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Working in Complex Systems: The Rubber Value Chain in Indonesia

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Frank Page

Managing Systems for Wellness

Frank Page has 25 years international development experience in Africa and Asia, consulting with and managing community based development projects. He specializes in strategic planning, project planning, community development, and organizational development. He consulted for over 17 years in Indonesia where his clients included capacity building, community development, environmental protection, and civil society NGOs/projects. Page was the Urban Program Manager for CARE International Indonesia, where he managed child nutrition, TB prevention, and avian influenza prevention projects.



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Donna Read

Managing Systems for Wellness

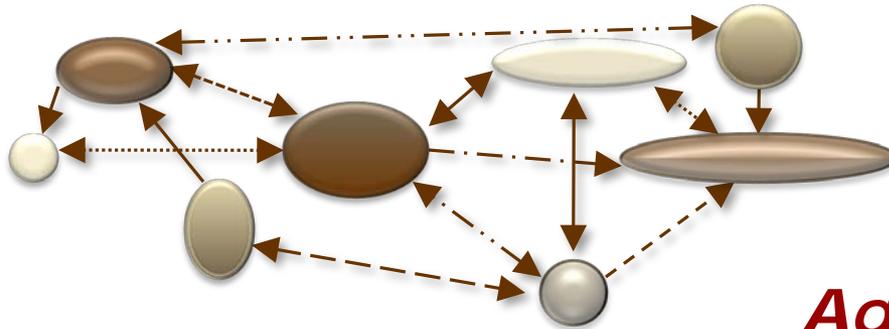
Donna Read is a certified Human Systems Dynamics practitioner and international development management professional. She has worked with development projects for over 30 years both in the field and in home office. Read has applied human systems dynamics to her organizational consulting work focused on building strong teams relationships. She believes that complex, adaptive systems share a few fundamental characteristics that enable them to function in chaotic, complex, nonlinear, changing environments.

What is Human Systems Dynamics?

HSD is a way of primarily making sense of patterns. Life is about patterns – seeing patterns, breaking patterns, making patterns. This is what we do as humans. Patterns are similarities, differences and relationships that have meaning across space and/or time. HSD concepts and tools help us to understand and recognize the patterns that emerge from instability when people work or live together in organizations, communities, and families. HSD is based on the study of complexity science and chaos theory that focus on the surprising behavior of Complex Adaptive Systems (CAS). HSD in action means that you can see patterns as they emerge and Find the Fix that Fits!

