increased adaptive capacity of the chain as well, both to market and regulatory change and the environmental risk. Hence, the general objective of value chain development — improved competitiveness and economic growth — implicitly serves the greening objective.

### **3.3.4. Strategic options for environmental sustainability**

Box 3.3.3 shows the sequence of arguments leading from strategic considerations to a series of strategic options for greening the value chain.

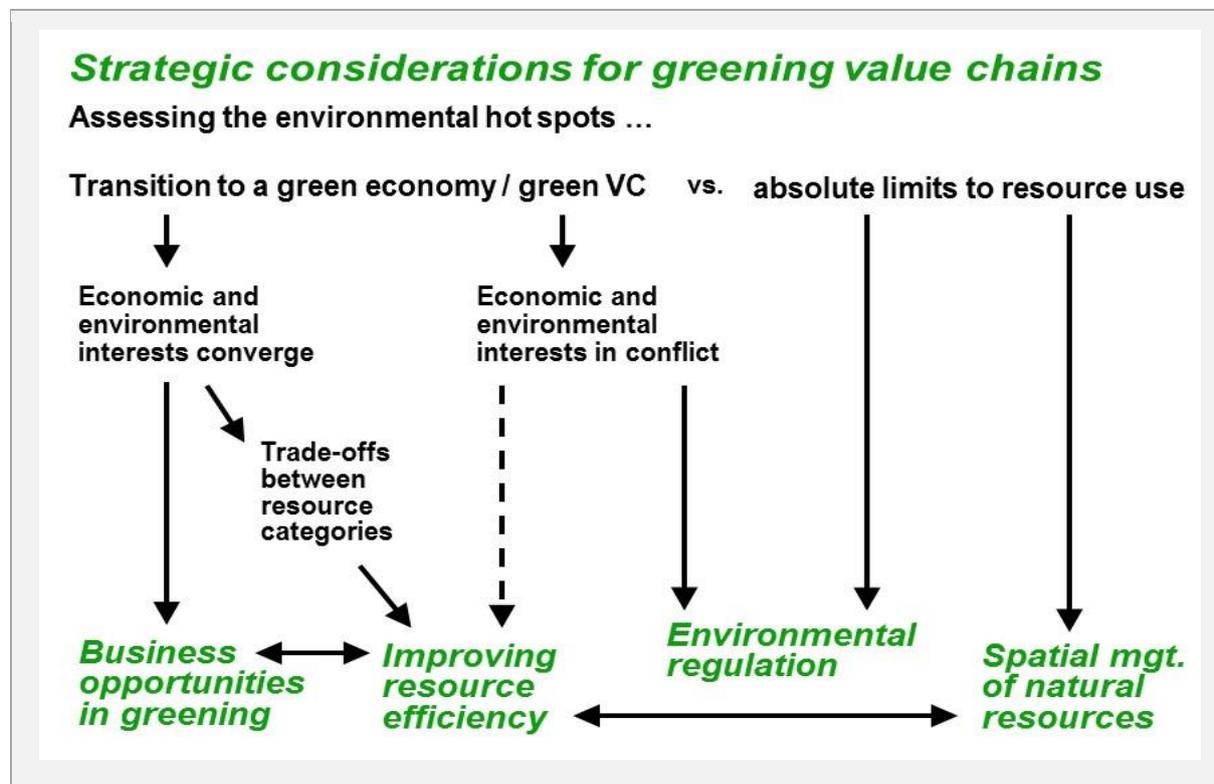
The strategic options depend on the type and severity of environmental problems in the value chain and on the given adaptation capacity. ValueLinks suggests three strategic options for value chain development aiming at environmental sustainability.

All options refer to both types of environmental impacts:

- Management of the natural resources and ecosystems on which the chain relies
- Improvements in resource efficiency reducing emissions, saving costs and improving resilience at the same time.
- Environmental regulation and policies

The first strategy responds to the need for respecting the local ecological limits that are decisive for the value chain at stake, making sure that key resources in areas where the value chain is located are maintained.

**Box 3.3.3: Concept – Strategic considerations for ecological sustainability**



Source: Own concept

The second option aims at mitigating the environmental impact and contributes to economic growth at the same time. This is the most important strategic option for value chain development and can take different forms. Ideally, efficiency strategies mobilize funds for green innovation and additional business opportunities.

The third strategic option applies wherever environmental strategies depend on external policy interventions. This option has indirect effects changing the framework conditions for businesses. Together, the strategies for sustainability complement and modify the strategic options for economic growth presented in chapter 3.2.5.

### **Strategic option 3: Management of natural resources and ecosystems**

If the analysis of environmental impacts detects local limits of resource use, the strategic considerations suggest a *spatial* development strategy to protect the natural resources and ecosystems in the areas where the value chain operators are located. This is not only important for environmental impacts affecting value chains building on local resources, such as value chains of biodiversity-based products, agricultural products and fisheries, and tourism around natural attractions — but also for the type 1 impacts of any other agricultural or manufacturing value chains on the local ecosystems.

Short of giving up production at critical locations, the value chain development strategy is to stabilize and protect local ecosystems at a level that assures their long-term productivity and secures the livelihoods of poor people and enterprises that have no chance of leaving the site.

One may ask whether this is an approach to *value chain* development. In fact, spatial resource management concepts, such as watershed management or land use planning are not specific to particular value chains. Protecting an ecosystem that supports *several* value chains calls for a program design that combines value chain development with resource management. Such combined approaches are discussed in chapter 1.4.2 of module 1.

Within the context of value chain development, the strategy for natural resource management starts by defining the resource base of the value chain not in terms of single categories, such as water, wood, fruits, sand, but in terms of the ecosystems where these resources are taken from. The technical processes of primary production have to be conceived as a form of ecosystem management. This concept is particularly evident in the case of freshwater catch fisheries: The production process does not start with casting a line or net, but by protecting the water body and its shoreline, preventing pollution, releasing fry or juvenile fish, combatting alien species that put the native ecosystem at risk and regulating access. Catching the fish for commercial purposes is just one technical step in a production process that in fact amounts to a full-scale ecosystem management.

Ecosystem management strategies are essential for any kind of biodiversity-based products, the collection of wild species, forestry or national park tourism; and they are also highly relevant in agriculture. Specific concepts related to agricultural value chains include:

- Climate-smart agriculture<sup>181</sup>
- Agricultural ecosystem management<sup>182</sup>

The connection of value chain development with ecosystems management is also made by approaches that reach beyond agriculture:

- Deforestation-free supply chains<sup>183</sup>
- Water, Energy and Food Security Nexus<sup>184</sup>

The principle of ecosystem management behind these approaches applies to the strategy formation for many value chains.

#### **Strategic option 4: Improving resource efficiency**

The transition to a green economy is a long-term process of promoting technical innovation, introducing new types of business models, environmental services and financing, and by adjusting the regulatory framework. Basically, economic development is complemented by a decoupling strategy that actively seeks growth at zero or minimum additional environmental costs. Operators are enabled to cope and stay competitive under conditions of rising resource scarcity and changing climate.

Enhancing the resource efficiency of the value chain is the basic strategy for greening and a core element in a circular economy. As long as the greening of the value chain is of economic benefit to the value chain operators, it is a win-win solution in which both environmental and commercial objectives come together. A classic example is energy-saving technology, which reduces emissions and saves money at the same time. Environmental problems, such as declining increasing water shortages are made up for by recycling and water-saving measures.

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<sup>181</sup> FAO, 2013

<sup>182</sup> UNEP, 2013

<sup>183</sup> Carbon Disclosure Project (CDP), 2014

<sup>184</sup> Stockholm Environment Institute, 2011

The technological innovations give rise to modified or new business models and services and changes in chain organization and business partnerships.

Improved resource efficiency responds to both types of environmental impacts. Ideally, it also opens the door to new business opportunities, and the transition process itself becomes a driving force for growth.

### *Innovation of technology and business processes*

Efficiency enhancing strategies promote technical innovation and investment. They refer to the interaction between the technical processes of the value chain and the environment identifying technologies reducing the natural resource input. To enable progress quickly, the strategy should go for the top win-win solutions first. Energy being the most fungible natural resource, the focus is often placed on energy efficiency solutions.

To formulate an efficiency strategy, value chain development decision-makers go back to the valuation of environmental impacts. The greening strategy has to set resource efficiency targets, or carbon emission targets wherever relevant, for each technical system in the different stages of the value chain. The objectives can be set by benchmarking the value chain at stake with similar value chains in other regions or countries. The objectives for greening use the same metrics as the initial environmental assessment.

There are several possibilities to arrive at technical and organizational innovations improving the water, energy and material efficiency. One is to determine the sources of waste and by-products along the value chain that may be transformed into raw materials in other processes. Another possibility is to compare the technology used currently with state-of-the-art technologies. The choice of available technologies is vast.

Follows a list of sources for innovations improving resource efficiency and reducing emissions:

- Innovations for the Blue Economy<sup>185</sup>
- The Natural Edge Project<sup>186</sup>
- Sector reviews on construction, steel and cement, agriculture and mobility<sup>187</sup>
- Clean Energy solutions<sup>188</sup>

As it stands, resource efficiency can also be used to set objectives for adaptation to climate change. For example, increased water efficiency of crop production as a result of drought-resistant crop varieties directly lowers the severity of the climate change impact.

### *Greening the business models in the value chain*

Value chain operators investing into efficient technology have to rebuild their business models. All technical innovations are accompanied by changing business procedures in other fields — forward and backward business linkages, the delivery of technical services and the horizontal cooperation between operators. It is also highly important to keep the financial side of green business models in view. Unless operators can show that the investment pays off, the strategy is likely to fail for lack of funding.

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<sup>185</sup> The Blue Economy: <http://www.theblueeconomy.org/>

<sup>186</sup> The Natural Edge Project: <http://www.naturaledgeproject.net/>

<sup>187</sup> Von Weizsäcker et al., 2009

<sup>188</sup> Powering Agriculture Knowledge Database: [https://energypedia.info/wiki/PoweringAg\\_Technology\\_Database](https://energypedia.info/wiki/PoweringAg_Technology_Database)

In many cases, the transition from a 'brown' value chain with high levels of pollution and resource consumption to a green value chain is gradual, as businesses become more resource-efficient over time. This gradual strategy is being pursued in the European Union's SWITCH-Asia Zero Carbon Resorts<sup>189</sup> project in the Philippines, for example. Hotels and resorts first reduce their energy consumption using simple, no-cost or low-cost solutions. With these savings, they replace old equipment with modern energy-efficient equipment and continue re-designing buildings to save energy.

#### *Capturing the opportunities in the business of greening*

Improving resource efficiency calls for investment in new equipment and new and different kinds of inputs. An important strategic aspect is the actual availability of energy or water-saving technology. Therefore, the efficiency strategy is related to the promotion of enterprises and entire value chains which provide the necessary green technology. Often, a new solution can only be found in close collaboration with such companies. Before they are able to deliver, the efficiency improving technical innovations have to be cast in viable business models. The efficiency strategy has to take these suppliers on board.

But introducing resource-saving technology is not only necessary for developing the value chain at stake. It also is a starting point to identify new business opportunities emerging in the value chain greening process of which enterprises can take advantage anywhere. Here is another strategic option: Where the markets for greening technologies and services are expanding, it makes sense to focus on the value chains for such products thus promoting resource efficiency via the suppliers of green technology. Development of value chains on the demand side is combined with value chain development on the supply side. The expected result is that the greening business has better chances of becoming profitable and the range of industries benefitting goes up at the same time.

#### **Strategic option 5: Environmental regulation policy**

The strategic situation looks different if value chain operators have no incentive to actually support a greening strategy because it does not serve their business interest. This is where the policy and regulatory framework becomes paramount for green value chain development, and regulatory change has to precede the enabling function of value chain development. The principle is that environmental and climate policy has to change the incentives for economic behavior first, before any new business solutions can be introduced. Better resource efficiency and the reduction of emissions have to pay off for enterprises.

Basically, environmental policy has two possibilities to change the incentives: One is a positive incentive, public payments enabling green investment. The other is taxation or environmental legislation. Instruments to achieve this include environmental standards, investment aids covering part of the cost of equipment, environmental taxes, restrictions on land use, or outright bans on certain products and technologies. The situation is similar to price changes induced within the economy and to which value chain operators have to react as well.

This strategic option is value chain-specific to the extent that value chain development needs specific regulatory solutions to deal with hot-spots identified in the environmental analysis.

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<sup>189</sup> Zero Carbon Resorts: <http://www.switch-asia.eu/projects/zero-carbon-resorts/>

### *Key environmental issues*

ValueLinks module 10 on environmental policy instruments to regulate markets becomes crucial for greening and has to be given priority. See module 10, chapter 10.3 in volume 2.

### *Greening at different levels of the value chain*

Value chain development addresses all levels of a value chain, the micro level of small enterprises, farmers, companies and traders, the meso level of support service providers and the macro level of policy making. Value chain development for environmental sustainability means working at all levels at the same time:

- Micro level: Foster the long term competitiveness of companies through resource and energy efficiency and conservation measures, the use of renewable energy as well as measures that help them adapt to or make them more resilient to the effects of climate change; create awareness about and encourage sustainable consumption and lifestyles of consumers which will trigger demand for sustainable products and services.
- Meso level: Proactively build the institutional capacities needed for green growth. Due to their limited resources, the MSME, including farmers, are especially dependent on support institutions and the availability of adequate, affordable support services, business strategies and business models.
- Macro level: Take over political responsibility beyond legislative periods by setting the right incentives and price signals and by playing a role model regarding all issues of sustainability.

Governments need to get involved at the supra-national level as well, trying to improve and secure commitment for international agreements on climate change. This includes shaping financing instruments at the global level, such as the Clean Development Mechanism. Another policy field is the reduction of trade barriers for clean technology.

### 3.4. Strategic considerations for promoting social benefits

Generating social benefits is the key motivation of government and development agencies promoting value chains. Poverty reduction and economic inclusion of women and the young are essential elements in the concept of a sustainable and green economy. Anticipating the social outcomes of economic development for poverty groups thus is at the core of value chain development.

The objective is the economic inclusion, at beneficial terms, of poor and marginalized farmers, microenterprises and wage workers (both the working poor and the unemployed) in the value chain. Economic growth should allow a substantial number of poor people to move above the poverty line. Per se, the objective is independent of the degree to which the non-poor benefit as well. However, rising inequality would be a problematic outcome as it aggravates relative poverty. A stronger version of pro-poor growth aims at a more equitable distribution of the additional income between the poor and the non-poor.

Another main objective is the equal participation of women and young people. The strategic considerations in this section are directed at public decision-makers in the first place. However, the social consequences of business development have become a strategic issue for private companies as well. Large corporations increasingly adopt sustainability policies with some explicitly engaging in inclusive business models.

The poverty and gender analyses of the value chain in module 2, chapter 2.5.2 provide the basic information for the strategic considerations: The poverty mapping of chains identifies poor and vulnerable groups in and around the value chain. It is these groups that value chain development has to address.

#### *Box 3.4.1: Tool – Assessing the possibilities for economic inclusion of the poor*

##### **Steps in the strategic assessment**

- Economic constraints and opportunities of poor producers: Which characteristics do poor producers have that provide them with a competitive advantage vis-à-vis their buyers?
- Which jobs are accessible to poor wage workers given their profile and constraints?
- Do poor consumers experience a poverty penalty in the value chain?
- How do conditions of livelihoods and nutrition affect poverty groups in the value chain?

*Source: Own concept*

The initial hypothesis is that poverty groups benefit from the growth of a value chain. All other things being equal, the additional value-added would be distributed among the operators and their employees. The impact on poverty groups then depends on the selection of the right value chain in the first place. As long as the value chain includes poor producers and provides jobs for low-skilled workers at least the potential for pro-poor growth exists.

However, studies on the gains of globalization show that this is not necessarily the case<sup>190</sup>. Economic progress is expected to produce winners, but the wins often are unevenly distributed with poor people left behind or even losing out in the process. “Economic growth is not simply more of the same”<sup>191</sup>, it implies structural change. The question is under what conditions and

<sup>190</sup> Globalization: [www.capturingthegains.org](http://www.capturingthegains.org)

<sup>191</sup> Easterly, 2002, p.177

to what extent the benefits of economic development actually reach the poor. The creation of new jobs begs the question under what terms poverty groups are being included. How can they gain access to markets and take their share? The strategic considerations shed light on the specific opportunities, constraints and risks of poverty groups in economic development. Building on the poverty mapping exercise we look at three groups of poor that potentially benefit from value chain development or who may as well be negatively affected by it.

The following sections look at them separately:

- Poor producers, mainly in agriculture and handicrafts
- Poor (working or jobless) wage workers in and around the value chain
- Poor consumers of the final product of the chain, e.g. staple foods or basic services

The second strategic consideration concerns issues that cut across poverty groups — the role of livelihoods, nutrition security, social discrimination and vulnerability. This includes to clarify the underlying causes of social exclusion, especially the distribution of assets, property rights and market failure to the detriment of the poor.

### 3.4.1 Opportunities and constraints of poor producers

A key poverty group to benefit from value chain development is poor producers, especially agricultural smallholders and microenterprises. They can be expected to benefit from market growth and improved efficiency of a value chain if they operate in a promising market segment. Their success depends on their ability to adjust to market conditions and is tied to a number of conditions. If poor micro-entrepreneurs or newcomers to the business are able to produce and sell profitably at their given *small* scale of operations, they should be able to pick up opportunities emerging in value chain development. In many cases economic development implies structural transformation that poor farmers and micro-entrepreneurs have difficulty coping with. Rising buyer requirements and lower product prices affect poor and marginal producers negatively. The question is whether they can be enabled to respond to changing market conditions. This is yet another issue of competitiveness and the ability to secure rents that we have already discussed in 3.2.2. This time it does not apply to the value chain in relation to end markets but to the poverty groups vis-à-vis their buyers.

#### ***Competitiveness of poor entrepreneurs***

Poor smallholders and SME are characterized by a large number of typical constraints reducing their competitiveness. Box 3.4.2 compiles factors impeding the market participation of poor operators. They serve as a checklist to assess the performance of poor producers in view of the market demand and the performance of competitors. The criteria can be linked to the analysis of the business model of a poor producer. See module 5 in volume 2.

An additional point diminishing the competitiveness of SMEs is economic policy discriminating against the poor – market regulations and public support services disregarding the poor. Often, weak groups have a particularly hard time, complying with the requirements imposed by public administration.

**Box 3.4.2: Tool – Checklist of factors impeding competitiveness of poor producers****Small size and scale of production and marketing**

- Small scale of operations leading to high cost of production and marketing
- Small marketable volumes
- Little available capital or poor liquidity
- Limitations to achieving consistent product quality

**Limited access and high cost of inputs and services**

- High prices of inputs and raw materials, the poverty penalty, see below
- Absence of service offers due to thin service markets
- Lacking access to financial services, finance, insurance

**Weak resource base, insecure property rights**

- Low productivity of available assets, the natural and human resources
- High investment risk due to insecure property rights for land and water

**High transaction cost**

- High information cost
- Higher cost of coordination compared to larger enterprises
- Unstable market links
- Geographical remoteness

*Source: Own compilation*

**Barriers to market entry**

Deficiencies in the business model likely have the consequence that poor operators are not efficient enough to compete on prices. This is the case in standard commodities. Though the market entry barriers may not be high and farmers have always been producing basic agricultural commodities, most poor small farmers are not likely to make enough money. The ongoing expansion of productive capacity and intense global competition exerts strong price pressure. As prices go down, poor smallholders can no longer compete with more efficient suppliers in other countries and are forced to sell close to unit cost. The most efficient market participants set the standard.

On the other hand, the more rewarding markets for high-value products impose requirements in terms of quality, volumes and reliability that poor producers have difficulties meeting. These constitute barriers to market entry means often excluding smallholders.

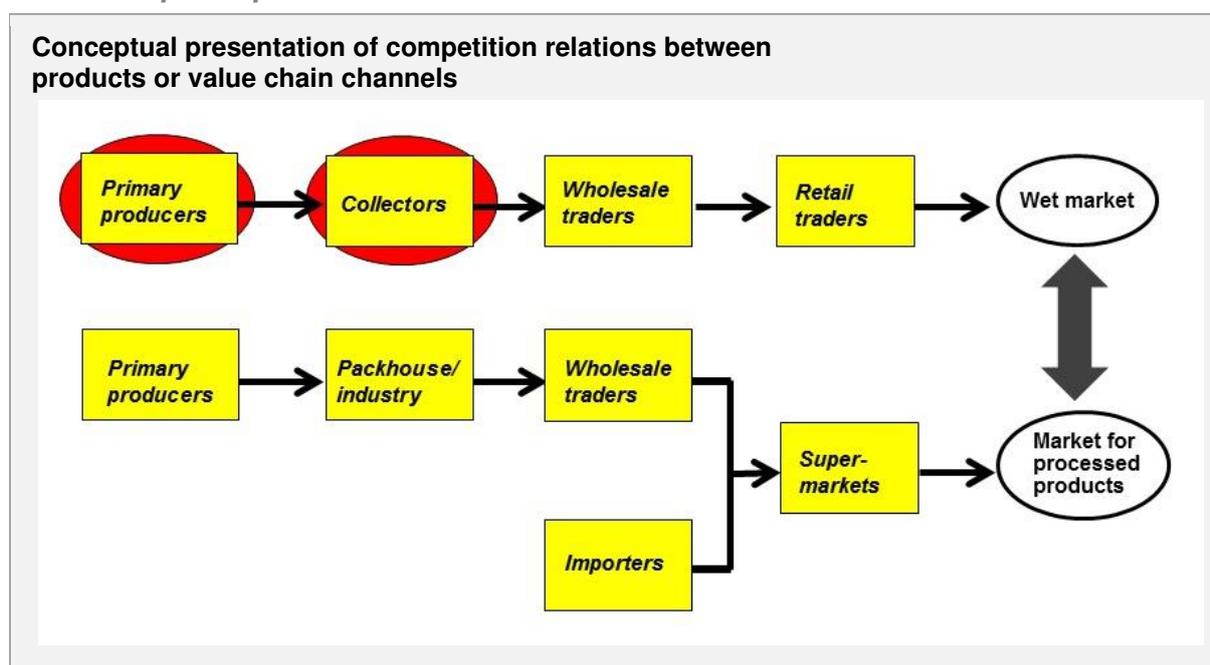
However, small size or little capital does not necessarily mean economic exclusion of poor producers. What constitutes an entry barrier for one group of operators does not have to be a barrier for others. Small producers can still find market niches. One example is handicraft producers, for whom the small scale of production and the dominating manual techniques do not constitute a disadvantage. By solving problems around the access to services and marketing channels they can devise a fitting business model. However, a business model will only be profitable if the niche can be protected by keeping others out. Defining the product quality and securing privileged access to raw material and market channels effectively creates entry barriers and makes it harder for newcomers to also move in.

Thus, the effect of market entry barriers is negative for uncompetitive small producers who stay excluded, while it is a blessing for those initially poor producers who are in the business and participate in its development.

### *Position in the value chain vis-à-vis competitors*

The position of small producers also depends on the relation to buyers. The question is whether buyers accept the price, quality and quantity of poor suppliers, or whether the buyers have alternatives. Again, the competition situation decides. Hence, an important tool identifying anti-poor conditions is to analyze the trend in the competition situation. This is done by carefully differentiating the market segments and supply channels in the value chain. A good part of the relevant information will already have become available in the mapping of value chain poverty groups. Box 3.4.3 below visualizes the competition between products for different outlets or supply channels.

### **Box 3.4.3: Tool – Value chain mapping depicting the competitive situation of poor operators**



*Source: Own concept*

The traditional informal channel of a wet market in Box 3.4.3 probably is of specific importance for the poor and often stands against a modern channel offering higher value variants of the product. At the same time, different production systems compete for the same consumers (mechanized versus manual labor). In order to assess the competition situation, it is necessary to differentiate the markets detecting the relative advantages of the enterprises in the different markets, including those served by smallholders and microenterprises.

### ***Bargaining power***

Another strategic consideration concerns the situation of poor producers who are already integrated into a value chain but operate from a weak bargaining position. Here, the issue is the *terms* of market participation — the rules of trade in the value chain or, technically, the value chain governance.

The weakness of poor producers in vertical market linkages has to do with an unequal distribution of market power between poor producers and their buyers or their suppliers. Market power is defined as the ability to unilaterally set prices, freely substitute between different suppliers, set private standards and influence market results. Market power exists even in the

absence of any anticompetitive practices. Box 3.4.4 below presents the sources of market power asymmetry: Generally speaking, market power is the result of an enterprise or small group of enterprises being in exclusive control of one or several resources of strategic importance, such as the access to end markets and to information, the possession of a key resource or the ability to make a unique product. Accordingly, a weak market position means lack of access to these resources. The position of the poor can be further exacerbated by their personal financial needs for medical care, food or social needs that interfere with their business.

#### **Box 3.4.4: Concept – Market power**

##### **Sources of market power of dominant enterprises**

- Large market share oligopolistic (hourglass) market structure
- Privileged position in the value chain benefitting from price discrimination between raw materials versus processed products due to different price elasticity of demand and the effective control of access to buyers in end markets
- A privileged position in the value chain also involves better access to market information and technology

##### **Conditions contributing to a weak bargaining position of poor producers**

- Temporary cash flow problems and personal financial needs
- No access to essential services and resources outside the established commercial relation with a stronger partner
- Heavy competition within poverty groups offering the same products
- Own services and products can easily be substituted

*Source: Own compilation*

The strong partner in an asymmetric relationship captures most of the additional value added. Wherever poor producers are trapped in an asymmetric relationship characterized by the factors listed in the Box 3.4.4 above, they can hardly benefit. Unless the conditions change, their development and that of other suppliers upstream will be blocked. However, there are ways to confront the problem.

#### **Countervailing power**

Market power is always relative and modified by the form of value chain governance. As the modes of governance evolve from spot markets towards regular contracting and vertical integration, unilateral market power tends to give way to a mutual dependence of buyers and sellers. One factor in this process is the evolution of end products. As final consumers demand higher quality and more complex products, dominant traders have to make sure they actually obtain the product in the right quality and quantity and in time. This involves forward contracting, passing on of technological and market information and the provision of incentives to suppliers. A dominant buyer in need of supply has to give up part of his privileged position while the supplier gains ground as the product can no longer be substituted as easily. Hence, integrated forms of governance allow small suppliers to develop some countervailing power. In dealing with buyers that look for specialty products, small producers can play off their flexibility and the possibility of making small series of a product variant at relatively low unit cost.

**Box 3.4.5: Tool – Checklist of factors enhancing the market power of poor suppliers****Specific, differentiated end market demand**

- Cost advantages of dominant buyers collaborating with small suppliers, e.g. lower inventories
- Flexible options for adjusting to different kinds and size of orders
- Need of dominant buyers to build a positive image of corporate citizenship
- Need of dominant buyers to fulfill social standards

**Horizontal cooperation of poor suppliers to make up for competitiveness issues**

- Producer associations compensating problems of scale, capital access, marketable volume
- Credit and input purchasing association compensating problems of service access

Source: Own concept

Except for the extreme situation in which a poor supplier has to accept any condition imposed by a strong partner, every business relation offers at least some factors that might strengthen the bargaining power of the weaker partner. Determining the bargaining power of the poor entails specifying and comparing the balance of factors in the vertical relationship. Box 3.4.5 above provides a checklist of factors to look for.

However, small does not mean poor. Building countervailing market power presupposes a minimal degree of competitiveness. Often, the poor cannot fulfill that minimum. It may be easier for them to stay in a spot market that has lower entry barriers but in turn tends to offer less favorable terms. Consequently, both dimensions of the value chain poverty analysis, competitiveness and bargaining power are related. Low competitiveness implies low bargaining power and vice versa.

**Vulnerability of microenterprises to ecological and economic risk**

Another major point concerns the vulnerability of poor operators. Their business models often entail sustainability risks that are particularly damaging for the poor. While economic or ecological crises affect the business of all value chain operators, the poor are the most vulnerable to:

- Volatile market prices
- Risks related to health and nutrition
- Depletion of natural resources

A substantial *financial risk* lies in the volatility of end prices which may go back to speculation. The instability or a downturn of market demand in times of crises often hits weaker suppliers hardest who tend to get excluded first. At the same time, poor producers have to guard against the risks for household food security setting aside land and other resources for food production. This reduces their competitiveness further.

The *ecological and technological risk* is linked to the pollution and depletion of natural resources. Lacking sustainability of production is particularly painful for weak producers who cannot move to other locations, while buyers and even strong manufacturing enterprises can shift their business operations. The misbalance is particularly acute in export production, when investors and exporters take into account that a boom may be short-lived. Box 3.4.6 provides a tool for assessing risks.

### Box 3.4.6: Tool – Assessing the risks of poor operators

#### Factors to consider assessing the financial and ecological risk of poor operators

##### *Financial risk of the business model*

- Financing of the value chain (total debt or liabilities of key enterprises)
- Susceptibility to price changes (cost of production and profit margins)
- Safety nets of poor producers (existing social capital and own assets)
- Diversification possibilities or alternative income opportunities for poor operators

##### *Ecological risk*

- Ecological efficiency of business operations
- Unaccounted consumption of natural resources, especially ongoing deforestation, soil erosion and pollution

*Source: Own concept*

#### *The poverty trap*

Lacking assets may mean that the income from the productive activities of a poor producer simply does not add up. In most value chains, some part of the poor smallholders and micro-enterprises do *not* have a realistic chance of making a decent living and growing their business.

Unfortunately, often enough no alternative sources of income are available. Poor producers may in fact be forced to stay in a business that does not provide them a decent living because they have to rely on a production activity that remains indispensable as a component of the livelihood. This group still is part of the value chain albeit under very unfavorable conditions and with no perspectives for improvement in sight. Thus, their situation can be a poverty trap.

### 3.4.2 Poor wage workers: Possibilities to access decent employment

A large group of the poor are working or jobless wage laborers — from farm hands and day laborers to industrial workers. From a labor market policy and development perspective, this is a highly important group of the poor, given that their only asset is their ability to work. With no access to land they are even worse off than self-employed farmers. Nevertheless, these groups tend to be less visible than the poor operators. This is especially true for the unemployed or only temporarily employed laborers and migrant workers. It is essential that the poverty mapping of value chains is inclusive in the sense that it not only shows poverty groups in but also *around* the value chain.

The strategic considerations concern the employability of the people concerned, their competitiveness on the labor market on one side, and the terms of employment on the other. The latter includes not only the question of wage levels but also the working conditions and the stability of employment.

#### ***Competitiveness of poor job seekers***

The poverty analysis of the value chain delivers a picture of the employment situation of the poor and the numbers of job seekers. If value chain development is to be inclusive of poor unemployed people, it has to create job opportunities that are accessible to them. Analysts have to understand their qualifications as well as the restrictions they face. The first step, therefore, is to classify and describe the different groups who likely seek employment in the value chain. Important points include age, gender, school education and the rural or urban background, mobility and current residence. See chapter 2.5.

The description is done independently from the specific value chain as value chains are connected by labor markets. Enterprises in other markets draw from the same common pool of people seeking employment and workers with no industry-specific skills will use every opportunity.

Once the different groups are known, it is important to relate them to the value chain in question. Male or female urban youth, migrants or rural seasonal workers are located at different places. The profiles of these groups and the numbers of people vary considerably and hence the conditions of the labor market for different value chain stages. The employment situation has to be differentiated according to chain links and according to urban vs. rural regions. In certain rural regions, the agricultural labor force may in fact be scarce. Under such conditions agricultural intensification should rather avoid a higher demand for farm workers.

Despite the differences, most poor job seekers will not have a professional education or, at least, not much experience in a professional qualification they may have obtained earlier. As a general rule, they need jobs that have low entry barriers and do not require formal training. Pro-poor value chain development needs to generate jobs for the low-skilled primarily.

#### *Factors influencing low-entry employment opportunities*

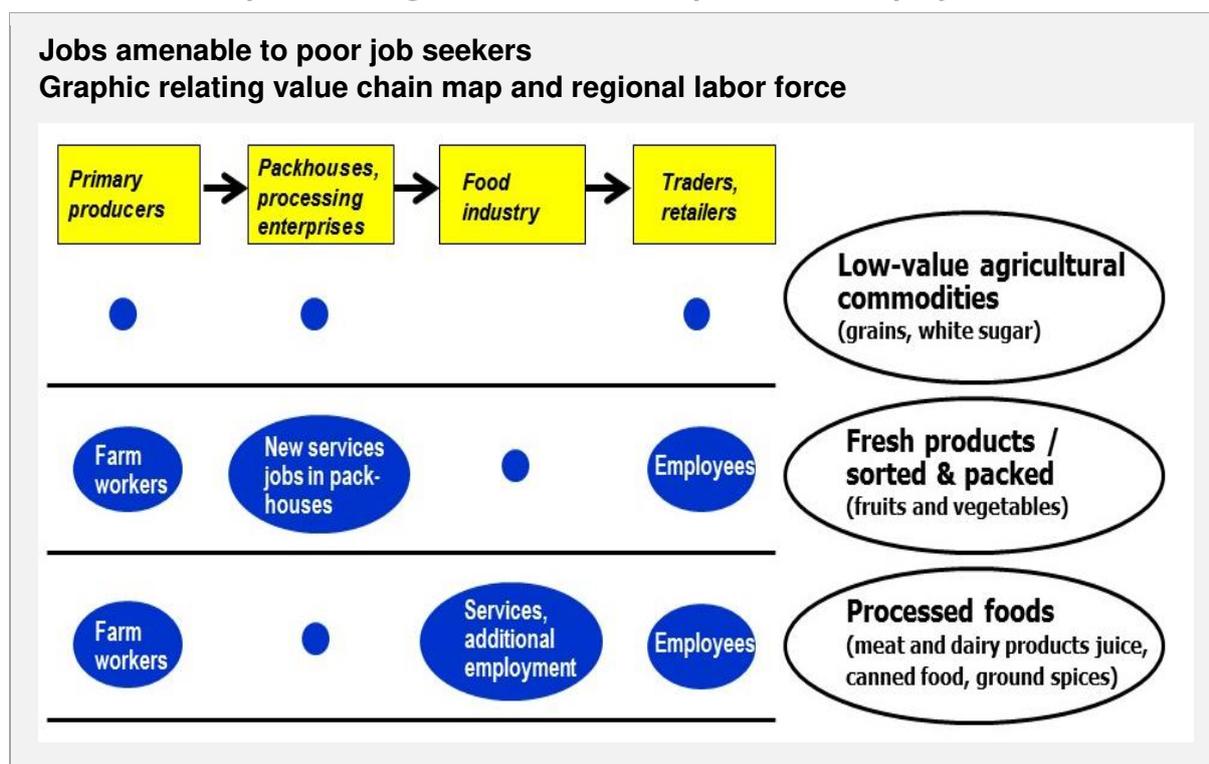
After analyzing the supply side of the labor market, the next level of strategic considerations has to clarify the potential for generating job opportunities for the poor. Analysts have to compare and relate the underemployed labor force to the possibilities for expanding business activities along the value chain. The question is how a value chain development strategy would translate into additional jobs, the types of these jobs and the point in the value chain at which they would be created or may be suppressed.

Both from an economic as well as social point of view, it makes sense to focus on labor-intensive technology in those parts and locations of the value chain where the workforce of the poor is large. Box 3.4.7 shows how the relation can be conceptualized.

An important variable forecasting the employment impact is the labor intensity of business processes. It can be measured as a technical ratio — the number of working hours per ton of produce or per US\$ 1,000 turnover. Alternatively, labor intensity is the financial ratio between capital and labor — the investment in US\$ per job created or the percentage of labor cost in total cost. The technical ratio is easier to determine than the financial one. The labor intensity ratio indicates a preferable option, at least in terms of the number of jobs that could be created. The respective figures can be derived from the analysis of the business models at the different chain links. Government and development agencies would give preference to promoting labor-intensive business models.

Independent of the technical and financial assessment, there is a number of qualitative considerations indicating where the potential for employment creation along the value chain is greatest. The following observations on the connection between value chain development and employment provide a general orientation.

**Box 3.4.7: Concept – Relating value chain development and employment**



Source: Own concept

- Industry and services are more likely to generate employment than agriculture

Generally, more new jobs are created in chain links downstream from primary production, which is a consequence of the increasing processing and handling activities. As chains develop, most of the additional value added is generated in industry and services. Even less developed agricultural value chains have more non-agricultural jobs, such as packaging, transporting and trading, than jobs on farms<sup>192</sup>. Downstream employment also tends to be more productive and provides better working conditions.

- Employment opportunities shift to advanced business models in the same chain link

Economic development implies a structural transformation shifting jobs from one business model to another. Although smallholders may still account for the majority of farm workers in Africa, structural change means that new jobs will rather be created in bigger and more commercial farms.

- High-value agricultural products offer greater employment potential

The employment generation potential is much greater for high value crops and many traditional tropical exports than in traditional food crops<sup>193</sup>. A case in point is export horticulture which offers productive jobs in enterprises providing seed, production equipment and packaging materials, in pack houses and in associated services. Processing of cashew nuts, cotton, flowers and other products exceeds primary production as a source of employment.

<sup>192</sup> Mitchell et al., 2009

<sup>193</sup> Byerlee and Haggblade, 2013, p.16

- Low-entry jobs are often gender-specific

Many jobs in agricultural processing and in light manufacturing, such as handicrafts and garment are specifically meant for female workers. Particular occupations are predominantly female.

- Informal employment as transitory solution

A substantial part of the employment generated in value chain development and accessible to the poor is informal. It includes casual laborers, such as porters, store men, helpers and self-employed intermediaries, petty traders and home workers. These jobs have the advantage of low entry barriers for the poor on one side, and low cost and high flexibility for enterprises on the other. “Flexibility and cost reduction are achieved by increasing the number of casual workers... Illustrative of this global trend is the Ugandan cut flower industry in which 75% of the workforce is now employed on a temporary basis”<sup>194</sup>. Access to informal employment is necessary for survival but offers little social security and is highly precarious at the same time. See below for the possibilities of creating quality jobs and decent work conditions. Casual day laborers in agricultural production do not have many opportunities for learning and their personal development.

#### *The effect of technological change*

Unskilled laborers run a high risk of being laid off as value chain development often implies technological improvements substituting equipment for manual labor. Farm mechanization obviously reduces the demand for manual soil preparation. Yet, unproductive casual labor will always be very poorly paid and does not lead out of poverty. In fact, in many rural areas we observe the outmigration of farm workers and thus an increasing shortage of manpower. Commercial mechanized farms and enterprises cannot only pay higher wages. They also offer better opportunities for skills development on-the-job.

In any case, the position of poor job seekers is comparable to that of poor operators. This can be seen most clearly in the case of the casual workers. Their opportunities on the labor market depend on their competitiveness and skills, the available employment alternatives and their general vulnerability.

#### ***Living wages and decent employment conditions***

The potential for poverty alleviation by creating more jobs is not just a question of numbers. It critically depends on the terms and conditions of employment, i.e. the qualitative aspect of the jobs created, the wage paid to workers and the contract conditions of self-employed micro-entrepreneurs.

Of particular significance is the question whether employment in a value chain enables poor people to move out of poverty or whether it leaves them stuck as working poor. If the poverty analysis of the VC shows that laborers working full time still face precarious living conditions, the economic inclusion in the VC is not enough to make a decent living.

Yet, sustainable value chain development has to secure the minimum requirements that allow poor workers a decent life. The idea is expressed in the term ‘living wage’. ILO provides a general definition of the living wage: “The idea of a living wage is that workers and their families

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<sup>194</sup> Posthumus, 2007, p.4

should be able to afford a basic, but decent, life style that is considered acceptable by society at its current level of economic development. Workers and their families should be able to live above the poverty level, and be able to participate in social and cultural life<sup>195</sup>. The living wage is not identical with a minimum wage set by law in many countries which does not necessarily allow for incomes above the UN poverty line.

The strategic considerations have to take account of two aspects:

- Level of the living wage in the country and industry in question
- Actual possibilities for achieving its application

The first point is a normative issue. Measuring and determining the living wage is the subject of an extended international debate and there is no universally accepted methodology for it. To understand how wages relate to poverty requires the understanding of the profile of poor people (for instance men/women, number of wage earners in a household, with/without dependents), and their living conditions and needs.

### **Box 3.4.8: Tool – Defining and calculating living wage and living income**

#### **Definitions**

The definition of living wage by ISEAL and six standard setting organizations:

*“A **living wage** is the remuneration for a standard work week by a worker in a particular place sufficient to afford a decent standard of living of the worker and her or his family. Elements of a decent standard of living include food, water, housing education, healthcare, transport, clothing and other essential needs including provision for unexpected events”<sup>196</sup>.*

The definition of living income reads similar (Living Income Practitioners’ Workshop hosted by ISEAL and GIZ):

*A **living income** is the net income a household would need to earn to enable all members of the household to afford a decent standard of living. Elements of a decent standard ...[as above for living wage].*

#### **Calculating the minimum requirement of a decent life**

For a particular country or region a basket of needs is worked out that contains the following elements:

- Cost of basic quality life for an average person
- Cost of nutritious low cost diet
- Cost of basic acceptable housing
- Other essential expenses
- A small margin for unforeseen events

Establishing the consumption needs frame and the work force frame:

- Establishing a standard household size
- Establishing a standard number of full-time productive workers per household

*Source: Eberhard Krain and Sophie Grunze (GIZ), based on Anker, 2014, and the results of the “Living Income Practitioners’ Workshop 2015” hosted by ISEAL & GIZ*

In a similar fashion, the methods for calculating living wages are applied to the related concept of the ‘living income’ of self-employed microenterprises and smallholder farmers. The living wage can also be utilized for the working time invested by self-employed poor, and thus be

<sup>195</sup> Anker, 2011, p.5

<sup>196</sup> Anker, R. and M. Anker, 2014; [www.isealalliance.org/LivingIncome](http://www.isealalliance.org/LivingIncome); also see: [www.isealalliance.org/our-work/improving-effectiveness/global-living-wage-coalition](http://www.isealalliance.org/our-work/improving-effectiveness/global-living-wage-coalition)

translated into a living income at full-time employment. An important difference is the fact that the living wage is a price, while a living income is the result of the diverse activities of a poor household. The calculation of a living *wage* provides a normative yardstick to guide the business community, whereas the living *income* is a measure of social impact. It results from many factors that cannot be controlled and therefore is less valuable as normative orientation.

The decisive question is how the wages in an industry can actually be raised. After all, wages are determined in the labor market as a result of the supply and demand for jobs, in this case low-skill jobs accessible to the poor.

### *Strategic considerations on the possibility of living wages*

Two basic strategic orientations exist – a political-legal and a market-based one. The first possibility is a government policy regulating the labor market by setting a minimum wage. The other tries to influence the demand or the supply of labor.

Because of its moral weight, the wage question is taken more and more seriously by policy makers and private sector alike, as trade unions and farmer organizations put moral pressure on companies and government. The immediate option to deal with these demands is to fix and impose a legal minimum wage. Second in line is the inclusion of wage criteria into voluntary standard systems. If the wage or the price for a commodity are far away from providing a living income, the respective product would not be certified as sustainable. The selling company might thus lose market share and its reputation among consumers.

The regulatory approach meets with difficulties though:

One is control. Establishing a lower limit for wages is one thing, enforcing that law is another. Governments have great difficulties interfering in informal labor markets and especially in rural areas. There are hardly any effective sanctions and the few sanctioning options are prone to corruption.

The other problem concerns the fact that labor productivity of some occupations may be too low to even justify the minimum wage. If the minimum wage per day is higher than the value added generated with that work, no such jobs can and will be created. There are simply limits to the pay for low-productive manual labor beyond which producing is no longer profitable. This is the case for many hand-made crafts and for manual labor in agriculture. For example, in many places manual tillage is more expensive than the alternative partly or fully mechanized operation, even though some people may be willing to do the job.

Another difficulty is the fact that national minimum wages cut across economic sectors. The uniform application of the same rate puts low productivity jobs at a disadvantage.

### *Balance between low-entry and low-wage employment*

The second strategic orientation builds on the wide range of possibilities improving the efficiency and competitiveness of the industry. The hypothesis is that more efficient enterprises also have a higher labor productivity which in turn leads to better remunerated jobs. A competitive chain has a greater potential for better jobs. At least, in an evolving value chain poor wage workers should be able to widen their margin for negotiation. Over time, informal employment can then be expected to get more formalized.

However, this approach also has its limits. The problem is that the skills profile of poor job seekers often does not translate in a higher employability. With no particular competitive advantage, the poor will go for any job that has a low entry barrier. Competition for low-skill jobs is strong. As a consequence, market wages necessarily remain low. Therefore, most of the

rural poor are represented in the low-productivity employment segment of the rural economy. When labor is hired, it is mostly temporary and seasonal, informal and casual<sup>197</sup>. Low-skill workers undercutting one another in the bid for jobs lead to the notorious 'race to the bottom' even if the value chain grows.

Wages can only rise if hired workers and self-employed micro-entrepreneurs can partly protect themselves from competition, for example by acquiring specialized knowledge and skills, or by organizing themselves. By achieving and protecting a special status, workers create barriers keeping competitors at a distance<sup>198</sup>.

The difficulty is that this may harm other poverty groups. Strategists should be aware of the trade-off between enabling marginal groups to find jobs on one side and making these jobs pay adequately on the other. Value chain development strategies have to seek a delicate balance.

### **3.4.3 Access of poor consumers to affordable goods and services**

The third group of poor to benefit from value chain development is the consumers of the final product. The potential benefit is straightforward in the case of products serving basic needs. Making specific products and services available for poor consumers and reducing the cost of production is an immediate benefit of value chain promotion for the poor. Another consideration concerns enterprises and market rules discriminating against poor consumers — the 'poverty penalty'.

#### *Consumption goods to satisfy basic needs*

The prices of staple food and basic products determine the poverty line, defined by the cost of satisfying the minimum calorie intake and other basic needs. Basic needs items include nutritious staple foods, clothing and footwear, household energy, housing and health services. Reducing the prices for products of daily use and improving access has the same effect on the household budget as increasing wages. Developing chains of products serving basic needs clearly is in the interest of the poor.

