

GENDER: A KEY DIMENSION LINKING AGRICULTURAL PROGRAMS TO IMPROVED NUTRITION AND HEALTH

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Improving the livelihoods and well-being of the rural poor is an important aim of agricultural development, promoted through agricultural intensification and commercialization strategies. But improved agricultural productivity does not necessarily translate into improved health and nutrition, either for producers or consumers. How can standard agricultural development strategies—promoting agricultural intensification, greater linkages to markets, and high-value production—also create positive impacts on health and nutrition? This brief argues that a key element linking these programs to improved outcomes is the dimension of gender roles and gender equity.

A large body of evidence shows that, in many parts of the world, men and women spend money differently: women are more likely to spend the income they control on food, healthcare, and education of their children. Increasing household income does not necessarily improve the nutritional and health status of women and children when that income is controlled by men. Women's relative bargaining power within the household is likely to influence whether gains in income translate into nutritional improvements. Empirical evidence shows that increasing women's control over land, physical assets, and financial assets serves to raise agricultural productivity, improve child health and nutrition, and increase expenditures on education, contributing to overall poverty reduction.

Arimond and colleagues¹ have identified five pathways through which agricultural interventions can affect nutrition: increased food for own consumption; increased income; reductions in market prices; shifts in preferences; and shifts in control of resources within households.¹ They highlight the substantial influence of gender roles across all five pathways, particularly in relation to increased food availability and increased income. In short, the impact of agricultural interventions on nutrition may depend on two gender-related factors: Does the agricultural intervention enhance *women's control over assets*? Does it include *nutrition education* to ensure better use of the additional food or increased income?

Three agricultural development strategies are discussed in this brief, to illustrate the significance of the gender dimension in promoting improved nutrition and health: 1) homestead food production, 2) linking smallholders to markets, and 3) large-scale agriculture. A substantial literature documents the role of homestead food production (HFP) in improving nutrition; relatively little research has been done, however, on the health and nutrition implications of other agricultural development strategies.

Homestead Food Production

Homestead food production (HFP) has attracted attention as an agricultural development strategy, particularly for households

with limited land. Linkages among gender, agriculture, health, and nutrition are easily traced: the strategy aims to increase dietary diversity using household labor intensively on small gardens within the homestead, allowing women to grow a variety of fruits and vegetables and tend small livestock while fulfilling their domestic and child care responsibilities.

Helen Keller International (HKI), an international NGO, pioneered this model to address vitamin A deficiency in Bangladesh in the 1980s. HKI expanded and adapted the program for Cambodia, Nepal, and the Philippines in the late 1990s, through strategic partnerships with more than 200 local nongovernmental and governmental organizations. The HFP model was broadened to include small animal husbandry in order to address multiple micronutrient deficiencies, including iron and zinc; the program in Cambodia included chicken and duck production in addition to vegetables. This aspect, too, is consistent with women's asset accumulation strategies: women tend to own and care for small livestock, while men are responsible for larger animals.

HFP programming has evolved to address other aspects of food insecurity, including improved incomes and livelihoods, community development, and the empowerment of women. Programs operate in several countries of South Asia, Southeast Asia and the Pacific, and Sub-Saharan Africa. A number of research studies and reviews of the nutrition impacts of HFP programs indicate that the effective HFP models take into account several gender-related factors: women's control over assets; nutrition education and behavior change communication about allocation of household resources to safeguard vulnerable household members, such as mothers and young children; and key messages regarding optimal infant and young-child feeding and care practices.

Gender norms differ across countries and contexts, so the appropriate means for addressing gender concerns will also differ. In Bangladesh, successful programs build on women's traditional role as providers of food and care within the household; at the same time, they addressed constraints on women's access to agricultural land and credit, as well as norms that favor social seclusion. Programs have used women's groups to introduce homestead vegetable production, creating income sources that women control. In the HKI Burkina Faso HFP program, project staff led preliminary communitywide sensitizations, to make men as well as women aware of the importance of maternal nutrition and improved maternal and child feeding practices—so that husbands would refrain from appropriating the produce or proceeds of women's gardens.