Complex Adaptive System (CAS) Self-Organizing System

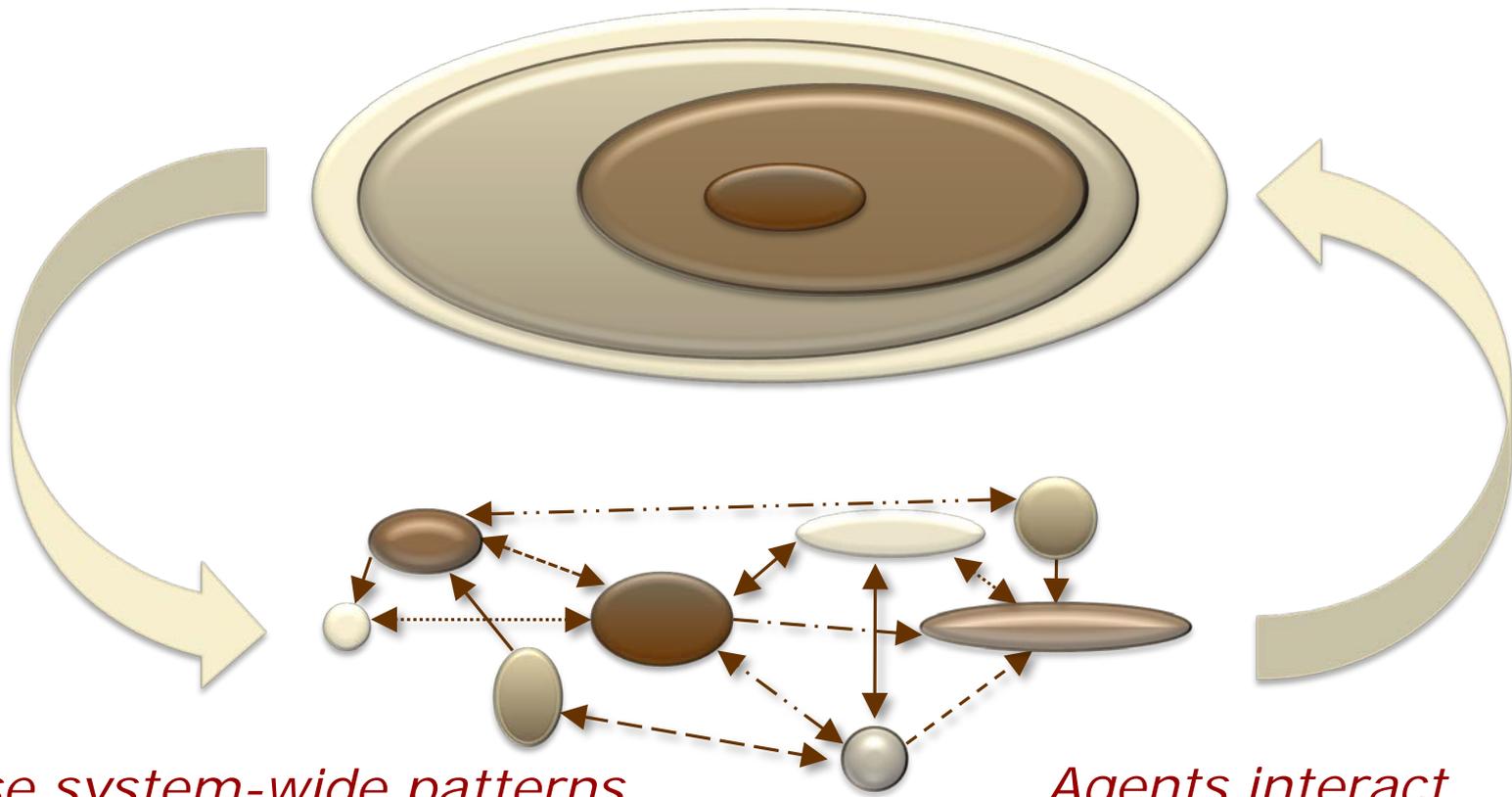
A collection of individual agents who have the freedom to act in unpredictable ways, and whose actions are interconnected such that they produce system-wide patterns.