The effect of economic development on consumer prices is subject to conditions though. One is that improved efficiency actually translates into lower prices for those markets and goods serving poor consumers. If private investors go for high quality and export markets instead, market development obviously will not favor the poor consumers.

Another condition is the size of the market. The contribution to poverty alleviation will be broader with products relevant for large numbers of poor people. A similar issue is market segmentation. Most value chains provide both higher and lower price versions of the product. The impact thus depends on market outlets and the scope of value chain development. The value chains leading up to local wet markets and cheap products would obviously be preferable. It is the poverty analysis of the value chain that can establish whether and to what extent this is the case. Value chain poverty mapping shows in which markets the poor buy their supplies.

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<sup>197</sup> FAO, 2010, p.2

<sup>198</sup> See Kaplinsky, 2005

### *The poverty penalty*

A fundamental problem is the fact that some companies and retailers fail to provide affordable versions of basic products. In fact, the poor often have to pay more than wealthy consumers to satisfy their basic needs.

The problem is conceptualized in the term ‘poverty penalty’. The poverty penalty is either:

- A higher than average price per unit that poor consumers have to pay, or
- The cost of finding other, usually more expensive alternatives if an essential product or service is not available in appropriate form

One important factor is the limited availability of certain products in urban slums or remote rural places where poor people live. In order to supply themselves they have to turn to expensive alternative suppliers. The other main reason behind a poverty penalty is a limited availability of cash. The poor simply cannot pay more than a small amount of money at one time, often much less than required to pay for an indivisible good, such as a new pair of trousers or a packaged product.

Box 3.4.9 presents a list of basic products and services for poor consumers and the respective market through which the product is usually offered in columns 1 and 2 respectively.

The third column checks for the accessibility of these markets and the actual availability of the product. The following column establishes the actual poverty penalty — the additional cost of private offers the poor have to resort to. The last column presents other alternatives and specific markets serving poor consumers in particular. They have emerged spontaneously in the informal economy or are the result of development programs, such as in microfinance. While being accessible, they also may have disadvantages.

**Box 3.4.9: Tool – Table identifying a poverty penalty in conventional markets**

(1) Product or service	(2) Usual market where the product is available	(3) Availability of the product to poor clients	(4) Type of poverty penalty	(5) Specific markets for poor clients (poverty markets)
Fresh water	Public utility, or medium to large private suppliers	Under-supplied	Expensive private offers (tanks, bottled water)	None
Electric energy / lights	Public utility	Undersupplied – especially in rural areas	Expensive private offers (batteries, petroleum etc.)	Local energy producing cooperatives
Basic staple food (grains, tubers)	(Food markets)	Sufficient	High prices due to market inefficiencies & speculation	Traditional traders on wet markets
Fresh food (vegetables, dairy, meat)	(Food markets)	Insufficient, of low quality	High prices due to market inefficiencies	Traditional traders on wet markets

(1) Product or service	(2) Usual market where the product is available	(3) Availability of the product to poor clients	(4) Type of poverty penalty	(5) Specific markets for poor clients (poverty markets)
Clothing	Formal apparel trade	Sufficient	Indivisible good that needs a minimum investment	Used clothing “mitumba” market, local tailors
Communication & information services	Phone companies, Internet posts	Limited, not available in rural areas	Indivisible good (phone contracts and equipment)	Mobile phone ladies
Banking services	Formal financial institutions	None	n/a	Phone banking
Credit / loans / insurance	Formal financial institutions	None, except for money-lenders & microfinance	Exploitative relations with moneylenders (but who may help in case of emergency)	microfinance institutions, credit & savings groups, money-lenders
Transport	Formal transport companies	Limited, especially in rural areas	n/a	Informal transport (rickshaw, tuk-tuk etc.)
Construction / Housing	Private real estate market, Public housing scheme	Under-supplied	Partly indivisible good as building materials cannot be obtained in small quantity	Self-help groups in neighborhoods, local handicraft services
Health services and medical drugs	Public medical service, private doctors	Under-supplied	Indivisible good (specific treatments)	Barefoot doctors, local health posts, traditional healers
Toiletries and detergents	Cosmetics industry, retail	Sufficient, but small servings lacking	High price of large package size	Industry and retailers offering small servings

*Source: Own compilation*

The identification of a poverty penalty adds another concern about the development of the value chain. Missing or overly expensive product and service markets clearly are 'anti-poor'. The existence of poverty penalties can be regarded as a form of market failure affecting the poor in particular, in this case in their role as poor consumers.

Governments and private companies can address the market failure by supporting and developing channels and market outlets that specifically support poor clients. Examples can be found in the fifth column of the table above. The solutions can both be informal market channels as well as commercial ventures of big companies. In any case, new types of business models

are required. A specific business model of companies offering services for the poor is known as the 'bottom of the pyramid' (BOP) approach. See module 5, in volume 2.

Developing specific value chains for poverty markets not only benefits the poor consumers receiving better products at lower prices, but also the small-scale producers and service providers involved.

### 3.4.4 Value chains, livelihoods and nutrition security

Economic development and the intensification and commercialization of business models can have negative social consequences. Any value chain strategy has to take into account the possible unintended impact compromising the poverty alleviation goal. Typical risks of economic development for the poor include:

- Small-scale subsistence producers losing out against growing, more efficient and more commercial competitors
- Conflicts over the use of natural resources between operators in the same or in different value chains
- Destruction of traditional livelihoods as poor people are cut off from local resources and income opportunities

The poverty analysis of value chains includes the description of the poverty groups in and around the value chain. This analysis has to be complemented with considerations for the social context in which poor operators and laborers live.

#### *The nexus between value chains and livelihoods*

The livelihood concept looks at the horizontal embedding of households in diverse social and economic networks<sup>199</sup>. Livelihood analysis is an essential element in the poverty analysis of value chains. See module 2, chapter 2.5 and Box 2.5.5.

It allows a different look on economic opportunities moving beyond a specific value chain to the multi-chain perspective of a poor household. In that perspective, *all* sources of income are included extending beyond the income received through the particular chain in question. Relatively small and even inefficient business activities may be worth maintaining because of their monetary and non-monetary advantages.

The strategic issue for value chain development is the question whether and to what extent the integration of a poor producer or laborer in a specific value chain contributes or rather subtracts from the diversity and stability of their livelihoods.

#### *Opportunities of value chain development for livelihood improvement*

The importance of the value chain for livelihoods is determined by the amount of revenues it generates in relation to total household income. If poor producers earn very little with their activities in the cocoa value chain they are regarded as poor cocoa farmers even though they may have other income.

However, for most poverty groups, the revenue earned in a value chain is only one of several sources. Even if participation in a value chain only provides some extra cash on the side, it still is an income generating activity. At the same time, it is the diversification that counts. Relying on more options reduces risk. It can be of great advantage if the integration in a particular

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<sup>199</sup> Bolwig et al., 2008

value chain still leaves the opportunity to engage in off-farm jobs or enables the access to information, services and material goods relevant for other activities. Enhancing the choice of economic opportunities thus is an important way of mitigating the poverty situation. Complementary value chain activities contribute to the resilience of poor households. These non-monetary benefits may be easily overlooked if the livelihood context of value chain actors is not taken into account.

Additionally, from a livelihoods perspective, participating in *different* value chains at the same time allows capturing additional opportunities arising in the interaction of the value chains. The significance of participating in a value chain may lie in a favorable timing of revenues over the year, a more flexible allocation of working time and resources, and the possibility to divert resources from one value chain to other occupations. A well-known example is the utilization of fertilizer delivered to cotton farmers on their maize fields in West Africa.

The downside of an only partial and temporary integration into the value chain is the fact that it offers limited possibilities for professional learning. A highly diversified livelihood strategy foregoes the efficiency gains brought by an increasing division of labor.

#### *Risks of value chain development for the livelihoods of the poor*

Conversely, specializing in one particular activity reduces the variety of income sources. Value chain development that requires specialization carries risks for the poor. The increasing efficiency is paid for by a loss of flexibility and the exposure to market and price risks. Possibly, a weakened position in other social networks and social tensions ensue if only selected people benefit. A natural limit to farm specialization is imposed by the need to stabilize the farming system and respect crop rotations. Other risks for livelihoods arise from the possibility that a modernizing value chain competes for the resources and assets relevant for the livelihoods of the poor and raises their cost of living. The next box presents variables to assess livelihood risks and opportunities of value chain integration.

#### **Box 3.4.10: Tool – Points to consider assessing the livelihood impact**

##### **Livelihood assets and resources affected by a changing value chain**

- Possibility or flexibility of utilizing products for auto-consumption or sale
- Access to hitherto underutilized resources providing food, energy, building material etc.
- Loss of free access to local commons if privatized and integrated into the market economy
- Conditions of access to basic goods and their rising prices

*Source: Own concept*

It is not always clear whether the creation of new opportunities justifies the risks of specialization for the livelihoods. Generally, the detailed interactions between the livelihoods of a poverty group and the value chain are difficult for outsiders to understand. Livelihood conditions of poverty groups are dynamic and differ between locations. Benefits that have no market price appear insignificant but still have great value for the life of a poor family. Ultimately, only the people affected can balance the risks and opportunities for their livelihoods. Analysts have to ask them to arrive at a judgment. However, studies on these matters are costly as they have to refer to all poverty groups affected and their livelihood situation.

IFAD suggests these lead questions that may be helpful:<sup>200</sup>

- What financial, environmental, health and other risks will the strategy expose the actors to, such as loss of income, assets or jobs, health risks, personal security and resource degradation?
- What social groups will be most exposed to these risks (the asset-poor, women, the landless, etc.)? Will the beneficiaries generally be able to bear these risks? Who will be most vulnerable to them?
- Are all members of the beneficiaries able to bear the labor or monetary costs associated with the value chain development strategy? Do they all possess the necessary assets? The nexus between value chains and nutrition

Nutrition security is probably the most important single factor in livelihood strategies. All poverty groups are concerned, producers, wage workers and consumers likewise. The strategic issue is the question how value chain development affects or is affected by the availability, access to and proper utilization of food — i.e. the three dimensions of food security. The linkages between value chain development and nutrition have been covered by Hawkes and Ruel<sup>201</sup>.

### *Interactions between value chain development and nutrition*

Studies have shown that in global value chains, such as those of coffee, cocoa or tea, malnutrition is prevalent in some producer countries<sup>202</sup>. An example is the cocoa producers in West Africa. A study in Nigeria found that 40% of the cocoa producers in Ono State could not meet their food requirements. Obviously, being included in a food value chain does not prevent poor operators from going hungry.

To interpret this fact, we have to go back to the poverty analysis of the value chain. Food insecurity and malnutrition are symptoms of poverty. Poverty mapping shows at which points in the value chain poverty occurs. Strategic considerations discussed the reasons for persisting poverty and the potential for overcoming it. Most factors affecting poverty discussed above also apply to the nutrition question.

A strategic issue of critical interest is the potential *negative* impact of market-oriented agricultural production on the food production and consumption in the farm household. Do commercial farmers run the risk of worsening the nutrition of their families? This is a matter of farm size and economics. If market integration requires that a certain minimum volume be delivered to buyers, farmers have to utilize a large proportion of their land and labor for the product. Yet, in farms below a critical size, specialization in just one value chain is risky. If farm gate prices go down, the cash income from the commercial production may no longer be sufficient to pay for the staples needed and malnutrition is the result. It is the combination of farm size and terms of market integration that counts. The point is similar to the argument made in the section on the competitiveness of smallholders and microenterprises. It is a basic principle of value chain development that market integration should be compatible with livelihood strategies.

Malnutrition also works the other way — it reduces productivity. A minimum intake of 2100 to 2400 calories, depending on the type of occupation, is necessary to be able to do manual work. People who do not get enough to eat and don't have the energy to pursue a job may find themselves in a nutrition-based poverty trap where the lack of food is a reason for low income

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<sup>200</sup> IFAD et al., "Pro-poor value chain development", DATE?, p.46

<sup>201</sup> Hawkes and Ruel, TITLE, 2011

<sup>202</sup> GAIN, 2013

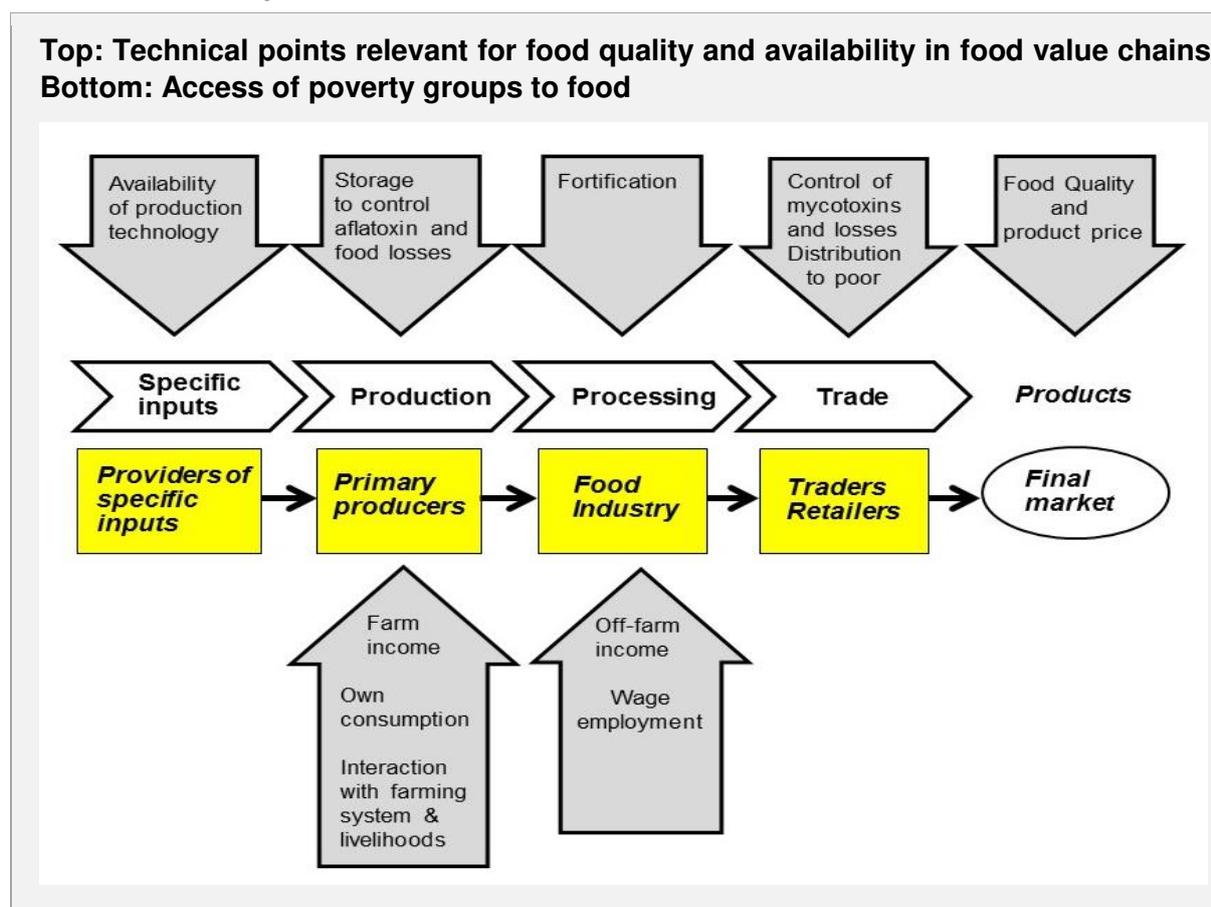
and vice-versa. However, as Banerjee and Duflo, 2012, argue, the trap should not be too difficult to overcome because even simple jobs should pay for the cost of cheap calories and public food subsidies help people move beyond the threshold initially<sup>203</sup>.

Even more important than the quantity consumed is the quality of the diet, especially in the case of small children who benefit from sufficient iodine and iron supply for their lifetime.

*Contribution of value chain development to food and nutrition security*

Development policy and agencies demand that value chain development contributes to food security and improved nutrition. Box 3.4.11 summarizes the possibilities to address food and nutrition security in a value chain framework. The upper part of the graphic shows technical factors at different stages in a food value chain leading to better nutritional value and quality, improved food availability and better affordability due to lower food prices. Value chain development can influence the respective technical processes from more productive farming techniques to better storage. The lower part shows the economic and social linkages between food production and access to food — cash income of operators and workers, their own consumption and the embedding of food production in livelihood systems. These effects apply to staple food and high-value food likewise.

**Box 3.4.11: Concept – Interaction of food value chains and nutrition**



Source: Own concept

<sup>203</sup> Banerjee and Duflo, 2012, p.25

The technical points in the upper part of the graphic apply to food chains primarily. They are less relevant to nutrition in the case of non-food and export products. That leaves higher incomes as the main linkage of value chain development to food security outside the agri-food sector.

However, greater availability of food, lower prices and better quality are all essential conditions. In themselves, they are not sufficient to improve the nutritional status of value chain operators and consumers. The quality of the diet of the poor has to do with nutritional behavior, access to different types of food and general consumption preferences<sup>204</sup>. Individual knowledge about nutrition, access to health services, hygiene practices, psychological factors and the gender relations in the household are also highly important factors.

The impact of value chain development and income on nutrition is indirect. Factors relevant for nutrition that are not controlled by value chain development have to be addressed separately, especially by social policies, such as school feeding programs or nutritional education and health care for mothers with small children.

### 3.4.5 Strategic options addressing poverty issues

The social objective of value chain development is 'pro-poor growth'. Ideally, the poor should capture at least a proportional part of the increase in value added.

It should have become clear from the preceding strategic considerations that value chain development does not *automatically* produce pro-poor results. The value chain development strategy must take the opportunities and critical constraints of the poor into account and *actively* take their side. The following graphic in Box 3.4.12 summarizes the line of argument leading to three strategic options to achieve a better economic inclusion of poverty groups.

The main strategic option is to promote business models benefitting poor producers and poor wage earners. This means redesigning business models so as to provide answers to the constraints faced by micro-entrepreneurs and realize the existing competitive advantages vis-à-vis buyers. Improving business models also helps creating additional employment opportunities for poor wage workers.

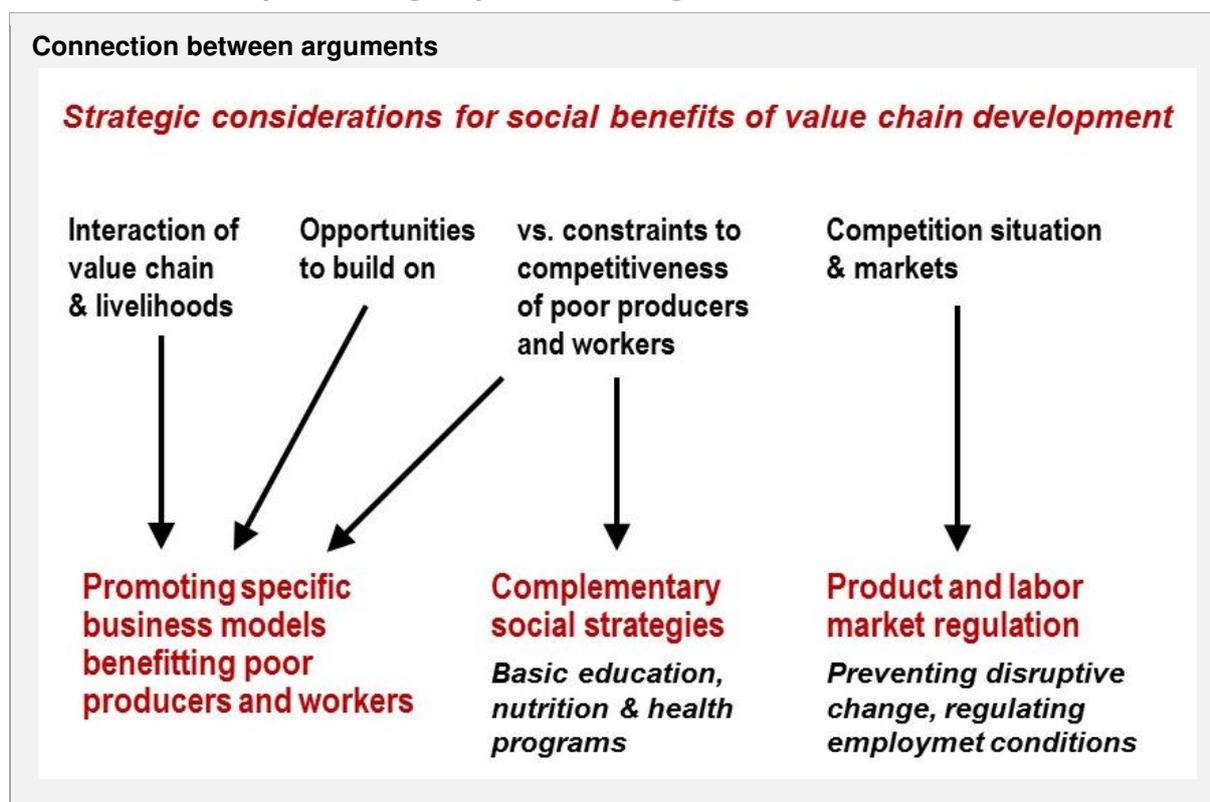
Wherever poor operators are unable to compete and their business models are not likely to succeed under the prevailing livelihood conditions, the specific problems identified in the strategic analysis have to be addressed separately. Complementary social policies are required to remove some of the basic constraints to entrepreneurship related to education, health and nutrition. The institutional factors related to the market power of larger business partners, to market failures and to unfair business practices make legal regulations necessary that create a level playing field and secure the economic inclusion of the poor at favorable terms. A general principle is to assure that value chain integration does not cause any negative impact on the position of the poor.

The options and principles are also relevant for private companies. At least the first two, and to some degree the third strategic option provide guidance to the decisions of socially responsible companies. However, there is no one size fits all strategy to generate poverty alleviating impacts. The prospects of success vary with markets and products, the framework conditions and the severity of the poverty problem.

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<sup>204</sup> See Banerjee and Duflo, 2012, p.39

**Box 3.4.12: Concept – Strategic options creating social benefits**



Source: Own concept

***Strategic option 6: Business models benefitting the poor***

A strategy for sustainable chain development cannot be based on the assumption that poverty groups will automatically benefit from the growing value added. Economic development is always accompanied by the transformation of business models and linkages. In order to strengthen their relative position in the chain poor producers have to change their own business models as well.

The idea is to specifically address and improve the competitive position of the poor. This includes to promote viable business models that are accessible to them and to actively compensate their competitive disadvantages. Fostering social benefits is only possible in chains which not only have a growth potential but where poor people have at least some advantage to benefit from. As it stands, chains with such characteristics are more likely to be found in local and domestic markets and in the informal economy. Whether a value chain promotion project has an impact on the incidence of poverty is a matter of selecting a value chain that actually has a potential for inclusive growth.

The search for business models refers to poor producers and wage workers alike seeking:

- Business models that are accessible and beneficial for poor producers
- Business models that hire poor wage workers

It is very important to note that pro-poor interventions into markets do *not* do away with the basic principles of value chain development. It is also clear that for economic development to go forward there must be incentives for *all* value chain actors involved including the non-poor. Economic development that benefits certain groups exclusively will not work. Promoting value

chains for the benefit of the poor has to be conceived as a win-win proposition. This is in contrast to a social redistribution strategy that is covered in strategic option 7, below.

### *Promoting business models relevant to poor producers*

Before any poverty effects can be expected, the value chain at large has to have the potential to compete and grow. The identification of business opportunities for the poor builds on the general strategic considerations for promoting economic growth (see chapter 3.2). The critical point is whether and to what extent the growth potential is accessible to poor producers.

Haggblade et al. formulate lead questions that help addressing the challenge, focusing the analysis on the different channels and business models within the chain:

- In which channels and competitive niches can the poor, women and youth compete?
- How can they adapt in order to raise productivity and shift into the growing, lucrative and competitive channels? <sup>205</sup>

The business models in the value chain have to be systematically screened for the opportunities they offer to poor people. The starting point is the business models which are already used by poor farmers and micro-entrepreneurs. They are taken from the value chain map. Box 3.4.13 summarizes the characteristics of business models that are easily accessible.

### **Box 3.4.13: Concept – Easily accessible business models of poor producers**

#### **Characteristics of small-scale, informal business models of poor self-employed producers**

- Markets are local
- The business activity is rooted in local traditions and run informally
- The production can be done profitably at small scale
- Technology, know-how and services are locally available
- Little capital is required
- The business model can be combined with other activities

*Source: Own compilation*

Informal business models are typical for local food and handicraft value chains in many countries. They are inclusive in the sense that entry barriers are low and a large number of poor utilize them. For the majority of peasants and poor people in informal business activities and microenterprises these occupations are the only accessible option. At the same time, they offer a flexible income source stabilizing the livelihoods.

Value chain development can provide public services and support technical innovation and market linkages to improve these farms and enterprises. In agriculture, this is the domain of smallholder development. Agricultural development raises productivity and aims at resolving some of the market failures affecting smallholders, such as access to information, technical services and microfinance. By addressing the important constraints, small farms can become more efficient and, often for the first time, realize they are actually running a business.

However, value chain development cannot compensate for the basic limitations in competitiveness of microenterprises, such as a too small size and a weak market position. A strategy within the confines of traditional business models of smallholders and microenterprises has narrow market limits. If the support helps to improve production efficiency increasing income

<sup>205</sup> Haggblade et al., 2012, p.18

at one location, similar producers at other locations tend to lose as prices go down. As everyone is forced to catch up and reduce unit cost, a treadmill effect results: The multiplication of an innovation or investment puts pressure on the market price of end products and eats away the benefits of the first movers. Poverty groups who are exposed to full competition cannot easily move beyond a minimum income just above cost price. This mechanism is well known in agriculture and it also applies to value chains of other simple products. Competitors undercutting each other to continue selling engage in a race to the bottom<sup>206</sup>. Thus, the mere inclusion of poor producers into the value chain is not sufficient to overcome poverty. Most of them consider it a temporary solution securing survival only.

Poor producers caught in this situation have two options: Those who have access to alternative occupations should react by leaving the business, i.e. step out, and seek other opportunities or paid work elsewhere<sup>207</sup>. See Box 3.4.14.

Others with no alternatives to their present, low-income occupation should at least seek to stabilize their business as one of several sources of revenue contributing to their livelihoods. The benefit is in securing the diversification of the livelihood, even if the income earned is not sufficient to shift people above the poverty line.

**Box 3.4.14: Concept – Outcomes of utilizing different business models**



Source: Own design, based on Dorward et al., 2009

As a consequence, there are two directions for business model development:

- One is a business model for entrepreneurs that can take advantage of an opportunity and have the chance to generate substantial and lasting benefits.
- The other is the optimization of a business activity as part of a livelihood strategy that poor entrepreneurs pursue for lack of a better option.

<sup>206</sup> Compare to case studies on the capturing of gains in global value chains: <http://www.capturingthegains.org/publications/workingpapers/>

<sup>207</sup> See Dorward et al., 2009

Promising business models that offer poor entrepreneurs the potential of stepping up and set them on a process of self-sustaining growth have to fulfill the following conditions:

- Utilization of a certain competitive advantage
- Solutions to compensate the limitations of scale and other disadvantages
- A business model design that is not too far away from the experience of the entrepreneur

To escape poverty, poor producers have to have some competitive advantage on which to build a business model that provides a surplus (or rent) above the cost of production. For sure, there are no ready business ideas waiting. Creativity is required to find opportunities. A few hints have to suffice: One is that small enterprises and farms embedded in a community have a competitive advantage on local markets as they understand the living conditions and needs of their neighbors and can do local processing or have access to resources. The different “sources of competitive advantages” have been discussed earlier (see chapter 3.2).

Secondly, the business model of poor micro-entrepreneurs have to include solutions for the access to inputs and resources. Responding to the limitations of scale, models of microenterprises have to rely on horizontal cooperation with others or on the contracting with bigger enterprises and companies. Some business ideas require hardly any capital, for example services, such as a craftsman shoeing horses or the production of mushrooms that does not need land. Other enterprises require only relatively small investments, as in the case of local cassava milling.

Finally, any business model strategy has to build on the previous experience of the operators and stay within the means of poor producers. The development of a business model has to be in manageable steps. Qualifying poor entrepreneurs to step up means supporting their business skills. Box 3.4.15 presents a range of different business model solutions for the poor.

#### **Box 3.4.15: Concept – Business models for poor entrepreneurs**

##### **Types of competitive business models for poor producers**

- Small-scale business models
- Inclusive business of large companies
- Interlocking business models of small suppliers and big enterprises, contract production
- Cooperatives and other forms of horizontal collaboration

*Source: Own compilation*

The core of the strategy is to help people find an adequate business model. Business model solutions are closely connected to business linkages, financing solutions and respective arrangements for public service provision. To this add the interventions to remove market failures discriminating against the poor, via promoting associations and integrating public co-financing of investment into business models. The disadvantages of smallholders and poor entrepreneurs justify creating not just a level playing field but a playing field that is tilted in favor of the weaker enabling them privileged access to public support.

Most improved business models imply a firmer integration into the value chain. This has consequences for the types of risks and dependencies small producers have to face. While contracting helps to reduce market risk and provides easier access to inputs and technology, it also involves commitments to and dependency on downstream buyers and on business partners in general. This is inevitable and should not be seen as a problem. In fact, every business model includes a specific set of risks and dependencies.

*Business model offering jobs for the poor*

The observations on the competitiveness of poor producers in part apply to the situation of poor wage laborers as well. Creating more low-paid, low-entry jobs is a good thing for the poor on one side, but it does not always offer them satisfying conditions. Poor workers suffer from their low competitiveness and bargaining power in an overcrowded labor market. Relying on the growth of conventional low-paying business models helps people survive but not actually escape poverty. What can poor workers offer besides being content with low wages?

A strategy to create jobs for the poor has to support business models that do not exclusively thrive on low wages. As value chains develop, enterprises move to making high-quality products, mechanization of farms, food processing technology and more sophisticated logistics that all imply higher qualified and therefore better paying jobs. The creation of decent jobs thus is a result of the general value chain development. It is only feasible under the right market and framework conditions. However, the value chain strategy contributes to employment by coordinating enterprise development with the qualification of the workforce. As additional jobs are only accessible to poor job seekers when they are better trained, promoting new business models has to go hand in hand with vocational training, on-the-job training and improved employability.

It is possible that a win-win situation for the poor arises even if chain development favors the non-poor primarily. As the rural economy grows, spill-over effects to other value chains can be expected. Additionally, increasing employment for the non-poor tends to stabilize the wage level in general. Rising wages are transmitted between the value chains.

*Promoting business models benefitting poor consumers*

The third field of a win-win value chain development strategy aims benefitting poor consumers. To the extent that the final product of a value chain caters for the basic needs of the poor, lower end market prices help poor consumers and improve nutrition security. This impact is broad based, as the poverty line itself is defined by the cost of minimum calorie intake and other basic needs of the poor. Developing such chains creates a win-win situation, even if the value chain operators do not belong to poverty groups. The effect will be bigger the more broad-based the value chain development effort.

The strategic considerations on this subject have also identified a series of specific business opportunities at the base of the pyramid. Developing these opportunities gives rise to yet another type of business model. See module 5 in volume 2.

***Strategic option 7: Regulation and social policies in defense of the poor***

Upgrading towards greater overall value chain efficiency implies the risk that poor people are left behind or squeezed out. Sustainable development policy therefore has to be based on the do no harm principle. Preventing negative outcomes of value chain development is as important as any active contributions.

The first task in formulating a value chain strategy addressing poverty is to look for potential losers of the growth model proposed. How do new business models and more efficient value chain channels change the competition situation for poor producers? Examples of changing

competitiveness of small farmers in African food value chains is provided by Haggblade<sup>208</sup>. Value chain strategies have to take into account the risk of squeezing out marginal producers.

Disruptive economic change happens if agribusiness development requires farmers to specialize and give up food production or if it leads to excessive debt. Regulation is necessary to prevent poor producers from putting their sources of livelihoods at risk. Similar risks arise wherever large-scale land and water development or industrial investment cuts off poor people from communal land and local resources. A value chain strategy clearly has to prevent or slow down such types of structural economic change through legal and political means. See module 10 in volume 2 on social policies.

Quite a different situation is the gradual emergence of new and more efficient business models *indirectly* reducing the competitive position of traditional ways of doing business. This effect of value chain innovation can and should not be avoided. Economic development always implies creative destruction: New technology and business processes inevitably replace or destroy less efficient procedures and enterprises. The process of change means that only producers adopting innovations will gain, while those sticking to less efficient business models lose and are driven out. It is unrealistic to expect that a growing agricultural or manufacturing sector will not affect the poor traditional farmers and artisans in them. Nevertheless, in cases where the ongoing economic change causes small producers to give up, the value chain development strategy has to make sure that the loss of jobs and income is compensated for in other value chains. Stepping out is an option that needs to be accompanied. Defensive interventions include public services enabling alternative business models and sources of income.

### *Strengthening resilience*

It is important that the people affected by economic change get the opportunity and time to adapt. Competition becomes problematic if imports of finished goods make domestic producers totally obsolete leaving the entire domestic value chain with no chance of adapting and catching up. Here, the problem again is structural change of a disruptive type which justifies regulation and the protection of the domestic economy. The main instrument is trade policy.

Another field of defensive interventions and regulation is the labor market. Legal regulation is necessary to protect poor wage workers from exploitation. Beyond market regulation, social policy is a last resort.

Another option is necessary wherever a pro-poor market approach reaches its limit and does not produce a significant social benefit by itself or where certain groups remain excluded or see their competitive position worsened in a growing economy. To the extent that economic growth tips the balance against the poor, value chain development has to be more and more complemented by direct support to weak market participants compensating risks and disadvantages. Box 3.4.16 presents a list of social protection policies complementing value chain development.

Even under conditions of less severe poverty, social policies are indicated as a corollary of economic policy because poverty has a negative impact on economic life in a broad sense. Low literacy levels, poor health and nutrition, the need to care for many children all restrict employability and the ability to participate. Social strategies can address these constraints directly targeting poverty groups. Social policy can thus make an indirect contribution to growth

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<sup>208</sup> Haggblade et al., 2012

— for example by providing social insurance and free education, improving nutrition and relieving mothers from part of their child care duties. These measures help people setting free the time and energy to acquire greater competitiveness in the markets.

**Box 3.4.16: Tool – Overview of social protection policies complementing chain development**

**Policies compensating disadvantages of the poor in the market economy**

- Free education, fee waivers
- Vocational training

**Policies and services buffering social risk**

- Free health care or social health insurance
- Free child care, maternity benefits
- Social transfers in cash or kind, vouchers and food aid
- Unemployment benefits, cash and food for work

**Basic social services and transfers**

- School feeding
- Subsidies to public transport connecting urban slums and rural areas
- Subsidies to housing and basic utilities, such as communal water supply and electrification

*Source: Own compilation, based on van Ginneken (2005), p.5*

The list of instruments for social and economic empowerment is long. In the absence of reliable public policies, poor people benefit from projects at regional and community level, which can target the needs of poor people in and around the chain very specifically. One example is the reconstruction of traditional knowledge when knowledge is lost due to displacement of elders<sup>209</sup>.

It is important to be clear about the fact that certain poverty groups are not able to join the market economy and will continue to depend on social transfers. This is true for all poverty groups whose competitiveness is fundamentally constrained. People at very remote places, some tribal groups facing institutional barriers and the old and the ill in general cannot be reached by market-based development strategies. To protect these chronically poor, redistributive policies are the instrument of last resort. Under conditions of disruptive economic change and deteriorating poverty, value chain development has to be entirely discontinued in favor of social policy. This is where the 'do no harm' principle applies.

The strategic considerations and the discussion of the strategic options clearly show that the possibility of alleviating poverty via developing value chains has its limits. For a discussion of the trade-offs and the need for other approaches complementing market development see chapter 3.6 farther below.

*Regulating labor markets – the decent work agenda*

Where poor workers remain poorly qualified and in a weak bargaining position, efforts have to be made to bar at least the most exploitative employment conditions by legally regulating the labor market. The International Labor Organization (ILO) oversees internationally agreed labor standards that national courts can refer to or that governments can use to formulate national

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<sup>209</sup> Morgan, 2006, p.3

labor laws. A key norm is established in the Declaration on Fundamental Principles and Rights at Work unanimously agreed by ILO member states in 1998<sup>210</sup>.

ILO suggests a combination of political and economic development measures. The Decent Work Agenda identifies a broad range of interventions creating a business environment favorable to decent employment<sup>211</sup>. Together with the FAO, ILO has also introduced guidelines for decent *rural* employment<sup>212</sup>.

Social standards are also applied by private companies. The Ethical Trading Initiative<sup>213</sup> specifies a base code to be used by companies managing their global supply chains. An example are standards for coffee and cotton that include minimum requirements for decent employment. Environmental and social standards are the subject of module 9 in volume 2.

#### *Addressing market failures discriminating against the poor*

In the section on market failures in chapter 3.2, a series of market and coordination failures have been described. Poverty groups are affected by these problems to a high degree because they have fewer possibilities to compensate unreliable business linkages. The market playing field is often 'tilted' against poor producers with less market power. Several factors limit the market success of poor producers from the start, such as missing property rights and lacking capital and technology. Thus, the considerations on correcting market failures described in section 3.2.5. are an important aspect. Business model improvement includes improving the coordination between market partners.

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<sup>210</sup> ILO: <http://www.ilo.org/declaration/lang--en/index.htm>

<sup>211</sup> ILO, 2008

<sup>212</sup> Decent rural employment: <http://www.fao.org/rural-employment/en/>

<sup>213</sup> Ethical Trading Initiative: <http://www.ethicaltrade.org/>

### 3.5. Gender-sensitive value chain development

The strategic considerations on gender-sensitive value chain development follow on from the gender analysis in module 2. The gender analysis of value chains establishes the nexus between gender and value chains identifying gender-specific economic groups and highlighting the roles of men and women in the chain and the economy at large.

The focus of the following section is on women living under conditions of poverty. As the characterization of gender-specific groups shows, the poverty risk of women is generally higher than that of men. See module 2, section 2.5.2. Therefore, many of the strategic considerations for poverty alleviation apply to the gender dimension of value chains as well.

The main arguments in favor of gender equity in value chain development have been summarized into three sets by KIT, Agri-ProFocus and IIRR<sup>214</sup>:

- Social justice, equal opportunity
- Poverty reduction, “fighting poverty is hard if you’re gender blind”
- Business opportunities, “serving women is good for business and the economy”

There is widespread agreement that addressing gender issues in economic development has both an ethical and an efficiency dimension. Above all, gender equity is a human rights imperative. At the same time, women can decisively contribute to value chain development and economic growth.

#### *Box 3.5.1: Tool – Assessing possibilities for greater gender equity*

##### **Steps in the strategic assessment**

- Gender-related constraints and opportunities: Which are the specific economic opportunities of women in the value chain?
- Role of women: How do the conditions in society impact on the position of women in economic life?

*Source: Own concept*

The strategic analysis is in two steps. The first looks at opportunities and constraints related to gender roles, the second at the institutional and socio-cultural background.

#### **3.5.1 Principles of gender-sensitive value chain development**

The general objective of a gender-sensitive development strategy is an equitable distribution of the costs and benefits between men and women. Economic upgrading needs to ensure that the value added is equitably distributed to female and male entrepreneurs and workers along value chains<sup>215</sup>. Costs and benefits are not just economic categories here: Costs include social responsibilities and household workload and benefits also relate to social recognition and autonomy.

<sup>214</sup> IIRR, 2012, pp.24-26

<sup>215</sup> Barrientos, 2014, p.6

The main principle of gender-sensitive value chain development is using a 'gender lens' at all stages of the value chain development process, from value chain analysis to strategy formation. Gender sensitivity means differentiating between the male and the female views on the different aspects of value chain development. The criteria that constitute a gender lens are listed by Mayoux and Mackie<sup>216</sup>.

A related principle is to conduct the *processes* of value chain development moving from strategic analysis to implementation in a gender-sensitive fashion. Gender-sensitive implementation makes sure that both sexes and women in particular, have the chance to take part. What that means for the process of value chain development see module 4<sup>217</sup>.

### ***Gender-related opportunities and constraints in value chain development***

The strategic considerations cover the specific gender groups of the value chain that have been identified in the value chain analysis in module 2. One group is women entrepreneurs, the other female wage workers. Their opportunities and constraints participating in value chains depend to a large extent on the conditions under which women live in society and on the institutional and socio-cultural context.

#### *Disadvantages and opportunities of women entrepreneurs*

Despite their success in some domains, women face many disadvantages in business. Generally, the economic participation in value chains is more difficult for women than for men. Gender constraints limiting the economic participation of women include:

- The generally higher poverty risk of women implies a higher incidence of the general limitations affecting poor, self-employed micro entrepreneurs
- Traditional and legal restrictions on property rights for women, especially to land
- In the absence of collateral no access to credit and financial services
- Lower levels of education and literacy
- Lack of time due to family and social tasks that compete with business obligations
- Limited access to business services, especially if dominated by males
- Discrimination by public administration and extension agents
- Social prejudices or legal restrictions impeding women to engage in particular business activities not considered appropriate for women
- Restricted mobility where women have less access to means of transport or cultural norms do not allow women to travel alone.

This set of constraints adds to the general problems of poor self-employed entrepreneurs affecting both sexes. They have the consequence that women-led enterprises are mostly smaller than those of men and often are confined to local, informal markets and homework where the constraints are less relevant. Women are more likely to be excluded from business activities extending beyond the community.

To be successful as entrepreneurs, women go for business models that fit their specific competitive advantages and are easily accessible given the long list of constraints they face. For poor women starting up a new business, it makes sense to take up business opportunities in those markets and stages of the value chain where women are already active and which have lower barriers to entry. The respective occupations have been identified in the gender mapping of the value chain. See module 5 in forthcoming volume 2. Typical female businesses include

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<sup>216</sup> Mayoux and Mackie, 2008, p.22 and pp.72-73

<sup>217</sup> Also see Wältring et al., 2012

agricultural processing, handicrafts, textiles or weaving and trade. Another source of opportunities is the traditional knowledge of women about biodiversity and the nutritional, household and medical uses of wild plants. As long as such traditional occupations are run as income-generating activities most of these businesses are not very profitable and do not have much potential for growth. Nevertheless, they offer the advantage that women already have competence in them that can be valued: They know the product, technologies and the local markets.

#### *Disadvantages and opportunities of female wage workers*

Women have good employment opportunities in jobs that require manual dexterity. Typically, women are hired to handle sensitive flowers or pack fine fruit and vegetables. Female workers are also preferred as manual laborers in light industries, such as handicraft making, ready-made garments and the assembly of toys and electronics. Female workers make up the large majority in a number of labor-intensive industries. For example, in ready-made garment industry, 85% of workers are female, in the East African vegetable and flower export business the figures are in a similar order.

At the same time, these activities are not valued adequately. Frequently, female wage labor is characterized by informality, long working hours and few options for qualification and skills training. In part, the gender pay gap is due to discrimination. "The gender division of labor in most societies casts women as primarily responsible for reproductive and care work and men for productive paid work. Where women enter the workforce they often do so in jobs associated with these activities, which are ascribed a lower value than those normally undertaken by men"<sup>218</sup>. Young single women tend to have less expectations and bargaining skills and therefore are considered as cheap laborers. The pay gap is also explained by gender differences in literacy and education that only leave low skills occupations and simple manual jobs. Such jobs are badly paid because they do not require any qualification and have low barriers to entry. Many people, especially young women, compete for them.

Nevertheless, the existence of such job opportunities is still of advantage to women, at least as long as they are free to take or leave them. In many places even a badly paid job that provides some cash income may still confer women more room to maneuver compared to unpaid farm and family labor and the village life back home.

#### *Intra-household distribution of workload, costs and benefits*

The economic opportunities and constraints have to be seen in the context of the traditional gender division of labor. See module 2. In a largely subsistence-based rural economy, the division of responsibilities between men and women makes sense. As long as most goods and services are produced in and around the farm and consumed within the household, the distinction between productive and reproductive roles is less relevant. The traditional rural household clearly benefits from the specialization of its male and female members.

The setting changes radically with the integration of farms into the monetary economy. Market integration, agricultural intensification, labor migration and the diversification of income sources call for the rebalancing of gender roles in the household. Often, agricultural intensification ensues that rural women have to do more work on the farm, such as crop management and harvesting. While household obligations stay the same, this adds to the workload of

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<sup>218</sup> Barrientos, 2014, p.7

women. Case studies show that female workload goes up when the farm moves from conventional agriculture to certified organic production<sup>219</sup>. This is a huge challenge and may easily fail. Increasing the farm workload harms women if they are not relieved of other tasks in compensation.

Another factor is selective male labor migration. When men are no longer available to do the land preparation, women have to do all the labor themselves, hire additional services or else will produce less food. Off-farm employment and migration of men thus have an impact on the livelihoods of families. When male farmers give up on farm work and leave home, more responsibilities are imposed on the rural women left behind. The result is the so-called feminization of agriculture.

Generally, the fact that women have to combine productive, reproductive and community work puts them at a disadvantage<sup>220</sup>. The challenge increases in a monetary economy, where women are doubly engaged, both in the commercial world of the value chain *and* in the private household. Additionally, there is a risk that the reproductive skills of women are indirectly exploited by commercial investors. As women provide food and health care to family members who work as wage laborers, employers do not feel obliged to provide social benefits to their staff. Economic development thus benefits from the unpaid work of women in the background — clearly an unsustainable pattern of value chain development. The value chain strategy therefore has to take account of the gender distribution of costs and benefits of value chain development including the unpaid work of the ‘invisible’ women.

Similar considerations apply to female *wage* labor. That most women hired by industry are young, single and childless has to do with the fact that they have fewer obligations at home. Paid jobs for women with children require different arrangements given the time constraints resulting from domestic tasks and social obligations. The question is to what extent the competition situation allows companies to organize jobs that respond to the living conditions of women and their children. A modernizing economy needs the backup of social policies that cover the needs for child care and health services to resolve the gender inequality. However, this is a generic political topic beyond the reach of any particular value chain strategy.