To be sustainable, HFP programs must generate income over the long run. This may require diversifying income sources—such as through small livestock—and improving links to markets. In Bangladesh, one NGO introduced new vegetable technologies, and

then helped establish marketing channels in Dhaka for the produce. Another focused on homestead milk production, hiring female livestock workers and modifying bicycles so women could use them to collect milk. Moving the focus of the dairy value chain from the market to the homestead helped increase women's participation, and linked the homestead to the market.

Recommendations

Taking gender roles into account can help HFP programs improve health and nutrition. The following are key strategies:

- ◆ Encourage diversified gardens that include high-value crops and small livestock in order to increase dietary diversity, provide sources of additional income, and enable women to accumulate small assets.
- ◆ Explicitly address nutrition education and behavior change and communication in HFP programs.
- ◆ Identify gender-specific constraints on participation.
- ◆ Foster income generation and better links to markets.

Linking Smallholders to Markets

Linking smallholders to high-value markets can increase their incomes while maintaining decentralized production arrangements. The two main strategies currently used in linking farmers to markets are *contract farming* and *producer marketing groups*. In contract farming, supermarkets, agroprocessors, or exporters offer to buy products from individual smallholders, often paying more than the local market price. The contractor may provide inputs and training to help smallholders deliver the quantity and quality needed for higher-value markets. Producer marketing groups, organized by outsiders or by farmers themselves, promote access to higher-value markets through shared transport or bulk contracts, or disseminating new farming practices among members.

Studies of the nutrition impacts of cash-cropping and commercialization, conducted in the 1990s, were instrumental in calling attention to the importance of gender and intrahousehold allocation for nutrition. The nutrition impact of programs that link smallholder farmers to markets has yet to be fully analyzed. Contract farming agreements that do not pay attention to intrahousehold labor allocation and decisionmaking may in fact aggravate the dynamics that disadvantage vulnerable household members.

- ◆ One large-scale venture in China contracted exclusively with the senior male members of each household, even though women did most of the agricultural work, leading to disputes because women were often not properly compensated for their work.
- ◆ In contrast, one example of nontraditional contract farming in the Dominican Republic increased the demand for women's farm labor, while also providing women an opportunity to demand compensation for their labor.
- ◆ Case studies of cotton contract farming in Zambia indicate that, with deliberate targeting of female participants and promotion of gender-friendly enterprises, contract farming can be profitable for female farmers.

Producer groups potentially offer farmers greater control in choosing crops and production methods, but it is essential, in working with such groups, to ascertain whether they represent both men and women. In working with groups dominated by men, more gender-equitable outcomes can be achieved either by increasing women's involvement in the farmers' associations or by working with separate male and female farmers' associations. The effectiveness of these strategies will depend on how comfortable women are with articulating their interests in

the presence of men. In Zimbabwe, for example, women have developed their own Women Farmers' Union; while in Zambia, a woman leads the national dairy group and has become the first woman member of the national committee of the farmers' union.

A recurring problem for market-oriented smallholder strategies is to ensure that women maintain control of their income. In Kenyan tea production, women's bargaining power was greater in households where women's labor was indispensable than in households that relied on hired labor. Where women are less able to transport produce to market, men generally make the financial transactions and retain the income. When farming enterprises under female control become more profitable, they may be taken over by men, as occurred in Kenyan household milk production—to the detriment of household (and especially children's) nutrition.

Fortunately, new methods of payment make it easier to ensure that payments for women's production go directly to women. Women who are members of microfinance groups or producer groups (such as milk unions) can receive payments into their own accounts. Payment systems via mobile phones further expand the options for women to receive payments directly. Ensuring that women maintain control of production after it becomes profitable represents a greater challenge, however; effective approaches may involve working directly with men or providing them profitable business opportunities, so that increases in women's income are not seen as diminishing men's income.