Agents interact

Complex Adaptive System (CAS) Self-Organizing System

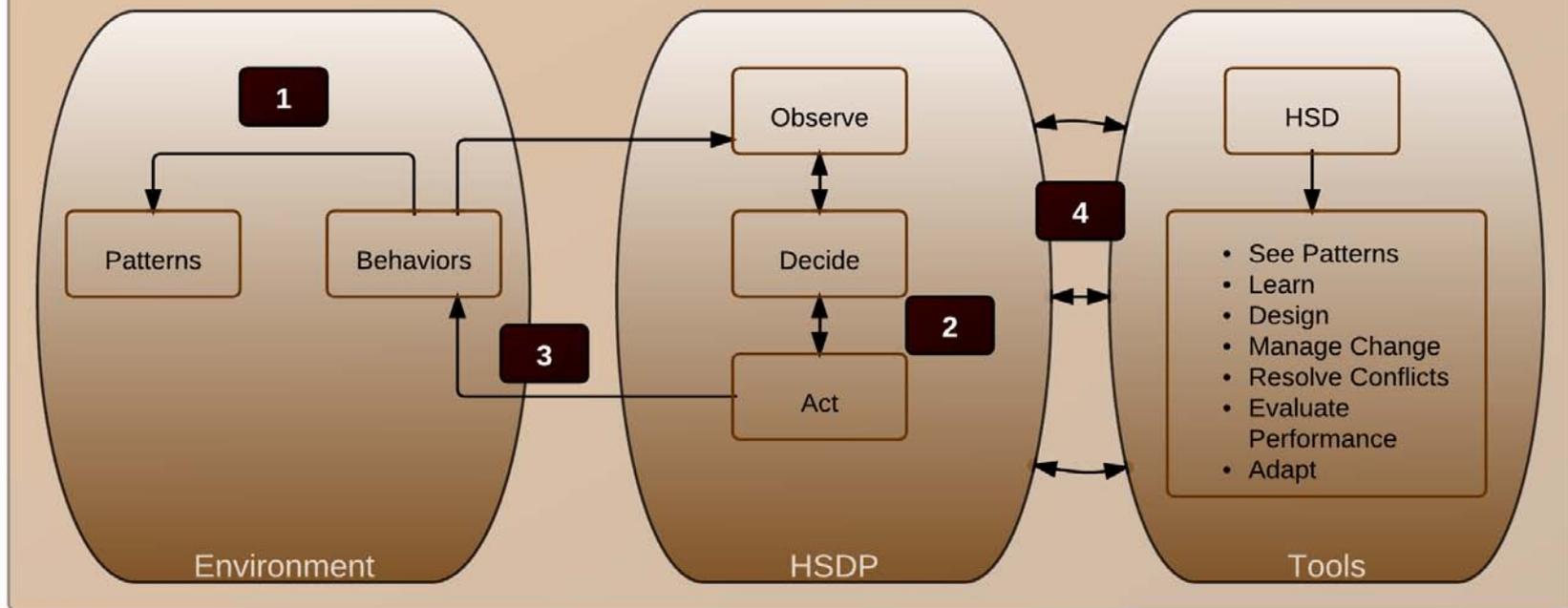
System-wide patterns emerge



*Those system-wide patterns,
in turn, influence the