#### *Addressing institutional and socio-cultural framework conditions*

The possibilities and limitations for empowering women within a value chain context are determined by cross-cutting social norms and gender-specific institutions. The perception of gender roles in society affects the participation of women in economic life in general. The gender dimensions framework discussed in module 2 covers the main factors of the institutional and cultural environment relevant for value chain development.

The external factors affect economic sectors and the stages of value chains differently. In agriculture, female farmers often face more stringent limitations related to property rights than women entrepreneurs in other sectors. Female wage laborers are affected by labor laws and social policy. Social norms stigmatize the economic engagement of women in some professions.

These institutional problems can only partially be addressed within a value chain development context. If they are highly specific to the economic sector in question, such as land rights in agriculture, they can be part of the respective sector policies. Some hints are provided in the

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<sup>219</sup> Riisgard et al., 2010, p.21

<sup>220</sup> KIT, Agri-ProFocus and IIRR, 2012, p.4

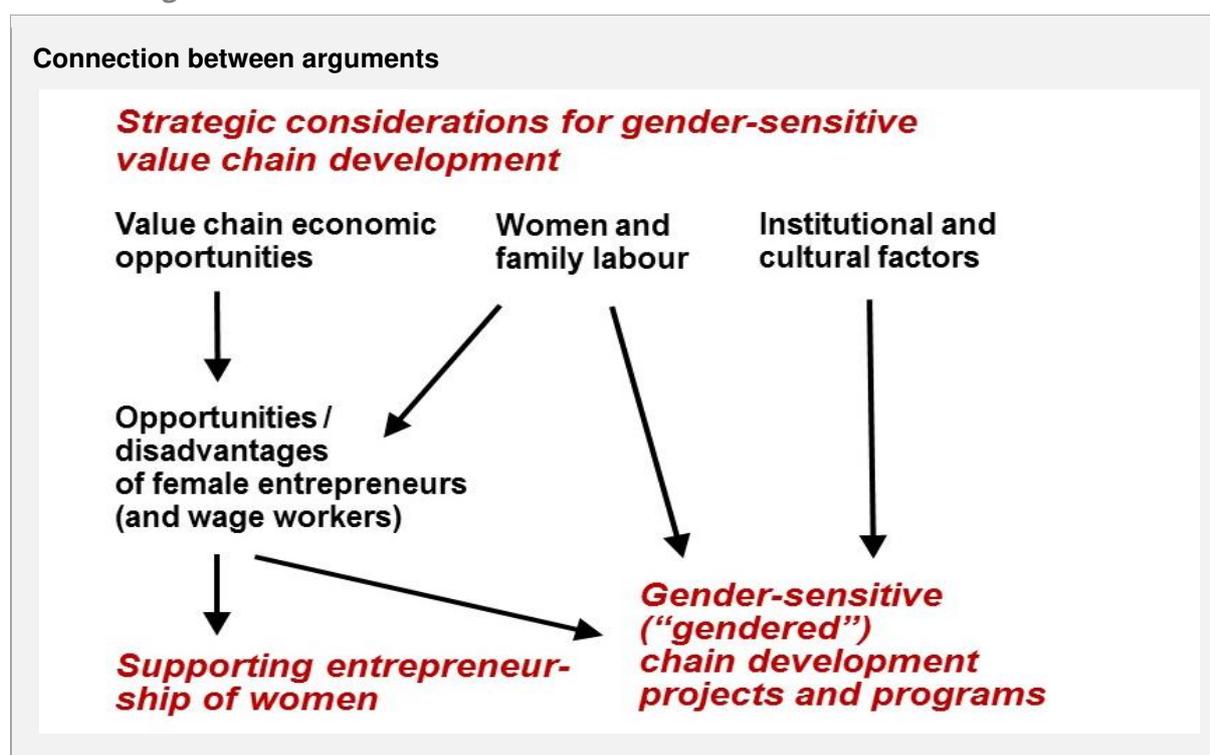
section on regulatory improvements in gender-sensitive value chain strategies below (see 3.5.2). Women's organizations and NGOs are the natural partners to work on the policy issues.

Otherwise, in the majority of value chains, there clearly is a need for general social and legal reforms. Value chain development has to be complemented by other approaches addressing gender issues in the framework of social and economic policy.

### 3.5.2 Strategic options for gender-sensitive value chain development

To achieve the objectives of greater gender equity and efficiency, the value chain development strategy has to improve the position of women in the value chain. Supporting women has a generally positive effect on development because of the social role of women in society. Many people agree that women tend to spend money more wisely than men, especially if they have dependent children. If value chain development does not produce any benefit for women, the selection of the value chain should be seriously reconsidered.

*Box 3.5.2: Concept – From strategic considerations to options creating gender benefits*



*Source: Own concept*

The box above summarizes how the strategic considerations lead to two strategic options. Strategic option 8 - *Gender-sensitive value chain development programs and projects* - on the right side is less an option than a necessity if the gender dimension of chain development is taken seriously.

#### **Strategic option 8: Gender-sensitive value chain development programs and projects**

A chain development strategy is gender-sensitive if it provides answers to gender-related constraints or addresses gender issues by shaping the value chain solutions according to the

needs of men and women. It anticipates the likely impact of value chain development on gender relations, the gender outcomes of value chain development. Gender specific value chain interventions can either take a defensive orientation applying the do no harm principle or actively seek the empowerment of women.

Defensive interventions make sure that economic development does not perpetuate or reinforce existing inequities. For example, a value chain development strategy should not promote crop intensification ensuing additional female labor that women are not compensated for. Similarly, value chain development strategies should carefully weigh the pros and cons of supporting male-dominated businesses if the development comes at the expense of traditional sources of income for women. This may be the case if industrial food processing outcompetes traditional manual processing. To be clear: The fact that a business is male-dominated is certainly no argument against supporting it but before an investment decision is made, the gender and social implications should be made transparent.

Active interventions create economic opportunities for women, improve their position in the chain and address gender relations. This does not necessarily imply the direct promotion of women. Positive gender outcomes are also possible as a result of generic value chain development measures. A generic, non-gender-specific approach produces advantages for women in female-dominated industries and wherever women have control of household budgets. In other value chains, gender-specific interventions are necessary<sup>221</sup>.

The following recommendations refer to the gender mainstreaming of value chain solutions and action programs — any improvements at the level of different gender groups, households, and the business models and linkages in the chain. They are organized according to the ValueLinks modules 1 and 5 to 10. The most important solutions to be 'gendered' are improved business models.

#### *Gender criteria for the selection of value chains to be promoted*

The selection criteria for value chains to be promoted by public development programs are discussed in module 1. It is evident that the criteria need to include the gender dimension. The key consideration is the importance of the value chain from a female perspective: Criteria include its contribution to the income of women, the business potential and the particular constraints and obstacles it imposes. In any case, the choice should not necessarily go for traditional women-dominated value chains but for any product providing women the chance of improving their economic status. More detailed gender criteria for chain selection can be derived from the strategic considerations exposed above.

#### *Impact of business model development on women*

The interventions to promote female entrepreneurship and wage employment are the subject of the strategic option targeting the economic empowerment of women. See Strategic option 9 below.

The issue here is the implications of developing the dominant business models for women. In farms and small rural enterprises the main points are technology design, workload and the distribution of financial gains between men and women. Generally, technology should be adapted to the physical conditions of women and help reducing their time input. At the same time, there may be benefits from using complementary talents of the sexes.

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<sup>221</sup> Coles and Mitchell, 2011, p.13

### *Gender equitable organization and governance of cooperatives and associations*

Networks of business women and gender-specific commercial groups and associations have an important support function. A gendered value chain strategy should support them. The tools to develop horizontal cooperation are mostly generic. See module 6.

The key to greater gender equity within mixed associations is twofold: It requires an equal representation of both sexes in decision-making and adequate procedures within the organization. Solutions include the proper timing of meetings and the planning of activities in view of the limitations of women with regard to their mobility and reproductive tasks.

### *Access of women to adequate public and private services*

Many constraints relate to service access. To overcome gender gaps in service provision and service quality, service providers have to be sensitized for gender issues.

This may be easier to achieve in public support services. Public administration has to ensure that there is no discrimination in access to support services and that programs actually serve the needs. The design and modes of service provision should take into account the demands and necessities of operators of both sexes. For example, rural extension services should include female field agents and trainers. Infrastructure and facilities in public market places have to be made female-friendly. Sensitization presupposes that women get organized and the organizations representing them are actually heard in the planning of public programs and projects.

The situation is different when it comes to private operational services driven by markets. One solution here is to strengthen the demand power of women building on networks and cooperative enterprises. In financial markets, microfinance institutions are more likely to differentiate financial products and services according to gender criteria. Also see modules 7 and 8 on these issues in volume 2.

### *Gender criteria in standard systems*

Sustainability standards and codes of conduct should address the issues by making gender equity a criterion for certification. An example is the Sustainable Agriculture Standard of SAN, the Sustainable Agriculture Network, which includes a non-discrimination criterion for gender in its chapter on fair treatment and good working conditions for workers<sup>222</sup>. A detailed discussion of how existing standards can be used to address gender issues and a source of examples for relevant seals, labels and standards, including women-only is provided by KIT, Agri-ProFocus and IIRR<sup>223</sup>.

### *Policies and regulatory improvements in favor of gender equity*

Next to improved business models, promoting political and regulatory change is a most important field of gender mainstreaming because all gender issues are driven by institutions and socio-cultural factors. However, not all gender issues can be addressed by public policy effectively. The typical male and female behavior belongs to the socio-cultural context. Attitudes are only indirectly amenable to policy making.

Policy solutions can be structured into social policies and services on one side and institutional and regulatory policy on the other. Social policies generate impact in a relatively short time

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<sup>222</sup> Sustainable Agriculture Network: <http://san.ag/web/>

<sup>223</sup> KIT, Agri-ProFocus and IIRR, 2012, chapter 7

while institutional and legal change can only be achieved in the long term. The political promotion of gender equality is a cross-cutting subject independent of the specific value chains. Gender policies thus are complementary to value chain policy. See module 10 in volume 2.

### *Social policies and public services*

Social services play a key role in economic empowerment as they relieve women from part of their reproductive workload. They cushion risk and vulnerability and thus contribute to freeing up resources that can be used for economic activities. Important types of social services benefiting women include:

- Free health care for women and children
- Daycare centers for children
- Family planning support
- School feeding
- Social security covering the needs of the sick and old people for which women normally take the responsibility
- Literacy and numeracy training
- General education and training in life skills, especially for women

Although these services may not appear directly related to value chain development, they can make a decisive difference for the ability of women to participate in economic life. Saving women time and energy, they directly contribute to more gender equity. Other services and public utilities can have the same effect. Any types of services that reduce the time rural women have to spend on household chores, such as fetching water and wood has economic significance. Examples include:

- Water supply at community level
- Solutions for household energy
- Electrification of rural areas and urban slums

Service design and provision has to be arranged in response to women's needs. It goes without saying that men and women need to have equal access to all public services and social programs.

### *Gender-based social work at community level*

Community-based approaches serve a similar purpose and also address the cultural and behavioral aspects and the gender relations within households. An interesting tool for gender-oriented value chain work at community level is the gender action learning system approach.

The gender action learning system (GALS) has the objective to "give women and men more control over their lives and to catalyze and support a sustainable movement for gender justice"<sup>224</sup>. It works with community facilitators that introduce participatory tools for analyzing gender relations and envisioning and monitoring social change. The views and experiences are shared within households and the community spreading the idea further.

### *Institutional and legal reform*

The change of laws and institutions determining gender relations depends on the political priorities and processes in a country. Fields of national policy making that are accessible to policy advice regard policies to achieve the legal equality and political participation of women. Labor

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<sup>224</sup> IFAD, 2014, p.1

legislation is another field of national policy amenable to promoting gender issues. Gender equity at the workplace is an important concern in the ILO labor standards.

However, achieving gender equality in actual practice is a long-term agenda that cannot be reduced to producing legal texts. Every step in the right direction is welcome, but the time horizon for change extends further into the future than that of most value chain initiatives. Nevertheless, value chain strategies have the possibility to engage in affirmative action to address gender inequities in companies and business life. Policy advice should closely coordinate with organizations that are engaged in the improvement of gender equity.

The biggest challenge is presented by traditional, mostly rural institutions regulating the roles and rights of men and women, especially inheritance rules and land tenure. There can be no doubt that customary inheritance laws often strongly discriminate against women. These are not only disadvantages for women; they also present obstacles to economic development. At the same time, these institutions are deeply rooted in local cultural traditions.

Changing the patriarchal traditions connected to private lives is a very complex challenge. The question is whether the population accepts reforms that touch upon religious traditions and the vested interests of men<sup>225</sup>. Passing laws is one thing, the actual implementation another. Modern statutory laws on inheritance and property do not automatically translate into positive gender outcomes. "Women face serious challenges in fulfilling their rights when the law conflicts with social norms at local level or the law is poorly implemented"<sup>226</sup>.

Nevertheless, the meta level of economic development cannot be left unaddressed. Knox et al. recommend engaging communities and working with NGOs providing legal and financial support and advocating women's rights. Jütting and Morrisson advise flexible interventions in line with political conditions and in close cooperation with local actors.

### ***Strategic option 9: Economic empowerment of women and the young***

The economic empowerment of female entrepreneurs and wage workers is the core of a gendered value chain development strategy. Increasing the economic participation of women in the value chain, providing them with own cash income is the key to improved gender relations and better chain performance.

#### *Developing female entrepreneurship*

The strategy to develop female entrepreneurship should start with the business models and value chains in which female entrepreneurship already has a tradition. These industries include trade, agricultural processing, handicrafts, textiles and garments, biodiversity products and services.

The issue is to move from micro-enterprises and backyard operations in these value chains to more profitable business models. One example is the business model for mechanized cassava milling and processing in Burkina Faso. See module 5 in volume 2.

Businesses that are traditionally run by women can also be the starting point for spinning off new business models related to the original ones. For example, women who have gained experience in food processing may move to trade in processing equipment, packaging materials or to related service offers. The transition to new products and services is made easier if

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<sup>225</sup> Jütting and Morrisson, 2005

<sup>226</sup> Knox, Kes and Milici (no date), p.1

women are already familiar with some elements of the business model, such as the technology and the market of female customers. Other business models for women build on cooperation of business women serving particular business needs, for example organizing transport and storage for inputs and final products.

The fundamental principles of developing and implementing business models are the same for everyone. Business skills, such as the use of technical equipment, book-keeping or marketing, are not gender-specific as such. See module 5 in volume 2 for tools of entrepreneurship training. Nevertheless, women require targeted capacity development and support in line with their *specific* needs.

Detailed treatments of support activities to promote women entrepreneurship are provided by the Women's Entrepreneurship Development Programme of ILO. See, for example, Patel and other publications on the ILO website<sup>227</sup>. Other sources are KIT, Agri-ProFocus and IIRR<sup>228</sup> and the World Bank, FAO and IFAD Gender Sourcebook<sup>229</sup>. The GIZ and OXFAM guide on "The Why, What and How" of Gender-Sensitive Value Chains<sup>230</sup> provides the outline of a process design similar to the PACA methodology, the Participatory Analysis of Competitive Advantage.

### *Box 3.5.3: Case – A female cooperative enterprise in Ecuador*

#### **Wooden Boxes to pack premium chocolate**

In 2004, a group of rural women in the Ecuadorian rainforest close to Puerto Quito y Quinindé, who had been seeking financial autonomy for a long time, founded the first small cooperative of what was later to become a network of 19 women's artisanal workshops named TAMCOS (Talleres artesanales de mujeres comunitarias). The business idea of TAMCOS is based on the cooperation with the local sawmill Endesa Botrosa, from which the women obtain by-products, such as wooden plates and reject material. From this material, the groups make small wooden boxes that are sold to the chocolate company Ecuatoriana de Chocolate and to other buyers overseas as package for chocolate and other semi-luxury foods.

Every women's group has three to five members — all female, who not only benefit from the income generated of up to US\$ 1,000 per month but also from the fact that the women work under conditions that protect them from molesting and male violence. An important advantage is the flexibility of the working hours: A single mother of several children can choose to work three hours only, which still earns her US\$ 200 in cash but leaves time for other duties. The cooperative has made enough income to invest and expand into other handicraft products. The key relationship with the timber firm is maintained: Endesa Botrosa has adopted a Corporate Social Responsibility policy that explicitly acknowledges the cooperative.

The initial investment was supported by the export promotion agency of Ecuador, CORPEI and the collaborating companies, organized as a public private partnership assisted by GIZ.

*Source: GIZ Ecuador, GESOREN program, 2011, and GIZ, 2015*

The interrelated constraints to female entrepreneurship listed above require a package of services addressing the full set of problems. This begins with literacy and vocational education and training addressing the qualification disadvantages of women. As anyone, women entrepreneurs need business skills. However, the provision of training and coaching services is only

<sup>227</sup> Patel, 2014 at ILO website: <http://www.ilo.org/empent/areas/womens-entrepreneurship-development-wed/lang--en/index.htm>

<sup>228</sup> KIT, Agri-ProFocus and IIRR, 2012, p.138 and pp.146-152

<sup>229</sup> World Bank, FAO and IFAD Gender Sourcebook, 2012, pp.196-199

<sup>230</sup> Wältring et al., 2012

the basis for economic empowerment. It must be complemented with other forms of support for the development of an enterprise. This includes assistance in finding and implementing business models, negotiating contracts with business partners and obtaining bank accounts and credit.

Beyond the business mentoring women need particular solutions to meet their obligations in household and child care. The balance between professional work and family responsibilities is a key concern in a 'gendered' value chain development strategy. Another field of support are women's business organizations and networks of female entrepreneurs.

Tools for the economic empowerment of women in contract farming schemes and producer groups, i.e. smallholder sourcing schemes, are provided by Chan and Barrientos<sup>231</sup>.

#### *Supporting female wage workers and subcontracted homeworkers*

The strategy to promote female wage labor has two dimensions: One is the creation of employment for women; the other is gender equity in private companies. Creating jobs for women is not just a question of numbers, but also of the qualitative aspects.

As regards employment, the generic principles of strategic option 6 apply. See section 3.4.5. The specific constraints of women in the labor market add to the difficulties of poor, low-qualified job seekers. This calls for a gender-specific approach to vocational training compensating the gender differences in literacy, education and life skills.

Once women have been hired, it's the business policies of the employer which count. Gender equality at the work place is a key concern in the decent work agenda promoted by ILO<sup>232</sup>. The international labor standards and all related ILO conventions target gender equality<sup>233</sup>. The main point is to make sure that the principles and norms are applied in actual practice. According to ILO principles, a gender friendly business policy does not only observe the fundamental principles and rights ensuring equal payment and equal treatment, it also provides decent working conditions, an appropriate design of workplaces, staff training and qualification. Of particular interest to women are the enterprise policies on maternity protection and the reconciliation of work with family obligations. An overview of gendered business policies for companies is provided by GRI and IFC<sup>234</sup>.

Gender issues apply to backward and forward business linkages as well. For example, processing companies buying from smallholders should practice gender-equitable procurement and service provision. See Chan and Barrientos<sup>235</sup>.

The value chain development strategy should include supporting the organization of female wage workers into unions and women's associations to strengthen their bargaining position, and provide training and services to promote the professional qualification of young women enabling them to find jobs in the labor market.

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<sup>231</sup> Chan and Barrientos, 2010

<sup>232</sup> ILO, 2009; also see the section on labor markets above

<sup>233</sup> ILO, 2006

<sup>234</sup> GRI and IFC, 2009

<sup>235</sup> Chan and Barrientos, 2010

### 3.6. Elaborating value chain development strategies

This last chapter provides the principles and some tools combining the economic, ecological and social considerations into an integrated strategy for the sustainable development of a particular value chain. The term strategy refers to the entire value chain as well as to the strategies of individual actors. For one, it can be understood as a general vision on how to achieve the transition towards sustainability transforming the entire value chain. On the other hand, a multitude of stakeholders within and outside the value chain pursue their own objectives and strategies contributing to value chain development. Although none of them can claim to possess a grand design, the combined effect still leads to change at the level of the entire value chain.

It is important to keep the two levels of strategy formation apart. On one side, we have to accept the fact that the behavior of enterprises is driven by market forces just as the interventions of public agencies follow political priorities. Each actor, including development agencies, has to come up with an own strategy. At the same time, the transition of the value chain into a more sustainable future requires a targeted collective effort.

Clearly, it is useless to go for a comprehensive development plan for everyone to follow but the stakeholders should at least have a common understanding of the issues. Joint 'visioning' provides strategic orientation to all actors who are committed to supporting the sustainable development goal for the value chain at stake. The contributions of different actors become more effective if they refer to a shared vision and align their program strategies accordingly.

Strategy formation thus always starts with the big picture of value chain development. First, stakeholders have to jointly reflect the dynamics and conditions of economic development and assess the potential, the limits and the goal conflicts between fostering economic growth, alleviating poverty and improving ecological sustainability. This leads to a vision and overall direction for change specifying the strategic options to pursue.

#### *Box 3.6.1: Concept – Tasks in strategy formation for value chain development*

##### **Strategic tasks formulating a vision for the development of a value chain**

- Strategic considerations on the development potential of the value chain
- Strategic synthesis and overall vision for the transition towards sustainability determining the strategic options to pursue

##### **Strategy formation for particular value chain development programs**

- Formulation of a realistic and measurable value chain development objective
- Program strategy to support specific innovations and value chain solutions

*Source: Own concept*

Each stakeholder has the second task to translate the sustainability goal into specific program objectives and strategies for himself. Every value chain development program develops an own program strategy addressing particular objectives of value chain improvement in line with the specific mandates, interests, time horizon, and available resources. The project formats depend on the different types of lead actors concerned. The two levels of strategy formation and the tasks involved are summarized in Box 3.6.1.

The tasks correspond with different processes of strategy formation. One is a collective effort of different value chain actors seeking consensus on the strategic direction of value chain development in general<sup>236</sup>, the other is the formulation of specific project plans<sup>237</sup>. The managerial aspects of these processes are covered in module 4, chapter 4.5.

There is no one definite methodology how to arrive at a value chain development strategy. The processes of strategy formation differ considerably in terms of time horizon, scope, participation and ownership. Nevertheless, the following strategic considerations and many tools are suitable both for a common value chain development vision as well as for individual project strategies. A reasonable value chain development strategy is characterized by a line of arguments that places the proposed action with the wider context of value chain transformation and connects it into the common agenda for sustainable development.

Ideally, there should be *one* vision for sustainable value chain development that is shared by the value chain business community and serves to guide the full range of individual value chain development programs and initiatives. However, very often the project planners are faced with a situation in which no such agenda exists. In the absence of a common vision for the value chain they have to fill the strategic gap: Any value chain development program should come up with arguments how the proposed action will contribute to the long-term sustainability goals.

In the following, we present strategic considerations and tools serving this purpose. The chapter has two parts, the strategic synthesis, and tools for strategy formation.

The first is the strategic synthesis: After passing through the strategic analyses of the economic, environmental and social dimensions of sustainability, the options have to be combined into a development model that satisfies as many aspects as possible. A growth strategy that damages the livelihoods of the poor is as unacceptable as would be a support program for microenterprises that has no chance of creating a viable business model. The vision for value chain development should be based on informed judgment or intuition of what can actually be achieved.

The second part is devoted to methodological tools for strategy formation that are more technical in nature. The lead actors have to cast the strategy into a value chain development project format, value chain development program or policy to act upon. A value chain strategy can be limited to one specific economic, social or environmental solution, always provided the other sustainability dimensions are not hurt. The task is to formulate a concrete and time bound objective in the light of a realistic view on economic and social change. Program planners and decision-makers decide on priorities building on the nine strategic options developed in the preceding chapters. The problems and needs are translated into value chain solutions to implement. ValueLinks offers possible value chain solutions for each of the elements of the value chain — the value chain operators, their business linkages, the technical and financial services in the value chain, and the regulatory framework<sup>238</sup>.

### 3.6.1 Strategic synthesis

Strategy formation has to consolidate the different economic, environmental and social arguments to arrive at a realistic picture of value chain development. Value chain development

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<sup>236</sup> The conditions under which different groups can achieve collaboration are treated in module 4, see chapter 4.3 on cooperation and chapter 4.4 on steering.

<sup>237</sup> See the graphic in Box 4.5.1 in chapter 4.5 on value chain development processes

<sup>238</sup> Individual value chain solutions are described in detail in ValueLinks modules 5 to 10 in volume 2.

strategies will be more realistic if decision-makers understand the nature of economic change and see the contradictions, trade-offs and potential synergies more clearly.

### ***The nature of systemic social change and its consequences for planning***

Value chain development is a systemic approach. The idea of value chain development is based on the observation that value chains evolve over time gradually changing and differentiating themselves. The solutions emerge in a historical change process which means that innovations appear at one time and never become routine. Given the complexity of the issues there is no formula for planned economic change. Market development cannot rest on linear causalities that reliably produce a desired impact.

The philosophy of strategy formation for value chain development follows principles of systemic change:

- John Gall's law: "A complex system that works is invariably found to have evolved from a simple system that worked. A complex system designed from scratch never works and cannot be patched up to make it work. You have to start over with a working simple system"<sup>239</sup>.  
This principle is a key to sustainable change. New business models, technology, types of contracting or service arrangements build on earlier solutions and experience. Solutions have to be built step by step and gradually get more complex.
- Complementarity of innovations: The different elements in the value chain system are complementary. Innovations only work in combination. For example, introducing a new technology leads to changes in the business model and calls for solutions to finance inputs or investment. Improving the value chain presupposes complementary and often parallel action.
- Emerging solutions: Solutions are expected to 'emerge' in the process if the conditions permit. No individual chain actor, let alone detached external experts can invent a chain solution single-handedly. Rather than building on preconceived solutions, value chain development should reinforce promising ideas of the chain actors and grasp opportunities. Value chain development relies on the creativity of the people in the system to find fitting solutions. People who confront a problem situation on a daily basis know best what may or may not work. Often times existing solutions only have to get more visible.
- Trigger points: It is important to find the right triggers or points of leverage and prioritize the interventions. Resolving a key problem generates more impact than an isolated improvement. A key change generates incentives for others to make subsequent investments and continue innovating Value chain development is successful if it induces a virtuous circle of economic growth in which one step leads to the next.
- Flexibility to adapt: The value chain strategy has to be flexible and responsive taking into account the changing framework conditions and market dynamics. The market process provides permanent feedback and tends to drive out unsuccessful players and non-functional solutions.

These principles imply that strategy formation can never be complete before activities start. The value chain development process is already underway. It does not depend on anyone external to the value chain because all actors become part of the system as soon as they

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<sup>239</sup> Quoted in the Wikipedia entry on John Gall. The idea was introduced into management by Kaufman, 2010, p.309

become active. Every action thus is an intervention into an ongoing process. Strategists have to continuously review the strategic considerations on which their strategy is based.

### ***Determining a realistic level of ambition***

The design of policies and programs has to be based on a realistic view of what can be achieved. According to John Gall's law, the first principle mentioned above, the development potential of a value chain depends on its present state. Development means making a useful step forward — starting from the current situation. Here are some questions and criteria to describe the degree of value chain development on which that next step would build:

- *Predominant types of business models*  
How basic or sophisticated are the business models of value chain operators? (informal/formal, size of enterprises, level of technology, degree of capitalization, market production versus subsistence)
- *Degree of integration of the value chain*  
Are the linkages, information exchange and contracts based on permanent relations between the value chain actors?
- *Regulatory framework and governance*  
Is the value chain governed by clear rules and do sector organizations exist? (Quality and sustainability standards, legal regulation)

These and similar questions allow assessing the structural development of the value chain. A weak economic structure with many informal and small enterprises, low technology, and no proper professional association means that the innovation steps can only be small, certainly compared to a value chain in which operators have already cooperating closely. The size of the chain in terms of value generated and number of operators also counts.

The weaker the structures, the more time is required to achieve lasting change. Introducing a new technology on a pilot basis may be done quickly but taking innovations to scale involves change in many places of the value chain system. To adopt technical solutions operators have to change their business models and linkages. Additional financial and technical services are required and possibly even changes in the regulatory environment. Systemic change needs time to come about. The time requirements are hard to estimate. Following is an attempt to classify value chain changes according to the time they take to materialize:

Short-term outcomes (in the order of one year)

- Piloting a new technology
- Development of an improved business model
- Acquisition of additional business skills

Medium-term outcomes (two to five years)

- Widespread adoption of an improved business model
- Product innovation and build-up of new value chain channels and contract relations

Long-term outcomes (more than five years)

- Capitalization of smallholders and micro enterprises
- Creation of business associations
- Introduction of new regulations
- Change in business behavior and trust building

In advanced economies, these changes may be achievable in a much shorter period of time.

### *Managing trade-offs and synergies*

In principle, there is no contradiction between the three dimensions of the sustainability goal. Economic, environmental and social development is complementary in the long term and has to be balanced. However, within a time horizon of up to 10 years and given limited financial and human resources, the socio-economic conditions often imply conflicts between the objectives and criteria of sustainable development.

### *Analyzing trade-offs*

In most cases, the strategic analysis of a value chain will bring out that not all development objectives can be achieved to the same extent at the same time. Conditions do not permit realizing only win-win outcomes.

Some typical trade-offs have been elaborated in chapters 3.2 to 3.4. For example, the value chain strategy may be able to create jobs with low entry barriers accessible to poor people but cannot achieve satisfactory wages to overcome poverty for good. Saving local land and water productivity helps poor farmers but often increases energy input at the same time. Better infrastructure, technology and market coordination benefits small entrepreneurs which are able to utilize the advantage, while others are affected by falling producer prices. Typically, the objective to generate economic growth quickly promoting highly responsive business models, the low-hanging fruit, gets into conflict with the goal to take the poor along.

Strategic synthesis thus implies setting priorities. Trade-offs have to be decided and certain objectives be put in second place, avoiding win-lose results to the extent possible. See the remarks on winners and losers of transformation below. Whether and which conflicts exist depends on the value chain. The trade-offs are not always apparent immediately. They have to be identified in the strategic analysis, for each value chain separately. To discover trade-offs the analyst looks for differences between strategic options regarding:

- The time requirements for realizing them:  
Private investment is achieved more quickly than policy change or the build-up of an educated workforce.
- Their outreach:  
Intensive and costly support benefits small numbers of people, broad-based services reach more people yet are less targeted to poverty groups.
- The interaction between different public objectives:  
The promotion of one public good may either diminish or add to another.
- The resource needs:  
Financial and human resources spent for one objective are no longer available for other concerns.

One way of discovering trade-offs is to list all relevant objectives of value chain development, specifying them for the value chain in question. Each objective is then assessed in terms of time required, outreach and possible interference with other objectives. This allows distinguishing incompatible objectives from those that go together. In fact, the strategy should specifically explore the potential synergies between strategic options to detect win-win constellations, for example between natural resource conservation and economic efficiency or between greater gender equity and growth.

Wherever trade-offs appear, strategists have to weight and compare the objectives. A pragmatic approach to formulating the value chain strategy could focus on one of the objectives and take others as secondary objectives or minimum levels not to fall short off. The decision can go either way: The strategy may go for economic growth leaving environmental conditions

unchanged or dispense with the growth objective and concentrate on environmental or social criteria alone. In the latter case, it is the value created by the value chain that should stay the same. The decisive point is to make the choices transparent and take a conscious decision on the strategic options to pursue, in the light of facts compiled by the value chain analysis.

#### *Conflicts between private and public interests*

No enterprise is in business because of its motivation to alleviate poverty. Strategy formulation has to start from economic opportunities and address the competitive issues first — from the perspective of the enterprises which are supposed to invest into chain development. From the perspective of public policy, it is the distributional aspects that are essential, especially a greater value captured by poverty groups, additional jobs for the poor or improved gender equity.

Clearly, strategy formation needs to take into account the diverging interests of private and public actors that appear even though *both* sides refer to the sustainability goal. After all, the value chain strategy has to serve all interest groups concerned, both public and private. Here, a relevant tool is an actor analysis of the value chain clarifying and listing the objectives of all parties. This helps the participating actors determine whether to engage in the value chain development strategy and how. Obviously, both sides have to see a benefit for themselves — private companies serving their markets as well as government having to respond to political clients. See more points on how to achieve stakeholder collaboration in value chain development in module 4, chapters 4.3 and 4.4.

#### *Winners and losers in economic transformation*

The benefits of chain development are likely to be unevenly distributed. The very fact that innovation and change are processes in time means that some operators move ahead of others. Upgrading technology and improving productivity, product quality and prices changes the competition situation within the value chain benefitting the innovative enterprises and putting others under pressure to keep pace. If end markets are growing, the value chain and the industry as a whole still move ahead. With no demand growth the conditions of market participation are likely to worsen for the least competitive. Wage workers and smallholders are bound to lose in the process because they do not have enough skills and resources to keep up. Other enterprises and their employees may also be affected if they can only compete with imports by lowering their margins. The distinction of winners and losers is not clear cut. Box 3.6.2 presents different levels of gainful or not so gainful inclusion in a value chain.

#### **Box 3.6.2: Tool / Concept – Distinguishing levels of inclusion in economic development**

##### **Degree to which poverty groups benefit from inclusion into value chains**

- No inclusion but low-level subsistence and no chance of obtaining a satisfactory market income from participating in the value chain
- Inclusion into a value chain at unfavorable conditions that tend to deteriorate further as a consequence of weak competitiveness; risk of being squeezed out
- Inclusion into a value chain at unfavorable conditions which at least enables a stable contribution to livelihoods Inclusion at conditions allowing poor entrepreneurs and workers to grow out of poverty

*Source: Own concept*

The key strategic question is which side the value chain development strategy should focus on — investing into potentially competitive operators strengthening the value chain and achieving at least some social benefit or rather into the poor and *less* competitive to achieve a more equal distribution of productive capacity within the chain, yet possibly to the detriment of the innovators. The first choice is less pro-poor now but may open up new opportunities later; the second contributes to more equity yet probably at a lower level of economic development that offers less space for redistribution.

Again, there is no answer to the question. The best approach is to expose the options and take a conscious decision.

### ***Essential elements defining the quality of value chain strategies***

The perspectives on the same industry differ between observers. They show various patterns of problems and possible ways forward. This information helps organizing ideas and it can be used to formulate hypotheses on value chain change. A value chain strategy opens possibilities and provides direction for systemic interventions.

“A good strategy is, in the end, a hypothesis about what will work. Not a wild theory, but an educated judgment”<sup>240</sup>. The strategic vision for value chain development builds on the general goal of sustainable development. It contributes to one or several of the general goals growth, ecological sustainability, poverty alleviation and gender equity without compromising any other dimension of sustainability. Rumelt sees a “good strategy” containing a kernel of three elements<sup>241</sup>:

- “A diagnosis that defines or explains the nature of the challenge”:  
In value chain strategy that means insight into generic development patterns. In each value chain, the diagnosis has to come up with the most critical issues the value chain project can focus on (for a start).
- “A guiding policy for dealing with the challenge ... that directs and constrains action without fully defining its content”<sup>242</sup>.  
The patterns recognized in the value chain diagnosis are used to construct hypotheses on the development potential of the specific value chain at stake. The focus is placed on fields where the strategy can exercise leverage. Starting out as educated guesses, the approach is improved over time.
- “A set of *coherent* actions that are designed to carry out the guiding policy”.  
This implies a conscious management of the trade-offs and potential synergies. At the same time, a good strategy keeps the entire value chain in perspective and does not get bogged down in individual aspects.

Good value chain strategies have to remain flexible and open to revision. If the conditions change, such as in the markets, social conditions, technology or environment, the strategy has to change as well. A good strategy in this sense is not a detailed plan but coherent action backed by argument<sup>243</sup>.

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<sup>240</sup> Rumelt, 2013, p.243

<sup>241</sup> Rumelt, 2013, p.77

<sup>242</sup> Rumelt, 2013, p.84

<sup>243</sup> Rumelt, 2013, p.77

### 3.6.2 Tools for strategy formulation and programming

The principles and features of a good strategy apply to all protagonists of value chain development programs and projects. However, there are significant differences between the type of lead actors — government, companies and development agencies — involved in value chain development: While private companies are often content with defining a budget and setting annual objectives, the public sector is bound to much more detailed programming and reporting. Each type of value chain development lead actor operationalizes and codifies its own strategy differently. Donors of development funds ask for detailed, quantified indicators<sup>244</sup> that may differ from private companies and government.

Module 4 reviews the roles and requirements of the different lead actors involved in value chain development. The following tools are applicable to value chain development strategy formation by different organizations and within different decision-making and planning systems. The tools provide possibilities for structuring the decision problems. They have to be specified in each case.

#### *SWOT analysis*

Strategic synthesis is not the product of applying one tool. Nevertheless, the SWOT analysis can prepare a synthesis and facilitate decisions. The SWOT matrix compiles strengths, weaknesses, opportunities and threats and is used to provide a synoptic overview of important strategic information. It is a widespread and well-known instrument summarizing the insights gained by strategic analyses. An example of its application in value chain development is shown in Box 3.6.3 presenting key strategic considerations on the fish subsector in Kenya.

*Box 3.6.3: Case – SWOT analysis and strategies to upgrade fish subsector, Kenya*

<p><b>Associations representing the value chain</b></p> <ul style="list-style-type: none"> <li>- National Fisheries Federation (NFF) &amp; member associations:</li> <li>- Inshore Fisheries Association,</li> <li>- National Inland Canoe Fishermen Council,</li> <li>- Cooperative Fishermen Association</li> </ul>	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>- Associations exist, representing the fishermen</li> <li>- Clear objectives &amp; commitment of NFF Executive Council</li> <li>- Potentially high lobbying power due to 5% share in GDP</li> <li>- Service offers available for entire value chain</li> <li>- Increasing investment in processing and marketing</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>- Limited human/ financial capacities</li> <li>- Weak buyer-seller linkages</li> <li>- Knowledge on quality is limited, despite training</li> <li>- Outdated technology of artisan and industrial vessels</li> <li>- Lobbying power not fully exploited</li> <li>- Insufficient access to finance</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>- Access to EU market</li> <li>- New products (e.g. deep sea fresh fish, value addition, aquaculture)</li> <li>- New technologies for improved fishing (fiberglass vessels)</li> </ul>	<p><b>Short term strategy</b></p> <ul style="list-style-type: none"> <li>- Raising awareness on opportunities</li> <li>- Improving post-harvest handling</li> <li>- Simple system to facilitate information flow between the chain links</li> </ul>	<p><b>Medium term strategy</b></p> <ul style="list-style-type: none"> <li>- Strategy to better exploit lobbying power</li> <li>- Improving information and training on quality, hygiene, waste reduction etc.</li> </ul>

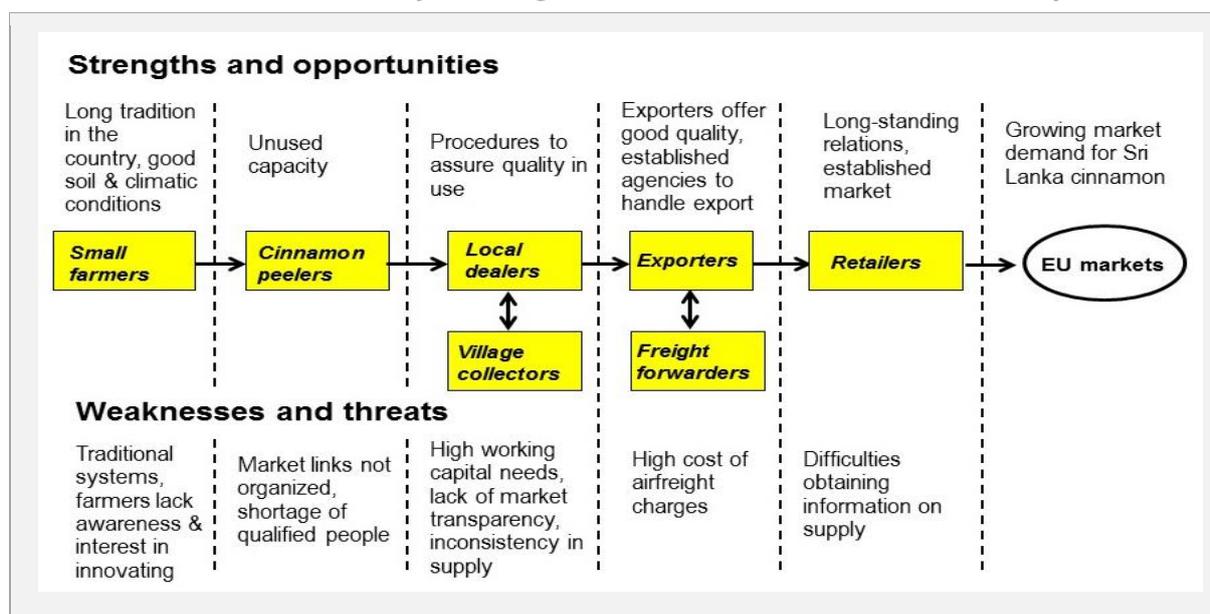
<sup>244</sup> Cunningham and Jenal, 2013

<ul style="list-style-type: none"> <li>- New technologies for improved processing and waste reduction</li> </ul>	<ul style="list-style-type: none"> <li>- Joint procurement and marketing ventures</li> </ul>	<ul style="list-style-type: none"> <li>- Communicating success stories to promote membership in associations</li> <li>- Measures to build trust between chain actors</li> </ul>
<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>- Rising fuel prices</li> <li>- Artisan fishermen poverty stricken</li> <li>- Insufficient storage and port infrastructure</li> <li>- Overfishing</li> <li>- Increasingly ambitious standards of buyer markets</li> <li>- Deficiencies of the vocational and higher education system</li> <li>- Inadequate legal provisions (e.g. restrictions on excluding non-members from service offer of co-operatives)</li> </ul>	<p><b>Medium term strategy</b></p> <ul style="list-style-type: none"> <li>- System with templates for grant applications by fishermen associations</li> <li>- Joint processing / marketing ventures (priority: ice storage)</li> <li>- Design of industry self-control system for quality, environmental and social standards (code of practice, internal control, certification)</li> </ul>	<p><b>Long term strategy</b></p> <ul style="list-style-type: none"> <li>- Strengthening organizational structures of associations</li> <li>- Development/ improvement of service offer of associations</li> <li>- Internal conflict management/arbitration procedures to manage conflicts of interests along the value chain</li> <li>- Implementation of industry quality-control system along the value chain</li> <li>- Enforcing standards</li> <li>- Capacity-building for training of artisan and industrial fishermen</li> </ul>

Source: GTZ-MOAP, Kenya, adapted by M. Will

Another form of presenting the information is by linking the chain map with a SWOT analysis that summarizes the insights of the different value chain studies and strategic considerations. Box 3.6.4 shows the value chain sequence in the middle row, complemented with results of a SWOT analysis above and below, thus linking operators at different value chain stages to weaknesses and bottlenecks as well as strengths and opportunities identified in a SWOT analysis.

**Box 3.6.4: Case – SWOT analysis integrated into cinnamon value chain map, Sri Lanka**



Source: adapted from Richter 2005, GTZ-Integration, Sri Lanka

### Formulating a value chain development objective

At some point, the wealth of information generated and the different arguments provided by the strategic considerations have to lead to the formulation of a value chain development objective. There is no formula that translates the pros and cons of a strategic discussion into the 'right' objective. What can be offered are hints on how to phrase a value chain development objective. The following Box 3.6.5 provides a template that may help with this task. It provides an exemplary wording from which to text modules may be copied.

Most likely, a value chain development objective will start with economic growth moving on to include the environmental and social dimensions. The template above covers all sustainability dimensions and refers to the value chain as a whole. It thus comes close to formulating an overarching, quantified vision for change. In concrete cases of value chain development projects, the objective will look very different, depending on the focus, the design and the outreach of the program.

The objective and strategy of value chain development has to be subject to revision and improvement. ValueLinks advocates 'double loop learning'. This means that implementers should not only check for the results achieved but also reflect on the original strategic considerations that gave rise to the formulation of the strategy.

**Box 3.6.5: Tool – Template for the formulation of a value chain development objective****Text modules of an objective of value chain development***Value added of the industry (= prices obtained or volumes sold)*

- For the product (specify type, quality, etc.)
- In the ... market (specify segment and product)
- Increased by ...\$\$ by ...%
- In the year ... (e.g. five years from now)

*By...*

- Improving or innovating the product (quality)
- Reducing cost (of production or marketing)
- Expanding capacity (in different chain links)
- Innovating the business models
- Improving market regulations

*While...*

- Maintaining the quality of the ecosystems...
- Reducing resource (water, energy, material) input by ...%
- Observing environmental standards (...)

*And...*

- Generating ... number of jobs in ... businesses
- Enhancing the profits of ... small enterprise business models by ...%
- Reducing the average market price of the end product to ...

*Source: Own concept***Selecting and combining strategic options**

The actual formulation of the strategy for value chain development takes up from the considerations and strategic options developed in chapters 3.2 to 3.5.

Box 3.6.6 below presents the nine strategic options that have been derived. Every strategic option includes several impact hypotheses for value chain development. The table presents the basic impact hypotheses in a few words. Although every option has a special focus, all contribute to the dimensions of the sustainability goal. For example:

- 'Promoting business opportunities in greening the value chain' not only provides environmental benefits but also promotes economic growth.
- 'Value chain upgrading and innovation' primarily aims at economic growth but also benefits the poor — at least to the extent they can participate in the opportunities.
- 'Supporting the entrepreneurship of women' is a major element of gender-sensitive development and still contributes to economic growth.

These are generic statements that have to be elaborated for every case. Consolidating the value chain strategy means selecting one or combining several strategic options in a sensible way. This implies assessing the strategic options and the interactions between them. There is no rule to determine combinations of strategic options. Even a thorough strategic analysis does not deliver more than hypotheses. If strategy formation means finding promising hypotheses, the implementation of a strategy is an "experiment"<sup>245</sup>.

Nevertheless, a few hints are possible:

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<sup>245</sup> Rumelt, 2013, p.241

- Each dimension of the sustainability agenda has a dominant strategic option. This is the upgrading and innovation strategy for economic growth, the resource efficiency strategy for environmental sustainability, and the development of business models and entrepreneurship for social inclusion of poverty groups and women.
- Decision-makers should address the economic strategies first so as to make sure that chain operators and private lead actors have an incentive to participate.
- Upgrading and greater resource efficiency will almost always be accompanied by changes in business models.