Finally, access to so-called "higher-value markets" requires meeting certain standards for the final product. Compliance with such standards carries both risks and opportunities.

Cash-constrained smallholders may cut corners on safety equipment or increase pesticide applications, creating health hazards that pose a greater threat to women, and particularly pregnant women. Compliance with important biosafety standards, such as control of aflatoxin exposure, may be more difficult for women producers, reducing the marketability of their produce.

Gendered constraints to adoption of standards, including issues of communication and affordability, need to be addressed to ensure that these standards improve food safety without excluding women or poor producers. As recently recommended, gender-focused analyses of value chains could substantially help in addressing such bottlenecks.² Ensuring women's control over production, income, and assets represents the surest path to enhancing the nutrition and health impacts of agricultural development strategies that link smallholder farmers with markets.

Recommendations

The potential gender disparities of programs linking smallholders to markets need to be directly addressed to realize their full benefits for improved health and nutrition.

- ◆ Include women producers in contracts and group membership, and make payments directly to women.
- ◆ In commercializing food crops or expanding cash crops, ensure that control does not shift from women to men, compromising household food security.
- ◆ Integrate health and safety concerns with the introduction of new technologies and markets; ensure that both women and men are trained to minimize exposure to agrochemicals and ensure compliance with biosafety requirements.

Large-Scale Agriculture

The large-farm model is substantially different from family farming: ownership, management, and labor are often distinct roles; and production may be vertically integrated with

processing, marketing, and export logistics. While research interest in plantations has recently increased, there has been limited research on either the nutrition impacts or the gender implications of large-scale agriculture.³

This brief identifies two primary pathways through which large-scale agriculture influences nutrition: (1) by increasing the income of agricultural workers; and (2) by affecting the level of control that women exercise over household income. Health and nutrition outcomes can also be affected by working conditions, healthcare, childcare, other facilities, and environmental impacts. Large-scale agriculture thus offers a range of opportunities for gender-equitable policies that reinforce health and nutrition.

Women's employment in large-scale farms depends in part on the type of crop and in part on other factors: the degree of mechanization, types of labor (formal or informal, permanent or temporary), compensation agreements, and the possibility of combining plantation work with other agricultural and domestic activities. While mechanized farming can limit employment opportunities for local populations, some research indicates that a system of partially mechanized production—increasingly prevalent in plantations in Africa—can be advantageous to women. In sugar cane production, for example, machines are used for cutting the cane, the most physically challenging job, reserved for men, but the workers gather it manually. This system can create more employment and more income for women.

Working conditions can substantially affect the health and nutrition of farm-based employees. Case studies in India find that women hired in wage labor systems often encounter lower wages and worse working conditions than men, along with difficulties in negotiating for better compensation or conditions. Women who are undercompensated and overworked are less able to fulfill their role as the household providers of health and nutrition. Provision of adequate childcare facilities is also important. Without childcare, women working as laborers are often forced to take their young children into the fields, a situation that can lead to child labor and expose young children to risks of zoonotic (animal-borne) disease, harmful pesticides, or work related injuries. Alternatively, mothers may leave young children in the care of older children, usually girls, with negative impacts on both the care of the children and the schooling of the older girls. Plantation systems may in some cases be better able to provide healthcare and schooling, benefiting women and children.

The use of pesticides and other agrochemicals in large-scale farms may have serious health effects on the men and women who work as wage laborers. Even more problematic is that laborers, lacking adequate training, safety gear, or cleaning facilities, may track residue of pesticides back into their homes and expose children or other vulnerable family members to these agrochemicals. Pregnant women are particularly vulnerable to agrochemical exposure.

Moreover, the “gendering” of tasks can lead to greater pesticide exposure for women, as in the following examples:

- ◆ A case study of biofuels plantations in Indonesia finds women are assigned the tasks of spraying and fertilizer application, and protective gear is available only at the worker's expense.⁴
- ◆ In the Latin American cut-flower industry, flower workers are exposed to a variety of harmful pesticides without adequate safeguards, leading to a higher than normal rate of miscarriage;⁵ women workers, who are paid on commission, spend more time in greenhouses than male workers, who possess formal contracts.