behaviors of the agents*

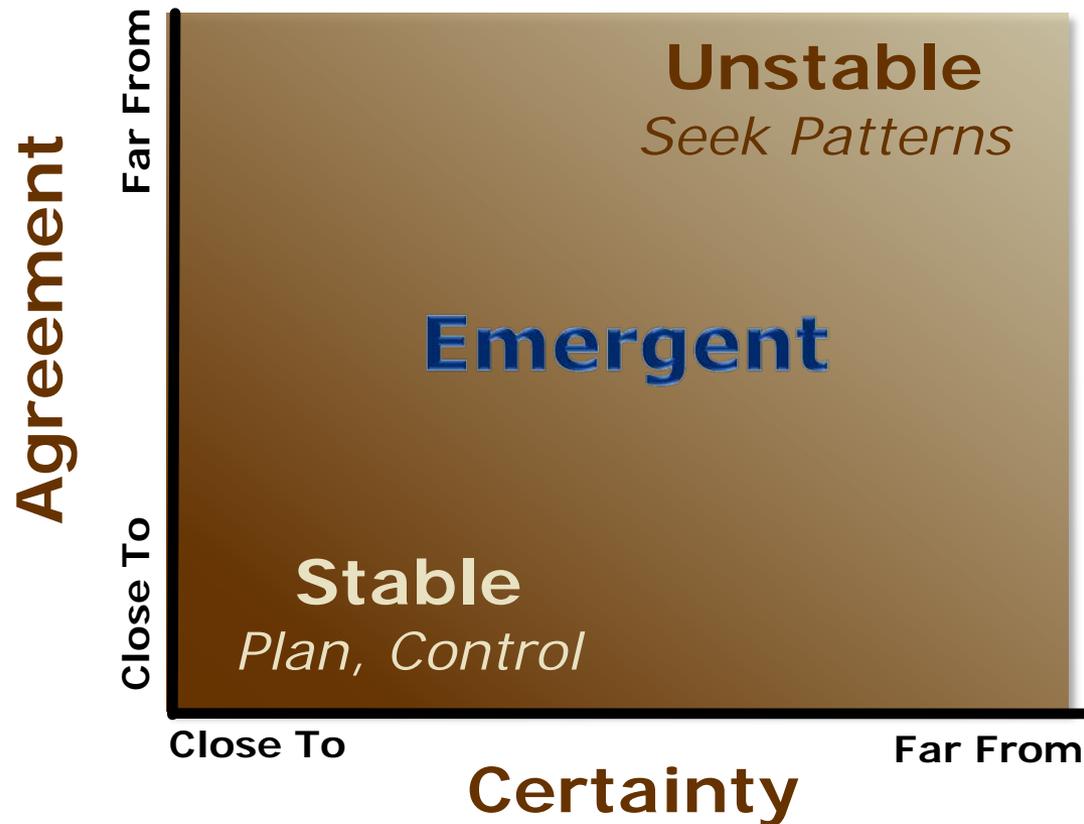
Agents interact

Pattern-Forming Process AKA Loopy Diagram

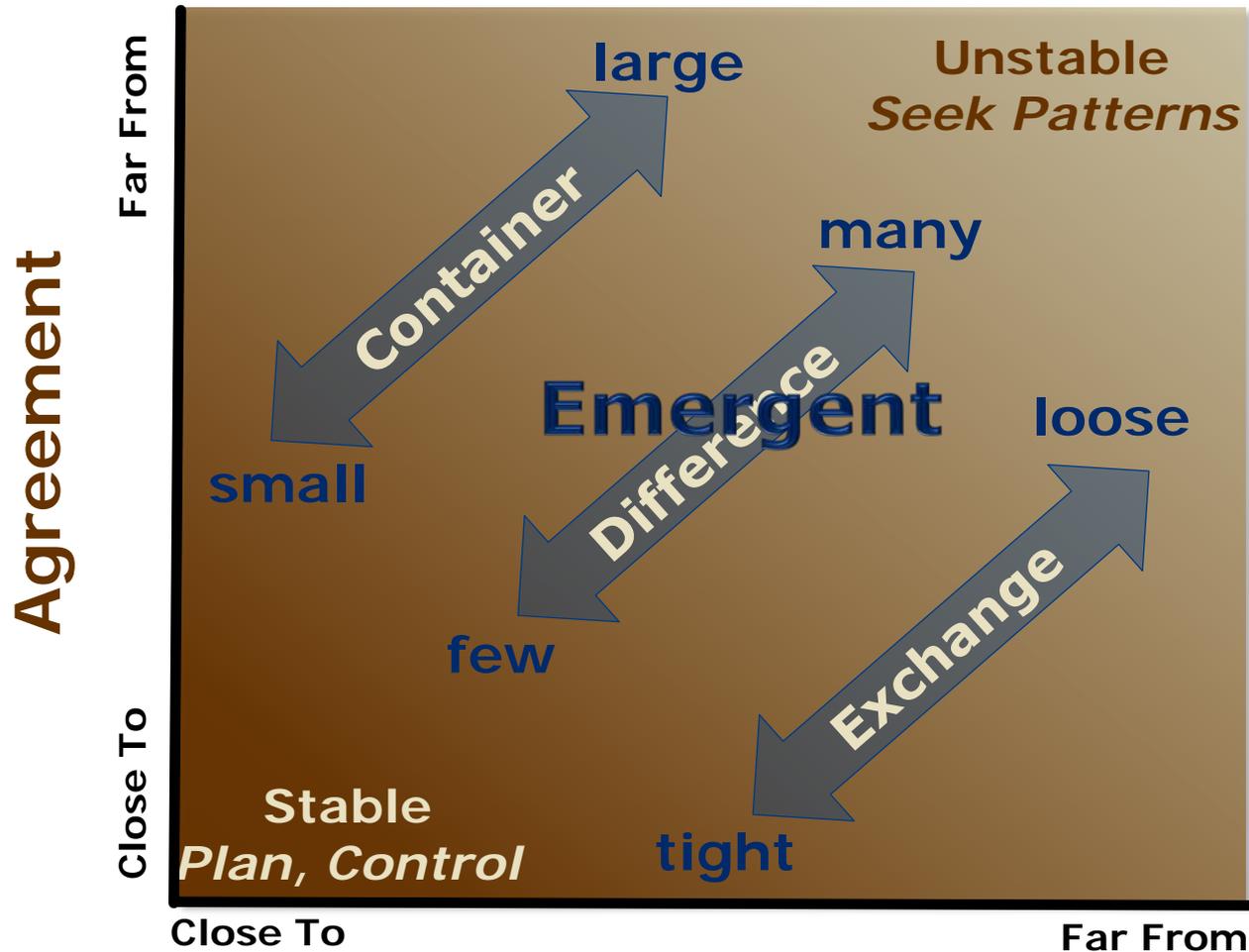


Landscape Diagram