Obviously, the combination of strategic options is a question of the weight assigned to the different development goals. It also depends on political and pragmatic criteria.

**Box 3.6.6: Tool – Overview of strategic options for value chain development**

Strategic option	Basic impact hypothesis	Expected impact
<i>Strategic options focusing on economic growth (see chapter 3.2.5)</i>		
(1) Value chain upgrading and innovation	A specific combination of business innovations and improved public services leads to greater value chain performance	Better products or lower cost overall
(2) Addressing market failure – making markets work	Coordination of public and private investment along supply routes breaks the deadlocks in the chain	Investment goes up, better products or lower cost
<i>Strategic options focusing on environmental sustainability (see chapter 3.3.4)</i>		
(3) Spatial management of local ecosystems	Implementation of management plans keeps extraction below critical limits	Foundation for long-term sustainability of the value chain
(4) Promoting business models and technologies with improved natural resource efficiency	Improved resource efficiency decouples production from natural resources, green products and services enable investment in resource-saving technology and stimulate growth	Less natural resource consumption, lower cost
(5) Sustainability standards and regulation	Sustainability standards and environmental legislation impose limits on business processes	Resource losses and pollution stopped
<i>Strategic options focusing on poverty alleviation (see chapter 3.4.5)</i>		
(6) Promoting business models for the benefit of the poor	Removing economic discrimination and promoting specific business models improves the competitiveness of the poor	Poor producers and workers contribute to and benefit from growth
(7) Defensive interventions and complementary social strategies	Balancing disruptive change and preventing exploitative labor relations to protect the poor, services and financial	No negative impact on livelihoods, poor better

	transfers compensating social problems	protected and their employability improved
<i>Strategic options focusing on gender-sensitive chain development (see chapter 3.5.3)</i>		
(8) Gender-sensitive value chain development projects and programs	Gender-specific solutions and value chain development processes enable participation of women	New business opportunities
(9) Supporting the entrepreneurship of women and the young	Support programs bring up the number of successful female enterprises and startups	Socially beneficial income rises

Source: Own concept

### **Value chain solutions: The building blocks of value chain strategies**

Value chain development is an innovation process that leads to changes in the way business is done. Essentially, the value chain strategy seeks solutions at all points where the value chain needs to improve. These include improved business models, stronger business linkages, better services, financial arrangements and an appropriate regulatory framework. The principle is confirmed by Mitchell et al.: “A chain is only as strong as its weakest link. (...) it is necessary to address all of the chain challenges in a coordinated and strategic program. The value chain approach identifies all of these key levers of chain competitiveness”<sup>246</sup>.

For example, a market failure problem is addressed by a better coordination and organization of operators, limited competitiveness of micro-enterprises by contract linkages and improved business models, and excessive water consumption and pollution by business models that utilize water-saving technologies, technical services and new financing solutions. The many possible changes improving a value chain can be clustered into generic fields of value chain solutions as they will be called in the following. Volume 2 of the manual differentiates six fields:

- Improved business models (module 5)
- Vertical and horizontal business linkages (module 6)
- Technical and support service arrangements (module 7)
- Financial arrangements (module 8)
- Quality and sustainability standards (module 9)
- Regulatory and support policy instruments (module 10)

#### **Box 3.6.7: Tool – Overview of strategic options for value chain development**

<b>Types of chain solutions → Strategic options</b>	<b>Business models (Module 5)</b>	<b>Business linkages (Module 6)</b>	<b>Services (Module 7)</b>	<b>Value chain finance (Module 8)</b>	<b>Quality &amp; standards (Module 9)</b>	<b>Policy instruments (Module 10)</b>

<sup>246</sup> Mitchell et al., 2009, p.55

Value chain upgrading and innovation						
Making markets work						
Management of local ecosystems						
Improving resource efficiency						
Environmental regulation						
Business models for the poor						
Defensive social strategies						
Gender-sensitive chain development						
Entrepreneurship of women						

Source: Own concept

This classification is not haphazard. Each corresponds to the elements that make up the value chain, from the operators using business models to the business linkages and the operational service arrangements. The table in Box 3.6.7 relates the strategic options to the value chain solutions. The green shaded areas indicate the types of solutions that would be relevant. Although this is a rough classification only, the tool shows that every strategic option requires action on several value chain solutions.

The types of value chain solutions structure the know-how and helps conceptualizing value chain development projects. They correspond to the *ValueLinks* modules 5 to 10 which provide details on the individual solutions and the respective modes of delivery.

### **Operationalizing the strategy: Choosing value chain solutions**

Each value chain solution suggests concrete changes in business models, linkages and other fields that a value chain program would take on. To operationalize the strategy, planners have to arrive at the specific value chain solutions to work on and determine the action needed. This means synthesizing the strategic analyses and turning the considerations into action proposals. The question is which particular change projects should be scheduled and in which sequence. There are several possibilities to achieve that.

Generally, potential actions can be systematically inferred by:

- Determining possibilities to remove the barriers hindering progress
- Determining possibilities to fulfill the requirements
- Checking on points of leverage in the value chain

The first two methods are fairly straightforward: The procedure is to gather all available information related to the strategic objectives, the opportunities, constraints and their causes. Screening this material provides clues about potential solutions and the necessary investment. In essence, this means analyzing the constraints in greater detail to arrive at a suggestion for action. The second approach starts from the strategic objectives and breaks them further down into manageable tasks.

**Box 3.6.8: Tool – Criteria to assess value chain solutions**

**Criteria regarding the significance of solutions**

- *Relevance*: Does the proposed solution actually contribute to the vision and to the objectives? Is it a necessary improvement?
- *Effectiveness*: Is the solution likely to produce results? This includes checking whether it addresses intermediate objectives or long-term strategic objectives: How far into the future are we looking?
- *Feasibility*: Is it in line with available resources and with the current capability of enterprises and agencies? Determine the feasibility of a chain development project according to market and upgrading potential!

**Criteria regarding the correlation of solutions**

- *Comprehensiveness and consistency*: In value chain development we are often faced with interrelated issues, such as cutting cost plus marketing or quality management along the chain. Is the combination of activities sufficiently complete to reach the objective? Are the proposed actions complementary and do they support each other?
- *Correct sequencing*: Do the solutions build on each other in a process of incremental improvements?

*Source: Own compilation*

The third method identifies those elements of the chain where action might produce the greatest effect. The procedure is to focus on those constraints and opportunities in the chain that are critical success factors and have the potential to advance or impede upgrading. Critical issues are found at the points of leverage. Points of leverage are the key business links or bottlenecks in the value chain affecting the overall performance or key services and sources of technology without which the chain cannot advance. Points of leverage can be identified as part of a value chain mapping exercise. Translating strategic options into value chain solutions may yield a large number of potential actions. To take a decision on action, the proposed solutions should be critically reviewed. Box 3.6.8 above presents criteria to set priorities across different solutions.

It is possible to differentiate between simple, complicated, and complex problems within a value chain system<sup>247</sup>. It is advised to proceed from simple to complex. The value chain solutions can be visualized in the value chain map. However, it is not useful to overload the value

<sup>247</sup> Cunningham and Jenal, 2010, p.10

chain map with too much information. To compile and describe the action alternatives it is better to use a table format.

Apart from the systematic screening methods a simple brainstorming of stakeholders often produces surprising insights. Planners should always be open to unforeseen opportunities. After all, upgrading has to build on creative business ideas and solutions.

#### *Connections between value chain solutions*

The fields of action are interrelated, and so are many value chain solutions. Most improvements are in fact combinations of solutions at different points in the value chain. There are a number of value chain solutions that have particularly strong interconnections. Consequently, several chain operators or chain supporters have to collaborate carrying out the development action.

#### *Business models – linkages – financing solutions*

Value chain development always translates into the change of business models. Investing into production capacity, innovating technology or improving the product always has implications for the business model of the operators concerned. At the same time, it implies change in the terms of contract between producers and buyers, in quality management and in the supply linkages and it calls for new financing arrangements. Improving a business model thus means looking for innovations to address in parallel.

#### *Policy instruments and service arrangements*

The regulatory environment and support policies provide the incentives for economic change. Yet, to be effective, the technology, environmental or social policy instruments need the requisite public support service capacity. Service providers are often leverage points in the value chain. Without services delivering technical solutions, social benefits or training, no economic progress of the chain is conceivable. Service providers are multipliers who convey innovations to many chain operators.

The classification of value chain solutions is not meant to limit the possibilities for reaching the value chain development objectives. It should be taken up with flexibility — as a possibility to provide orientation. After all, each upgrading program looks different depending on the conditions of the case.

Ultimately developing a combination of a vision, strategies and solutions is identical with the impact model of an upgrading project. In fact, it is at the stage of strategic planning that the impact model should be established.

Box 3.6.9 presents two examples of project designs of value chain upgrading projects in Asia.

**Box 3.6.9: Case – Examples of value chain upgrading objectives and actions****Palm oil in Southern Thailand***Vision*

- Greater competitiveness by reducing costs at the primary production stage

*Objectives*

- To increase average oil yields by improving the fresh fruit bunch yield and the oil extraction rate in oil mills – to match benchmarks of Malaysian plantations
- To enhance oil extraction profitability by generating electric power as well as biofuel using biomass residues

*Main actions*

- Introduce energy policy providing attractive feed-in tariffs for local sources of electric power
- Create business links between oil mill owners and providers of power generators
- Improve plantation management practices
- Enhance and improve supply of farm services

**Maize in Xayabouri Province, Laos***Vision*

- Expansion of maize production and sales

*Objectives*

- To introduce more contract farming arrangements with buying companies
- To qualify maize farmers associations to become contract partners

*Main actions*

- Regulate current contract problems with the publicly owned RD Ltd. Company
- Grant market access for private companies interested in contract farming
- Found association of maize growers in two districts

*Source: GTZ Laos and GTZ Thailand*

### 3.6.3 Anticipating change: Impact hypotheses of value chain development

Wherever a public agency engages in promoting private sector development — be it a development agency, a ministry of economic development, or an export promotion bureau — tax money is spent to achieve a political objective. These agencies, and particularly the donors of development aid are expected to report on the impact.

Every chain promotion project implies hypotheses about the impact that the public interventions will have on economic growth, on the incomes of poverty groups, on the ecosystems protected and on the resources saved. This last paragraph provides a first account on how to structure these hypotheses. More particularly, the question is how the support services translate into a structural, sustainable change of the value chain in question. This relationship is expressed in a results model which tracks the sequence of events leading from interventions to the desired development impact.

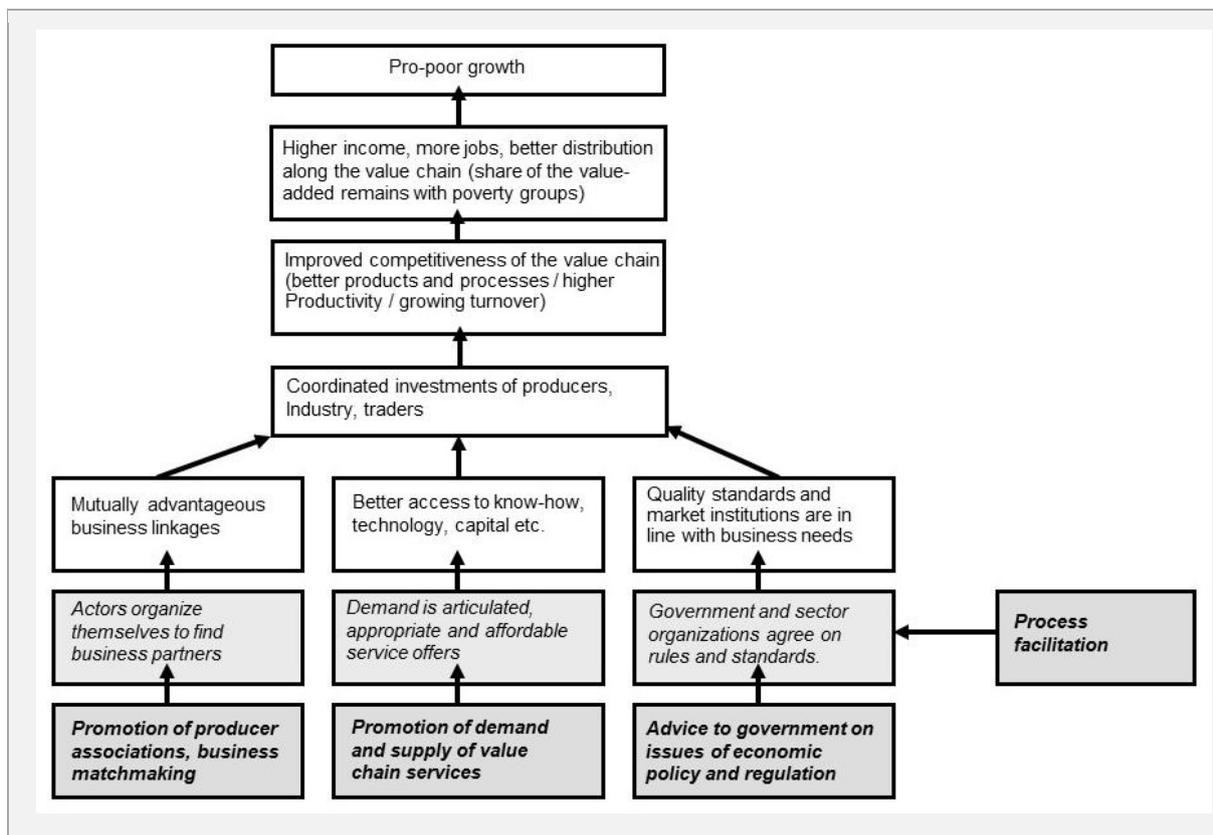
Impact orientation has become a crucial concern for any public program. Development agencies need to be oriented towards impact from the very beginning. Therefore, formulating the value chain development strategy is closely connected to formulating a results model. This model is used all along the project cycle that follows, from the design of projects, monitoring,

to the evaluation and reporting on results. Elaborating them should not be postponed to ex-post evaluations.

The strategy for value chain development is a combination of strategic options and value chain solutions. Taken together, they constitute a development model for the value chain. The value chain development strategy is a ‘theory of action’ combining analytical insight and action orientation. The different strategic considerations in this chapter are a good starting point. Basically, the procedure of constructing a results model is to work from the strategic options downwards identifying the preconditions for achieving the results. The methods to achieve this are the subject of chapter 11.3 in *ValueLinks* module 11<sup>248</sup>.

At some point, the strategy takes the form of a logic model specifying the sequence of events between the initial activities at the bottom and the expected results at the top. Box 3.6.10 is a prototype logic model of value chain promotion that includes three areas of value chain solutions and fields of action. Each intermediate step explains and illustrates the logical connection between interventions and impact.

**Box 3.6.10: Tool – Prototype logic model of value chain promotion**



Source: Own concept

This is a generic model which can be used as a template adjusting it to the case at stake. The impact model can be read from top to bottom or vice versa.

<sup>248</sup> See volume 2 of the ValueLinks manual

Starting at the bottom, it specifies three fields of action:

- Outputs: The dark grey color indicates outputs of activities undertaken by chain actors with the support of the development agency.
- Use of outputs: The next level shows the use of these services by chain actors being facilitated by the development agency.
- Impact: The white colored boxes farther up all indicate direct or indirect benefits of the chain promotion effort as they build upon each other.

The higher the level, the more aggregate the benefit, and the weaker the attribution of these changes to the initial chain promotion effort. Nevertheless, all benefit levels — with the exception of the topmost pro-poor growth — could be regarded as direct impact of a chain promotion project. This prototype impact model is an approximation to a wide range of value chain strategies and serves the purpose of illustration only.

Most development programs support several value chains in parallel. As a matter of principle, these programs have to establish a separate impact model for each value chain promoted. This is necessary because objectives, fields of action and the size of the effort are likely to differ. However, this does not mean that a separate impact monitoring system has to be established in each case.

In preparing upgrading action it is important to distinguish between the roles and responsibilities of enterprises, supporters at the meso level and the lead actors in value chain development. The action to resolve constraints and address the opportunities has to be taken by the enterprises and chain supporters. Consequently, these actors also have to set the operational tasks and assign responsibilities. The contributions and facilitating role of an external development agency is determined later and follows a different logic. The processes of strategy formation and program planning follow in the next module 4<sup>249</sup>.

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<sup>249</sup> Chapter 4.5

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# Module 4

## Value Chain Programs & Projects

## Contents

<b>Module 4</b>	<b>Value Chain Programs and Projects</b>	<b>267</b>
<b>4.1.</b>	<b>Introduction: Implementing value chain development</b>	<b>268</b>
4.1.1	Value chain development from different stakeholder perspectives	268
	The stakeholder landscape	268
	The lead actors in value chain development	270
	<i>Private companies and business associations as lead actors</i>	270
	<i>Government and public administration</i>	271
	<i>Development agencies</i>	272
4.1.2	The practice of economic development	272
	Flexibility of implementing a value chain development approach	272
	Capacity WORKS for value chain development	273
<b>4.2.</b>	<b>Program formats of lead actors in value chain development</b>	<b>275</b>
4.2.1	Chain initiatives of private companies and associations	275
	Supply chain initiatives led by private companies	275
	<i>Lead firms and business consortia</i>	275
	<i>Inclusive business</i>	277
	Value chain development led by business membership organizations	278
4.2.2	Government policies and public programs	279
	Public value chain development programs	279
	<i>The place of value chains in public policy programs</i>	280
	<i>Public value chain development activities and policy instruments</i>	281
	Institutional set-up for policy implementation	282
	Limits to the effectiveness of public value chain development	285
4.2.3	Donor-funded value chain development	285
	Value chain development programs and projects	286
	Development projects with a value chain perspective	289
	Strengths and weaknesses of donor-funded value chain development	289
<b>4.3.</b>	<b>Cooperation for value chain development</b>	<b>291</b>
4.3.1	Forms of cooperation and partnership	291
	Criteria for choosing partners in value chain development	292
	<i>Micro level partnerships</i>	294
	<i>Going to scale: Partnerships at the meso level</i>	294
4.3.2	Public-private development partnerships	295
	Preconditions — Converging interests of private and public actors	296
	Informal and formal cooperation arrangements	297
	<i>Informal public private cooperation arrangements</i>	297
	<i>Formal public private development partnerships</i>	298
	<i>The design of formal public-private partnerships</i>	299
	<i>Combining informal and formal cooperation</i>	300
	Initiating and concluding new public-private partnerships	301
	Public-private dialogue	302

<b>4.4. Steering value chain development</b>	<b>305</b>
4.4.1 Program-related steering structures	305
Choice of steering instruments	305
Steering structure	308
Stakeholder representation and incentives for collaboration	309
Steering efficiency and sustainability	310
4.4.2 Permanent steering by industry organizations	310
<b>4.5. Managing processes of value chain development</b>	<b>313</b>
4.5.1 The value chain development process	314
The value chain analysis and visioning process	314
<i>The process of value chain analysis</i>	315
<i>Strategic considerations and the formulation of a vision</i>	316
Implementation processes	317
<i>Workshops and meetings</i>	319
<i>Quality and efficiency of the implementation process</i>	321
4.5.2 Support processes and facilitation instruments	321
<i>Sequencing the support process</i>	322
Entry and exit points for external support and facilitation	323
<i>Tasks in support processes and facilitation</i>	324
<i>Principles of facilitating value chain development</i>	325
<i>Pitfalls in facilitating the value chain development process</i>	326
4.5.3 Conflict management	327
Managing conflict within a value chain	327
Managing value chain development in a conflict environment	330
<i>Reacting to the impact of external conflicts on a value chain</i>	330
<i>Value chain development in response to the conflict environmental</i>	331
Conflict-sensitive value chain development	331
<i>Conflict analysis of the value chain</i>	333
<i>Strategy formation</i>	333
<i>Principles of conflict-sensitive project management</i>	334
<i>Monitoring and evaluation</i>	334
4.5.4 Gender-sensitive value chain development	335
<i>Gender-sensitive cooperation and steering structures</i>	335
<i>Gender-sensitive facilitation of value chain development processes</i>	336
<b>4.6. Capacity development and learning</b>	<b>337</b>
4.6.1 Individual capacity to promote value chains	339
Capacity development of value chain development facilitators	339
The role of value chain specialists	340
4.6.2 The organizational capacity for value chain development	343
Networks for knowledge building and exchange	343
Training institutes and consulting firms	345
Institutional capacity for value chain development	345
<b>Resources</b>	<b>347</b>

## Module 4 Value Chain Programs and Projects

### 4.1. Introduction: Implementing value chain development

After considering the development possibilities of value chains in general terms, this module explicitly takes an actor perspective. It is about the organizations that actively implement value chain development activities. In contrast to the preceding modules, the following text is action-oriented in nature. It aims at answering the question how implementers of value chain development activities ought to proceed to be effective. Value chain development means managing technological, economic and institutional change. Value chain development implementers need specific know-how on the processes and instruments of change management.

Many value chain development guidelines are written from the standpoint and perspective of a development agency. This has been the position of the first edition of ValueLinks as well. However, in reality more often government ministries and the organized private sector take on the role of change agents. Value chain development is not only an instrument for donor agencies. ValueLinks therefore differentiates between three major categories of 'lead actors' in value chain development: Government agencies, private companies as well as donor-funded development agencies.

The module presents expertise and tools guiding the lead actors in their task to promote value chain development. This includes organizing collaborative action and leadership in the processes of value chain analyses, strategy formation and planning, and the implementation of solutions. To the extent possible the know-how is specified according to lead actors.

#### 4.1.1 Value chain development from different stakeholder perspectives

Value chain development is a collaborative venture and involves a multiplicity of chain actors. Private enterprises, public and private support service providers, government and public administration constitute a cooperation system in which the partners perform different functions. It is important to clarify their roles in order to foment the division of tasks.

##### *The stakeholder landscape*

To determine roles in value chains and in value chain development, we must first get an overview of who is involved. The scheme in Box 4.1.1: presents an overview of stakeholders in chain development which helps sorting out the different types and roles of value chain actors.

The variables to classify them are:

- Private actors vs. public actors
- Value chain operators, value chain supporters and value chain enablers
- Value chain-internal actors and external facilitators, especially development agencies

The box below classifies the value chain actors according to the variables.

Five of the actors are part of the value chain system and play a regular role in its functioning. They are included in value chain maps. Development agencies are only present temporarily and are external to the system.

**Box 4.1.1: Concept – Classifying value chain actors**

	VC- internal actors		VC-external actors
	private actors	public actors	
<b>Operators</b>	Private enterprises Lead companies	State-owned enterprises	n/a
<b>Supporters</b>	Industry/subsector associations BMO, chambers	Public support service agencies	Development agencies
<b>Enablers &amp; regulators</b>	n/a	Government agencies	n/a

Source: Own compilation

To clarify the roles of these actors in value chain development, we have to determine who *ought* to do what in value chain development. This is a normative question. Taking position, we start from the fact that value chain development creates *collective* goods in the interest of all value chain operators, as well as *public* goods for society — a more equitable and sustainable economy. The principle is that those who benefit from these goods should get engaged with value chain development and contribute actively.

In general terms, this is how the groups of chain actors *should* behave:

- Private enterprises, large or small, perform the productive, processing and commercial business operations, assume the risk and pay for the cost. This applies to state-owned enterprises as well. Private operators primarily create benefits for themselves — the viability of their business is the foundation for the competitiveness of the value chain. Still, large companies do have an incentive to contribute to value chain development because they benefit from the performance of other value chain actors.
- Private industry associations and business membership organizations provide support services to groups of value chain operators or for the entire value chain, such as export promotion or contributions to regulatory decisions.
- Public research and training institutes, and specialized units of public administration provide information and other support services to the business community and assist enterprises.
- Government organizations comprise of national as well as regional ministries and departments relevant for the value chain at stake. Their role is to regulate and supervise production and trade in the interest of employment, environmental sustainability, and to provide basic infrastructure, such as roads — in the public interest at large.
- Donor-funded development agencies are external to the value chain system. Their main role is to facilitate value chain development and provide support to value chain actors — in the global public interest.

Another group of actors with great influence upon value chain development, even though not classified as a value chain actor, is civil society. This includes advocacy groups, activists and media observing and criticizing economic development. While civil society organizations may neither be willing nor able to create new business models, they play an important role in driving the course of value chain development. By denouncing social and environmental problems and by advocating green products and sustainable consumption patterns, they have the role to exercise pressure and supply energy to the process of change.

### ***The lead actors in value chain development***

In principle, all stakeholders listed above can and should contribute to value chain development. Enabling participation needs leadership and a structure for cooperation.

Among the stakeholders some are in position to take over a leadership role. We call them 'lead actors in value chain development'. The term refers to organizations assuming the responsibility to organize and drive value chain development within a certain time frame. Lead actors set up value chain development initiatives, projects and programs seeking the cooperation of others to introduce innovations and chain solutions in partnership.

ValueLinks 2.0 differentiates between three different types of lead actors:

- Private companies and business associations
- Government and public administration
- Development agencies

Limiting the number of lead actor types to three has pragmatic reasons. The classification builds on the major differences in perspective — the private, the public and the external perspective on the value chain. Each type of lead actor stands for a particular way to conceive value chain development activities. Nevertheless, lead actors should have vested interests that overlap with the collective interest of the business community or society at large.

The following chapters provide orientations for value chain development lead actors based on the definition of their roles and the assumption that they share the same goals of sustainable development. Most principles and practices of value chain development are the same for any type of lead actor but some differences should be taken into account. One aspect is the specific incentives for assuming a leadership role which clearly differ between private and public organizations. Others are the size, the available resources and the organizational capacity. As a consequence, the forms of organizing value chain development projects and the particular activities differ<sup>250</sup>.

#### *Private companies and business associations as lead actors*

The main promoters of private sector-led value chain development programs include:

- Large individual companies occupying a key position in the value chain
- The organizations of the organized private sector, such as trade associations and business membership organizations

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<sup>250</sup> Therefore, the following chapter on program formats is structured according to lead actors.

Individual *lead companies* are interested in driving value chain development because their success in a particular market often depends on the functioning collaboration with other enterprises. Lead firms willing to sell new equipment, introduce improved technology or expand processing capacity, need to make sure that the other parts of the value chain moves along. Another incentive for private lead firms is the creation of a level playing field for effective competition — making sure that all enterprises in a value chain abide by the same rules.

*Business associations* include value chain and subsector trade associations, chambers of commerce and industry or chambers of artisans. Operating at the *meso level*, business associations are obliged to serve the common interest of the business community they represent. They take over a lead role as change agents by advocating public support and working in the interest of the business community addressing the regulatory framework and collective goods, such as vocational training and other support services.

### *Government and public administration*

The institutional set-up of government and public administration is complex. Government operates at national, regional and local levels. Responsibilities span a wide range of issues hardly ever organized according to markets and industries. As it stands, only few public organizations have an explicit mandate to promote value chain development. In most countries, there simply is no 'ministry for value chains'. Nonetheless, some public agencies and services specialize in particular subsectors of the economy. Two types of public value chain development lead actors stand out:

- Government departments for special industries: Common cases are ministries of fisheries, livestock or mining. Even if the term value chain does not appear in the list of their competences, they often have a responsibility for economic development
- Sector ministries for economic development, such as the ministry of trade and industry or the ministry of agriculture

The latter are no value chain specialists but frequently adopt the concept of value chains for industrial or rural development policies. Some are organized according to markets, such as the export promotion agencies. Ministries may also have service units that specialize in particular industries.

While line ministries have the authority to formulate sector development objectives, implementing a public value chain policy cannot be effective without relying on the know-how of an array of public service providers who are competent to actually provide the public goods needed. As a leader of value chain development, the state includes and operates through public service units and agencies covering specific issues of relevance to value chains. In contrast to private lead firms and foreign development agencies, the public sector never is a uniform actor. The different services and administrative units have to be aligned. This has consequences for the organization of public value chain programs (see chapter 4.2).

The interest of state actors is dependent on the respective mandates in the first place. Ideally, public sector organizations are governed by their mission and assigned competences that literally reach from agricultural research to zoning of land use. Yet, most likely the mandate is not a sufficient incentive to mobilize them for the development of a value chain. In order to be useful for enterprises, public agencies often have to be responsive to unplanned service demands arising in the short term. Working in the interest of value chain clients means taking the value chain development objectives as reference and interpreting the official mandate accord-

ingly. Hence, the mere description of the assigned tasks does not tell much about the incentives of a public agency to actually serve the vision of value chain development. Either political value chain development leaders provide resources and targeted orders or the business community of the value chain will have to actively claim public support. The latter involves the risk, that powerful businessmen manipulate public services for their own purposes.

### *Development agencies*

Development agencies active in value chain development comprise:

- Bilateral aid agencies, such as GIZ, SNV or USAID
- UN organizations, UNIDO, ILO, the World Bank and FAO in particular
- Non-governmental organizations, for example CARE

These agencies are the most obvious lead actors in value chain development, even though they operate at international level and have no particular stakes in any value chain. They all have in common that they are lead actors external to the value chain they work on. Apart from the domestic NGOs they are foreigners on top of it.

The contributions of external development agencies follow a logic that is different from both internal private lead firms and the state actors. Development agencies differ from private lead actors in the sense that they pursue public policy objectives serving their political clients in donor countries. At the same time, the approach is different from the way governments operate because development agencies conduct temporary projects that cover all relevant value chain development issues in parallel. The support is provided from one source. The difference between bilateral agencies, the UN organizations, and NGOs is mainly a question of their scale of operations.

Interests and incentives derive from the donors of the funds. The objective of development agencies driving value chain development is to promote the sustainable development agenda generating social and environmental impacts. To succeed, they have to cooperate with the actors in the value chain and depend on them. Only if the internal value chain actors, public or private, commit themselves, can a foreign development agency take a value chain development lead role.

Every value chain development program format has its own design and institutional set-up. While the principle logic of value chain development is similar, there are differences in the way different lead actors organize the planning and implementation processes. Nevertheless, they still share partnerships and steering structures.

## **4.1.2 The practice of economic development**

### ***Flexibility of implementing a value chain development approach***

Before moving into value chain development action, it is important to consider that the development of value chains does not necessarily depend on economic development programs. The evolution of most value chains is driven and coordinated by market forces, not by explicit development strategies. Change happens as operators react to opportunities. Certainly, the capacity for autonomous change differs widely between industries.

Secondly, in an ever changing economy, value chain development is an evolutionary process of improving and adapting. Fundamentally, the development of value chains is open-ended.

Its dynamic character is present in the ongoing adjustment of objectives and continuous improvements. Structural change occurs in a series of steps that lead from one innovation to the next. The same is true for the objectives of value chain development. Every project places the focus on another issue.

As a consequence, there is no one formula for how to conduct value chain development activities. In practice, many different formats of value chain development initiatives, programs and projects exist. Value chain development is in fact an *approach*, a way of organizing information and making sense of economic development that can be used for a wide range of value chain development activities.

The differences in formats, in size and duration of value chain development projects also imply differences in the way these projects are steered, and in the processes of strategy formation, planning and implementation. The responsible lead actors have to make decisions on how to utilize the value chain development approach in every case.

It is important to note that the ValueLinks methodology does not prescribe any particular project design. The sequence in which this manual presents different analytical tools and strategic arguments should not be mistaken for a statement on the right value chain analysis and planning processes. ValueLinks provides a choice of tools and criteria. It is up to value chain development project planners and implementers to select those that fit a value chain development program best.

### ***Capacity WORKS for value chain development***

An important model of project management is Capacity WORKS, a concept and set of tools for development work and social change developed and used by GIZ<sup>251</sup>. It is based on many years of implementation experience that have brought out five success factors for cooperation projects: strategy, cooperation, steering, processes and learning.

According to Capacity WORKS, projects for capacity development are operationalized by:

- A clear and plausible strategic orientation
- A clear understanding of who a project will be cooperating with and how
- An operational steering structure
- A clear understanding of the key processes
- Measures to develop and consolidate learning capacities<sup>252</sup>

Value chain development projects can easily be described in terms of the Capacity WORKS concept: Value chains are cooperation systems sharing interests and pursuing common objectives and strategies. The structure of the value chain defines who among the value chain actors qualifies as cooperation partner in value chain development action. The need to implement value chain solutions jointly requires value chain actors to set-up a steering mechanism, for example value chain committees or roundtables. Value chains constitute production and marketing processes.

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<sup>251</sup> GIZ, 2011

<sup>252</sup> GIZ, 2011, p.9

**Box 4.1.2: Concept – Success Factors of Capacity WORKS in value chain development**

Capacity Works	Main tasks and tools of value chain development
<b>CW-1: Strategy</b>	<ul style="list-style-type: none"> <li>- Value chain analysis</li> <li>- Strategic analysis: Strategic considerations, analysis of constraints, needs and opportunities</li> <li>- Formulation of value chain development vision, objectives and solutions</li> <li>- Assessment of likely economic, social and ecological benefits</li> </ul>
<b>CW-2: Cooperation</b>	<ul style="list-style-type: none"> <li>- Analyzing the cooperation system of the value chain, i.e. value chain mapping</li> <li>- Identifying value chain leaders</li> <li>- Forming partnerships among actors to implement value chain development solutions</li> </ul>
<b>CW-3: Steering Structure</b>	<ul style="list-style-type: none"> <li>- Steering instruments and formats, e.g. value chain committees</li> <li>- Steering structure for the value chain</li> </ul>
<b>CW-4: Processes</b>	<ul style="list-style-type: none"> <li>- Process to formulate value chain development objectives and strategy</li> <li>- Implementation processes including operational planning of value chain development activities</li> <li>- Facilitating the process of change</li> <li>- Conflict management</li> </ul>
<b>CW-5: Learning &amp; Innovation</b>	<ul style="list-style-type: none"> <li>- Training and promotion capacities</li> <li>- Reporting on innovation outcomes and impact, documentation of knowledge and experience</li> <li>- Peer learning and networking among value chain actors and value chain development promoters</li> </ul>

*Source: Own concept, based on GIZ (2015)*

In a development context, the value chain structures and operations are subject to value chain development processes generating technical and organizational change that ideally leads to learning and continued value chain innovation further on. Hence, all five success factors of Capacity WORKS are relevant for value chain development. Box 4.1.2: above lists typical tasks and tools of value chain development relating them to the success factors.

The issues and tools presented in this module are structured according to four of the five success factors, setting aside the value chain development strategy which is covered in module 3. After clarifying the different possible project formats for value chain development in chapter 4.2, chapters 4.3 and 4.4 present forms of cooperation and steering of value chain development. Chapter 4.5 deals with the processes of value chain development from process design to facilitation and conflict management. The final chapter 4.6 looks into the possibilities of building long-term capacity for value chain development.

## 4.2. Program formats of lead actors in value chain development

ValueLinks 2.0 goes beyond the conventional set-up for value chain development that views development agencies as the only implementers of value chain projects. In fact, value chain development is organized in a variety of formats. Each type of lead actor follows specific formats to promote value chain development. Although the principles are the same, part of the value chain development implementation know-how is specific to the different value chain development lead actors. The organizational formats for value chain development are classified on the basis of two criteria:

- Type of value chain development lead actor: The main criterion is the type of actor taking the lead in value chain development
- Scope and outreach of value chain development: Second is the scope of the program — from comprehensive value chain development to the development of particular chain stages and locations

We start with private chain initiatives, as companies are closest to the themes of value chain development. Next in line is government. Development agencies as external actors complete the series.

### 4.2.1 Chain initiatives of private companies and associations

Private companies are innovators driving value chain development by improving products, technology and marketing. Yet, changing the business model to become more competitive does not yet mean that a company is a lead actor in value chain development. As important as the individual innovation of one enterprise may be, it only qualifies as a contribution to value chain development if other enterprises participate and benefit as well, making complementary investments on their part. Privately led value chain development is defined as the collaborative effort of several enterprises along the value chain to reach common goals, and jointly change the way business is done. Such initiatives may be led by single companies or by private business associations.

#### *Supply chain initiatives led by private companies*

The motivation for value chain initiatives led by private companies arises from within the business community. The main objective of a privately led supply chain initiative company is a greater market success by introducing innovations and mastering the problems of investment coordination.

#### *Lead firms and business consortia*

Dominant buyers, exporters or processing companies play a lead role in value chain development if they are able to take over the risk of opening up new markets, pioneering new products, technologies and new business models. The starting point is the interest of a particular company to develop its own *supply chain* — the specific market channel in which the lead firm is active. Improved competitiveness is only attainable if the company involves partners in its supply chain to promote innovations and enable the coordination of investment. Normally, lead

firms are large companies, but in niche markets, such as organic food, small companies can also play the role of a business pioneer.

The format of chain initiatives led by private companies is a supply chain project jointly realized by a consortium of enterprises, frequently accompanied by financial institutions. The objective is the implementation of interrelated business models along the supply chain of the participating companies. The set-up depends on the position of the lead firm. These are examples from agribusiness:

- Producers of mechanical equipment as lead firms

Manufacturers of tractors have an interest in contributing to the evolution of mechanized farming. The purchase of agricultural machinery is only possible if an entire system of mechanization is in place, including commercial farms that can bear the cost of mechanization, the requisite technical and financial services, trained mechanics, the storage infrastructure and the distribution and marketing channels absorbing the additional volumes of produce justifying the initial investment. This means that a consortium for mechanization has to include farmer organizations, banks, and traders of equipment. Similarly, providers of food processing technology have to have an interest in the development of the value chains they deliver into.

- Food processors or commodity traders as lead firms

If a food processing company plans to expand its capacity, the suppliers of raw material have to make complementary efforts to bring up volumes and adjust quality. The lead companies specify the requirements in terms of product quality and production technology and may form a consortium to support the investment on the supply side.

- Fertilizer and plant protection providers as lead firms

To develop the market for farm inputs, it is not sufficient to only invest into the network of retailers. Agribusiness companies also have to partner with farmer associations, research and extension services and even commodity traders. An example is the fertilizer company Yara International that established the Ghana Grains Partnership in partnership with the Ghanaian firm Wienco and the Farmers' Association Masara N'Arziki, Ghana's biggest maize producer with more than 9,000 farmers<sup>253</sup>.

The interest of private value chain initiatives for value chain development in general lies in the wider impact they generate. The question is whether the investment is limited to a business solution in the interest of the lead company and its partners only, or whether it generates external benefits for the value chain and society at large.

Private lead actors contribute to value chain development beyond their own direct interest by:

- Opening up business opportunities for other enterprises
- Generating technical and business innovations benefiting the whole industry
- Introducing support services, such as training
- Enhancing learning and professionalizing business partners

The larger the benefits for the value chain business community and for the general public interest, the greater are the incentives to also include public partners in the value chain initiative. In many cases, the consortia thus are not limited to private companies and banks but

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<sup>253</sup> See [http://yara.com/sustainability/how\\_we\\_engage/africa\\_engagement/ghana\\_grains\\_partnership/](http://yara.com/sustainability/how_we_engage/africa_engagement/ghana_grains_partnership/)

include public institutions and development agencies as well. In Africa, multi-stakeholder agri-business platforms have emerged in which public money is used to foster private supply chain initiatives. An important platform is the Grow Africa partnership set up in 2012 by the African Union and the World Economic Forum<sup>254</sup>. For the same reason, private value chain initiatives often tend to develop into private-public partnerships or are conceived as private-public partnerships from the start<sup>255</sup>.

### *Inclusive business*

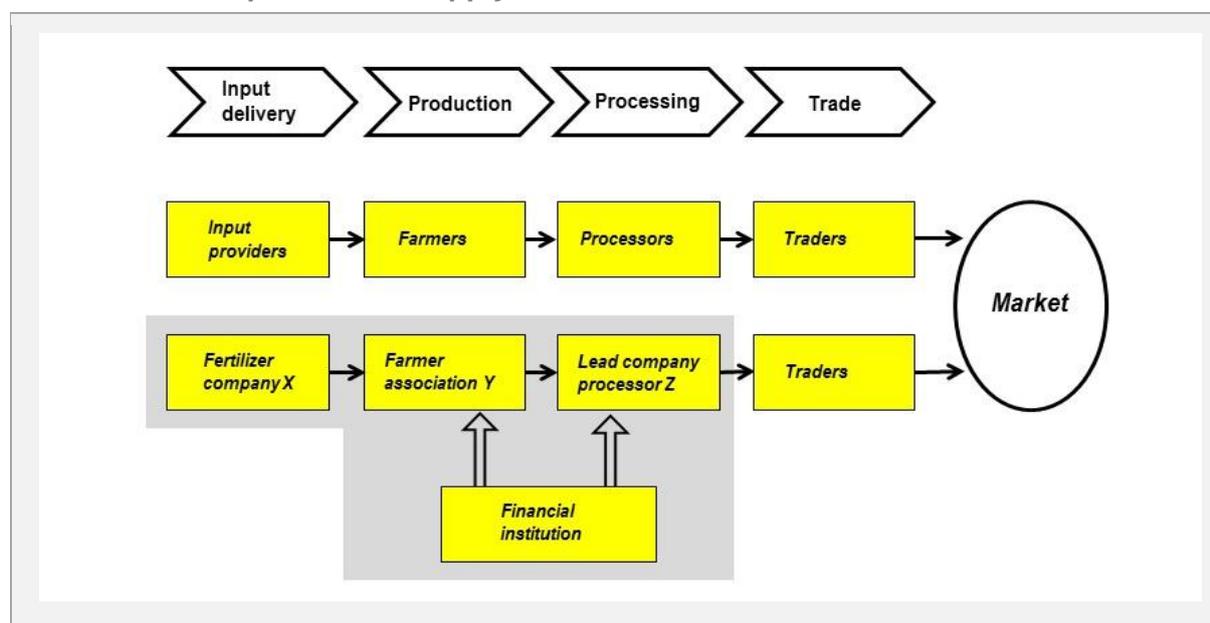
A similar format of privately led supply chain development is the concept of inclusive business. The concept is promoted, among others, by the World Business Council for Sustainable Development and the Growing Inclusive Markets Initiative of the United Nations Development Program. It aims at creating inclusive businesses models that “include the poor in the value chain as consumers, producers, business owners or employees”<sup>256</sup>.

The scope of a project introducing an inclusive business model is smaller than in business consortia including several enterprises. Essentially, it is about a single, usually large company changing its business model by engaging in business linkages with poor people.

Depending on the case, this means creating forward or backward linkages, such as:

- New products and distribution channels for poor consumers
- Selling through poor local distributors or
- Sourcing from micro-enterprises.

### **Box 4.2.1: Concept – Private supply chain initiatives**



Source: Own concept

<sup>254</sup> See [www.growafrica.com](http://www.growafrica.com)

<sup>255</sup> See chapter 4.3 for a detailed treatment of public-private development partnerships

<sup>256</sup> See [www.growinginclusivemarkets.org](http://www.growinginclusivemarkets.org)

Although the focus is on one company, developing inclusive businesses can count as a format for value chain development, because it has the potential to engender change at other points in the value chain. The link of the inclusive business concept with value chain development has been made by several observers<sup>257</sup>.

Box 4.2.1 above presents the format of supply chain initiatives in principle. The value chain map is taken as the basis to chart the consortia and partnerships created by private companies. The size and scope varies considerably. Here, the grey shaded area indicates the partners in a private supply chain development consortium.

The advantage of value chain development led by private companies is the focus on tangible factors and economic viability. Therefore, the scope and outreach of value chain solutions is likely to be smaller than in most public value chain development programs. Businessmen engage in value chain development on a voluntary basis. They will only stick to it as long as they can expect tangible results for themselves.

### ***Value chain development led by business membership organizations***

Beyond the supply chains of companies, it is the organized private sector that engages in value chain development, such as business membership organizations, industry associations and chambers of trade and industry. Business membership organizations are more flexible in addressing issues of collective interest, such as regulations and foreign trade. They are support service providers working in the interest of the value chain community at large.

The value chain development activities of business membership organizations extend to the entire value chain or economic subsector and include a wide range of topics — from vocational training to promotion of small and medium enterprises, from developing and supporting exports to investment promotion, and from contributions to improving industry regulations to development of initiatives reducing the ecological footprint.

The interventions can have a value chain development project format limited in time, or the format of a long-term support program depending on the capacity and the profile of the business membership organization. In fact, private associations are best placed to engage in value chain development on a permanent basis. The scope and duration of interventions depends on the issue: Technological innovations are pursued in a project format. Skills development and consultancy for start-ups, information and networking are continuous services for member enterprises. Therefore, it is hardly possible to pinpoint particular formats for value chain development led by business membership organizations. In mature industries, business membership organizations may in fact be positioned as an appropriate format for institutionalized value chain development. They analyze the value chains of their member enterprises and develop strategic documents to attract investors and to guide the design of value chain development projects and services.

Providing business membership organizations and especially formal chambers with the requisite capacity to perform this role is the objective of SEQUA<sup>258</sup>, a development organization of the German organized private sector and GIZ. Its shareholders are Germany's top business

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<sup>257</sup> BMZ, 2013

<sup>258</sup> See <http://www.sequa.de/index.php/en/>

membership organizations, such as the Association of German Industry (BDI) and the Association of German Chambers of Industry and Commerce (DIHK). SEQUA runs international programs supporting business membership organizations and chambers in numerous countries, collaborating closely with the German private sector.

## 4.2.2 Government policies and public programs

Value chain development is of great public interest as it has the potential to generate economic, social and environmental impacts of high concern to society. Government and public administration interfere in economic processes in multiple ways to serve the common good. Topics of public interest in value chain development include, among other things, economic growth, employment, labor conditions, product safety, environmental protection and a myriad of specific questions arising in economic life. Policy interventions are regulatory either imposing restrictions on economic activities or providing incentives for changing them.

Value chains operate under regulatory conditions that are set by governments. Depending on the issue, different areas of public policy are concerned, each following particular policy processes. Water policy, for example, is a key policy area driven by the need to secure the sustainable supply of water affecting society as a whole. At the same time, public water management has direct implications for value chain development in industries that depend on the access to water. In fact, many policies and permanent functions of government are highly relevant for value chain development, although they do not constitute value chain policies in the first place and often have been conceived without any consideration for the needs of value chain enterprises.