- ◆ A study from the International Labour Organization indicates that women workers in plantations often receive less training and instruction regarding the application of agrochemicals than male counterparts.⁶

Plantations systems may also have important *environmental impacts* with gender dimensions. Discharge of pollutants may damage the quality of local soil and water. The demand for water to sustain large-scale agricultural production will likely compete with water needed for food production, livestock, and domestic consumption. Women are typically responsible for collecting water and fuel, and may be forced to seek out less reliable and more distant sources. In addition, women often make use of wild-growing plant species for household consumption, and these varieties may be reduced by monoculture plantations.

In sum, the nutrition and health impacts of large farms and plantations are largely determined by their effect on household incomes of farm workers and by their environmental externalities, and these impacts affect women and men differently. While many case studies give cause for concern, fair trade and corporate social responsibility provide a basis for positive outcomes. A notable example is the fair-trade export of cut flowers from Kenya and Tanzania to Norway, which provides high levels of female-dominated employment, equal contracts for men and women (including maternity and paternity leave), safety standards, and social engagement.

Recommendations

Large-scale agricultural operations can avoid disadvantaging women and communities by being gender-aware as well as by observing environmental safeguards.

- ◆ Ensure that employment opportunities—including task allocation, hours worked, wages, and promotion possibilities—are gender equitable.
- ◆ Provide appropriate and affordable healthcare and childcare facilities.
- ◆ Ensure that new technologies—such as mechanization, new crops and varieties, inorganic fertilizer, and pesticides—are introduced in a gender-sensitive manner.
- ◆ Provide appropriate safety equipment and training to both female and male laborers.
- ◆ Minimize the negative environmental impacts of plantations on the local community.

Conclusions and Policy Implications

There is substantial evidence confirming the impact on health and nutritional outcomes of strengthening the position of women, both in terms of control of resources and agricultural productivity, and in terms of relative bargaining power within the household. However, research is needed to fully understand the linkages between alternative agricultural development strategies on health and nutrition. Just as gender relations are culture and context specific, the appropriate agricultural development strategy will vary both across and within countries.

As agricultural productivity increases and surplus food is marketed, the distinction between food and cash crops at the household level will tend to erode. Two areas are likely to be of concern: (1) at the national or aggregate level, the balance between food and cash crops, as biofuels (for example) and food crops compete for scarce farmland; and (2) at the household level, the control over income derived from various crops.

Homestead food production is still an underutilized strategy. Combined with educational and other initiatives, it potentially

offers substantial improvements in health and nutrition. Evidence indicates that even small-scale homestead production of micronutrient-rich foods, when combined with nutrition education, can have impact greater than its income effects. Homestead production systems offer the potential to improve nutrition for peri-urban and agricultural laborer households, as well as small farmers.

In any production or employment scenario, however, the available evidence indicates that increasing women's access to resources and control over household income will have important implications for the health and nutrition of the family, and particularly of women and children.

From the perspective of nutrition and some aspects of health, therefore, any development strategy should explicitly consider its impacts on women and children—and especially on the critical “window of opportunity” from preconception through the second year of life, when nutritional deprivation and toxic environmental

exposures can have lifelong consequences. In designing agricultural development projects, planners must make informed provisions for

- ◆ reducing environmental toxin risks;
- ◆ providing optimal childcare, either through maternity leave policies or through provision of adequate childcare facilities;
- ◆ ensuring that women have control over income, resources, and time; and
- ◆ providing nutrition and health education—ideally, simultaneous with agricultural interventions.

For researchers in this field, the urgent priority is to develop further evidence on the full impacts of various forms of agricultural development, both on women's control over income and assets, and on health and nutrition. The development impact of agricultural investments cannot be understood without considering their nutritional, health, and gender-based effects.

NOTES

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