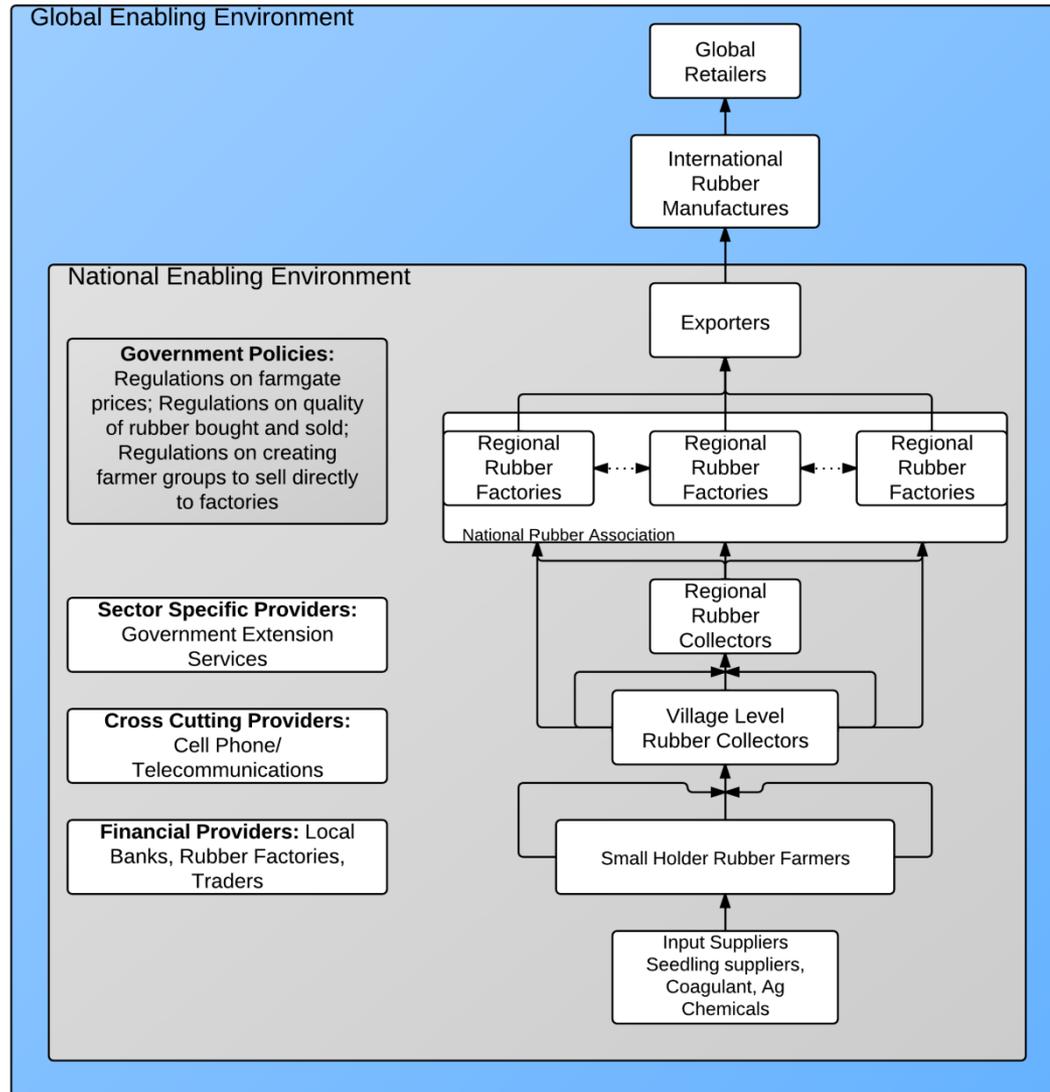
Know when your changes are in the zone of emergence



Landscape Diagram Constraints



The Rubber Value Chain as Example of CAS



Key Constraints - Asking “Why?”