Here, the question is how value chain *development* can become a subject of public policy. Value chain development does not belong to the traditional portfolio of public policy but is a relatively new public task responding to the problems and opportunities inherent in markets and value chains. As such it cuts across different fields of policy combining, among other things, trade policy, technology policy, labor policy, regional policy, public infrastructure, and other fields.

The concept of value chain development programs presented in the following is defined by the principle of systematically choosing and combining different policy instruments. It is the bundling of instruments that defines the policy design. The range of available policy instruments relevant to sustainable value chain development is covered in module 10 in volume 2.

### **Public value chain development programs**

Sustainable value chain development is a multidimensional policy agenda following economic, social and environmental objectives. At the same time, the content of value chain development is highly specific to every value chain. The formulation of a value chain policy poses the problem of scoping, which is the question whether a particular industry or value chain can actually become a separate policy field. On the methodology of scoping, see module 1.

At the minimum, certain criteria have to be fulfilled:

- A strong public interest in the value chain, driven by industry and policy stakeholders
- Great importance of the value chain for the national economy
- Fragmentation, lacking ability of the value chain actors to steer value chain development themselves

As it stands, only few value chains fulfill these conditions and become a policy field of their own. See below for examples. In most cases, market-oriented policies refer to the development of entire sectors, such as food and agriculture, tourism or manufacturing industries. Within the broader limits of agricultural development and industrial policy, value chain development is treated as one approach among others<sup>259</sup>. Thus, value chains are indeed a reference for public policy, albeit mostly as an element in bigger policy programs.

#### *The place of value chains in public policy programs*

An example of an agricultural development program referring to value chain development is the series of national agricultural investment plans developed under the Comprehensive Africa Agriculture Development Program (CAADP). It is actually more of an Africa-wide policy and investment framework with the objective to generate an overall growth rate of the agricultural GDP of at least 6% per annum, in accordance with the Malabo declaration of the African Union<sup>260</sup>. This growth rate has to be spelled out for different markets and value chains. Box 4.2.2 presents quotes from Nigeria's National Agricultural Sector Investment Plan, which places a particularly clear focus on the value chain approach.

#### **Box 4.2.2: Case – Value chain development, part of Nigeria's National Agricultural Development Plan**

##### **Quotes from the National Agricultural Investment Plan of Nigeria**

"The approach adopted by the National Agricultural Sector Investment Plan addresses every component of the entire agriculture value chain for crops, livestock and fisheries.... Thirteen crops (cassava, rice, millet, sorghum, wheat, maize, sugar, cow peas, soya beans, tomato, cotton, cocoa, and oil palm) have been selected for special focus. These crops also meet the criteria of size, linkage effects, 'pro-poorness' and market opportunities."

"The Federal Government sets the direction while the organized private sector as well as the State and Local Governments drive execution. ... The core components of the National Agricultural Sector Investment Plan are:

- Agricultural Productivity Enhancement
- Support to Commercial Agriculture
- Land Management and Water Control
- Linkages and Support for Inputs and Product Markets and
- Program Coordination, Monitoring and Evaluation.
- "The (instruments) cover activities required to effectively meet the full value chain and food security concerns."

*Source: Government of Nigeria, 2010, p.25-37.*

The components of the Nigerian National Agricultural Sector Investment Plan spell out policy fields that contribute to the development of 13 priority food value chains in which the growth objective is to be achieved. The National Agricultural Sector Investment Plan does not speak to the specific value chain strategies. It provides a framework that needs to be complemented by specific arrangements for the development of each priority value chain. Nevertheless, formal public strategies and plans for specific industries and value chains do exist. An example

<sup>259</sup> Padilla Pérez, 2014

<sup>260</sup> See <http://pages.au.int/caadp/documents/malabo-declaration-accelerated-agricultural-growth-and-transformation-shared-prosper>

is basic staple foods for which many countries have developed specific strategies, for example the Maize Sector Development Strategy of the Ethiopian Ministry of Agriculture. Another subject is key export products, such as the Ghana Cocoa Sector Development Strategy of the public Ghana Cocoa Board.

Obviously, governments produce national value chain strategy documents only if a product is highly relevant for food security, represents a large share in national income or contributes significantly to foreign currency earnings. Otherwise, the elaboration of value chain strategies is left to private associations, such as the Tanzania Horticultural Development Strategy 2012-2021 prepared by the Horticultural Development Council of Tanzania.

#### *Public value chain development activities and policy instruments*

Public value chain development programs combine a multiplicity of public services and policy instruments. The typical public fields of public value chain promotion can be classified into five types:

- Support services: Research and technology, agricultural extension, professional education, skills development, export promotion
- Financial incentives: Public co-investment of private productive capital, support to business startups
- Investment into public infrastructure: Roads, ports, facilities at market places, irrigation infrastructure
- Regulatory interventions: Grades and standards, such as product grades, legislation for product safety, legal regulations on labor conditions and the use of technology, land use planning, taxes and tariffs
- Coordination and steering: Information, such as value chain statistics, analyses and studies, facilitation of meetings, organizational strengthening

The activities mentioned above are just examples. The range of policy instruments is much larger and may include instruments of other policy areas. Ideally, the configuration of activities and instruments is informed by value chain analyses and the strategic considerations covered in modules 2 and 3 in this volume of the manual. The objective and content of public interventions can utilize the value chain solutions presented in modules 5 to 10 of volume 2. For example, financial incentives for startups and private investment should be linked to the identification of viable business models. See module 5. The provision of support services should be based on needs and funding possibilities.

However, the main challenge is not to complete the content of strategic plans and policy documents but the political will and resources to put them into practice. In many cases, national government as a public lead actor of value chain development will neither have the power nor the resources to coordinate and fund the execution of a comprehensive value chain development plan. This has to do with the fact, that the competences for the different regulatory interventions, support services and public investments are dispersed across a range of public agencies at national as well as decentralized levels. A lead ministry or agency may not be in the position to influence decisions of other public agencies. Additionally, government cannot achieve much without the cooperation of private enterprises.

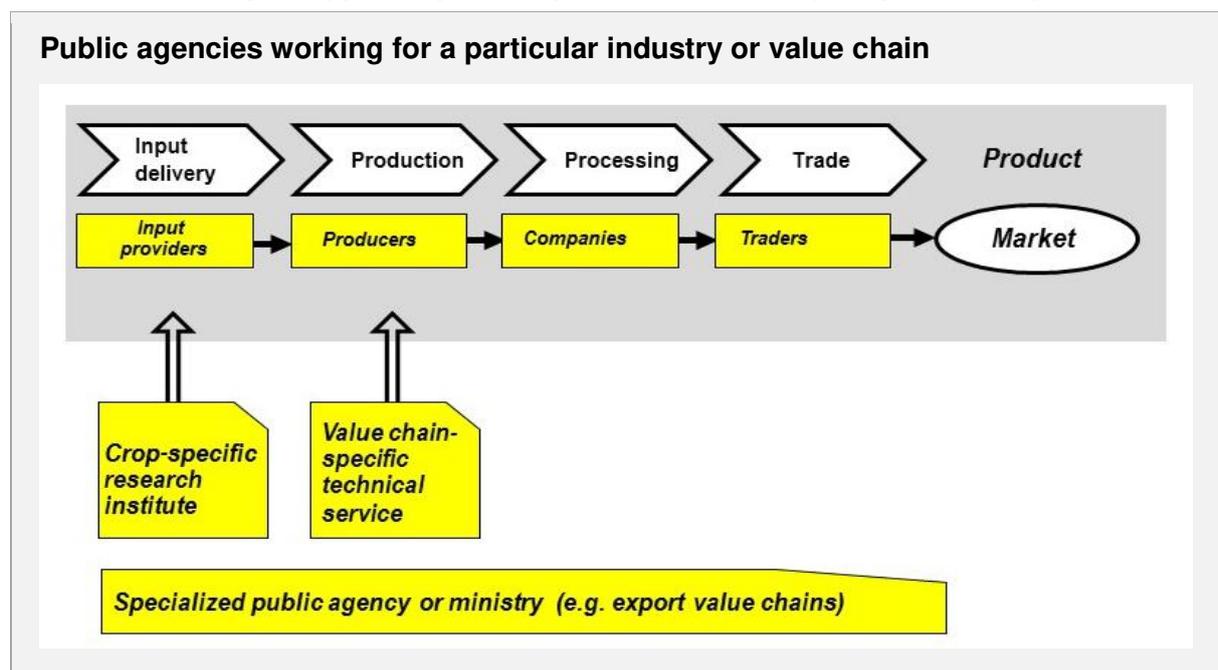
Instead of producing detailed, 'hard' master plans, public value chain policy-makers are well advised to leave the implementation flexible. A public value chain policy document should be limited to setting objectives and providing broad strategic orientations, while the implementation is left to the network of stakeholders.

### ***Institutional set-up for policy implementation***

The implementation of public value chain policies has to combine contributions of different departments. Only some lead actors — government departments covering special industries — have the possibility to assemble several functions in one organization. Otherwise, the responsibility for implementing public value chain development policies lies with an array of different agencies and units. Decisions are highly fragmented with competences spread over different line ministries and between national, regional and local administration. The mandates of public agencies often cover particular value chain stages or generic issues that cut across several value chains and industries. The public administration at regional and local level necessarily operates within geographical limits. Thus, most public agencies only have a partial view of the value chain.

The public actors can be classified according to their position vis-à-vis the value chain — as shown in Box 4.2.3 to 4.2.5 below, which present three different types of public actors. First are value chain-specific service providers, such as a public horticultural research institute. The second is public agencies serving particular groups across a range of different value chains, e.g. vocational training institutes. Finally, there are cross-cutting organizations working for the benefit of value chains in a local economy, such as agencies responsible of productive infrastructure, natural resource management or rural roads.

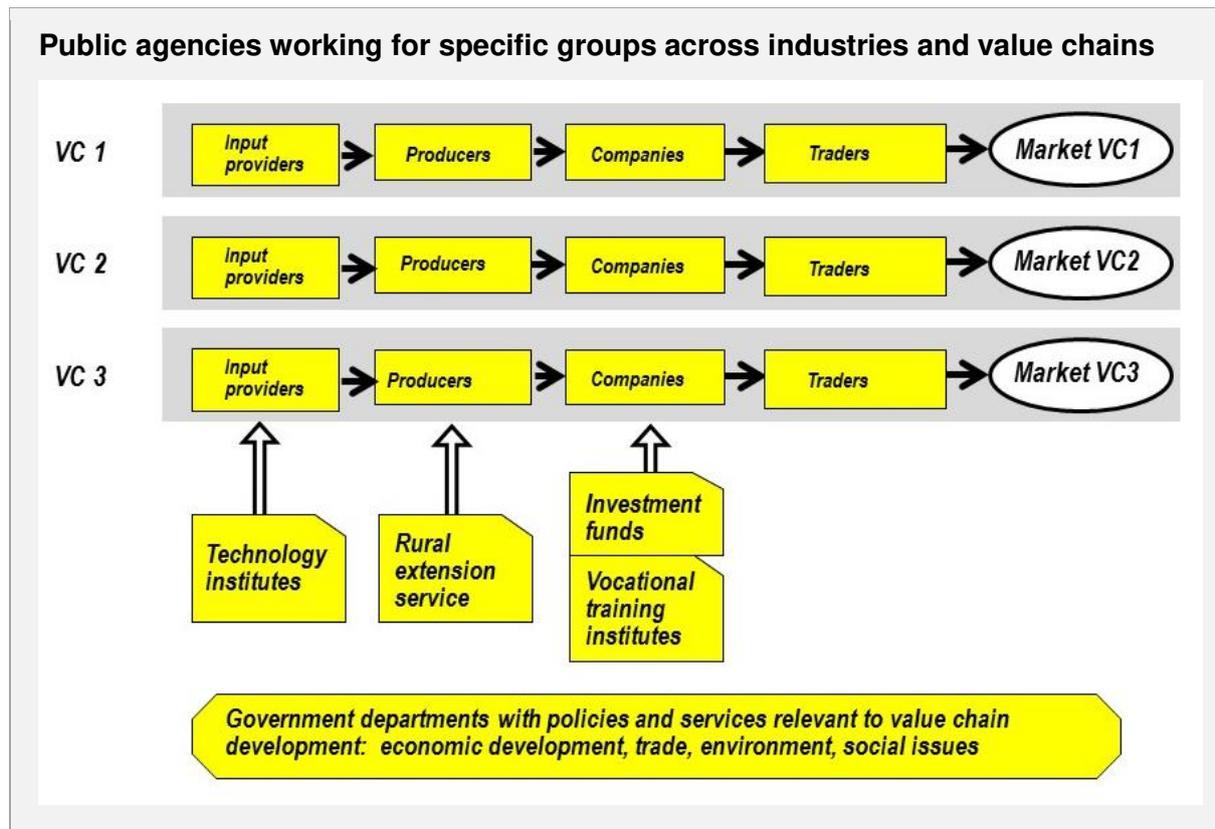
#### ***Box 4.2.3: Concept – Types of public agencies (1): Directly responsible agencies***



*Source: Own concept*

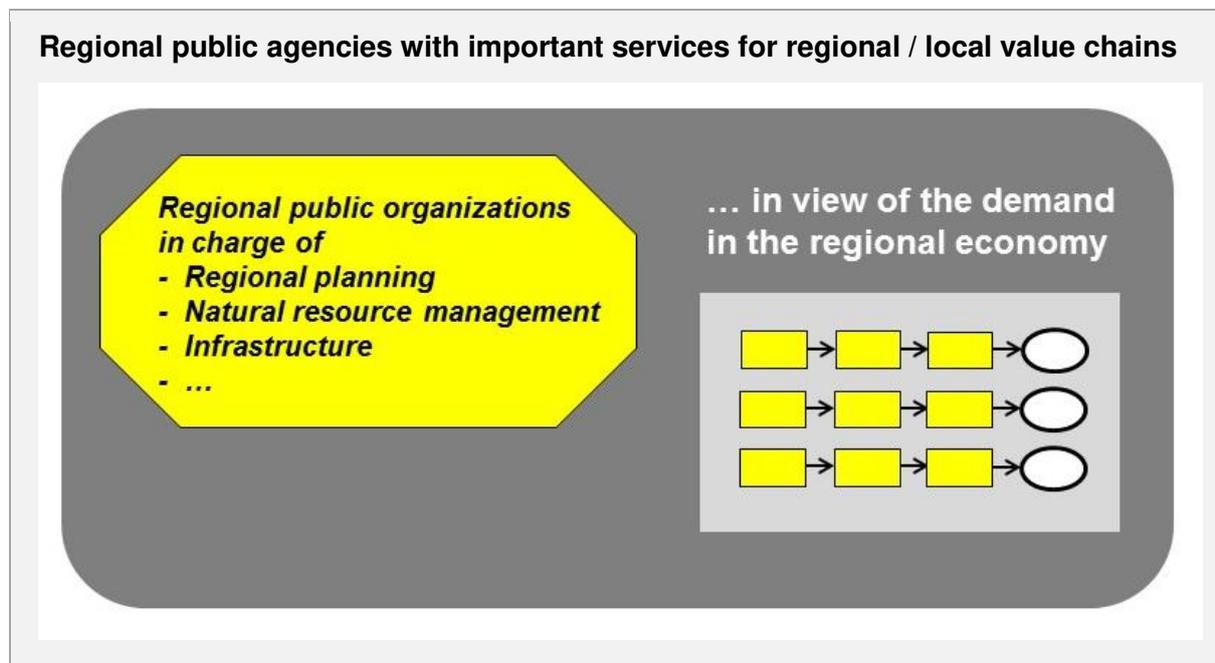
The question is how a value chain policy program can be implemented given that the competent ministries and public actors only have partial responsibilities and for the most part public administration is not structured according to markets. Hardly ever does a coordination mechanism between the agencies work, and less so in value chains of minor relevance in the political arena. The challenge of public value chain policy is to achieve coordination *without* hierarchy.

**Box 4.2.4: Concept – Types of public agencies (2): Indirectly responsible agencies**



Source: Own concept

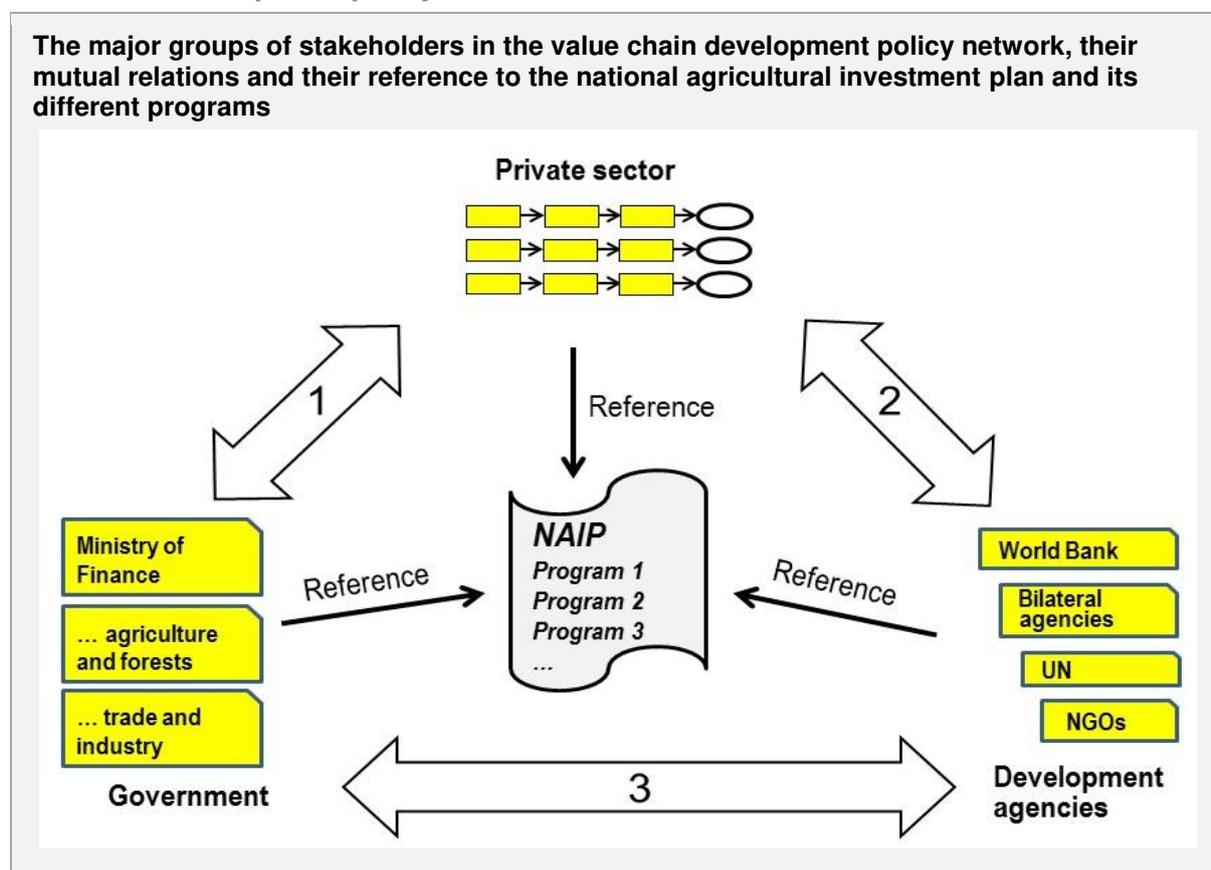
**Box 4.2.5: Concept – Types of public agencies (3): Cross-cutting agencies**



Source: Own concept

Box 4.2.6 shows how a national agricultural investment plan can be used as a reference by the different actor groups.

**Box 4.2.6: Concept – National investment plans as reference for value chain development policy network**



Source: Own concept

To effectively contribute to value chain development, the key principle of a public agency should be to follow the general idea set by the policy, but define its own activities responding to the needs arising in the process. Anyhow, public services are only useful to the extent they respond to needs of their clients and are provided in time. This cannot be achieved by centralized planning.

The contribution of a public service provider to implementing the value chain development policy thus has at least three references, of which the national value chain policy document is only one. The activities would be determined by:

- The mandate, budget and processes of the public agency itself
- The respective value chain business community the agency is supposed to serve
- The value chain development policy and the relevant national policy documents, such as the national agricultural investment plans or a competitiveness agreement

The value chain development policy document is used for steering. For the steering structure and instruments, see chapter 4.4 below.

### ***Limits to the effectiveness of public value chain development***

Besides the fragmentation of public actions to promote value chains, the diversity of subjects and demands on value chain development is another constraint. Value chain development is a complex field of policy-making. The public policy cycle differs from the planning cycles used by the private sector and by development projects. Conflicts of interest and contradicting information have to be handled. Opening up to the interests of ever more stakeholders is paid for by less clarity and stability. Frequent changes in value chain policies can be a problem.

Another constraint is the capacity of public administration. Generally, the room for maneuver of government is narrow, not only because of budgetary constraints but also due to the limited analytical and planning capabilities of government agencies. In the absence of a grand design of value chain development, activities necessarily have to remain piecemeal. The point here is that government should stick to *co*-investing — with the emphasis on ‘co’ — leaving the initiative to private enterprises. Governments should seek the best match between the formulation of a value chain policy and the capability of government to actually follow up.

### **4.2.3 Donor-funded value chain development**

Probably the most prominent group of lead actors is the development agencies receiving special project funding from international and bilateral donors. This group embraces the lead actors mentioned in chapter 4.1 – UN organizations, bilateral aid agencies and non-governmental organizations. In recent years, private foundations, especially the Bill & Melinda Gates foundation, have joined as well. Consulting firms contracted to implement a value chain development project, can also be counted in. The lead actors plan and implement value chain programs and projects that usually have a duration of three to four years and a fixed budget.

Donor-funded development projects operate under conditions that are more favorable for conducting value chain development than those of the other lead actors. Development agencies do not need to earn money, as in the case of enterprises, nor are they restricted by limiting mandates as in the case of public administration — leaving aside the political dependency of agencies on the donors of funds at home. The project format combines the competences in one hand, so that resources can be more freely targeted.

However, to be effective, development agencies have to work with and through public and private partners. As actors external to the value chain, the role of development agencies in value chain development is to support enterprises and public actors and facilitate change. It is the capacities and constraints of the partners that count for the success. Wherever government or private companies are already engaged, development agencies should design their support activities around the existing policy agenda. The role of externally funded value chain development projects is to enable and build the capacity of government agencies and private enterprises. The principle to operate as facilitator implies that external development agencies should not design stand-alone projects separate from the business community and the responsible government units.

The scope of donor-funded value chain development varies considerably — from value chain development programs in the proper sense to mere value chain development components of projects in other fields of development.

## Value chain development programs and projects

The format of donor-funded value chain development that comes to mind first, is the classic value chain development program supporting one or several value chains. This is the format to which most value chain development guidelines at least implicitly refer, including ValueLinks 1.0 published in 2007<sup>261</sup>. The project cycle starts by selecting a value chain to promote and proceeds by diagnosing the value chain, elaborating a value chain strategy and implementing facilitation and support activities, i.e. interventions, followed by a final review that closes the cycle. Apart from variations in terminology, the principle is the same for all value chain methodologies<sup>262</sup>.

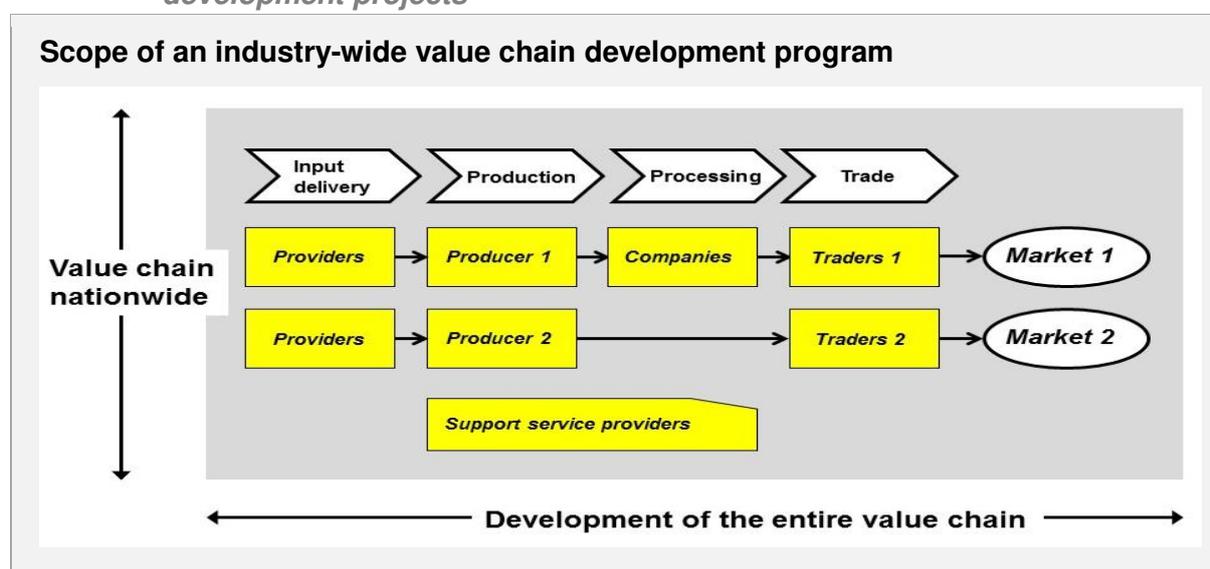
The apparent consensus on the project format does not mean that the understanding of what constitutes a value chain development project is uniform. The practice of value chain development ranges from comprehensive national subsector programs to projects covering specific problem issues at the local level. Types of value chain development programs and projects in the narrow sense, covering the entire value chain, are:

- Industry-wide, national value chain development projects
- Value chain development projects in specific regions, provinces, locations

Other value chain development projects focus on particular stages and issues:

- Chain linkage projects, such as 'Linking farmers to markets' connecting small enterprises to buyers
- Issue-based value chain development projects, such as value chain projects introducing specific technologies or business models

### Box 4.2.7: Concept – Scope of donor-funded full-scale value chain development projects



Source: Own concept

<sup>261</sup> See, for example, IFAD, 2014; ILO, 2009, Lusby and Panlibuto, 2002; Springfield Center, 2014

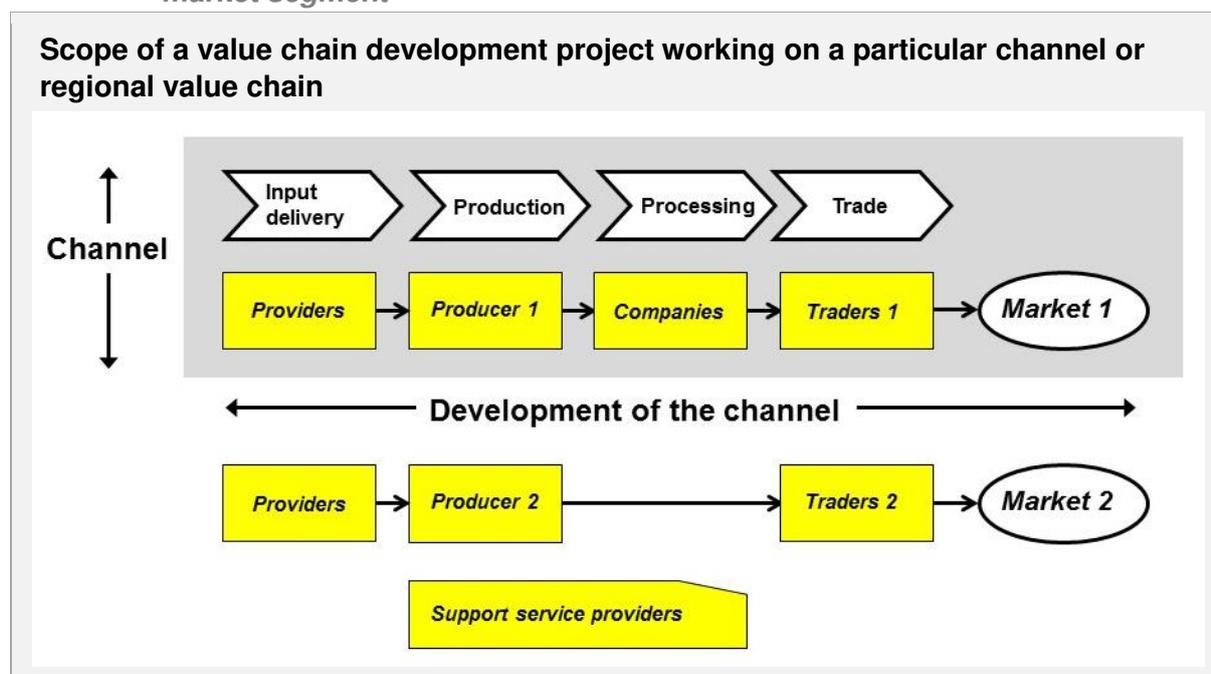
<sup>262</sup> More on the typical processes of value chain analysis, strategy formation and implementation of value chain development follows in chapter 4.5

The charts show the scope of these variants. The first ??, in Box 4.2.7 above, presents the outreach of a value chain development program covering the entire value chain – all channels, all stages, nationwide.

Full-scale public value chain development programs are rather unusual; except for very small value chains. Hardly any donor agency can mobilize the resources to cover an entire industry. Instead, the focus is placed on particular channels, supply lines and markets, or on specific business links as shown in the following two charts (see Box 4.2.8 and 4.2.9). The shaded area indicates the scope of the value chain development project in each case. Often, the scope is further limited to particular locations.

When the system boundaries are defined too narrowly, the value chain context can get lost. To be still considered as value chain development, projects focusing on particular issues and target groups have to make sure they refer to the value chain-wide development context. The project can then be considered as a contribution to the strategy for developing the value chain at large.

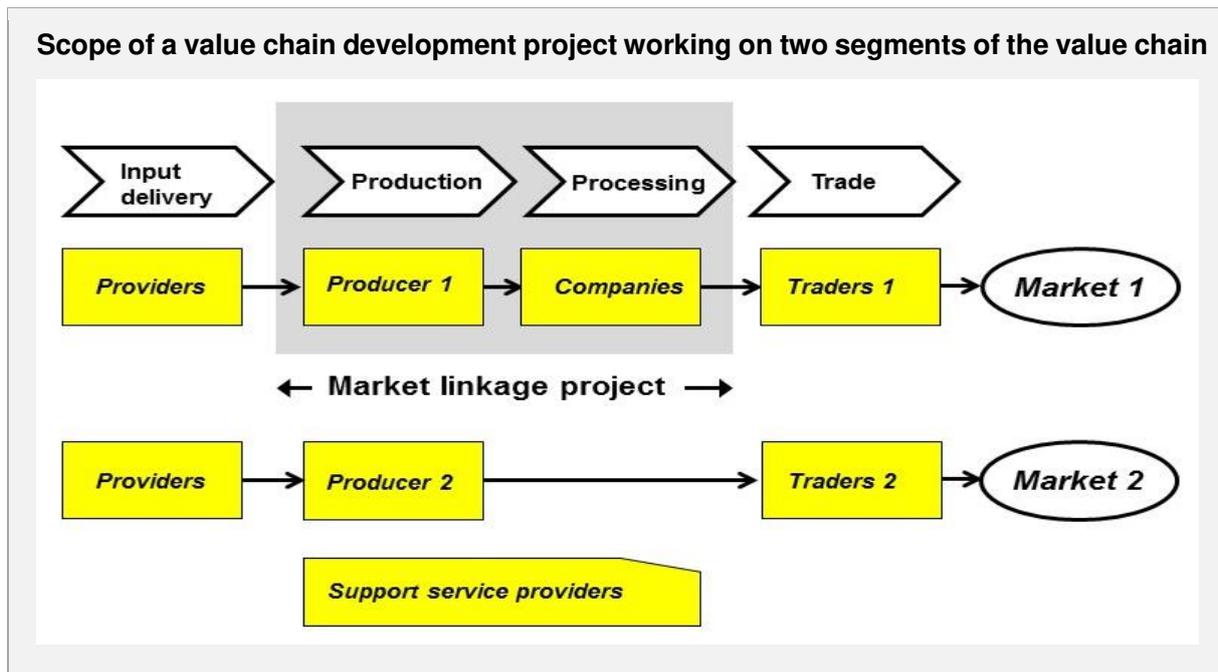
**Box 4.2.8: Concept – Value chain development projects for one channel or market segment**



*Source: Own concept*

The chart in Box 4.2.9 presents the scope of a market linkage project that aims at improving the access of small-scale suppliers to buyer companies. ‘Linking farmers to markets’ is a widespread project design that is often equated with value chain development as such, although it only looks at one particular business linkage, often at just one location. This is fine as long as the project design takes due account of the significance of that linkage in terms of market share and possibility to replicate for the value chain as a whole. The approach is close to private sector-led supply chain initiatives that have been described earlier. See section 4.1.1.

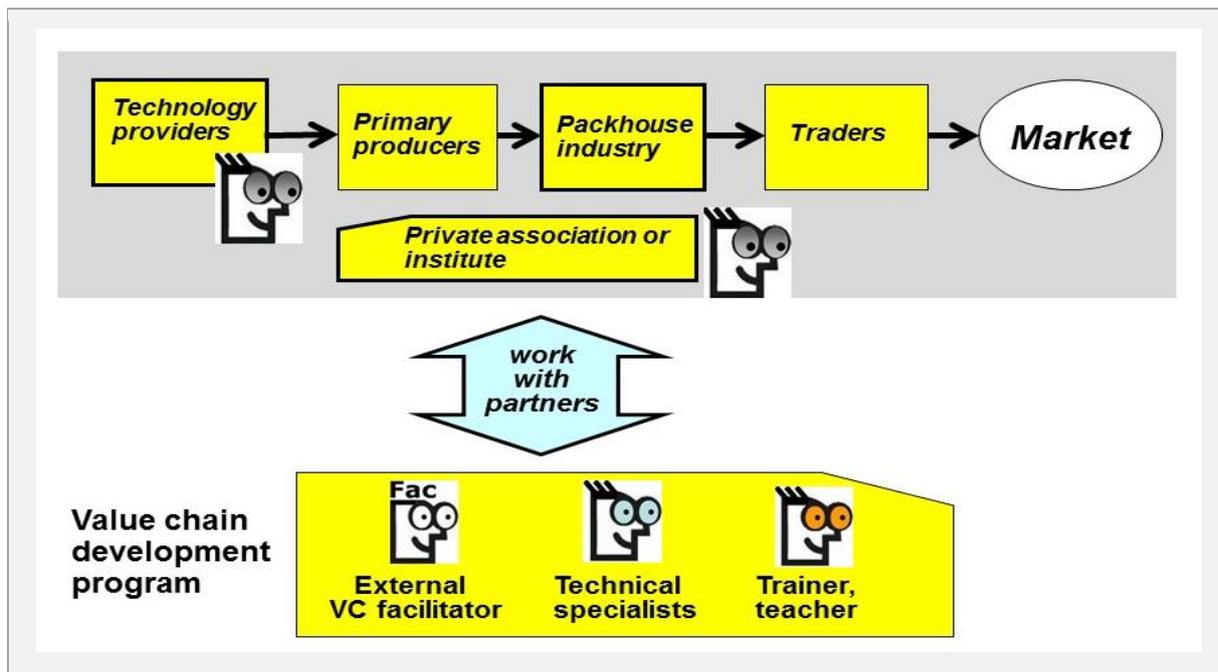
**Box 4.2.9: Concept – Market linkage project**



Source: Own concept

The difference is the position of the lead actor. Box 4.2.10 shows that the development agency running a value chain development project is located outside the chain. In contrast to private supply chain initiatives, the project set-up is time-bound and depends on the cooperation with value chain actors as partners.

**Box 4.2.10: Concept – Institutional set-up of value chain development projects**



Source: Own concept

The institutional set-up of a program thus depends on the types of partnerships engaged. The scope of value chain development programs led by development agencies is between private supply chain initiatives pursuing a business model solution and the scope of government value chain programs spanning governance issues nationwide.

### ***Development projects with a value chain perspective***

All formats discussed above refer to the value chain development approach proper. Another option is to combine value chain development with other development approaches. In many cases, value chain development is used as just one component in development programs that have a different focus otherwise. As a component, value chain development stands for the *economic* dimension of sustainability: Higher incomes and more employment are not just secondary objectives. Creating new business opportunities is a precondition for alleviating poverty and relieving pressure on natural resources. Questions are, for example, whether the solutions promoted in a rural development program make economic sense and whether they can be financially sustained.

Development approaches that do not primarily focus on value chains, but do benefit from value chain know-how, comprise:

- Rural development, local and regional economic development
- Small farmer development
- Private sector promotion, small and medium enterprise promotion
- Management of tropical forests, nature reserves, biodiversity
- Climate change adaptation and mitigation
- Infrastructure development, such as roads, irrigation systems, energy use

The combination of value chain development with regional development, natural resource management and agricultural development has already been discussed in module 1, chapter 1.4. By including a value chain development component in the design, development programs adopt a value chain perspective. Development ‘with a value chain perspective’ refers to different types of development programs that include considerations for market access and economic sustainability. The ambition is not to conduct value chain development as such but to place the respective issue into a market and value chain context.

Development programs with a value chain perspective only use part of the value chain know-how. The effort put into value chain analysis and strategic assessment depends on the significance of the value chain component. Often, it will suffice to refer to available value chain analyses and value chain objectives that have already been agreed on. The program then concentrates on the value chain solutions that fit the main objectives best.

Of particular interest is the feasibility of program activities for particular target groups in view of the economic conditions these groups face. For example, a program that aims at the protection of biodiversity in a particular region will have to understand the economic incentives and disincentives to preserve the ecosystem. The assessment of the business models used helps to identify ways how to harmonize business needs with biodiversity protection objectives.

### ***Strengths and weaknesses of donor-funded value chain development***

The strength of donor-funded value chain development programs is the fact that design and implementation are managed by one agency as lead actor. Development agencies are more

flexible in assigning resources than the state. The project format is versatile and allows a precise targeting of resources enhancing relevance and effectiveness.

On the other side, this is only of advantage to the extent that the value chain actors have sufficient own capacity to absorb and make the best use of the support. The investment into value chain solutions has to be done by the private enterprises and the responsible government agencies. Development agencies cannot and should not replace the natural actors of the value chain. The impact of donor-funded support and facilitation hinges on its partners.

Some of that risk can be mitigated by taking a 'portfolio approach', as USAID calls it<sup>263</sup>. Investing into a 'portfolio' of different value chains provides the flexibility to assign resources to more promising value chains.

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<sup>263</sup> USAID, 2011

## 4.3. Cooperation for value chain development

Value chains are cooperation systems of private enterprises. The cooperation system is visualized by the value chain map showing the sequence of value chain operators who are the key stakeholders. Depending on the interest of analysts, the value chain map is complemented by private and public support service providers as further primary and secondary stakeholders. See module 2, chapter 2.2.

The value chain or parts of it constitute cooperation systems for value chain *development* as well. Value chain development is based on shared objectives and the agreement on strategy. The implementation of value chain improvements essentially builds on cooperation and partnerships. Thus, the value chain map as the general actor landscape can be used to derive a particular stakeholder analysis for value chain development. However, it is very important to keep the two concepts apart: One is the value chain as a permanent cooperation system of the business community to reach markets. The other is the temporary cooperation system for value chain *development* that takes the form of value chain programs and projects and policy networks.

By its very nature, value chain development involves multiple stakeholders. Value chain innovations can only be implemented by collaborating. Using the formulation of the Capacity WORKS manual of GIZ, value chain development is a “joint venture...negotiated, planned, implemented and steered by a large number of actors”<sup>264</sup>.

The benefits of partnering in value chain development are manifold: Better insight and understanding of problems and thus greater relevance of the project, access to the know-how of partners, mobilization of funds, complementary action and thus greater efficiency<sup>265</sup>. An important type of partnership and a project format at the same time is public-private partnerships.

### 4.3.1 Forms of cooperation and partnership

Value chain development uses many types of partnerships depending on a shared interest to realize value chain solutions. Partnerships emerge between actors contributing to the same objective or need to be included for success. The table in Box 4.3.1 is an attempt to classify the types of partnerships between the three major groups of actors: Private enterprises, government and public administrations, and development agencies. This table can easily be enlarged subdividing the categories of actors further. The interesting point is that it allows categorizing partnerships systematically.

The number of partners and the specific partnerships sought in a value chain development program depends on the program’s scope and objectives. It will be small in a private value chain initiative or include many interested parties of the policy network around a government value chain development program.

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<sup>264</sup> Capacity WORKS, 2009, p.75

<sup>265</sup> Hartwich et al., 2005

**Box 4.3.1: Concept – Types of value chain development partnerships**

	<b>Private enterprises</b>	<b>Government</b>	<b>Development agencies</b>
<b>Private enterprises</b>	Private value chain partnerships	Public-private partnerships	Public-private development partnerships
<b>Government</b>		Value chain development policy programs	(Policy support projects)
<b>Development agencies</b>			Donor coordination platforms

*Source: Own concept*

To identify stakeholders and partnerships, the value chain map can be used as a tool, as shown by the shaded areas in the charts in Box 4.2.7 to 4.2.9. As soon as the scope of a value chain project reaches beyond a particular business linkage, it becomes a multistakeholder venture. The most frequent form of a value chain development cooperation system is the multi-stakeholder partnership, in which multiple partners, including private enterprises, governmental institutions and development agencies, collaborate, at different levels. Multiple partnerships call for an effective steering structure.

### **Criteria for choosing partners in value chain development**

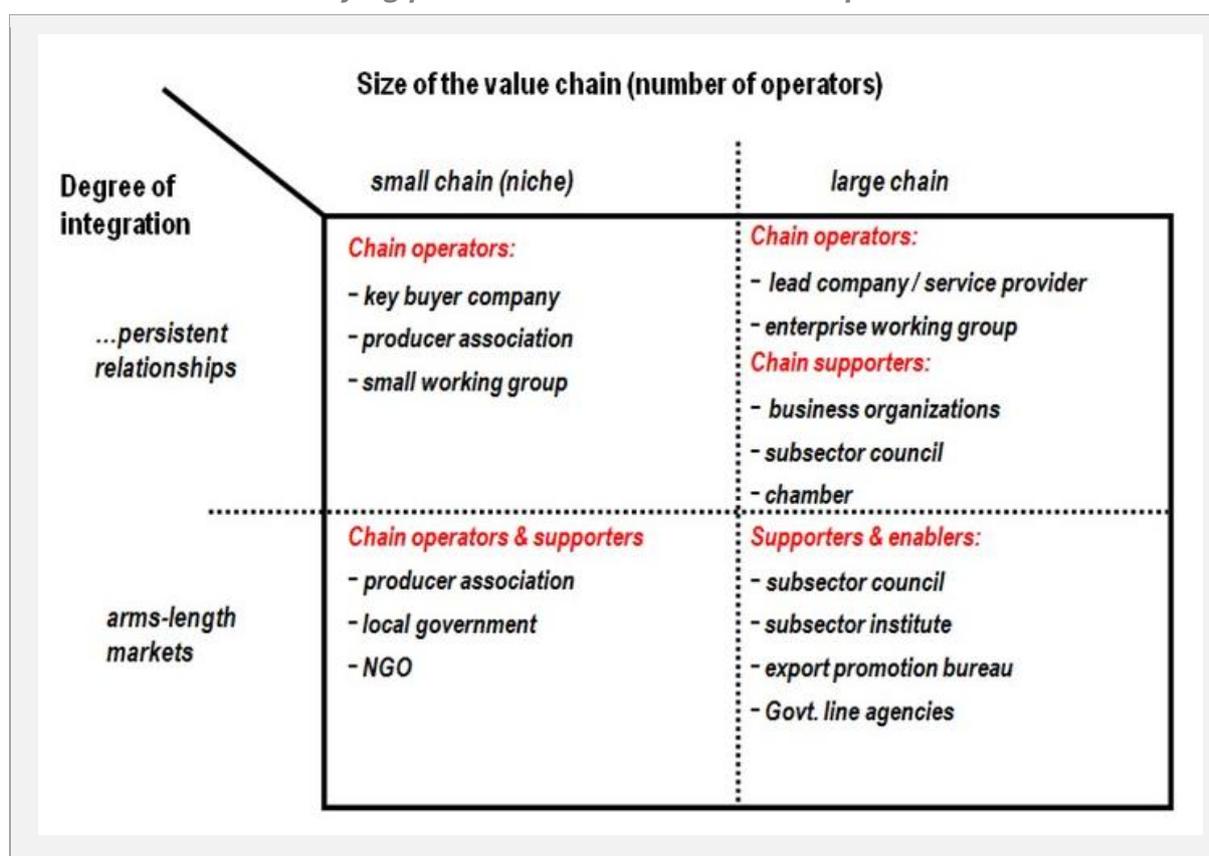
Every lead actor has to care for partnerships to reach the objectives. Cultivating value chain development partnerships is of particular significance for development agencies because they can achieve lasting results only by working with and through the actors in the chain.

There are certain criteria for choosing partners for implementing a value chain solution. An important consideration is outreach, i.e. the number of operators reached by a company or service provider. As it is hardly possible to address all enterprises individually, partners in chain development should be in a leverage position in the value chain or should have the potential to take over that role. That position depends on two factors mainly:

- The number of chain operators, the size of the value chain
- The degree of horizontal and vertical integration of the value chain

Leverage is easier in a small chain that is characterized by a high degree of integration and persistent relationships. Box 4.3.2: contains a tool for classifying chain actors occupying a key position in the chain – and hence the potential partners of development projects.

Box 4.3.2: Tool – Identifying partners for value chain development



Source: Own compilation

In a small value chain with few operators the lead role often falls to the most important enterprise, i.e. the buyer, producer association or industry. The same is true in well integrated chains dominated by a lead company. In big or less well integrated chains, the likely implementer of upgrading action is a chain supporter, such as a subsector association, a chamber or a specialized public agency.

The leverage position of the collaborating partners in the value chain is one aspect. Another factor in the effectiveness of external chain promotion is the leadership quality of particular chain actors. To the extent that chain actors are leaders, they may in fact take over facilitation tasks themselves and become change agents. Change agents are individuals or organizations (public or private) assuming leadership within the chain, introducing innovations, multiplying know-how and providing good examples to others. It is highly important to identify such potential business leaders. Box 4.3.3: lists characteristics of change agents.

**Box 4.3.3: Tool – Checking on the characteristics of change agents****Value chain actors are change agents in a value chain if they have:**

- An industry-wide overview, and hopefully a vision for it
- Genuine own interest in change
- The willingness and capacity to promote change and invest resources
- Leverage position in the value chain
- The capacity to perform facilitation functions themselves

*Source: Own compilation*

Those chain actors showing some of the characteristics in Box 4.3.3: are preferable partners to work with. In the absence of any change agents, it can become a task of external facilitators to build the capacity of those who might assume that function or facilitate the creation of institutions representing the collective interest.

Development agencies have to relate to the value chain development formats of other lead actors. They are the most flexible to engage in any kind of partnerships, both at the micro level of specific companies, as well as at the meso level of support service providers and government institutions.

*Micro level partnerships*

At the micro level, development agencies may partner up with:

- A buyer or processing company engaging in new relationships with their suppliers, i.e. contract farming
- A producer association that helps its members establish new business relationships and provides marketing or knowledge services
- Groups of producers, processors and traders that invest resources and time into the solution of common problems or into new opportunities

Micro level partnerships are suited for niche markets, highly integrated chains with very few key companies, or markets where producers are well organized. However, where these conditions are missing, targeting the micro level exclusively is futile because of its limited outreach. It can even cause market distortions because it gives preference and public money to just a few operators disregarding their competitors.

In large or weakly organized markets, the collaboration with selected partners at the micro level is justified if it has the character of a pilot project. Pilot activities generate practical examples and help to enhance visibility in relatively short time. In order to serve as an example for up-scaling, the conditions have to be realistic, and the enterprises should make own investments and contributions.

*Going to scale: Partnerships at the meso level*

The experiences of pilot activities referring to individual groups of companies have to be brought to other enterprises as well. In any case, the experience at the micro level needs to be scaled up to achieve a wide outreach of a value chain development project.

Partnerships for scaling out value chain development include the chain supporters and enablers mentioned in Box 4.3.3: Where individual partners are available, external development agencies conclude cooperation agreements with:

- The national export promotion bureau; the desk officers responsible for the product at stake assumes a coordination and facilitation role for the entire value chain
- A business association organizing the operators in the value chain and assuming an advocacy, service or coordination role on behalf of their members and the value chain at large
- A specialized public agency, such as a technology institute
- A government ministry in order to develop and carry out a complete value chain development strategy as for example a strategic government program as the case of Ecuador, with its Cocoa Program, organizing public policies and services and stakeholder to increase the local coco production and exports

Of all forms of cooperation systems for value chain development, one deserves a closer look: the public-private development partnership. This is the collaboration of a development agency or the government with private companies. They include large firms in company networks and business platforms as well as combinations of big and small enterprises, as it is often the case in private supply chain initiatives. Partnerships of development agencies with companies have gained particular importance in development, and especially in value chain development.

### 4.3.2 Public-private development partnerships

The collaboration between public agencies and the private sector is a basic concept in value chain development. Value chains are composed of private enterprises and it is through their decisions and investment that economic progress is achieved. Therefore, *any* value chain development activity necessarily involves private operators as partners. The partnerships reach from informal and short-term collaboration to mutually binding commitments.

#### *Box 4.3.4: Concept – Reasons for seeking cooperation*

##### **Why cooperate?**

- Limited public financial resources require the mobilization of additional resources
- Public agencies expect increased efficiency and sustainability of projects from the cooperation with private companies
- Companies need public partners targeting new markets and innovating technology
- Large companies improve their image by running corporate social responsibility programs contributing to sustainability goals
- Cooperation in the fields of education, quality infrastructure or resource efficiency benefit both private and public interests.

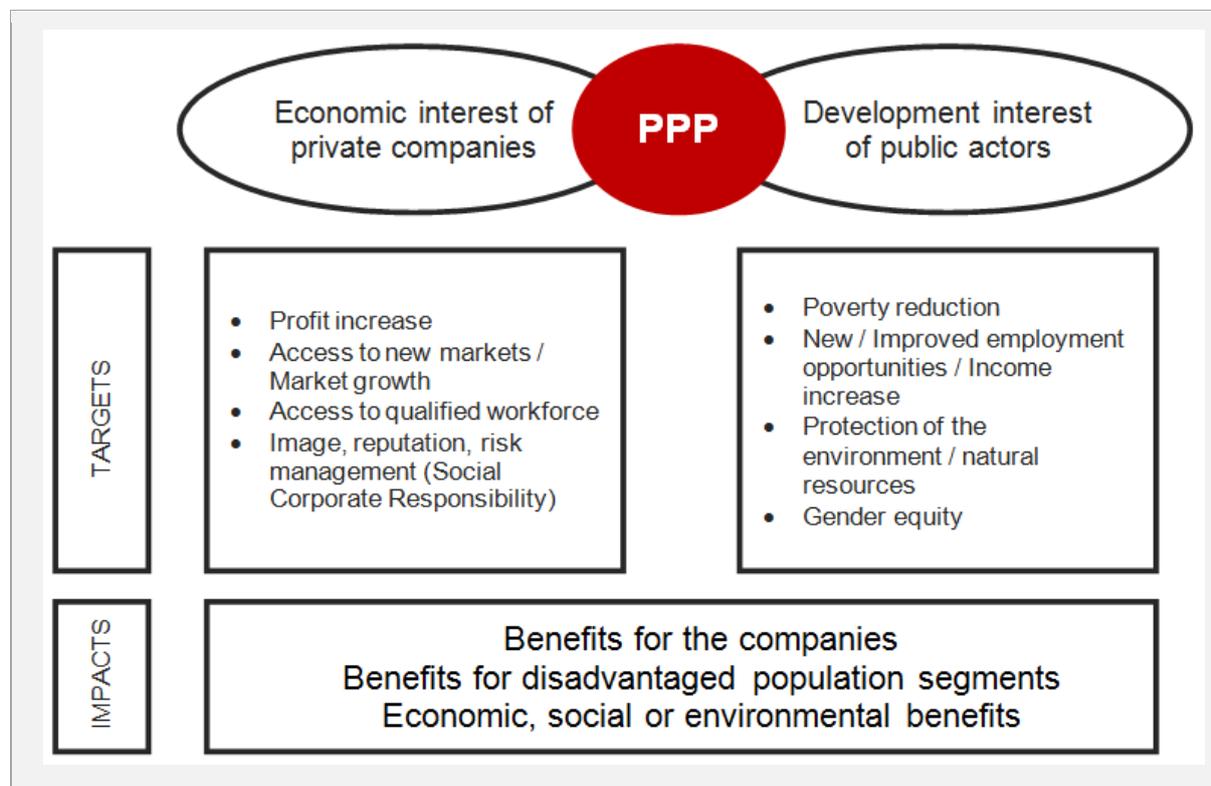
*Source: Cooperation with the private sector, GTZ-GESOREN, 2007*

Beyond the general importance of private partners, public-private partnerships (PPP) are of particular interest in value chain development — contracts between a government or development agency on one side with a particular private company on the other to achieve a common objective. If the interest of an individual enterprise coincides with the public interest, the cooperation creates a benefit for both sides. The private investment serves the company and generates advantages for the value chain at the same time.

### Preconditions — Converging interests of private and public actors

Interests and roles of the private and public sectors do not necessarily combine well. Private companies and public actors have to look for converging interests actively to find common ground, as visualized in the graphic below.

Box 4.3.5: Concept – Public and private interests in PPP



Source: Own concept

#### The interests of private partners

Lead firms and business leaders act in their own interest in the first place. However, by doing so, they address common issues of their industry at the same time. For example, they open up new markets, resolve a technological problem of relevance to the entire industry, or come up with innovative ideas. In their constant strive to maintain or achieve competitive advantage, private companies strengthen the competitiveness of the value chain at large. In turn, their own position is improved.

More and more, companies are interested in entering cooperation schemes with the public sector in order to promote their own commitment to sustainability goals. By entering in partnerships with development agencies and government, companies hope to gain or improve their access to decision-makers and strengthen their networks. This, in turn, enables companies to promote their own objectives for the development of the value chain they are part of. Finally, enterprises supported by public actors may improve their public image, reputation and mobilize financial resources for a specific initiative.

The specific interests vary with the type of companies. Processing companies will be interested in strengthening reliable and stable supply of quality products and in integrating small farmers.

Service providers will show interest in publicizing new technology or demonstrating the benefits of their new services through pilot projects.

#### *The interests of public partners*

Governments and public agencies are no longer able to solve the diverse social and ecological challenges on their own. Cooperating with the private sector public agencies take advantage of the dynamics of large companies, the specific sectoral and regional knowledge of enterprises, their presence in different countries and their access to new technologies. Value chain facilitators can greatly benefit from incorporating private leaders as change agents in value chain development initiatives. Box 4.3.6 summarizes the contributions that private enterprises can make to economic and social development.

#### **Box 4.3.6: Concept – Contributions of private companies to development**

##### **Private business leaders can provide benefits for development because they:**

- Are close to the market and thus capable of assessing business opportunities and market requirements, often sharing this knowledge with their suppliers
- Generate product and process innovations
- Contribute to professionalizing the business of other chain operators by engaging in supplier qualification programs
- Accelerate economic development by investing own resources
- Help to channel public assistance, thus contributing to a greater legitimacy and credibility of government interventions
- Have a long-term perspective to improve business processes in value chain

*Source: Own compilation*

Some of these benefits simply constitute a side effect of private investment. However, they can be greatly enhanced by a conscious and targeted government intervention, and joint initiatives. Where interests converge, public-private partnerships create additional benefits for all partners involved. The importance of agricultural PPP has been confirmed by an FAO study concluding that partnerships can add value by generating greater public benefits than could otherwise have been achieved through public procurement or private investment alone provided that interests are aligned and risks fairly shared<sup>266</sup>.

#### **Informal and formal cooperation arrangements**

The range of cooperation alternatives and arrangements is broad. A main distinction is between informal and formal cooperation arrangements. Box 4.3.7 below shows the differences.

##### *Informal public private cooperation arrangements*

Usually, the cooperation between public and private partners starts informal with simple activities, such as information sharing: Companies and government share market information, technological ideas or information on the value chain and participate in events jointly. A second level of informal partnership is collaborative activities resulting from stakeholder meetings in the context of value chain development programs, such as mutual support to funding requests, the collaboration on studies and the preparation of proposals.

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<sup>266</sup> Rankin, M. at al., 2016

Informal schemes allow partners to gain experience and build trust. The dynamics of collaboration change with each step taken by the partners who retain the flexibility to exit at any point. The risk of collaboration stays low, as objectives are short term and no resources are committed. Small complementary investments are signs of cooperation interest. This level of partnership counts for a large part of cooperation arrangements.

**Box 4.3.7: Concept – Characteristics of informal and formal cooperation**

Characteristics of...	Informal cooperation	Formal cooperation
Contributions	Voluntarily offered	Contractually agreed
Contractual form	Verbal, not documented	Written agreement
Cooperation activities	Limited to short-term and intermittent collaboration	Long-term, based on joint objectives
Processes	Flexible, evolving over time	Organized as a project based on targets and terms
Investments	Not quantified	Quantified and monitored

Source: Own compilation

*Formal public private development partnerships*

Formal partnerships include contracts that regulate the conditions and responsibilities of both partners. In a formal public-private partnership, the objectives, activities, responsibilities, resources invested as well as roles of each partner are clearly defined before commencing the implementation of the partnership. Formal agreements also foresee possible exit points as well as sanctions if the partnership is discontinued unilaterally. As any other project, formal partnerships follow a project cycle.

In the last years, development agencies and governments have developed policies and instruments to promote public private development partnerships. In principle, all are based on the four conditions for cooperation mentioned above, although the scope of each principle may vary. Cases in point include the DeveloPPP program of the German development cooperation<sup>267</sup>, the Private Sector Engagement hub of USAID<sup>268</sup> and a series of similar initiatives compiled by the Donor Committee on Enterprise Development<sup>269</sup>. The DeveloPPP program invites tenders for proposals of partnership projects four times a year. Once the application of a private company is accepted the public partners work with the company to draw up a detailed project plan. The public-private partnership is bound to a number of conditions.

<sup>267</sup> The DeveloPPP program is funded by the German Ministry for Economic Cooperation and Development (BMZ) and implemented by GIZ, DEG and sequa; See [www.developpp.de/en](http://www.developpp.de/en)

<sup>268</sup> See <https://feedthefuture.gov/private-sector-engagement-hub/>

<sup>269</sup> See [www.enterprise-development.org/implementing-psd/private-sector-engagement-and-partnerships/funding-opportunities-for-businesses/1914-2/](http://www.enterprise-development.org/implementing-psd/private-sector-engagement-and-partnerships/funding-opportunities-for-businesses/1914-2/)

The DeveloPPP program only considers public funding if the following conditions are fulfilled<sup>270</sup>:

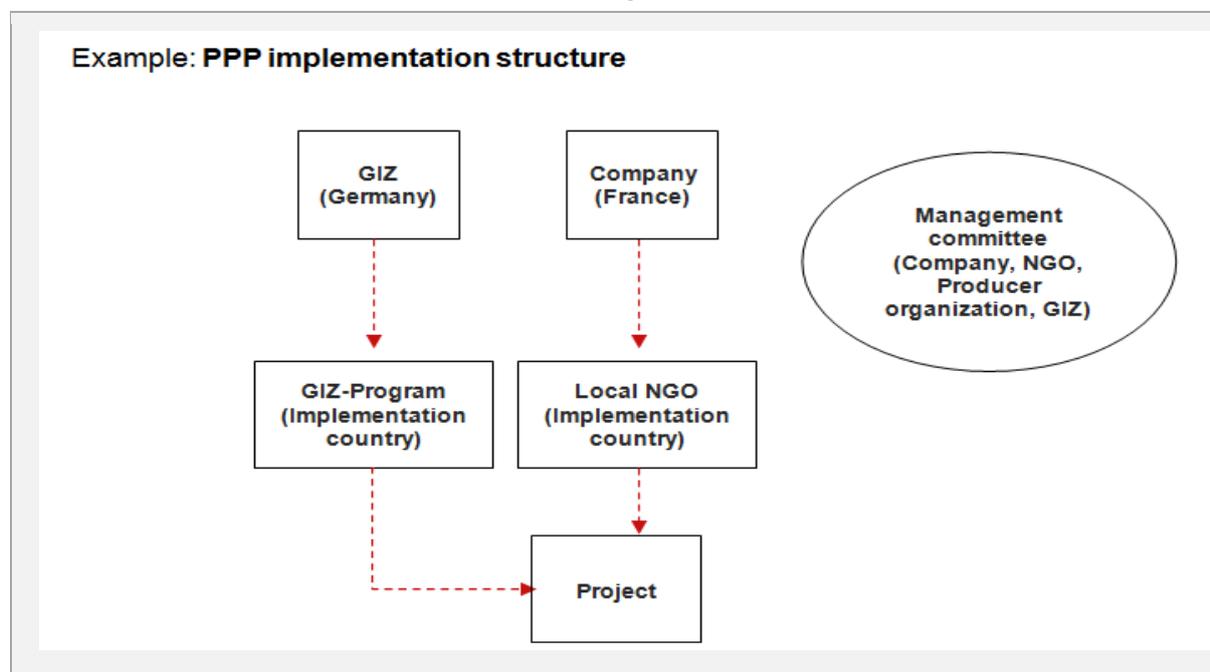
- *Compatibility*: The private objectives and the goals of public development have to be compatible. Projects must demonstrate a clear development outcome.
- *Complementary efforts*: Public and private contributions should complement each other so that the cooperation enables both partners to achieve their respective objectives more efficiently and more cost-effectively. The cooperation results in benefits for all partners involved.
- *Subsidiarity*: The cooperation does not imply public subsidies to core activities of the enterprises or activities to accomplish legal requirements. Correspondingly, the contribution made by the private partner should only include investments and expenditure that would not have been made without the measure.
- *Commercial interest*: The company must demonstrate a clear commercial interest in the project. Non-profit projects cannot be funded.
- *Financial Commitment*: Both public and private partners invest own resources in the cooperation. The company must make a substantial contribution of at least 50 percent of overall costs.

These five principles are also common to many other public-private cooperation schemes, not only in value chain development.

#### *The design of formal public-private partnerships*

The typical management structure of a public-private partnership involving GIZ can be seen in the box below.

#### **Box 4.3.8: Case – How GIZ structures the implementation of PPPs**



Source: Own compilation

<sup>270</sup> Adapted from the description at [www.developpp.de/en/content/criteria-participation](http://www.developpp.de/en/content/criteria-participation)

The most important questions to be answered when designing a PPP project relate to:

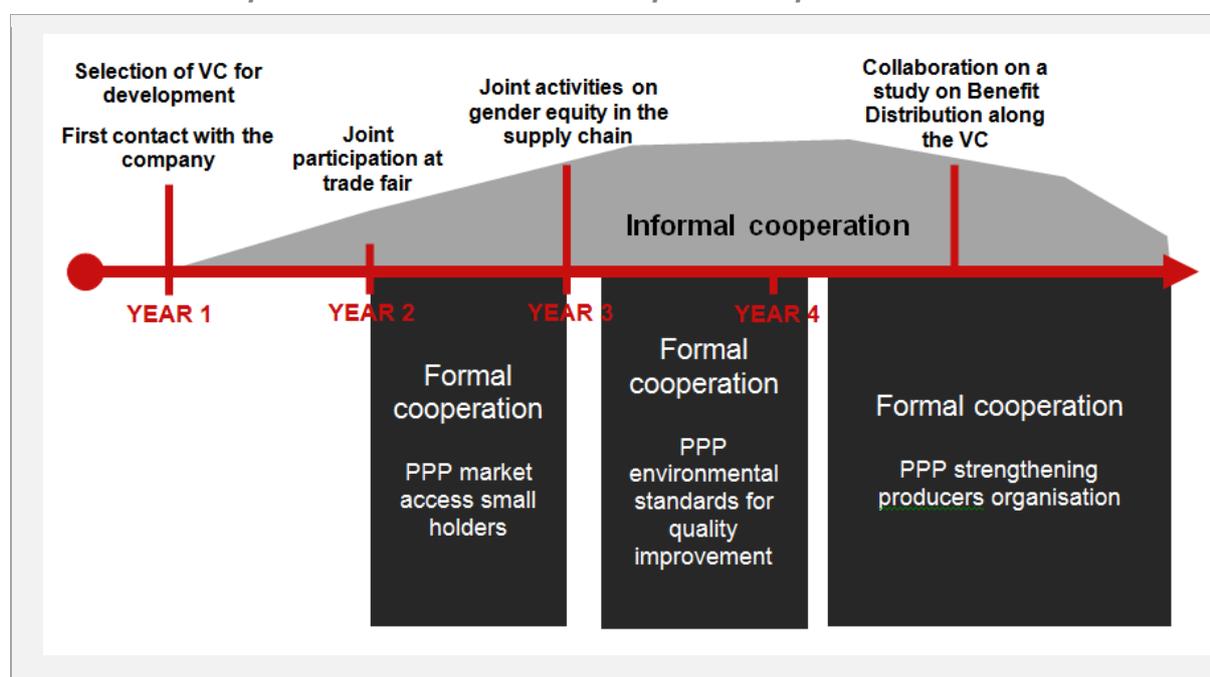
- The level of resources committed and the shares of each partner
- The management of the funds contributed by either side
- The management structure

The financial side is crucial. As a general rule, the public partner contributes less than 50% to the joint venture. If the amount of public contribution is too low, the initiative may not be attractive to larger companies and lead to reduced private interest. A high volume may be a problem for small companies. High public contributions also include a risk of unwittingly subsidizing operational costs of the private partner. Partnerships with large companies mean economic stability, the cooperation with startup firms and smaller enterprises may have a bigger impact on innovation. The contract has to stipulate whether each partner is responsible for its own investment or whether one party delegates responsibility and resources to the other. Another question is how to integrate a third partner in the agreement. Do only the signing partners implement or is subcontracting also a possibility?

#### *Combining informal and formal cooperation*

In a long term partnership formal and informal types of cooperation come together. The following Box 4.3.9 presents the history of a long-term partnership between GIZ and a lead company in an agricultural commodity sector as a stylized example. It starts with informal contacts and the joint participation at a trade fair. The initial phase leads to a series of PPP contracts.

#### **Box 4.3.9: Concept – Formal and informal cooperation options**



*Source: Own compilation*

The first stage tackles the issue of smallholder market access, followed by contracts on environmental standards and the strengthening of producer organizations. While the formal cooperation continues, the partners agree on additional short-term activities now and then.

Experience shows that successful partnerships also set an example for other companies. Once a culture of cooperation is established in the value chain, public-private partnerships become common practice. This has been the result of many years of cooperating in the cocoa value chain and other sectors in Ecuador. See the example in Box 4.3.10.

**Box 4.3.10: Case – Examples of different PPP instruments in Ecuador, 2014**

Name of the Instrument	PPP offered by the trade promoting agency of Ecuador	PPP offered by the rural development agency of Ecuador	PPP offered by the GIZ Program
Goal of the instrument	Insertion of small farmers in export markets	Local economic development	Income increase for smallholders / value chain development
Private partner	Private Ecuadorian export companies	Local companies	Private companies (both national and international)
Size of the private partner	Middle sized, with exporting experience	Middle sized	Middle to large size companies
Implementation responsibility	Private partner	Private partner	Private partner
Duration	1-3 years	1-2 years	Several contracts during the program period
Public contribution	50/50 Up to 100,000 US\$ public contribution	50/50 Up to 25,000 US\$ public contribution/ year	50/50 Up to 25,000 US\$ public contribution/ year

*Source: Own compilation based on information of GIZ, Ecuador*

### **Initiating and concluding new public-private partnerships**

Situations in which value chain development starts anew pose a difficult challenge. Special efforts are required to engage companies which have no experience with public-private partnership. Initiating new partnerships at the beginning of a public value chain development thus requires a strategy of its own.

Public lead actors who try to get private companies on board should pursue the following activities:

- (1) Seek contact with potential partners
- (2) Identify shared interests and establish common ground
- (3) Discuss the options for cooperation starting with informal partnerships
- (4) Define objectives and expected impacts jointly
- (5) Assess opportunities and risks of the intended cooperation
- (6) Establish contact persons and responsibilities and
- (7) Support the planning process

Here are some suggestions for the first steps:

The entry point for identifying potential cooperation partners is the value chain map. It contains the main players of the chain as well as important support service providers and public actors. After scanning the stakeholder landscape for potential partner and reviewing existing partnerships in the sector, the lead actor has to get in touch with potential partners. The following Box 4.3.11 lists some of the techniques for making contact and establishing a relationship.

**Box 4.3.11: Concept – Establishing contact with potential cooperation partners**

**Looking for private cooperation partners**

- Participation at industry events, such as congresses and trade fairs
- Contacts with chambers of commerce, trade associations and business federations
- Participation in international initiatives promoting corporate social responsibility
- Inviting companies into value chain steering committees
- Workshops with companies at the local level
- Participation in social and cultural events

*Source: Own compilation*

The key is to create opportunities for meetings, establish a network of contacts and stay in permanent dialogue. The most important platform for this are the steering structures created by value chain development programs that are the subject of the following chapter 4.4. As the network of value chain actors settles and a culture of cooperation evolves, chances grow that an interested company turns up unexpectedly. The last option is to hire a consultant as match-maker.

Once a potential partnership emerges, a process of several meetings follows that allow both parties to get to know each other and discover the pros and cons. Especially when working together for the first time, the potential partners should take ample time to identify common objectives and screen their work programs for overlapping interests. Sharing a joint vision may be easy, but as in every negotiation partners have to be clear on their individual interests and assess the possible outcomes of cooperation in an objective manner. The influence of the local context and external pressure should also be considered. As explained above, many public programs offer funds that private partners are supposed to match. This can be a strong incentive but should not be utilized as the main argument to win private partners over.

**Public-private dialogue**

Public-private dialogue is another type of cooperation of great interest. It raises regulatory issues of public concern in value chain development. To be effective, the initiative combines private companies on one side with the competent political entities on the other. It can take place at different levels and for different purposes. The institutional set-up of a public-private dialogue differs according to the dialogue partner initiating it. Private companies go for:

- Lobby meetings with the responsible minister, secretary or the respective government authorities in line
- Subsector or value chain conferences and workshops to discuss sector strategies and specific topics to which government representatives and public agencies are invited

When government invites to a public-private dialogue, be it regional or national, it typically takes the form of:

- Consultation workshops with the business community to get the feedback of companies on sector specific new laws, regulations and policies
- A regular dialogue forum, such as a local economic development committee

**Box 4.3.12: Case – Public-private consultation on business laws in Vietnam**

**Role of business laws for the development of fresh produce value chains**

Developing the fruit and vegetable sector in Vietnam has to deal with issues of food market regulation and economic policy. One concern is the control of product quality; other issues have to do with the enterprise and investment laws affecting the distribution and retail sector. Improving the framework conditions at the macro level is seen as complementary to improving the efficiency of the value chains in pilot projects at the micro level and to strengthening support service provision at the meso level.

During the implementation phase of the development program for small and medium sized enterprises (SMEs), new enterprise and investment laws were being drafted that are of great significance for further investment into fresh produce retailing. The sector support strategy needs to increase the competitiveness of the local distribution sector, especially in view of Vietnam's accession to the WTO and in a situation where the economy is opening up to foreign competitors.

**Organizing a private-public consultation process**

In the run-up to passing and ratification of the new laws, the SME program provided direct support organizing policy dialogue meetings between government agencies, the drafting committee of the enterprise law, and the private sector – for instance with foreign business associations, such as Eurocham and with local business associations under the umbrella of Vietnamese Chamber of Commerce and Industry. At the same time, both GTZ and the international retail company *Metro Cash&Carry* provided the Ministry of Trade with expertise through commissioned studies, study tours, legislative and regulatory expertise on specific topics.

Even after the law passed in 2006, the consultation process must still go on. Both the public and private sides should assure that subordinate regulations of the law are as well consulted with affected companies as the law itself. Otherwise, the reforms introduced by the law may not have the desired effects. Therefore, continuing efforts by GIZ and others are required to continue the dialogue.

*Source: GIZ SME promotion project Vietnam*

Donor projects can play a crucial role in bringing together the two sides and facilitating the dialogue. Box 4.3.12 presents the example of a successful private-public dialogue initiative in Vietnam. The principle policy issue – i.e. a new law regulating business – cuts across different subsectors. Nevertheless, value chain specific interests were at stake.

Initially, the quality of dialogues is often poor. External moderators can use facilitation techniques to make meetings livelier and more productive, raise awareness and interest of participants, and help to achieve political commitment. External facilitators take the role to rally private sector representatives to make a consistent request to the government. Box 4.3.13 below summarizes important tenets for organizing successful public-private dialogues in regard to law and policy making processes.

**Box 4.3.13: Tool – Procedure and success factors organizing private-public dialogues****Recommendations for actions to set up public-private dialogues in value chain promotion***Pre-dialogue phase*

- Business community identifies the issues to be discussed
- Business community designates private representatives of the value chain
- Private representatives analyze the selected issues and develop a line of arguments
- The relevant Ministry nominates 'Focal Points' and technical specialists
- Either side or a neutral organizer sends the invitations presenting a preliminary plan and the concept of the public-private dialogue

*Dialogue phase*

- Public sector or a neutral organizer hosts the first session of the dialogue and promotes a positive attitude among participants; there is a higher chance of success if the dialogue is carried out in an atmosphere of trust.
- The organizer emphasizes the ownership of the chain actors who have to drive the process
- The dialogue operates issue-based and demand-driven to make the private businesses fully aware of the benefits of participating in the policy dialogue with government
- Work on solutions. This is where agencies, such as GIZ, can give technical advice and support to working out possible policy options. The line of arguments is discussed
- Results are validated and signed by the private representatives of the value chain
- Transmission of the line of arguments, proposals and requests to the competent authorities
- The media are indispensable partners in any policy dialogue

*Post-dialogue phase*

- Organizers keep the participants informed about how their requests have been received by government.
- Competent authorities inform the private actors on the action taken

*Source: compiled from information provided by Agnes Gerold and GIZ, Vietnam*

Besides government and the value chain community, there are important groups outside the value chain who development agencies can work with. Mobilizing and promoting civil society alliances or consumer pressure in combination with press work and other public relations measures can have a direct influence on the behavior of stakeholders in the value chain, making them improve their current behavior and performance. This is particularly important when it comes to topics like social and environmental standards, where civil society and consumers are important political players exercising considerable influence on businesses. Involving the press can also produce wider impact influencing policy and law makers to take a more business-friendly and reform-oriented stance.

An issue-based approach requires companies to team up each time addressing the business issue collectively. Sometimes it may be easier to work on regulatory problems that can be resolved in the short term. However, if the policy perspective is long-term, the private-public dialogue has to be institutionalized in some way. Fostering a coherent value chain policy implies an institutional role of the private sector.

## 4.4. Steering value chain development

Value chain development is centered on the cooperation between chain actors. Many innovations can only be introduced if all value chain actors concerned get involved and coordinate their investment. The subject of value chain steering is the collaboration of chain actors in development processes. Steering brings out their common interests and goals, seeks a shared value chain strategy and agenda, creates ownership, and organizes collaborative decision-making and action. Steering and facilitating value chain development have to be kept apart. While steering is defined as the organization of collaborative implementation, facilitation refers to accompanying and supporting the implementation process. The techniques and problems of facilitating value chain development are covered in chapter 4.5.2.

The creation of steering structures follows the requirements of the value chain development strategy. The scope and ambition and the available funds for collaborative value chain development determine the set-up. In weakly developed or fragmented value chains, it is mostly externally funded value chain development programs that introduce steering structures in more mature industries value chain-specific private associations take over. The long-term objective is to institutionalize the steering function enabling the actors to pursue value chain development on a permanent basis<sup>271</sup>.

### 4.4.1 Program-related steering structures

An adequate steering structure for value chain development should fulfil these demands:

- Inclusion of all stakeholders relevant to the value chain development agenda
- Sufficient incentives so that the cost of collaborating is compensated
- Efficiency of the steering structure to perform the tasks at the lowest cost possible
- Perspective for consolidating and financing value chain development steering on a long-term basis

These principles apply to all types of lead actors. As value chain-external actors, development agencies should take care not to be self-centered in their approach to steering. In many value chains several projects and initiatives are active at the same time. It would be counterproductive if each project was to install a separate steering structure.

The idea is to enable collaboration, not to create exclusive structures around a particular project. It is also important to note that design questions of individual donor-funded value chain development programs, especially the selection of value chains to promote, should be treated in program-specific steering committees, not in the value chain steering structure. It is the task of those who commission and supervise a program to decide whether and where to engage.

#### *Choice of steering instruments*

Steering instruments are specific formats for organizing the steering function. Typical terms used for value chain steering instruments include:

- Value chain national stakeholder platform, forum or conference
- Value chain committee, value chain roundtable<sup>272</sup> or value chain platform

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<sup>271</sup> Hints on how to institutionalize steering structures follow in section 4.4.2

<sup>272</sup> Department of Agriculture, Forestry and Fisheries, Republic of South Africa, 2011

- Social dialogue platform in value chain systems<sup>273</sup>
- Value chain core group<sup>274</sup>
- Roundtables for sustainability standards<sup>275</sup>

Another concept of value chain steering is the 'nucleus approach', a specific form of a working group of 10 to 30 small and medium enterprises with similar characteristics and interests, such as being of similar size and operating in the same chain stage, which are organized by a chamber of industry and commerce. This approach has been used in Sri Lanka<sup>276</sup>.

**Box 4.4.1: Concept – Basic steering models for value chain development**

Steering model	Character / Description	Steering tasks
<b>National stakeholder forum or conference</b>	Meeting of industry representatives, government and donors at national level — motivated by public or private investment plans	<ul style="list-style-type: none"> <li>- Seek agreement on value chain development goals and strategic directions</li> <li>- Coordinate value chain development programs of government and external donors</li> </ul>
<b>National or regional value chain committee</b>	Body representing groups of operators at different stages of the value chain. There should be just one value chain committee per value chain. Wherever two or more regional value chain committees exist, they need a mechanism for exchange	<ul style="list-style-type: none"> <li>- Assess development potential and problems of the value chain that are of common interest to the value chain business community</li> <li>- Keep an overview and follow up on the issues</li> </ul>
<b>Regional or local value chain working group</b>	Task force of enterprises and support service providers working on a specific issue, the group is dissolved once the issue is resolved	<ul style="list-style-type: none"> <li>- Jointly develop and implement a solution for a problem area identified at a higher level of steering</li> </ul>

*Source: Own compilation*

Each of these concepts of multi-stakeholder collaboration has emerged in a different context. Nevertheless, they share the basic idea of a value chain steering mechanism. The differences are in the objectives and in the outreach of the format that ranges from national to regional groupings and from industry-wide to issue and product-specific collaboration. Box 4.4.1 above presents steering instruments that summarize the wealth of formats into three basic models, organized by the level of outreach.

<sup>273</sup> ILO, 2009

<sup>274</sup> GTZ, 2006

<sup>275</sup> See module 9 on sustainability governance

<sup>276</sup> See [www.nucleus-sl.com](http://www.nucleus-sl.com).

The social dialogue concept of the International Labour Organization (ILO) has developed as a steering mechanism to address labor issues in the framework of the Decent Work Agenda. It is a broader concept than value chain development steering idea and addresses contentious issues relating to economic and social policy via the exchange of information, consultation and negotiation<sup>277</sup>. It has been introduced into the value chain work supported by ILO later on.

Besides responding to an obvious coordination necessity, convening enterprises and supporters in conferences and committees has manifold further advantages:

- The meetings establish personal and professional links among the actors.
- It helps to progressively build trust and confidence and fuels the learning process.
- The institutions created for collective action in value chains also are a precondition for deepening the private-public dialogue.
- At the same time, they also provide a platform for coordinating the different donor contributions.

Box 4.4.2 below presents the case of a regional value chain committee in Ecuador, in this case called roundtable.

#### **Box 4.4.2: Case — Regional cocoa roundtable in the Amazon region, Ecuador**

##### **Background and organization of the roundtable**

In the context of the cocoa value chain development project supported by GTZ, a regional roundtable for certified specialty cocoa was established in the Amazonas region. 32 private and public organizations participated regularly every 3 months. Producer associations and local government were represented best. Participants paid for their own expenses for participating. The meetings were called and organized by a committee with two representatives of associations, two of local government, one of an NGO, and one of GTZ. The roundtable defined and implemented strategies of common interest. It was also a forum of exchange of experience and coordination.

##### **Activities and results**

Initially, participants found out that they share common problems of competitiveness and that there was enough common ground to start joint action. Five fields of action were defined, each relating to value chain solutions:

- Improvement of business models introducing technical innovations to bring up productivity
- Improvement of business models enhancing product quality
- Horizontal linkages strengthening producer associations
- Vertical business linkages with buyers requiring certification
- Strengthened support services

For each topic of collaboration, a particular working group was created, and a leader-facilitator chosen among participants. The working groups developed concrete project proposals to be funded through public-private partnerships. In addition, they organized buyer-seller meetings, fairs as well as training events and workshops.

*Source: GTZ PAC program, Ecuador, 2007*

<sup>277</sup> Ishikawa, 2003

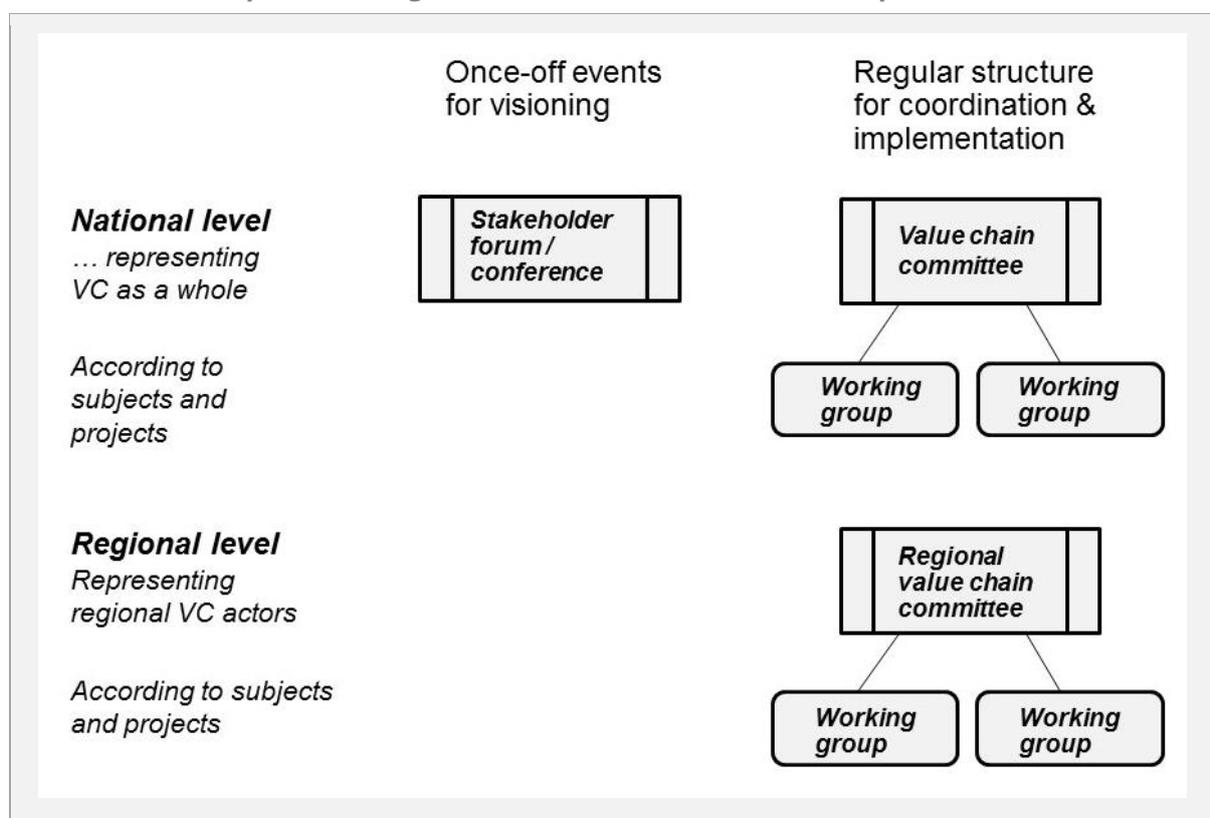
## Steering structure

Steering instruments should be selected in line with the available resources and the scale of the value chain. They can be formalized or remain informal if necessary. Different steering instruments are combined to form a steering structure. ValueLinks suggests building steering structures using the basic models presented in Box 4.4.1 above.

Wherever steering can build on existing formal or informal social organizations, the best solution is to reinforce them and not create new ones. Existing platforms and networks are the natural starting point for building the steering function. Only in the absence of *any* structures, a value chain development program takes the role of mobilizing chain actors and assist with the formation of a new steering format. It is clear, that the value chain community has to be interested before actually moving ahead. Ideally, value chain committees should be hosted by a business association or by a chamber. Second in priority would be a public agency, such as a specialized unit in the line ministry. The steering structure has to reflect geographical units and the particular problems and issues calling for the collaborative action of stakeholders.

Box 4.4.3 presents the set-up of an ideal steering structure. The size and degree of differentiation of the steering structure follows from the conditions of the value chain. Most likely, it is more extended and diversified in large value chains. Steering structures need to be flexible and should be modified as the working environment and the value chain changes. Adjustment is also needed in order to maintain the interest and energy of participants.

**Box 4.4.3: Concept – Steering structure for value chain development**



Source: Own design

### ***Stakeholder representation and incentives for collaboration***

An important quality criterion of steering structures is that they mobilize the participation of stakeholders. The stakeholder landscape looks differently depending on how the value chain development problem is conceptualized in the first place. Committees are made up of representatives of operators at the different value chain stages and of all relevant change agents. Representatives of groups of operators speak on behalf of the entire category of operators they belong to.

The difficulty is that the numbers of operators vary. In primary production, the numbers of smallholders or small enterprises sharing similar business models is very large. Hence, there is an issue of due representation. In fact, forming steering structures in large value chains presupposes the existence of collective organizations at the meso level, such as farmer associations or business membership organizations. Where these do not exist, the organization of collective interests becomes an issue of its own. It is a long-term task that has to be addressed separately. In the meantime, second-best solutions are required in which public agencies take care that smallholders and small and medium sized enterprises get an effective voice. At the same time, the existence of value chain development programs is an incentive for small enterprises to organize themselves better.

The right composition of committees and working groups depends on the tasks assigned to the respective steering format. To ensure an operational composition, there has to be a critical mass of participants.

The following criteria can be of use:

- The group size has to be adequate for a productive group dynamic. The optimal range is between 10 and 20 members
- Private sector representatives of enterprises or associations should have the majority. Representatives of business associations should be mandated by their members
- Lead actors and all relevant change agents have to be on board, especially lead firms, business associations, specialized government units and support service providers
- Government and development agencies need to be present to the extent they provide support to the steering structure and are sources of funding for value chain development

Depending on the issue, other service providers or representatives of logistical infrastructure, such as energy, water or transport, are invited as resource persons.

The viability of a steering committee has a lot to do with the economics of collaborative action. The benefits for the participants — or rather those of the stakeholders they represent — have to outweigh the cost of participating and contributing to the tasks. Apart from a low degree of organization and lacking knowledge and awareness, difficulties in mobilizing collective action can be due to free riding, as value chain actors expect to benefit without investing themselves. But it might as well be the case that the expected benefits are not large enough for participants to get active.

Development agencies should not easily disregard such problems by simply handing out financial allowances to stimulate participation. It is better to analyze the reasons for a lack of interest carefully and review the planned steering structure.

Building a value chain steering structure is a matter of forming political coalitions around subjects of common concern. Another point is to go back to the original idea of the value chain

development programs. If the objective is to mobilize poor producers to promote their market inclusion, public value chain development programs should include a component to explicitly build the capacity of small-scale farmers to make effective choices that advance their interests<sup>278</sup>, and help poor producers develop ownership and actively pursue their interests in value chain development. Such interventions go beyond value chain development in the narrow sense.

### ***Steering efficiency and sustainability***

Running a value chain steering structure is costly — not only convening the meetings but also the time that participants and organizers spend preparing them and taking part. The responsible bodies should make these costs transparent, including the costs assumed for development agencies that provide organizational and facilitation functions. It is important to verify that steering actually pays off and has the potential to be maintained in the longer term.

Continuation of steering only has a perspective if the steering structure is as lean as possible. These are possibilities how to improve steering efficiency:

- Different value chain development programs should work with the same value chain committees
- Steering intensity, i.e. the frequency of meetings should be in line with tasks
- Facilitation should be efficient avoiding interruptions and repetitions
- Work on value chain solutions in smaller groups of competent people

The particular steering instruments do not necessarily have to be sustainable. After all, the functions are related to the agenda for change. Steering instruments and structure have to be flexible to adjust to new value chain initiative and objectives. But the continuation of some form of steering is a sign of advanced development and maturity of the value chain.

## **4.4.2 Permanent steering by industry organizations**

Steering structures are often initiated by government agencies on behalf of an externally funded value chain development program. To secure continuity, the responsibility for promoting the development of an industry must be anchored in the business community itself. As external supporters withdraw, a long-term institutional solution is needed fostering the ownership, responsibility and collective action of value chain actors. This idea of steering is at the basis of several models of national value chain policy making.

A typical institutional arrangement is the subsector council — industry-wide formal committees of major institutions of an important subsector, often entertaining an own secretariat. Examples:

- Competitiveness agreements ('acuerdo nacional de competitividad' in Spanish) used in Latin America.
- Interprofessional value chain associations ('interprofession' in French). These are formal committees of sector representatives in important export chains, often led by government. Most examples are from francophone Africa.

Boxes 4.4.4 and 4.4.5 below present these arrangements.

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<sup>278</sup> Bill Vorley, <http://www.agriculturesnetwork.org/magazines/global/partnership-for-learning/bill-vorley-iiied-knowledge-programme>

#### Box 4.4.4: Case – Supporting value chain policy in Latin America

##### **Competitiveness agreements for value chain development in Latin America**

In many Latin American countries, subsector policies use the format of a national competitiveness agreement. A competitiveness agreement is a national policy to promote the integration of private companies in the national and world markets and to improve the competitiveness rating of the country in World Bank reviews. They have been implemented in eight Latin American countries. Institutionally, the policy follows the levels of administrative hierarchy: The minister of economic development presides over a national competitiveness committee or council integrating the representatives of private sector organizations.

At a lower level, stakeholders of a particular industry (the terminology varies between value chain and cluster) or in a particular region constitute roundtables initiating a multi-stakeholder policy process under the competitiveness agreement. Roundtables coordinate the implementation of the action plans. International funding is acquired to realize individual projects.

##### **The Case of Peru:**

##### **National Competitiveness Agreement in the Maize & Poultry Value Chain**

The Peruvian government created a National Competitiveness Council in 2002. After lengthy political consultations, a National Competitiveness Plan was passed in July 2005. In parallel, The Peru-German program for sustainable rural development supported the process of creating a competitiveness agreement in the maize and poultry value chain, along with another donor, IICA. The process was initiated by the Ministry of Agriculture and took one year. The agreement has the format of a public-private contract signed by all participating companies, associations and public agencies. It specifies five areas of value chain development, i.e. crop and animal health, infrastructure, improvement of vertical linkages between primary production and marketing, maize productivity, and strengthening of farmer organizations. The principal achievement is that, for the first time, operators at different stages of the value chain have come together and started joint pilot projects.

*Source: GTZ / PDRS Newsletters, personal communication of Manuel Rojas, and Govt. of Peru, 2006*

In francophone Africa, so-called interprofessions are value chain specific formal associations uniting and organizing all enterprises and business associations operating in the chain. They have the function to establish rules and standards for the business, create market transparency, promote the product on domestic and export markets, and collectively address problems affecting the value chain as a whole. To perform their functions, the different stages of the value chain, i.e. the professions, have to be equally represented. This model is particularly relevant for export-oriented commodity chains.