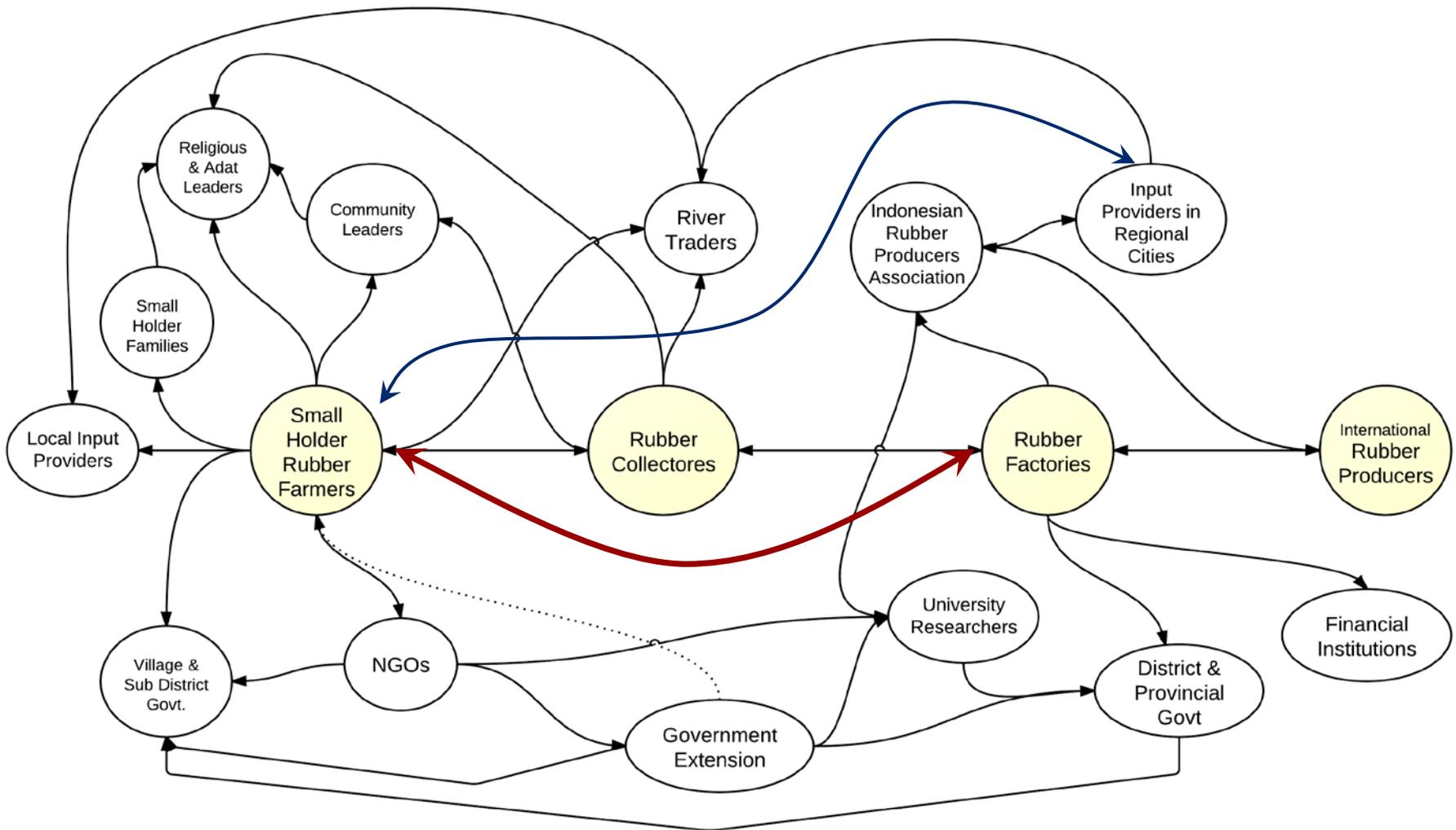
- ***The pricing mechanism promoted low quality rubber***
 - Pricing based only on weight, not on moisture content
 - Lack of transparency on how prices were set
 - Traders not willing to wait for moisture testing
 - No technology to measure moisture content in field
- Key input for high quality rubber, coagulant, not available in villages
- Farmers following traditional, low productivity practices
- Farm gate prices are lower than government regulations allowed
- Factories not getting enough quality rubber to meet their quotas
- Factories and collectors would buy below standard rubber

HSDI Approach (A Facilitative Approach)