#### Box 4.4.5: Case – Interprofessions in Senegal

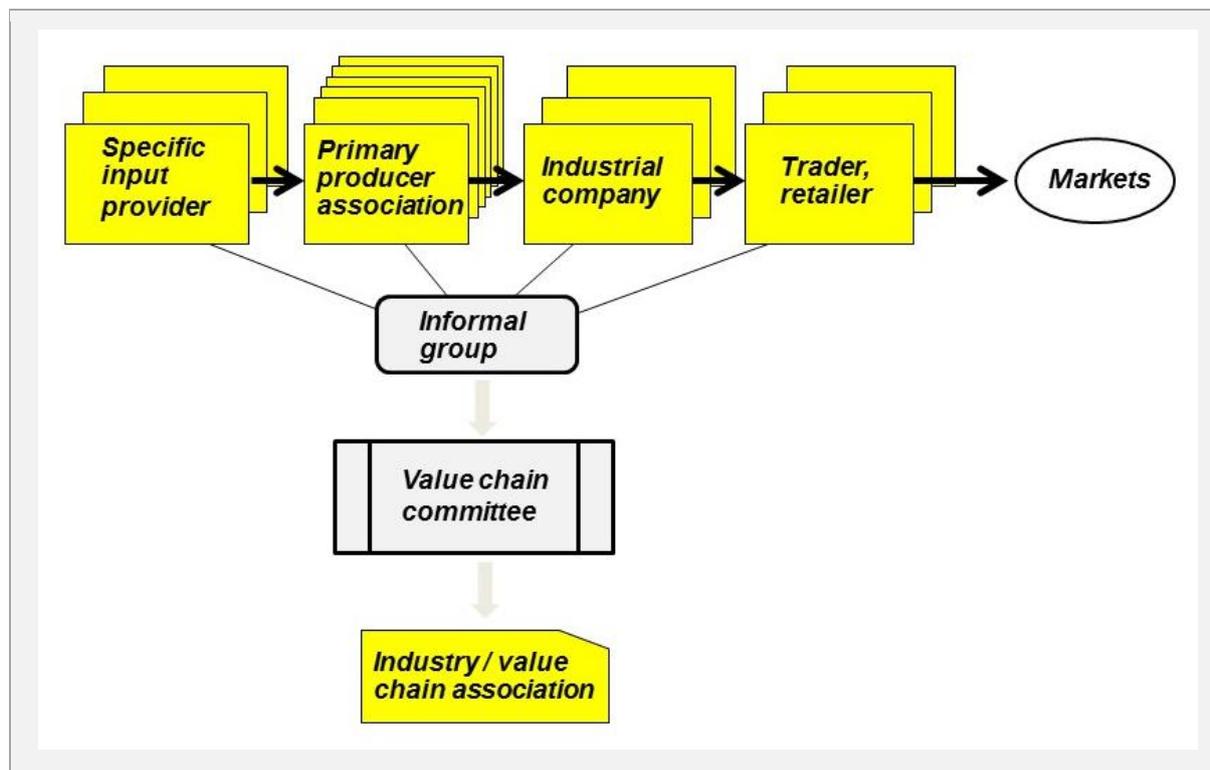
##### **Competitiveness Agreements for value chain development in Africa**

In Senegal, Mali and other African countries interprofessions are officially recognized by law and formally part of the institutional set-up of national value chain policies. Only one private interprofession per value chain is allowed. It takes the lead in regulating the market and suggests development measures. In the case of Senegal, the legal framework provides that the agreements reached by the interprofession are compulsory for all chain operators as long as the decisions are taken unanimously. Hence, the interprofession constitutes a sort of 'value chain parliament'. At present, there are seven interprofessions and interprofessional organizations in Senegal covering fish, cereals, industrial tomatoes, rice, milk, groundnuts and horticulture.

*Source: A. Robast / Peche, D. 2005, also see the website [www.inter-reseaux.org](http://www.inter-reseaux.org)*

At some point, the creation of steering structures for value chain development leads to the founding of formal organizations that institutionalize the common business interests. The temporary steering models that have been created to accompany the implementation of value chain development programs evolve into permanent steering structures. This evolution is visualized in Box 4.4.6 below.

**Box 4.4.6: Concept – Institutionalizing the steering structure**



*Source: Own design*

The idea is that a light, informal steering group evolves into a formalized value chain committee over time. The networking and capacity development that comes with long-term cooperation is the basis on which formal industry associations can be built.

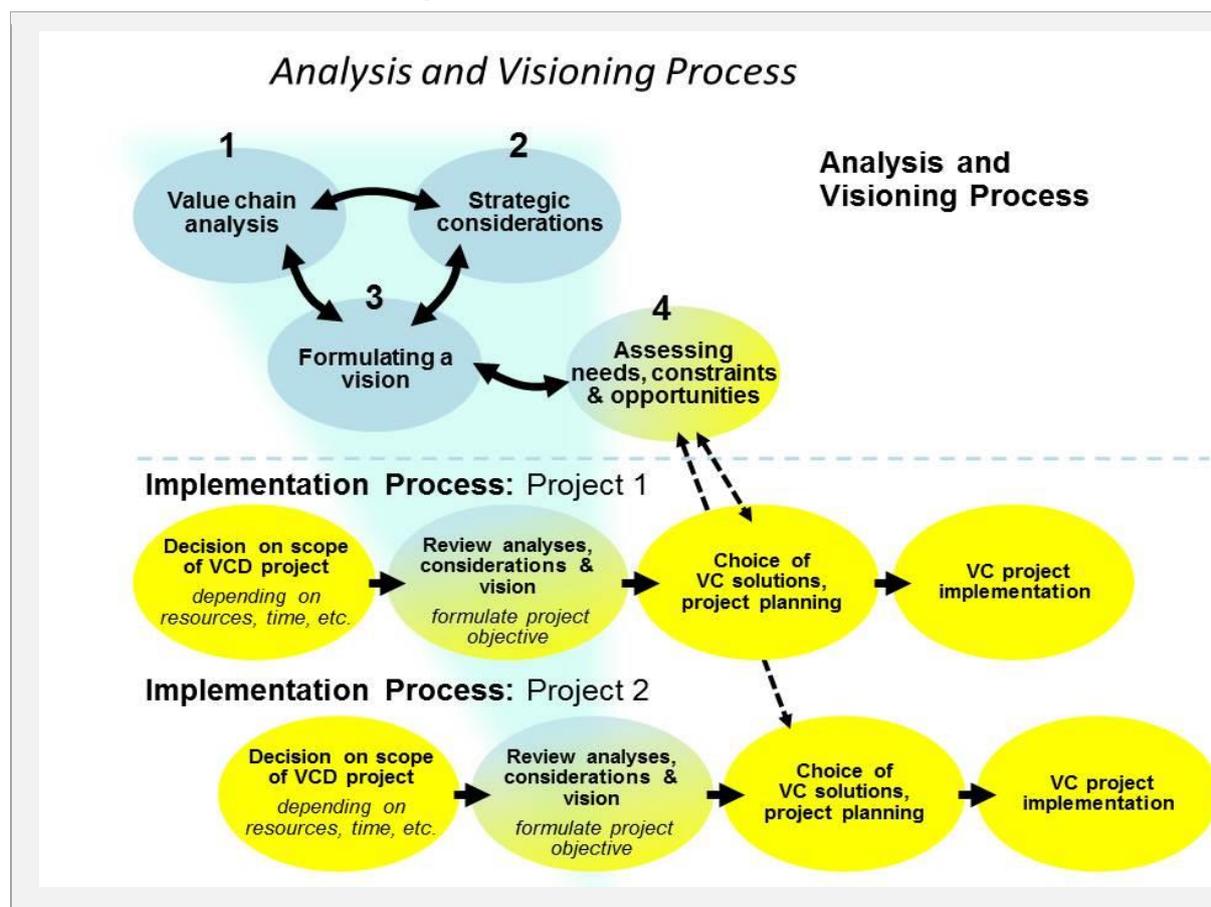
## 4.5. Managing processes of value chain development

Value chain development is a change process that goes through a sequence of steps that take time to accomplish. Innovation can only be achieved step by step. Consensus needs to be built, partnerships established and the rules for collaboration agreed on. For a value chain development project to be effective and efficient, the different partners have to deliver their contributions in a coordinated manner and at the right time. Unless these processes are well managed, the lead actors risk losing control — and the energy for change is diminished.

To be clear, the following considerations refer to processes of *value chain development*, i.e. the *value chain development project processes*, not to the regular processes of value chain operations that a value chain development project aims at improving. This part of project management know-how is important for all actors in value chain development, but of particular relevance to lead actors.

In the following, it will be dealt with different aspects of the management of value chain development, including the general value chain development processes, support processes and facilitation instruments, conflict-sensitive as well as gender-sensitive value chain development.

**Box 4.5.1: Concept – The relation of visioning & implementation processes in value chain development**



Source: Own concept

### 4.5.1 The value chain development process

Value chain development includes different processes involving all value chain development actors who contribute to the agenda for change. It consists of two processes, namely the analysis and visioning process and the implementation process. See Box 4.5.1 above.

The analysis and visioning process includes the value chain analyses, strategic considerations and the formation of a joint vision for value chain development. See module 2.

While analysis and visioning provide the overarching orientation for value chain development as an initial step, implementation is always achieved in a project mode. The implementation process consists of the actual implementation of upgrading solutions during which value chain innovations are introduced and physical investments are made.

In most cases, value chain development visions require several upgrading solutions so that the implementation actually includes several projects conducted in parallel processes or in sequence. Thus, numerous value chain development projects engage in promoting the same industry and its vision. See project 1 and 2 in Box 4.5.1.

Box 4.5.1 illustrates that not every single value chain development project can nor should promote a separate visioning process. Instead, it shows how a common visioning process of the larger business community connects to the various implementation processes of different value chain projects. Ideally, a new value chain development project would build on an existing value chain development vision choosing one or several solutions to work on.

Both the analysis and visioning process as well as the implementation process have to be distinguished from the support processes by which external actors promote value chain development facilitating and providing advice on the implementation of solutions. The know-how for support processes is of particular relevance for development agencies and will be dealt with in section 4.5.2.

#### *The value chain analysis and visioning process*

In order to arrive at a realistic vision that is widely accepted and on which the project implementation processes can be based, the analysis and visioning process should follow a rational procedure: The process starts by creating a shared understanding of the value chain situation, its problems and potential, and moves on to a common view of its future and the action needed. The stages of the analysis and visioning process thus include:

- (1) Value chain analyses
- (2) Strategic considerations on the future development of the chain
- (3) The formulation of a vision and strategic objectives

Wherever a vision for value chain development exists already for the respective value chain, the lead actors in value chain development should refer to it and try to fit in. This is necessary for two reasons: For one, a value chain development analysis and visioning process needs time to generate consensus and commitment. It cannot be repeated frequently. Second, any value chain development program has to make sure that it has the support of the value chain community and that it makes sense from the broad perspective of market development. This is more easily achieved if the program relies on earlier decisions and achievements. In the end, any new program should relate to previous value chain development interventions in order to guarantee coherence of the development process.

Only if a value chain program cannot rely on any preceding analysis and visioning process, it will have to take on the job of developing a vision for the value chain at large. However, smaller value chain development programs can reduce the strategy process to complementing or updating the missing aspects of previous value chain analyses and to determining a program objective that fits the vision but is more limited.

The three elements of the analysis and visioning process are closely connected in an iterative cycle. See the graphic in Box 4.5.1, above. The value chain analyses can follow the methodology set out in module 2. Utilizing the results of the value chain analyses, the visioning process further applies the generic sustainability goals to the specific chain at stake sorting out the different interests and goal conflicts. The respective tools can be found in module 3. The analysis and visioning process result in the choice of strategic options to follow and an agreement on the vision of value chain development.

### *The process of value chain analysis*

Practical issues of using analytical tools: Principle of making analysis as easy as possible, case material, typical value chain maps, typical problems, industry-specific guidelines, simplified.

Chain mapping can be done by planners or experts as a desk study. However, it is often more efficient to produce chain maps in a group exercise, in which private operators and chain supporters participate jointly. This is not only beneficial in order to capture all perspectives involved but also to build trust and foster cooperation for a common goal. Nevertheless, when it comes to very detailed chain maps, it is recommended to also engage experts in chain mapping.

#### **Box 4.5.2: Tool – Participatory chain mapping in workshops**

##### **Procedures to produce a chain map**

- Briefly present value chain theory, mapping symbols and a model chain map
- Present further information on the specific value chain in question, i.e. the results of market, economic and service assessments
- Facilitate a discussion in which chain stages and actors are named by participants according to the mapping principles explained in module 2, chapter 2.2. Alternatively, present a preliminary overview chain map in plenary that has been prepared beforehand
- Discuss in plenary (if not exceeding 15 people) or split into groups to validate and further improve the preliminary chain map
- Identify information gaps and decide on priority information needs
- Formulate key questions for more detailed chain analyses

##### **Visualization techniques**

- Use metaplan techniques, such as pinboards and cards to visualize the chain map and to facilitate exchange and focused discussions
- Do not exceed the limits of pinboard space in preparing the overview chain map. If space is not sufficient, prepare a second map enlarging the relevant part of the big map
- Switch between Powerpoint and pinboards using the standardized set of ValueLinks symbols

*Source: Own compilation*

Participatory value chain mapping uses the *ValueLinks* mapping symbols. This form of visualization has the advantage that it can be universally used. The symbols are defined by color

and form. They can be applied in chain mapping workshops using ordinary cards for pinboards, in documents with color illustrations or in black and white copies. See module 2.

Box 4.5.2 above recaps important steps in the procedure of participatory chain mapping.

Generating information and using it has to be treated as iterative. Often, the need for in-depth analyses only arises as ideas for market development and upgrading emerge in the process.

#### *Strategic considerations and the formulation of a vision*

Building on the value chain mapping and analysis, the subsequent step in a value chain development process is to build a consensus in the value chain business community on the objectives and strategy to pursue. This is summarized under the term visioning process.

#### **Box 4.5.3: Case – Joint value chain strategy development during a multi-stakeholder workshop**

**The GIZ program PROFIAB in Côte d'Ivoire applied the following procedure for joint strategy development for the promotion of six value chains:**

##### *Step 1*

A local consultant was asked to prepare a short value chain study according to a given template and within a timeframe of about four weeks. He collected information about the value chain actors and prepared a draft value chain map. He met with selected key stakeholders and noted their comments and concerns about market demand trends and main value chain constraints. He compiled information on other support programs and related activities of meso level organizations. Based on the information obtained, he recommended a number of main value chain upgrading areas and project interventions.

##### *Step 2*

The program organized a two-day multi-stakeholder workshop with about 40 representatives of different value chain actors, such as input suppliers, farmer organizations, industry and traders, government officials, support institutions and project experts.

##### *Step 3*

As an input to the multi-stakeholder workshop, the national consultant briefly presented the main findings of his study, the Ministry of Agriculture informed about its value chain sector policy and the facilitator explained the ValueLinks planning approach. The workshop participants then discussed and validated the draft value chain map and exchanged on market trends.

##### *Step 4*

A vision statement and related constraints were elaborated in two working groups and consolidated in form of a joint vision statement and constraints analysis in plenary.

##### *Step 5*

On the second day, potential solutions and related project facilitation activities were discussed in detail in two working groups and reviewed in plenary. As a result, a number of six to eight value chain upgrading solutions and related project facilitation activities were suggested.

##### *Step 6*

A value chain committee of eight to ten people was elected comprising representatives of the different value chain actors.

*Source: GIZ PROFIAB program in Côte d'Ivoire 2014*

According to the Capacity WORKS approach, developing a strategy implies the identification of several strategic options in order to select the most promising with regard to the achievement

of the intended effects. This procedure is used to extend the creative leeway in the projects and to avoid two phenomena:

- Working with concepts not adapted to reality, even if they technically reflect the state of the art
- Working with different options simultaneously, thus inhibiting a clear profile of the project and the necessary concentration of resources

The size of a strategy formulation task depends on the number of partners and the scope of the endeavor. There is no rule on how many actors to include. Obviously, a nationwide value chain visioning process requires more time and resources than developing a common agenda for a local value chain or a particular issue. A visioning and strategy-building process may take up to a year, as in the case of a national policy, or just a few weeks where value chain development initiatives can build on previous studies and an existing value chain strategy. Generally, it is recommended not to force participation in the process. If joint visioning is to be effective, it has to rely on the voluntary participation of stakeholders. The process gradually builds a common understanding of the issues among the partners and mediates between the different interests.

The visioning process requires a series of meetings and conferences using the formats and principles of multi-stakeholder collaboration. As the intention is to generate consensus and prepare action, organizing the visioning process equals the creation of a temporary steering structure for value chain development. Box 4.5.3 above presents the case of strategy formation process in Côte d'Ivoire.

The main planning steps can be combined in one main multi-stakeholder workshop as well, with a number of consultations before the workshop and the election of a value chain committee for further consultations after the workshop.

The lead actor of the value chain development program — be it a private company, government or a development agency — holds a key role for the entire process and is the driving force behind it. The visioning process needs guidance by lead actors, who have to mobilize the stakeholders, mediate between diverging interests and facilitate the interaction and consensus building. Thus, it requires an adequate support process. See section below on the management of support processes.

### ***Implementation processes***

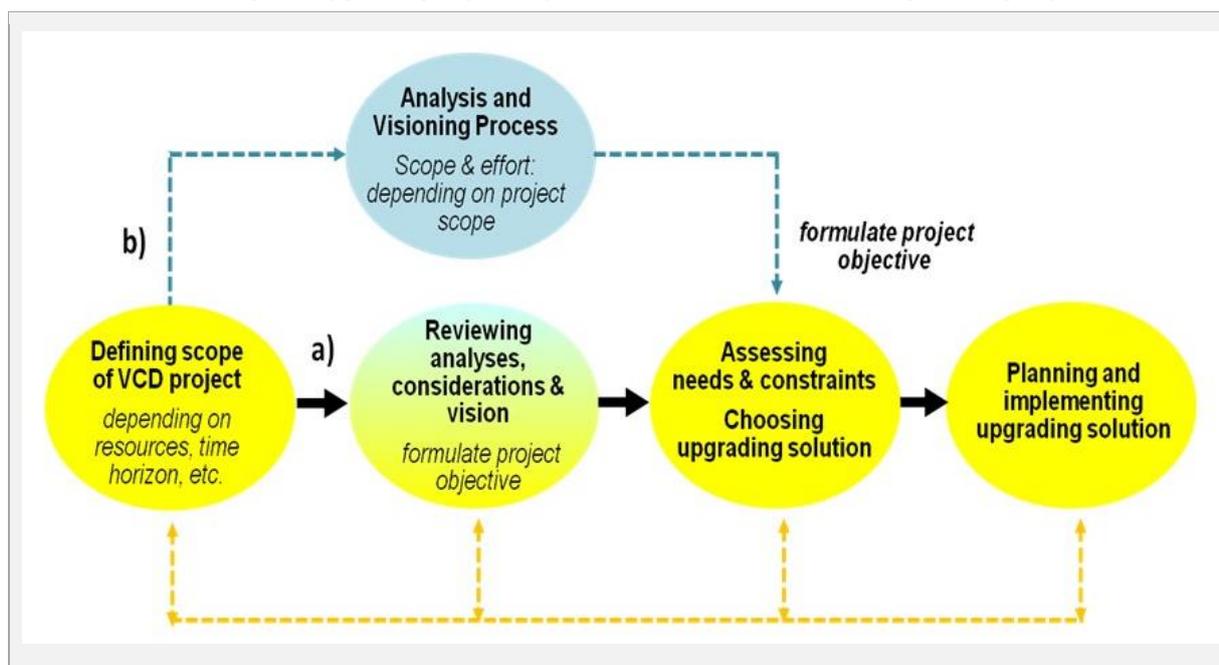
The formulation of a vision, general strategy and of particular program objectives is not yet enough to arrive at an operational value chain development program. Vision and program objectives have to be translated into outputs and activities to achieve impact. For example, a strategic objective that aims at better product quality to secure market penetration has to be broken down into smaller objectives, such as:

- A better regulatory environment, for example agreement on an appropriate quality standard
- Greater institutional capacity, for example quality infrastructure
- The development of business models, such as using adequate technology and structured supply linkages
- The required services, such as advice, training, maintenance
- Implementation is the realization of the respective value chain innovations and investments in practice

There is no universal formula for the value chain development project cycle. The actual process sequence differs between projects.

Box 4.5.4 charts the generic sequence of value chain development. In a first step, the scope of the value chain development project is defined, depending on the mandate and interests of the lead actors as well as the resources and time available. Even if program planners can build on an existing vision for the value chain at large, they need to go through a process of reviewing the available analyses and strategic considerations to define the particular project objective. See arrow a).

**Box 4.5.4: Concept – Typical project cycle of value chain development project**



Source: Own concept

Only in cases where planners cannot draw on such information, they need to conduct a new value chain analysis and visioning process before actually going into project implementation. See arrow b).

Once the general strategy for value chain development is clear, a new project formulates its own objective as a contribution to the overall vision. Large programs embark on the strategy at large and make it their own.

For the formulation of the objective the sequence moves to the description of the technical and organizational solutions and to the specification of the necessary activities, responsibilities of participating actors and their contributions. The project chooses the specific value chain solutions responding to the needs and constraints. Based on this process the implementation of the solution can be initiated. It makes sense to refer to ValueLinks modules 5 to 10 in the upcoming volume 2 to determine the upgrading solutions in detail.

As suggested by the dotted arrows in Box 4.5.4, the sequence of the project steps is not definite; the different processes of project implementation are iterative. The scope of the planned value chain development project can be kept flexible as the time horizon changes or the lead

actor brings in new interests. In this case, the scope of the value chain development project can be redefined based on the value chain analyses and the strategic considerations.

The way in which the implementation process is carried out depends on the regulations and specific modes of operation of the respective lead actors. The processes of conducting value chain projects differ between private companies, government and development agencies. Nevertheless, every value chain development project has to come up with some form of operational planning coordinating the contributions of the partners involved.

The value chain map is of great use in achieving this task. The results of value chain analyses and strategic considerations can be put into the value chain map as suggested in the following Box 4.5.5.

#### **Box 4.5.5: Tool – From vision to action**

##### **Procedures using the chain map to derive an action plan**

- Identify the needs: What needs to change in the value chain in order to arrive the objectives for value chain development?
- Identify and assess constraints and opportunities: Which constraints need to be removed, which opportunities should be developed?
- Indicate the points in the chain map: Organize needs, constraints and opportunities placing them in to the map close to the chain stages, operators, linkages and supporters concerned
- Prioritize: Select the most critical points among the issues and discuss alternative solutions to addressing them
- Solutions: Identify and classify possible solutions along modules 5 to 10

*Source: Own compilation*

The implementation of each value chain solution needs a plan that specifies the particular objective and the required activities plus a timeline. The strategy is thus decomposed into a series of fields of action, which have been termed subprojects, work packages or value chain development interventions interchangeably.

It is advisable to include indicators of successful completion of value chain development sub-projects linking the operational plan with the monitoring system of a program. To clarify how the activities relate to the objectives and vision, each value chain solution should show up clearly in the results framework of the project. This allows tracking the impact and checking on the value chain development strategy as the project implementation moves ahead.

#### *Workshops and meetings*

The main challenge for planning and implementing value chain solutions is the fact that value chain development always implies joint decision-making and coordinated action of several stakeholders. Thus, value chain development implementation requires repeated meetings and workshops enabling that collaboration.

There is no general recommendation on how the sequence of such events should be structured. In the interest of efficiency, it makes sense to keep the number of meetings as low as possible by combining several steps of the value chain development project cycle in one workshop. Stakeholders should only take part, when the process requires their agreement and commitment.

Box 4.5.6 presents a tool that can be useful to plan workshops and meetings. The table specifies the four major steps of project implementation from left to right, and the list of partners in the value chain development project from top to down. In a concrete case, the table would be much larger to actually represent the process and its participants. Facilitators can use the tool to decide how many tasks may be covered in one workshop at the same time and who needs to be invited to get things done and move ahead in the implementation process. The table allows visualizing the design of a workshop by marking the boxes and answering the question who to involve in which step of the implementation process.

**Box 4.5.6: Tool – Design of meetings - contents and participants**

Steps of project implementation	1 Defining scope of value chain development project (depending on resources, time horizon, etc.)	2 Reviewing analyses, considerations and vision: formulate project objective	3 Assessing needs and constraints & choosing value chain solutions	4 Planning and implementing the value chain solution
Value chain actors				
Private companies & associations	Start workshop			
Government & public administration			Policy meeting	
Development agencies				
Lead actor				
Facilitators			Policy meeting	
...	...	...	...	...

*Source: Own concept*

Accordingly, there are various formats of organizing collaboration and exchange between the different actors of a value chain development project. A typical process design for value chain development implementation includes a start workshop in which all actors take part so as to get everyone on board, followed by stakeholder meetings to discuss specific subjects and coordinate action in particular subprojects. The colors in the example above show the contents and participation of a start workshop in blue color, and one of the follow-up meetings marked in yellow. These are only examples showing how to utilize the table.

To master the procedural and methodological challenges, the value chain development implementation process needs both the facilitation service and accompanying support of the lead actor.

### *Quality and efficiency of the implementation process*

Smooth implementation is only possible if the process moves ahead step by step — at the pace of the value chain actors. Box 4.5.7 recaps important conditions for value chain development projects to produce a lasting success. They have to do with social behavior and the ability to cooperate. Together they determine whether the value chain development effort is likely to be sustainable.

#### **Box 4.5.7: Concept – Preconditions for the success of value chain development**

<b>Conditions of success</b>	
<b>Clear roles</b>	All chain actors understand and assume their roles effectively
<b>Leadership</b>	Change agents take the lead, others follow
<b>Ownership</b>	Enterprises act upon their own interest, individually and collectively Chain actors assume responsibility from the start
<b>Win-win situation</b>	All actors benefit from upgrading, leaving others part of the gains
<b>Will to advance</b>	Positive and negative experience is taken as a basis for progress

*Source: Own concept*

The quality of the implementation process as such shows in two points:

- One concerns the systematic documentation of results and decisions. Efficiency and commitment is reduced considerably if the results of earlier steps are called in question and steps have to be repeated.
- Another important point is to gain momentum via activities that allow a quick start and produce tangible results early on.

The process gets its energy from the commitment and the trust of stakeholders. Often, quick and visible improvements are possible without a long-term plan. Hence, action to upgrade the value chain can already start during the analysis phase. This will not only generate quick wins and immediate benefits but also help to gain momentum and build trust into the feasibility of the upgrading strategy. Quick actions also serve as pilot tests and allow to spot coordination and implementation problems early on.

## **4.5.2 Support processes and facilitation instruments**

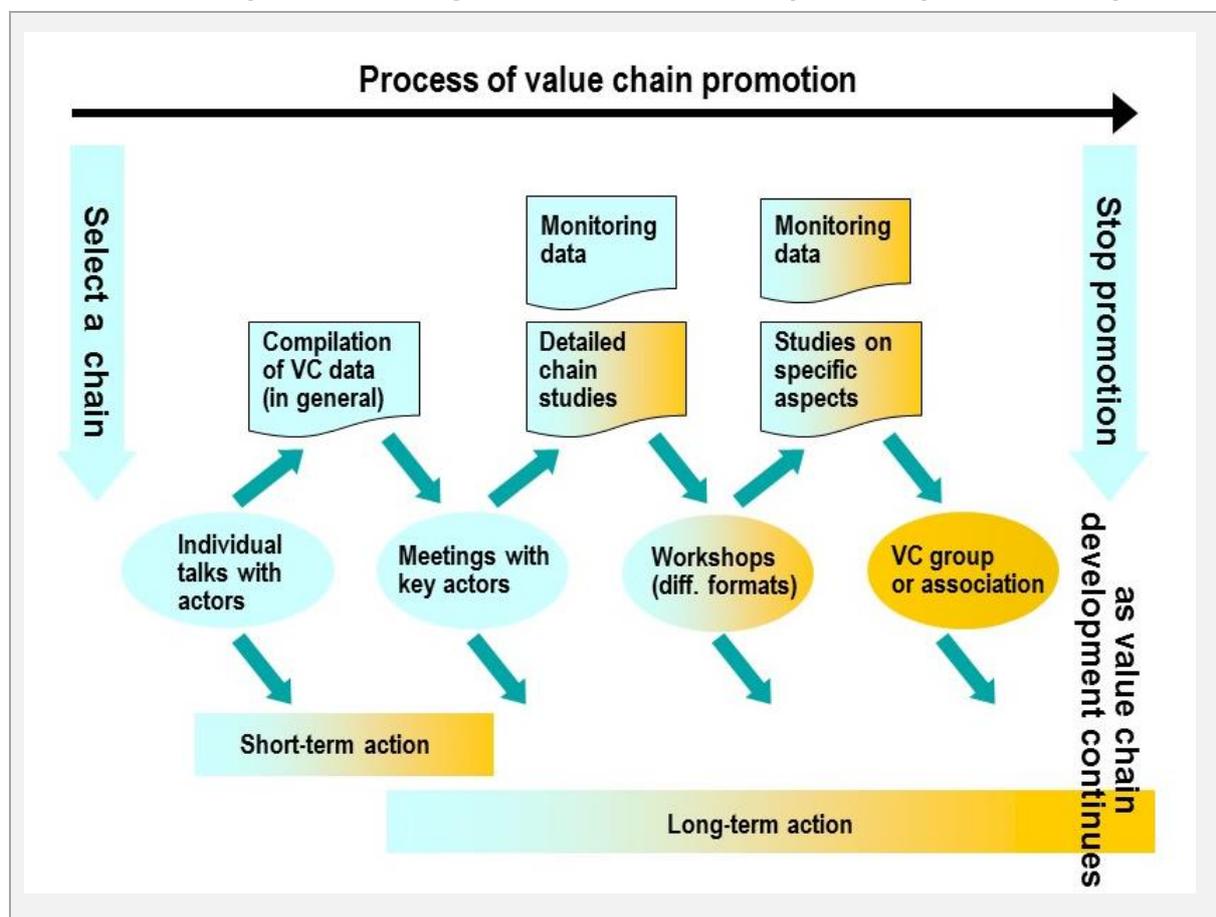
Strategy formation and implementation processes need to be set apart from the support processes facilitating the value chain development process. In contrast to the upgrading activities pursued by the value chain actors, facilitation is not a permanent function. It is mostly taken up by external development agencies as a task limited in time. However, development agencies

are not the only ones to lead value chain development support processes. Government and business membership organizations also take on facilitation functions. The precondition for starting any support process is the explicit interest of the actors engaging in value chain development. Unless there is a clear decision and commitment on the side of operators and service providers, there is no need for value chain development support processes and no role for facilitators either.

### Sequencing the support process

Subdividing the value chain development process into a sequence of iterative steps has the advantage that the facilitation and support process can be adjusted in line with the advancing implementation process. The beginning and end of value chain development actions also define possible entry and exit points for external facilitators.

### Box 4.5.8: Concept – Structuring the value chain development implementation process



Source: Own concept

The figure in Box 4.5.8 above visualizes the gradual built-up of process steps distinguishing three types of action. The main line in the middle of the figure shows the sequence of meetings moving from individual talks between actors on to more and more formalized meetings in which decisions are taken to collect information or to get into action. The oval boxes on top show how the information collection proceeds from compiling basic data to more detailed studies as the process unfolds. Below is a sequence of value chain development actions moving from

short-term interventions to more demanding and longer-term operations. An important aspect is to learn that information and new insights emerge over time. Value chain development as a learning process implies the division of the planning and implementation process into a sequence of separate steps, each constituting a small project in itself with a defined starting and end point.

### ***Entry and exit points for external support and facilitation***

External facilitators accompany value chain development processes temporarily. The usefulness of their support depends on the dynamics of change. Facilitators have to observe the progress made and adjust their interventions accordingly. Nevertheless, it is the value chain actors who have to take the decisions and determine the speed of progress. Facilitators should not get tempted to dominate this process but be prepared to accelerate or slow down. This means they need criteria for starting facilitation activities and for either continuing or terminating support every time the implementation process enter in a new stage.

Starting a new project and passing on from one phase of implementation to the next, facilitators need to consider the progress and the quality of the implementation process achieved: The question is whether the partners in value chain development take over responsibility, actually cooperate and whether mutual learning takes place. If this is not the case it may be useful taking a step back or even breaking up if the fundamental conditions for success are no longer in place. Box 4.5.9: and Box 4.5.10: Tool provide criteria describing the conditions for entering into or continuing chain promotion, as well as the criteria for exiting the value chain development process.

#### ***Box 4.5.9: Tool – Conditions for entry into a chain promotion project***

##### **As an external facilitator: Start or move on...**

- When operators take own initiatives to upgrade the value chain
- When there is a clear demand of chain operators for a facilitation function
- If previous steps show positive results confirming the upgrading vision
- As soon as intermediate objectives for upgrading have been agreed upon

*Source: Own concept*

In the interest of impact and sustainability, these criteria have to be taken seriously. It would be a mistake to rush enterprises into upgrading activities. The energy for change has to come from within the value chain business community. The same consideration applies to ending external support.

Facilitators should withdraw completely if the conditions for success are no longer given. This will be the case if one of two opposing situations arises: Either the upgrading objectives have been reached — or the chain operators are no longer willing to pursue it. A digressive public support may constitute an excellent transition to exit the value chain promotion.

To get accepted in their role, external facilitators have to show own competence. Value chain projects have to be able to offer world class market intelligence; models of how other similar upgrading project have worked; knowledge on technologies; dedicated facilitator manpower and finally some money to kick start a process.

**Box 4.5.10: Tool – Criteria to stop facilitating or exiting a value chain development process**

**Stop facilitating...**

- When the objectives of a particular upgrading step have been achieved and new routines are established
- As long as there is no agreement on the objective of a next upgrading step

**Exit the facilitation role...**

- When the chain operators can assume full ownership and responsibility on their own without external facilitation, and further collaboration and process facilitation is institutionalized by chain supporters
- If the operators and supporters lose interest in the upgrading idea or would not agree on an objective

*Source: Own concept*

To build credibility, facilitators need time. In practice, the engagement with chain actors starts with a first generation of interventions that are not perfect but move the process forward. As the knowledge and contacts that the development project can offer increases, facilitators can become more ambitious with more far reaching interventions.

*Tasks in support processes and facilitation*

Support processes are the temporary activities of external development agencies or other lead actors to facilitate value chain development. The support process includes a number of tasks to engage partners and get a value chain development project going. In a series of interviews with managers of GIZ-supported value chain development programs in 2015, Tobias Urban identified the following seven activities, typically performed by facilitators in the value chain development practice of GIZ<sup>279</sup>:

- *Communication*: Communication is the key instrument of facilitators. To build relations and stay in touch, facilitators spend a lot of time on the phone and on meeting value chain development actors in person, networking and constantly informing and involving them as partners.
- *Creating awareness and understanding of value chain development*: The value chain approach is a new way of thinking. Therefore, facilitators need to make sure that stakeholders understand the approach. The ideas and methodology is shared at the beginning of multi-stakeholder workshops, and by ValueLinks training.
- *Organizing meetings of value chain stakeholders*: Implementation is agreed in meetings of different formats, varying from small groups of few people up to workshops with more than 70 participants. Facilitators invite the relevant stakeholders, organize the venue and provide materials.
- *Moderating agreements on objectives and strategy*: Facilitators help to jointly analyze the value chain, to agree on shared objectives and strategy and to decide about concrete upgrading actions. The facilitator enables the stakeholders to accomplish these tasks by providing tools, methods, technical know-how and market information, and by guiding participants through the process.

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<sup>279</sup> Urban, 2016

- *Mediating conflicts:* Conflict management refers to conflicts arising between different value chain operators and between public and private stakeholders. Stakeholder workshops provide an appropriate platform to meet in person and make divergent interests transparent. Facilitators moderate conflicting parties and help sorting out the differences in a structured way.<sup>280</sup>
- *Coordinating different development agencies and support services:* Very often, several development agencies work in the same value chain. Project coordinators meet with colleagues from other projects in donor rounds to avoid duplications and harmonize efforts.
- *Assist the implementation of actions:* Generally, the implementation of business solutions is the responsibility of the value chain actors. Facilitators assist enterprise putting solutions into practice by providing training and giving advice. Wherever development agencies cannot serve the needs themselves, facilitators connect with technical specialists and external trainers.

The support process is ongoing and follows the value chain development processes closely. Issues are taken up as they arise during the implementation process.

### *Principles of facilitating value chain development*

The chances of value chain development to succeed depend on the dynamism of the implementation process. Facilitators have an important role in creating favorable conditions, enabling value chain actors to pursue solutions using their own resources. Capacity development is the key word. This does not exclude that facilitators sometimes provide direct assistance to get the project going and convince partners by making results visible quickly.

Facilitation requires good communication skills, personal strength and human empathy for the weaknesses, strengths and aspirations of the people involved. Facilitators should assist less powerful value chain actors to raise their voice and to allow them to express their needs and interest frankly. Gender-specific formats may be needed as well, depending on the framework conditions in the country. Box 4.5.11 below presents important general principles to observe.

In order to keep the right balance between pushing the process with external inputs and cultivating the ownership and commitment of actors, facilitation needs to build up gradually, leading from quickly visible action to more complex tasks of chain development, from small meetings to big events and from compiling basic data at the outset to detailed studies where required. Facilitators should only become active to the extent that implementing partners need their interventions to push forward.

In their capacity development role, facilitators aim at enabling value chain actors to continue value chain development without external support. This means they should gradually transmit support processes and facilitation functions to others, building the respective capacity among the stakeholders<sup>281</sup> and delegating the organization and financing of meetings to the value chain actors. Facilitators have to switch to an external-internal facilitation role at some point if the value chain development project aims at setting up a value chain which can adapt to changing market conditions further on.

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<sup>280</sup> Conflict management is the subject of the separate section 4.5.3, below.

<sup>281</sup> This refers to the last success factor of Capacity WORKS, see chapter 4.6.

**Box 4.5.11: Important principles of promoting and facilitating value chain development****Facilitators of value chain development should...**

- Make the role of an external facilitator transparent and communicate clearly
- “Enhance an environment of respect and safety where all participants trust that they can speak freely and where individual boundaries are honored”
- “Respect the culture, rights and autonomy of all participating groups”
- Create awareness and understanding on the value chain concept
- Serve the clients and “practice stewardship of process and impartiality toward content”
- Place the focus on practical implementation and rapid and visible results and impacts
- Build on the own initiatives of chain leaders, private enterprises or business associations
- Create a balance between participation and results
- Continuously monitor the process and provide feedback
- Ensure continuity of the support processes

*Source: Own compilation with quotes from the code of ethics of the International Association of Facilitators (IAF)<sup>282</sup>*

**Pitfalls in facilitating the value chain development process**

The evaluation study of DEval<sup>283</sup> and the empirical study on the implementation of value chain development by Urban<sup>284</sup> provide insights into the problems and pitfalls of value chain development support processes reducing the efficiency and active participation of stakeholders. Following is a summary of the main problems reported by development practitioners:

- *Stakeholder representation:* Conducting multi-stakeholder workshops in large value chains requires a system of representation. Finding accepted representatives of smallholders can be a considerable challenge. If stakeholder groups are not properly organized, the representatives do not obtain a valid mandate and have an incentive to pursue their own agenda. This is an issue in setting up steering structures as well.
- *Managing expectations:* Launching new value chain development projects raises high expectations among value chain actors including the expectation to receive financial support. The risk of disappointment is high. Expectations of government partners often are unrealistic as well. Government tends to demand the expansion of geographical coverage and project activities even though this means that resources are spread more thinly.
- *Lacking continuity of the support process:* Value chain development implementation suffers if support processes are interrupted. This happens if facilitators leave their position or are replaced by other development agencies which have a different understanding of the process and follow other principles. Continuity is also jeopardized by changes in the composition of working groups.
- *Mistrust and conflict among operators:* Certain groups of operators mistrust each other. For example, local traders or middlemen may have a bad reputation, or companies may not have enough patience to sit with poor people. Facilitators have difficulties involving these groups even though the value chain analysis shows they have important functions. Controversies between buyers and sellers are a natural feature of business. Conflicts that have social roots can turn into problems and exacerbate in the value chain development process.

<sup>282</sup> See [www.iaf-world.org/site/professional/iaf-code-of-ethics](http://www.iaf-world.org/site/professional/iaf-code-of-ethics)

<sup>283</sup> DEval (2016)

<sup>284</sup> Urban (2016)

- *Conflicts between key partners in value chain development:* While general decisions are usually taken with broad participation, the implementation is left to small working groups. Group dynamics and difficult personal constellations slow down implementation.

Many of these problems can be avoided by professional project management and by facilitators applying the principles of conducting support processes adequately. It is in the hands of facilitators to communicate as clearly as possible, navigate the expectations, and assure the continuity of the process. However, the control of the support process is much weaker in the case of conflicts. The last two bullet points therefore deserve particular attention.

### 4.5.3 Conflict management

Value chain development is affected by a conflict-prone society and can have an effect on the evolution of conflicts at the same time. Three different types of interaction between a particular value chain and conflict can be identified:

- (1) Conflicts within a value chain
- (2) Impact of conflict environments on a value chain
- (3) Impact of value chain development on conflicts in the environment

Even though these three categories are not neatly separable, it is useful to consider them separately since each has different implications for mitigating harmful impacts and strengthening those that are positive through project design and implementation<sup>285</sup>. Especially for the two last-named types of conflict – value chain development in a conflict environment – a conflict-sensitive approach to the design and implementation of value chain interventions is of utmost importance<sup>286</sup>. The development of the value chain can both aggravate as well as mitigate a preexisting or potential conflict.

#### *Managing conflict within a value chain*

Value chain development cannot be expected to advance smoothly at all times. The interests of suppliers and buyers often are in conflict, as are the interests of private operators and public administration. Competition is the foundation of the market economy, and distributional conflicts have to be expected as operators will always seek to increase their incomes, possibly at the expense of others. Only in case these disputes are more severe than the normal disagreement among chain operators within a market economy, the situation is perceived as a conflict within a value chain.

These conflicts revolve around the control over inputs and required resources, the quality or frequency of supply or the distribution of the costs and risks of upgrading within the chain. While those conflicts in most cases do not turn violent, they can significantly increase tensions and the willingness of value chain actors to cooperate for the benefit of the chain and they “likely impact negatively the way partners and beneficiaries perceive and accept a project”.<sup>287</sup>

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<sup>285</sup> USAID 2008, p.19

<sup>286</sup> For a detailed description of the interaction between value chains and conflict settings see S. Hiller et al., 2014 and USAID, 2008

<sup>287</sup> USAID, 2008, p.20

Addressing open or concealed commercial conflicts *within* the value chain requires bringing the conflict parties together. This can be a challenge in the absence of a basic willingness to cooperate and a minimum level of trust. Facilitators can help mitigating or even resolving a conflict within a value chain by creating a negotiation situation. There are two main principles:

- *Making the conflict transparent:*

External facilitators should start as neutral mediators by elucidating the positions of the conflict parties. The task is to get to the core of the conflict bringing out the 'hard' differences in objectives and interests, and disentangle them from emotions. Reducing the conflict scenario to the underlying economic interests is a necessary condition for taking up negotiations subsequently. The idea is to transform a negative and hidden conflict into an open negotiation situation.

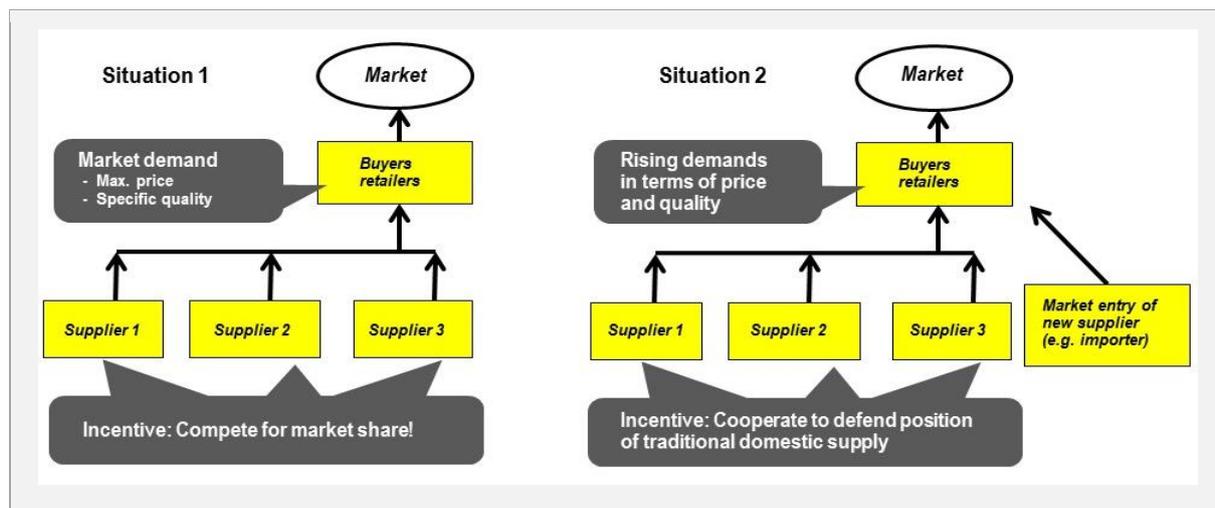
- *Engage parties in dialogue:*

The second step is to facilitate a dialogue between the parties and draw lessons for possible solutions. The conflict may not be settled for good but is handled sensibly if both sides concede benefits to the other seeking a compromise.

If the parties do not find common ground and the conflict cannot be reconciled, the idea of a collaborative value chain development project has to be abandoned. The only way out is to redefine the scope of the value chain development project. This means dropping the conflictive value chain channel and concentrating on other, parallel channels instead. From a public policy point of view, it makes sense to support those parts of an industry that follow a sustainable development path. For example, in cases where large investors get into conflicts over land and natural resources with the local population, the solution of last resort is to stop the investment. Conflicts around land grabbing, illegal fishing or logging or any illicit appropriation of common goods demand to take sides and explicitly protect poor producers from the risk of being displaced.

Ideally a conflict is overcome by identifying a win-win solution for the parties involved. The point is to change the conflict situation by generating new incentives. The following Box 4.5.12 and 4.5.13 visualize the principle. Each chart shows a competition situation on the left side, the initial situation 1, which is characterized by a conflict of interest. Once the chain structure changes moving to situation 2 the incentives for the parties change as well. This can be the foundation for resolving the initial conflict (though possibly replacing it by another one).