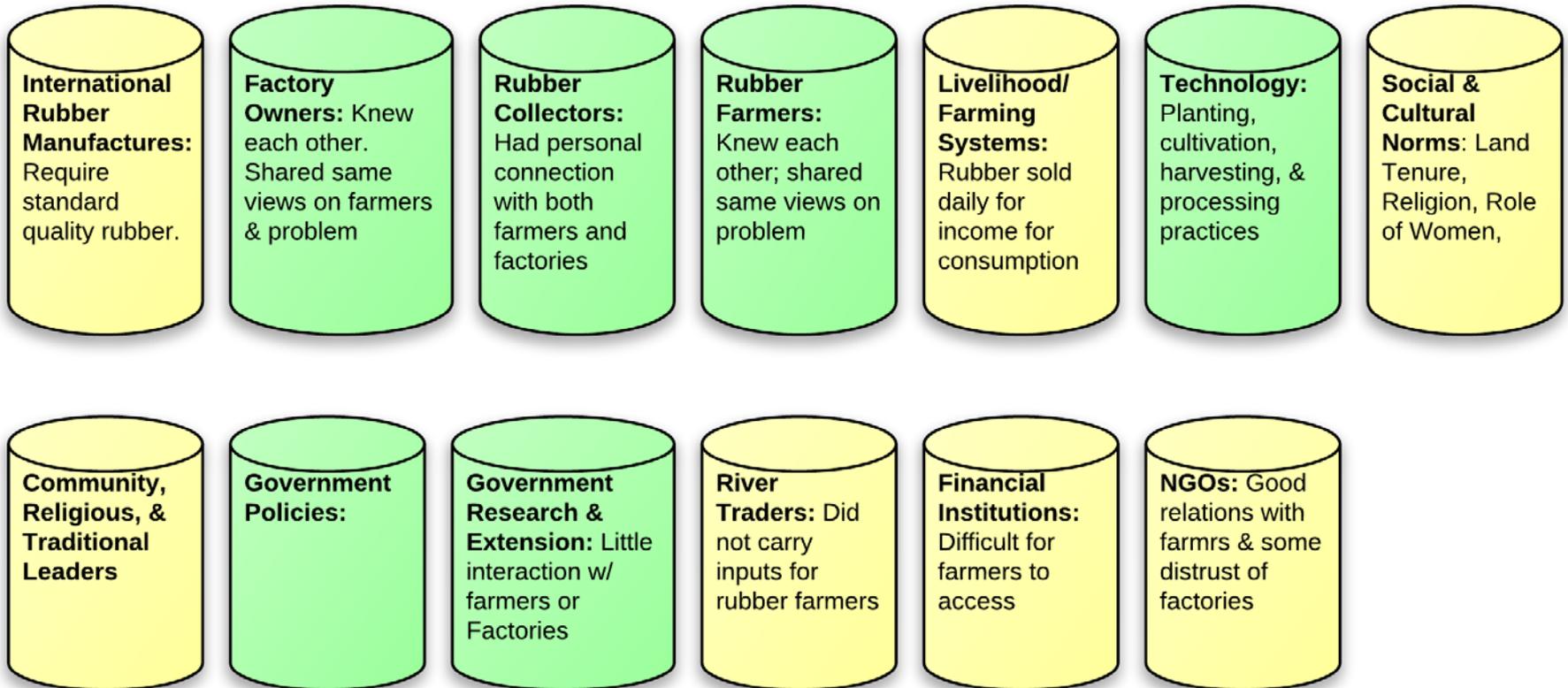
Differences

- Factories wanted good quality rubber
- Farmers wanted higher incomes
- Pricing was not transparent and did not account for quality as a determinant for price
- Different perception among farmers, collectors, and factories regarding the market chain (and need for quality rubber to supply to the world market).
- Different levels of knowledge of government regulations

Exchanges and Relationships



Containers



Changes to Influence the System

- **Create New Container** to hold rubber farmers, village collectors, factory owners, government regulations and agencies, and researchers
 - 3 Day Participatory Workshop and Follow-up Trainings
- Focus on goals that will **Address The Key Differences**
 - Used Government Regulations as a basis for new marketing relationship
- **Strengthen and Deepen Exchanges**, particularly between Rubber Farmers and Factories
 - Participatory processes in workshop/trainings
 - Follow-up training visits by farmers to factories

Results: Strengthened Relationships

- **Outputs**

- Trainings to improve rubber quality at farm gate
- Pilot projects to sell directly to factories
 - Agreement to measure moisture content at factory
 - Prices based on government regulations

- **Preliminary Outcome**

- Good quality rubber delivered to factories
- Farmers earning 20% more than before

HSD Tools for Working in Complex Systems

- Butterfly effects
- Boundaries
- Transforming feedback loops
- Fractals
- Attractors
- Self-organization
- Coupling

For more information on Human Systems Dynamics, please visit the
Institute's website at:

<http://www.hsdinstitute.org>



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April 27 @ 9am:

EPS Seminar: How Mobile Phones Can Improve Access to Services for Persons with Disabilities

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