**Box 4.5.12: Concept – From incentives to compete to incentives to cooperate**

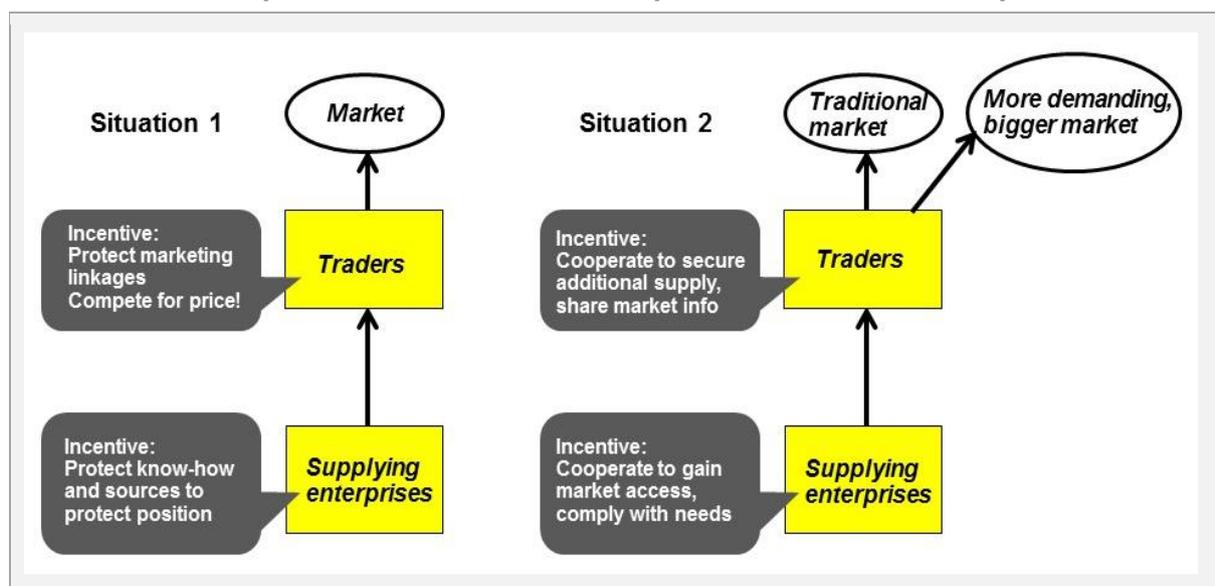


Source: Own concept

In Box 4.5.12, different suppliers are in conflict over the share of sales and the access to a buyer. In situation 2, on the right side, the value chain structure changes. If a third party, such as an external competitor enters the scene, the traditional suppliers have an incentive to cooperate defending their common position vis-à-vis the entrant.

The same principle applies to conflicts between suppliers and buyers along the value chain. The next chart in Box 4.5.13 presents a win-lose situation in which both traders and supply enterprises protect their position. In situation 2, new market opportunities appear, and the incentives turn to cooperation. Both sides are forced to collaborate to develop the new, bigger market.

**Box 4.5.13: Concept – From incentives to compete to incentives to cooperate**



Source: Own concept

A conflict situation can constitute an excellent opportunity for a lead actor and facilitator to promote change.

### ***Managing value chain development in a conflict environment***

Beyond handling conflicts of economic interests within a value chain, value chain development programs also have to consider the interaction between economic development and violent political conflicts. Two directions of influence exist: the impacts of conflict on value chain development and, vice versa, impacts of value chain development on a conflict setting.

#### *Reacting to the impact of external conflicts on a value chain*

The potential of economic development is hampered by an active conflict or post-conflict environment. The prospects for growth are generally worse under conditions of political turmoil, ethnic violence or outright civil war compared to stable countries<sup>288</sup>. Costalli et al. studied the economic consequences of civil war and found that the average annual loss of GDP per capita is 17.5 percent<sup>289</sup>.

Armed conflicts appear more frequently in recent years. They go along with the destruction of critical infrastructure, power cuts, worsening of hygienic conditions, less access to supplies and services, and increasing security risks for enterprises. Consequently, value chain participants are migrating and fewer investments are taken in the areas concerned<sup>290</sup>.

Approaches to value chain development have to change accordingly. Adapting value chain development strategies to the conditions of conflict environment can utilize the following options:

- Emphasis on short value chains and simple products: The larger the number of actors in the value chain, the more vulnerable it becomes. Short, value chains run a lower risk of disruption. Local supplies gain in importance.
- Solutions making up for loss of infrastructure, energy and water supplies: Locally available resources gain in importance, such as biomass residues that can be used to produce electricity or fodder. The use of technologies for water management and local energy production becomes profitable.
- Focus on value chains satisfying basic needs: Economic activities to satisfy the need for food and other basic items will always continue, even under adverse conditions.
- Value chains of unusual products: Crises conditions create demand for unusual products and services that help consumers cope, such as shelter, blankets, hygienic articles, or public kitchens for refugees and conflict victims.

A situation of crisis generates new business opportunities as foreign agencies become influential market actors. Where domestic food chains no longer function, international humanitarian agencies and food aid constitute a relevant segment of the domestic food market. To serve food distribution via humanitarian channels, aid agencies have to buy locally produced staple food in large quantities<sup>291</sup>. The World Food Program runs the 'Purchase for Progress' program

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<sup>288</sup> GTZ/FIAS, 2008, p.4

<sup>289</sup> Costalli et al., 2014,

<sup>290</sup> ODI and BMZ, June 2010, p.8

<sup>291</sup> FAC 2012, p.3

(P4P) to amass the needed quantities, effectively creating a new market for farmers and domestic traders. Currently, WFP is buying locally produced food in 20 countries<sup>292</sup>. Other products, such as building materials, are also purchased locally.

The decisive point is that the market interventions of aid agencies have to make sense from the perspective of value chain development: Prices and terms of contract should not deviate from normal buying practice. To the extent possible, trade functions should be delegated to private operators. Since food aid agencies apply international food quality standards, domestic suppliers have to acquire additional capacity. Another instrument for market development is the use of vouchers that are disseminated to clients of aid agencies to buy commodities on their own.

#### *Value chain development in response to the conflict environment*

The other, strategically more important point is the influence of economic development on the evolution and the intensity of an armed conflict. The root causes and escalating factors of conflicts often have an economic dimension and economic resources play an important role for the duration and intensity of a conflict<sup>293</sup>. This impact of value chain or economic development on conflict can be both positive as well as negative.

When carefully designed and implemented, interventions can be an asset for the peaceful management of conflicts. By addressing the economic causes and other conflict drivers, value chain development interventions can contribute to ending conflict and generating a stable economic environment for recovery. However, if they feed existing drivers of conflict they may as well exacerbate and prolong conflicts or even give rise to new ones. This can be the case if economic development reduces the material basis of economic sustenance and exacerbates existing socio-economic tensions. An important approach is conflict-sensitive value chain development.

#### ***Conflict-sensitive value chain development***

Our starting point is the observation that economic activity has to continue in any conflict setting. As long as business activities are not used to finance the conflict or contribute to the tensions, a value chain development program should never be stopped in a conflict situation. A discontinuation does not only put the achievements at risk, it lowers the prospects for a quick post-conflict recovery and generally reduces people's confidence. After all, a crisis also holds opportunities for restructuring economic relations.

In a context of conflicts and economic fragility, the value chain development planning and implementation process has to be conducted with great foresight and awareness of the continuing interaction between the value chain strategy and the evolution or continuation of the conflict. A value chain intervention needs to be conflict-sensitive and accomplish its objectives in a way that also maximizes peaceful outcomes and mitigates identified conflict issues or risks<sup>294</sup>.

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<sup>292</sup> WFP, 2009, p.3

<sup>293</sup> GIZ, 2009, p.13

<sup>294</sup> USAID, 2008, p.21

A conflict-sensitive approach to value chain development applies to all phases of the value chain development project cycle. The aspects to consider are summarized in Box 4.5.14.

**Box 4.5.14: Concept – Aspects of conflict management along the value chain development project cycle**

**Selection of value chains for promotion**

Ensure that selected value chains do not feed preexisting conflict dynamics and possibly have mitigating effects on conflict impacts or causes.

**Value chain analysis**

Complement value chain analyses by conflict analysis (see tools for PCA), thus identifying influence of the conflict on the value chain and vice versa.

**Strategy formation**

Consider five approaches to modify value chain development strategies in conflict situations, i.e. conflict-sensitive and relevant approaches.

**Value chain development project management**

Design and readjust project implementation according to conflict-sensitive principles.

**Monitoring and evaluation**

Monitor to mitigate risk and support early warning, thus enabling appropriate and timely responses and value chain actors to work in ways that promote peaceful outcomes.

*Source: Own compilation*

A basic principle of value chain development in a conflict environment is effective communication: “The key to conflict-sensitive upgrading of a value chain is effective dialogue between the stakeholders”<sup>295</sup>. The principles and tools of a conflict-sensitive value chain development methodology can be found in more detail in DCED (2010), GTZ (2009) and USAID (2008). The following paragraphs provide orientation on each one.

*Considerations for value chain selection*

In module 1 the key factors for selecting a value chain for promotion have been discussed. These apply here as well, but conflict settings require *additional* selection criteria to ensure that value chain interventions do not feed pre-existing conflict dynamics, for example by targeting sectors that support a war economy or are controlled along conflict fault lines<sup>296</sup>.

At the same time, these additional criteria can help to detect value chains which can possibly have mitigating effects on conflict impacts and causes, thus contributing to peace and stability. Some key question and principles with which to conduct the initial screening and select a potential value chain for upgrading are provided by DCED, GTZ and USAID<sup>297</sup>.

The output of this screening is a brief document flagging the potential positive and negative impacts the team identifies for feeding into further analysis, strategy discussions and decision-making<sup>298</sup>. In conflict situations, the number of international donors goes up. Therefore it is

<sup>295</sup> GTZ, 2009, p.10

<sup>296</sup> USAID, 2008, p.6

<sup>297</sup> DCED, 2010; GTZ, 2009 and USAID, 2008

<sup>298</sup> USAID, 2008, p.6

recommended to enhance donor coordination to avoid overlapping. In fragile situations it is even more important to spend the money efficiently.

### *Conflict analysis of the value chain*

Value chain analysis should be complemented by a conflict analysis. The analysis is at the macro level. USAID suggests to have a close look at the following aspects in order to better understand the wider context of a conflict:<sup>299</sup>

- *Conflict profile*: The history of the conflict, relevant demographic, geostatic and geographic factors, etc.
- *Conflict dynamics*: Tracing changes in a conflict trajectory over time and looking at conflict levels and types
- *Parties involved*: Differentiating parties directly involved in the conflict, potential spoilers, parties to peace, third parties like mediators, political actors, civil society leaders, business, NGOs, religious institutions like churches or mosques, etc.
- *Causes and drivers of conflict*: Political, social, economic and other sources

Such macro level factors are used for an initial conflict analysis. A more narrow and detailed analysis is required in a second step taking into account conflict-related and local conditions of the selected value chain.

A range of conflict analysis tools exist that differ according to the purpose of the analysis. A commonly applied toolbox for conflict analysis is the peace and conflict assessment. With its focus on the economic dimension of a conflict, the assessment can help to decide which approach is most suitable in the conflict situation investigated. It consists of four individual elements, each of them containing various tools and instruments. For conflict-sensitive planning of a project, it is sufficient to conduct a reduced peace and conflict assessment with just three elements, omitting the peace building relevance assessment. For further information on peace and conflict assessment and its application see GTZ 2009<sup>300</sup>.

### *Strategy formation*

According to the GTZ guidebook on Sustainable Economic Development in Conflict-Affected Environments, planners have several possibilities for sustainable economic development and value chain interventions under conditions of conflict. The choice is based on the results of a peace and conflict assessment:

- (1) Contribute indirectly to peace building through conflict-sensitive design and implementation, i.e. 'do no harm'
- (2) Address root causes or escalating factors of a conflict
- (3) Try to decrease the economic resources which feed a conflict
- (4) Work on the symptoms or impacts of conflict on the economy
- (5) Support economic 'connectors' – i.e. those people, institutions and attitudes which work for peace building and reconciliation.<sup>301</sup>

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<sup>299</sup> USAID, 2008, p.3

<sup>300</sup> GTZ, 2009

<sup>301</sup> GTZ, 2009, p.33

Value chain interventions applying option 1 above are considered to be conflict-sensitive and adhere to the do-no-harm principles. Options 2 to 5 describe interventions which are conflict-relevant, i.e. they directly combine economic development with peace building objectives.

### *Principles of conflict-sensitive project management*

Whereas conflict-sensitive value chain selection, conflict analysis and strategy formation are subject to the planning process of a value chain development intervention, there are also certain principles of conflict-sensitive management which should be adhered to during the implementation of activities. These include:

- *Do-no-harm*: Value chain development project managers and planners must be aware of any unintended harmful impacts and need to adjust their intervention so as to minimize the risks and maximize the potential positive impact.
- *Safety first*: This principle puts the safety of individuals first. This does not mean that development cooperation has no scope for action in challenging environments, but rather that a proactive approach to security management is needed. Risk management can help to analyze and assess potential security hazards and gives recommendations on how to manage these risks.
- *Be well connected with risk management offices*: Close ties to these offices either within the donor or other organizations which are specialized in observing and reporting rapid changes of the conflict situation are essential to put safety first.
- *Be flexible*: The value chain development implementation process is iterative. A flexible approach to implementation is even more relevant in volatile conflict-affected environments, which are characterized by quick changes.
- *Choose the right partners*: It is crucial that ongoing projects regularly reassess their partners and target groups. If the initial selection leads to tensions or new conflicts, changes should be considered. Do-no-harm and peace and conflict assessment based monitoring mechanisms help to detect unintended negative results and to choose alternative courses of action.
- *Pay special attention to personnel issues*: Local staff selection should follow do-no-harm guidelines and project staff should ideally be an even mix of men and women, young and old, members of the elite and of excluded groups. At the same time, however, recruitment should be non-discriminatory, based on technical eligibility and qualification, not on ethnicity, origin or other demographic criteria. Do-no-harm and peace and conflict assessment can help to manage these challenges.
- *Cooperate, coordinate and communicate with all stakeholders*: Whenever possible, donors and value chain development actors should speak with one voice or work in joint initiatives. Transparent external communication and the facilitation of dialogue between opposing sides are also crucial for projects working in conflict-affected environments.
- *Coordinate with other donors working in the same field*: In the tension of a conflict target groups are highly sensitive to badly coordinated interventions by international donors. Good coordination is necessary to build trust.<sup>302</sup>

### *Monitoring and evaluation*

As conflicts as well as their underlying causes, actors and dynamics change quickly over time, regular updates are required. Monitoring is necessary for the evaluation of risks and as a mechanism of early warning, enabling timely and appropriate responses. It should “help to

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<sup>302</sup> For further elaboration see GTZ, 2009

protect staff, partners and value chain actors work in ways that promote peaceful outcomes”<sup>303</sup>. In this regard a frequent monitoring addressing a few key questions is an option. Having in mind the challenges of working within a conflict situation, it is essential that the monitoring tool is easy to handle, concise, and focused.

#### 4.5.4 Gender-sensitive value chain development

The attention to gender questions is the most important cross-cutting task in value chain development. ValueLinks follows a gender mainstreaming approach<sup>304</sup>. Modules 2 and 3 both include specific sections on the methods for addressing gender issues in value chain analysis and strategy formation.

Whether or not a value chain development program addresses the gender issues adequately is largely a question of *how* it is implemented. To make sure that sufficient attention is paid to the needs of women, they have to be able to actively take part in program design and implementation. Gender-sensitive implementation concerns the value chain development processes, cooperation and steering. It also needs a proper place in program monitoring and evaluation<sup>305</sup>.

##### *Gender-sensitive cooperation and steering structures*

The first point that comes to mind is an adequate representation of gender groups in value chain steering committees and platforms. It is not always necessary to achieve equal numbers of 50% men and 50% women. The adequate share of women in steering structures depends on type of value chain and on the place of women within it<sup>306</sup>. After all, both gender groups have different interests and incentives to take part.

However, even where business processes are exclusively in the hands of men, female interests may still be affected without women being aware of it. Women are often restricted to ‘invisible’ yet important roles in value chains assuring reproductive tasks in households and providing family labor<sup>307</sup>. Facilitators have to actively implicate women so that they can bring in their perspective and interests effectively. By default, value chain development programs are implemented by mixed groups including men *and* women, especially for value chain analysis and decision making. Solving issues needs the involvement of both sexes. However, it can make sense to work with exclusively female focus groups to address and support their particular interests. Female leaders can serve as role models and encourage others.

Many public value chain development programs use indicators measuring the active involvement of women. However, the mobilization of women often is a challenge: While there is no problem getting the participation of women entrepreneurs in female-dominated value chains, it is difficult to give weaker and less organized groups a voice. To assure their participation, the formats for cooperation have to accommodate the conditions and constraints of participants, especially of women.

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<sup>303</sup> For defining conflict-sensitive indicators see USAID, 2008, p.23

<sup>304</sup> See module 3

<sup>305</sup> On this point, see module 11 in forthcoming volume 2

<sup>306</sup> See gender mapping, module 2

<sup>307</sup> See module 2

### *Gender-sensitive facilitation of value chain development processes*

Another dimension of value chain development implementation is the gender-sensitive facilitation of processes. It is not enough to include women in the value chain development processes. They also have to be given a voice. Beyond assuring the presence of the right voices, facilitators also have to ensure that 'those voices can speak', that they are heard and that they are listened to<sup>308</sup>. Box 4.5.15 summarizes important tools for facilitators.

In large value chain development programs, the gender dimension should be anchored in the organization itself. The gender mainstreaming concept implies that gender is a crosscutting subject and should not be delegated to a specialized unit. What value chain development programs should do is connecting the treatment of gender issues along the project cycle in one unifying concept. The existing guidelines on value chains and gender cover the entire sequence from value chain analysis to evaluation. To assure consistency, a sufficiently large value chain development program would appoint a working group composed of project staff and partners and assign a responsible desk officer as leader. This group develops, accompanies and monitors a specific gender strategy for the program specifying the principles and tools to be used. The gender working group has the task to systematically sensitize and engage stakeholders and train program management, staff and partners acting as a hub of gender-related activities. By compiling the gender-related indicators and collecting gender-disaggregated data, it prepares reports and develops lessons and recommendations. Ideally, that information is broken down to the particular value chains.

#### **Box 4.5.15: Tool – Gender-sensitive value chain development support processes**

##### **Process design**

- The value chain development process has to enable equal participation of men and women
- Process steps have to be planned carefully so as to "ensure that the precious time, resources and energy (of participants) are clearly focused on those issues and areas where participation is most likely to lead to benefits"<sup>309</sup>

##### **Organizing events**

- Participants who cannot be reached indirectly or do not feel comfortable have to be invited explicitly delivering the invitation personally or in writing
- The timing of events has to respect the social obligations of people, such as child care
- Practical solutions to organize the venue and the journey and to finance events have to take account of gender-specific constraints, such as women often being less flexible than men

##### **Facilitation**

- Value chain development facilitators assist disadvantaged women to speak up in public, make sure they are listened to, and promote mutual understanding and respect
- Value chain development facilitators actively draw the attention to gender issues that have been overlooked
- The communication of gender issues has to bear in mind the cultural context using of a non-discriminatory, tactful language
- The choice of facilitation techniques is adapted to the literacy level of participants

*Sources: Materials from GLZ Nicaragua and Mayoux/Mackie, 2007*

<sup>308</sup> Mayoux/Mackie, 2007, p.39

<sup>309</sup> Mayoux/Mackie, 2007, p.33

## 4.6. Capacity development and learning

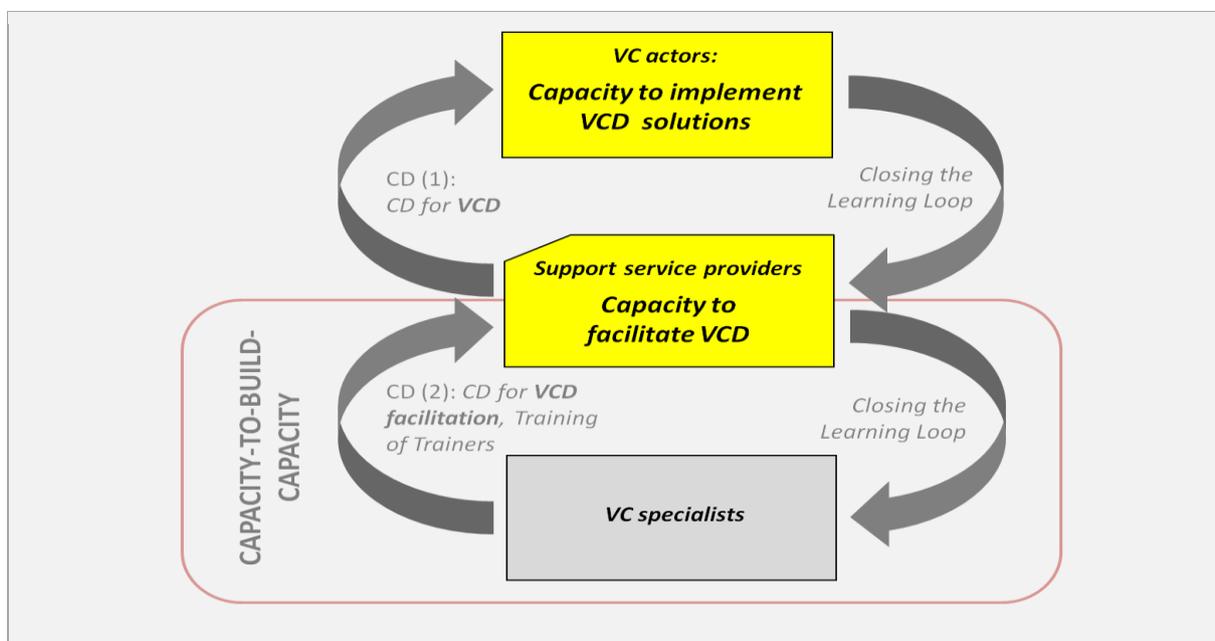
Value chain development is an ongoing innovation process. Many factors have influence on the evolution of the industry but cannot be anticipated. Market prices, demand trends, technical progress and the activities of competitors may change at short notice. This calls for a continuous learning process and a flexible treatment of strategic options as risks emerge and new opportunities unfold.

The success of value chain development rests in the competence and capacities of value chain actors to confront the ongoing dynamic change and to extend and apply their knowledge. Capacity development and learning are thus of utmost importance for achieving a sustainable development impact. Capacity development is the subject of the success factor 'learning and innovation' in the Capacity WORKS approach of GIZ<sup>310</sup>.

For clarification, we need to distinguish two perspectives on value chain capacity:

- The **capacity of a value chain to perform**, i.e. the technical and entrepreneurial competence of operators and the chain structure of business models, linkages and governance rules. It is subject to value chain development programs enabling chain actors to implement value chain solutions improving the value chain.
- The **capacity to facilitate and conduct value chain development**. This capacity usually rests with value chain development facilitators and support service providers, and the public agencies and development programs which have to provide adequate facilitation and support services to value chain operators.

### Box 4.6.1: Concept – Two types of capacity development relevant to value chain development



Source: Own compilation

<sup>310</sup> GIZ, 2015

Box 4.6.1 above illustrates both types of capacity and shows how they are connected. Starting from below, value chain specialists, such as experts, mentors and backstoppers train and advise value chain development facilitators and support service providers at the middle level. In turn, support service providers and value chain development facilitators work with value chain actors to promote value chain development. The value chain actors at the top level are thus capacitated to implement solutions improving the chain. The idea is to enable enterprises and other value chain actors to sustain upgrading activities beyond the duration of value chain development programs once external facilitators and supporters withdraw from their role.

Value chain development at the top level of the figure *is* capacity development. Ideally, the experience of having gone through a process of value chain development once is the foundation for the continuation and adaptation of similar initiatives further on. It is the enterprises and value chain actors who need to develop capacities in the first place. When designing a value chain development program, the capacity development aspect should always be included.

This chapter deals with the middle level in Box 4.6.1, the capacity to build capacity. This applies to value chain development facilitators and support service providers, two terms that are used interchangeably in the following.

The capacity development concept distinguishes three aspects of capacity – individual, organizational as well as institutional/societal capacity. Applied to capacity to *promote* value chain development, these can be interpreted as follows:

- *Individual capacity* is the ability and performance of value chain development facilitators and support service providers, advisors and trainers to promote value chain development.
- *Organizational capacity* comprises the competences of training institutes, networks of value chain experts and consultants, private associations and government agencies to set up and conduct value chain development programs.
- *Institutional/societal capacity* means a policy framework that delivers economic research and higher education enabling value chain development.

In the following, we focus on the capacity development strengthening individual and organizational capacities. The institutional dimension is only touched briefly. It should be noted that there are no blueprints for capacity development.

Any capacity development approach has to be adapted to local conditions and take into account the needs of value chain actors and facilitators. The starting point is the gaps limiting value chain development. Value chain analyses are not only required for the design and implementation of value chain development as such, but also provide information on the gaps in service provision and the capacity development needs of service providers and facilitators<sup>311</sup>.

To determine the specific capacity development requirements of facilitators and value chain development programs, it is advisable to conduct a capacity needs assessment addressing the weak points at individual and organizational level. The information gained helps to formulate a capacity development response in view of the mandates, functions, responsibilities and tasks of value chain development promoters. However, time and resource limitations should be kept in mind when deciding for and designing such an assessment.

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<sup>311</sup> Cf. Will et al., 2008

Useful information on capacity assessments can be found, amongst others, in the following publications:

- UNDP (2008), “Capacity Assessment Methodology – User’s Guide“, New York: UNDP.
- Stephen, p.and Triraganon, R. (2009), “Strengthening Voices for Better Choices – A capacity needs assessment process“, Gland (Switzerland): ICUN.
- Babu et al. (2014), “Capacity assessment for achieving the Agricultural Transformation Agenda in Nigeria“, IFPRI Working paper, No. 26.
- “The Learning Network on Capacity Development” (UNDP Capacity Development Group, 2016)<sup>312</sup>

#### 4.6.1 Individual capacity to promote value chains

The required individual capacity of value chain development facilitators is their ability to initiate and facilitate value chain change. Facilitators need to understand the system in which they engage and have skills to analyze the challenges and opportunities<sup>313</sup>. They have to respond to expectations of others and come to terms with their own role.

Individuals learn in two ways:

- First, value chain development facilitators learn by going through the value chain development process themselves implementing value chain development activities; this is learning-by-doing or on-the-job learning.
- The second source is training on value chain development, its processes and best practices. Capacity may also refer to the specific value chain in question.

#### *Capacity development of value chain development facilitators*

Value chain development is characterized by considerable uncertainty given the dynamics of consumer markets. As the business unfolds, new challenges and opportunities emerge and value chain actors need to become conversant with new technology. In this quickly changing environment, support service providers need to have the competence to efficiently support value chain operators. This means offering client-oriented services that keep markets in view.

Value chain development facilitators need to be trained both in methodology and content: First and foremost, they must be conversant with general processes of value chain development, especially value chain analysis and potential value chain solutions. Support service providers should be able to efficiently conduct value chain development and take an active role facilitating groups, managing conflicts and monitoring the ongoing value chain development. Will et al. also point out certain behavioral characteristics. Facilitators should be reliable and account for the quality of the development services provided, be client-oriented and follow up on upgrading activities<sup>314</sup>. And, not least, they need to be capable of passing on their knowledge and conduct trainings for entrepreneurs and value chain actors.

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<sup>312</sup> See <http://www.lencd.org/learning/how-assess-existing-capacity-define-capacity-needs>

<sup>313</sup> ILRI, 2015b

<sup>314</sup> Will et al., 2008

The key instrument to provide facilitators with these competences is training – in fact a training of trainers to the extent that facilitators are trainers themselves. Training on value chain development skills should cover the following essential subjects:

- *Basic value chain mapping*: This is a key competence
- *Interpretation of value chain analyses*: Facilitators do not necessarily conduct specialized value chain studies on their own but they should be able to commission studies and interpret the results
- *Value chain development strategy*: This includes impact hypotheses – the understanding of how change can be brought about
- *Value chain solutions*: Technical know-how on business models, contracting, product quality and other upgrading solutions
- *Implementation of value chain development programs*: From decision-making and planning to realizing interventions
- *Communication and training skills and advisory competence*: Includes the preparation and implementation of trainings

Value chain training is organized by value chain development experts with specialist know-how – trainers, mentors and backstoppers<sup>315</sup>. As a matter of course, facilitators need to exercise the skills obtained in training courses in practical development and advisory work. Transferring knowledge without practical application is not very effective.

Apart from the methodological know-how, facilitators also have to have knowledge about the particular value chains they are dealing with. This is another field of knowledge sharing.

### ***The role of value chain specialists***

The lowest level of the figure in Box 4.6.1 depicts value chain specialists, which is experts, mentors and backstoppers who take the responsibility for supporting the development of the required capacities of value chain development facilitators and providing training and training of trainers. Their services are limited in time. Ideally, value chain specialists provide their services flexibly and keep out of the value chain development implementation process.

For one, their tasks include the direct support of value chain development facilitators:

- Analysis of the training and service needs of both value chain actors and support service providers
- Identification of facilitators and support service providers to be trained, as trainers and advisors
- Providing training according to the needs identified
- Backstopping, advising and supporting value chain development facilitators

Will et al. recommend to consciously identify the support service providers who should take part in capacity development and training activities by using pre-established selection criteria<sup>316</sup>. The authors provide useful tables to be filled out in any specific case, thus establishing an overview of support service providers relevant for value chain development<sup>317</sup>. Value chain specialists also have an important role in knowledge management. They have to continuously

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<sup>315</sup> For the role of value chain specialists see below

<sup>316</sup> Will et al., 2008, p.15

<sup>317</sup> Will et al., 2008, Annex B1-B3

acquire new knowledge on capacity development methodologies and techniques. This includes:

- Contributions to the development of the value chain development approach and of tools and instruments
- Creating training contents and materials to be utilized by facilitators
- Organization of meetings for exchange and knowledge sharing

The curricula and training materials developed should address the capacity needs of the support service providers and value chain actors involved. Depending on these needs, the material comprises manuals for trainers, workbooks for trainees and toolkits, but also posters, videos, radio transmissions or theatre plays. Will et al. suggest the participatory development of the material for capacity development<sup>318</sup>. See Box 4.6.2.

**Box 4.6.2: Tool – Steps for developing training materials and contents**

- (1) Understanding value chain capacity development needs: Which capacity development activities contribute to value chain development?
- (2) Trainings needs assessment: Which gaps/constraints do value chain actors identify?
- (3) Setting objectives: What to value chain stakeholder want to achieve?
- (4) Collecting information: Which stakeholder can contribute which information?
- (5) Processing and consolidating information: Which information is relevant?
- (6) Developing contents: Which information shall be communicated?
- (7) Sharing drafts with service providers, clients: Which suggestion should be included?
- (8) Pre-testing: Which feedback comes from participants and service providers?
- (9) Incorporating corrections: Which elements are missing to present useful material?
- (10) Developing handouts: Which parts can be extracted as handouts?

*Source: Will et al., 2008*

Box 4.6.3 below shows how the objectives and contents of trainings for support service providers could look like, based on the example of the capacity development strategy implemented by The Livestock and Irrigation Value Chains for Ethiopian Smallholders (LIVES) project in Ethiopia<sup>319</sup>. The training aims at developing capacities among the extension agents and subject matter specialists, focusing on public sector staff. The LIVES project developed a capacity development toolkit, which provides useful information on planning such training events, their delivery, documentation, monitoring and evaluation<sup>320</sup>. The combination of practice and theory characteristic for the 'training of trainers'.

Box 4.6.4 is an example of applying the capacity development principles in practice.

<sup>318</sup> Will et al. 2008; see Box 4.6.2

<sup>319</sup> The project is funded by the Department of Foreign Affairs, Trade and Development (DFATD) of Canada and led by the International Livestock Research Institute (ILRI) and the International Water Management Institute (IWMI). For more information see also: <http://lives-ethiopia.org/>.

<sup>320</sup> See ILRI, 2015

### Box 4.6.3: Case – Capacity development for service providers in Ethiopia

#### Capacity development for service providers in the ‘Livestock and Irrigation Value Chains for Ethiopian Smallholders’ (LIVES) project

##### Aims

- Support of project implementation
- Scaling out of project results and lessons
- Sustainability of achievements and successes

##### Contents and capacities supported

- Market-oriented extension approach
- Value chain development
- Results-based monitoring and evaluation
- Business skills development
- Gender mainstreaming
- Knowledge management
- Basic agricultural marketing
- Facilitating linkages and collective action
- Training methods

Source: ILRI, 2015

### Box 4.6.4: Case – Capacity development within the 2SCALE project

#### Project objective

The 2SCALE program aims at improving rural livelihoods and food security in 12 African countries. The goal is to reach 1.15 million farming families and 4,000 other small and medium-scale enterprises and double their productivity. The project intends to develop viable agribusiness clusters and value chains. The large scale makes it necessary to include capacity development.

#### Capacity development approach

The capacity development program has a three-tier concept. Agribusiness trainers provide back-up support for agribusiness coaches. These are staff of business support services who work directly with farmers and entrepreneurs, the so-called ‘cluster actors’. The approach follows these steps:

- (1) Project leaders put a team of four to five agribusiness trainers together
- (2) Introducing principles and methods of capacity development to the trainers
- (3) Trainers develop training/coaching plans to support agribusiness coaches
- (4) The implementation of these plans has three cycles:

- First workshop to introduce tools, ideas and methods; and to develop ToR for field assignments of business coaches
- Individual coaching/back-up support to the business coaches in the field, often working with the cluster actors they support
- Second workshop to review experiences and draw lessons for the next learning cycle. In practice, the review workshop is combined with the introductory workshop of the following learning cycle



Source: adapted from the ICRA Website, 2016<sup>321</sup>

<sup>321</sup> See <http://www.icra-edu.org/projects/5/2scale:+towards+strategic+clusters+in+agribusiness+through+learning+in+entrepreneurship>

ILRI points out the importance of accompanying trainees beyond training courses. It is recommended to accompany support service providers in their own training and service provision to support the actual application in practice: “The practical workplace application of acquired skills and knowledge requires coaching and mentoring support, which facilitates training transfer by creating opportunities for practice and feedback. The effectiveness of training is enhanced by this coaching and mentoring support”<sup>322</sup>.

After the training, follow-up workshops should be organized on a regular basis enabling the exchange of experiences. Review and follow-up workshops usually include feed-back from facilitators and the value chain actors involved as well as findings from monitoring. This serves the purpose of detecting the most successful approaches and best practices, so as to adapt future capacity development activities<sup>323</sup>. See an example in Box 4.6.3 above.

## 4.6.2 The organizational capacity for value chain development

Individual capacity development does not take place in a vacuum, independently of relationships, links and context. Activities for individual capacity building can only develop their full potential if the organizational and institutional levels of capacity development are addressed at the same time<sup>324</sup>. As important as the development of individual capacities for value chain development is, the performance of individuals depends on the organizations and networks within which these individuals act.

Capacity development can be considered sustainable when individual learning continues after the completion of an externally funded project and operators and other value chain actors find solutions to the subsequent challenges independently. This means that the support service organizations in the value chain should have the capacity to revisit past experience and are able to apply the knowledge in a new context.

The objective of organizational capacity development is to institutionalize value chain development expertise in industry associations, in sector-specific technology or training institutes, in the competent government departments of the public administration and in networks of value chain experts and consultants.

Organizational capacity building means building the structures for maintaining and further developing value chain know-how, without being bound to a specific case or value chain. Two organizational formats count for value chain development. One is exchange networks, the other formal organizations.

### *Networks for knowledge building and exchange*

Knowledge sharing plays an important role in capacity development and learning. Networks of value chain facilitators and value chain specialists contribute to sustainable capacity development as they provide a platform for the exchange of knowledge and experience – presenting the lessons learned in a way that enables other participants to transfer them to their own work.

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<sup>322</sup> ILRI 2015b, p.1

<sup>323</sup> See an example in Box 4.6.3

<sup>324</sup> GIZ, 2015

This is best accomplished through peer-to-peer exchange. People learn most easily in communities of practice.

Joint learning is important in view of the accelerating pace of market change and technical progress. A useful source on network building is Fukuda-Parr and Hill. As they point out, joint knowledge creation and sharing can replace the transfer of know-how through the “expert-counterpart” model of technical cooperation: “Networks among development practitioners and access to global knowledge systems can substitute for conventional technical cooperation, by which knowledge was thought to be embodied in an individual expatriate to be imparted to other individuals”<sup>325</sup>.

In the Capacity WORKS document GIZ elaborates on different tools for joint learning, for example Communities of Practice or peer-to-peer learning<sup>326</sup>. It suggests setting up and structuring networks of multipliers and trainers, with the purpose of exchanging information on methodological, didactic and sector-specific issues.

The use of ICT and web-based technologies is beneficial to increase information and knowledge flow among the institutions and stakeholders. See Box 4.6.5 for an example of an online network efficiently established with the goal to facilitate mutual learning processes and knowledge sharing in the context of the Comprehensive Africa Agriculture Development Program (CAADP).

#### **Box 4.6.5: Case – Regional Strategic Analysis and Knowledge Support System**

Established in 2006 under the Comprehensive Africa Agriculture Development Programme (CAADP), the Regional Strategic Analysis and Knowledge Support System (ReSAKSS) provides data and knowledge. Its goal is to promote evidence-based decision-making, improve awareness of the role of agriculture for development in Africa, fill knowledge gaps, promote dialogue, and facilitate mutual learning processes and the benchmarking and review processes associated with the CAADP agenda. It encourages knowledge sharing and access among a network of partners in Africa (development institutions, regional bodies, researchers, practitioners, policy makers, farmer groups).

ReSAKSS is organized as a network of three nodes among the major regional economic communities in Africa. The ReSAKSS nodes conduct activities organized around three components:

- (1) Strategic analysis to fill knowledge gaps and assess policy and investment options for accelerating agricultural growth and reducing poverty and hunger.
- (2) Knowledge management and communications to develop and build upon existing data, analytical tools, and knowledge; and facilitating timely access of the knowledge.
- (3) Capacity strengthening to generate and disseminate knowledge products to support CAADP implementation.

Source: <http://www.resakss.org/>

The ValueLinks methodology itself has given rise to the formation of the International ValueLinks Association e.V., a professional network and community of practice that brings together value chain development facilitators and specialists from many countries ([www.ValueLinks.org](http://www.ValueLinks.org)).

<sup>325</sup> Fukuda-Parr and Hill, 2002, p.194

<sup>326</sup> GIZ, 2015, p.255

### **Training institutes and consulting firms**

The knowledge on value chain development and its processes needs to be firmly established in national knowledge organizations, such as training institutes and universities.

#### **Box 4.6.6: Case – Promotion of Private Sector Development in Agriculture, Kenya**

PSDA was a bilateral program between the governments of Kenya and Germany. It supported the development of the private sector in agriculture applying a value chain approach. To anchor value chain expertise in the country, the project conducted the following activities:

- Improving provision of services in value chains, such as for training, extension advice, business development and business linkages.
- Improving organizational development services for private sector organizations, such as for farmer groups, agricultural cooperatives and associations.

The project achieved significant organizational and economic impact on key private service providers, especially on the Agri and Co-operative Training and Consultancy Center, ATC. ATC has a strategic plan and annual training plan that includes value chain development, uses marketing tools and promotes branding diversifying the client base. As a result, training centers were not only transformed into viable businesses including cost-recovering course fees and an increasing visibility, they also became specialized in value chain training. See an example for a course provided by ATC on the ATC-Website.<sup>327</sup>

In addition to the strengthening of service providers, the project succeeded introducing the value chain approach into the curricula of five Kenyan universities and colleges.

*Source: GIZ Kenya and the ATC website [www.atc.co.ke/](http://www.atc.co.ke/)*

The first option is anchoring value chain trainings in the portfolio of training institutes. See Box 4.6.6 for a successful case in Kenya. The Promotion of Private Sector Development in Agriculture (PSDA) program implemented by GIZ in Kenya helped institutionalizing value chain expertise within the system of Kenyan education and training institutes, and especially in the Agri and Co-operative Training and Consultancy Center (ATC) that has been offering courses since then. The partnership started when the program ordered training and consultancy services. Contents and tools were handed over so that the service provider could also provide them to others. The cooperation included strengthening the organizational capacity of the institute as a private service provider.

Similarly, consulting firms and other providers of business development services should create and maintain capacity that can be mobilized quickly and is applicable to a broad range of value chains.

### **Institutional capacity for value chain development**

The capacity development concept comprises a third dimension beyond the individual and organizational levels – the institutional framework. In broad terms, the institutional framework for *capacity development* is the same as for value chain development in general: It includes favorable regulatory conditions for economic *development*, as well as public and private value chain governance supporting sustainable development. These aspects of value chain development have been mentioned at several places in this manual.

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<sup>327</sup> See [www.atc.co.ke/index.php?option=com\\_content&view=article&id=116:value-chain-development&catid=34:programmes&Itemid=2](http://www.atc.co.ke/index.php?option=com_content&view=article&id=116:value-chain-development&catid=34:programmes&Itemid=2)

One field of public policy appears to be particularly relevant for value chain development capacity – research and technology policy. Public as well as private research institutes have an important role to play in developing value chain development methodologies for the major industries in their country. Institutional capacity means that the national research and higher education system integrates value chains as a specialist area. Public policy should contribute by including the respective topics in research planning, and use priority setting and funding mechanisms to promote value chain research at the national level.

The demand for expertise grows to the extent that value chain development is a regular feature of sustainability policies. The more lead actors engage in programs, the higher is the demand for trained staff and advisors. Once again, collective action is required: The organizations should agree on the profiles of technical personnel needed, the skills that educational institutes should impart and the curricula and standards applied. Businesses contribute to institutional capacity when they clearly communicate to universities what their practical education and training needs are. Universities need that incentive before they would review their curricula giving more weight to the value chain approach and its generic methods.

The experience of the ‘Livestock and Irrigation Value Chains for Ethiopian Smallholders’ (LIVES) project is exemplary on how to develop partnership between graduate programs and research and development organizations. The graduate fellowship program of LIVES addresses critical capacity and research needs of development stakeholders. This approach allowed the project to interact with university supervisors and influence the research agenda of graduate fellows, ensuring that graduate research that is relevant and grounded in the local development context. Box 4.6.7 explains the approach.

**Box 4.6.7: Case – A graduate program in Ethiopia**

Engaged with partners in a participatory consultative process, LIVES sought to identify pertinent research problems and make graduate research useful to address livestock and irrigation value chains development challenges.

Research fellows then worked in project zones and districts to address the relevant research problems identified during stakeholder-consultation and research-planning workshops. Graduate seminars at regional, zonal and district levels were organized to allow project partners to give feedback on graduate research proposals and thesis results as well as to ensure the relevance of graduate research to address local development challenges. Graduate fellows are jointly supervised by university and ILRI / IWMI supervisors.

In support of public extension staff, 97 MSc fellows (48% female) have been enrolled in regular and summer programs. With regard to the public research staff, 70 fellowships have also been offered and 30 students (6% female) have started their research projects. In addition, 30 competitive research fellowships have been offered and 25 fellowships (16% female) have been awarded. In total, 27 students have so far completed their studies.<sup>328</sup>

*Source: ILRI, 2015*

<sup>328</sup> See <http://lives-ethiopia.org/2016/02/11/three-years-of-lives-highlights-of-key-activities-and-lessons/>

## Resources

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## Websites

### *Facilitation techniques*

Value chain development / ValueLinks toolbox: <http://ruta.org/toolbox/herramientas> (in Spanish)

GIZ / Masrenace tools for implementing a gender strategy (in Spanish): <https://masrenace.wikispaces.com/Caja+de+Herramientas>

Collective Leadership Institute: <http://www.collectiveleadership.de/apex/cli/home/>,  
<http://masrenace.wikispaces.com/>

### *Instruments, platforms and contacts for cooperation with the private sector*

Entwicklungspartnerschaften mit der Wirtschaft (Germany): <https://www.bmz.de/de/themen/privatwirtschaft/entwicklungspartnerschaften/index.html>

Partnerschaften mit dem Privatsektor (Switzerland): [https://www.eda.admin.ch/deza/de/home/partnerschaften\\_auftraege/public-private-partnership.html](https://www.eda.admin.ch/deza/de/home/partnerschaften_auftraege/public-private-partnership.html)

Public private partnerships (Worldbank): <http://ppp.worldbank.org/public-private-partnership/overview>

Business call to action: <http://www.businesscalltoaction.org/>

Growing inclusive markets: <http://www.growinginclusivemarkets.org/>

Public private partnerships of the Government of The Netherlands: <https://www.government.nl/topics/development-cooperation/contents/development-cooperation-partners-and-partnerships/public-private-partnerships>

Partnerships (IFAD): <http://www.ifad.org/pub/partnerships/>

## Internet platforms and networks for identifying partners

German industrial associations: [www.bdi-online.de](http://www.bdi-online.de)

CSR Worldwide: [www.csr-weltweit.de](http://www.csr-weltweit.de)

Foreign trade portals: [www.ixpos.de](http://www.ixpos.de)

Global Compact: [www.unglobalcompact.org](http://www.unglobalcompact.org)

German regional industrial associations:

[www.afrikaverein.de](http://www.afrikaverein.de); [www.lateinamerikaverein.de](http://www.lateinamerikaverein.de); [www.numov.org](http://www.numov.org); [www.oav.de](http://www.oav.de); [www.o-m-v.org](http://www.o-m-v.org)

Environmental dialogue: [www.umweltdialog.de](http://www.umweltdialog.de)

CSR-Germany: [www.csr-in-deutschland.de](http://www.csr-in-deutschland.de)

Wegweiser: [www.wegweiser.de](http://www.wegweiser.de)

## Value chains and conflict

USAID (2008): "A synthesis of practical lessons from value chain projects in conflict-affected environments" provides practical experiences in case studies of 14 different value chain interventions in conflict settings.