

Gender, Caste, and Asset Control: Implications for Agricultural Projects in Rice-Wheat Systems of Eastern India

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THE CEREAL SYSTEMS INITIATIVE FOR SOUTH ASIA (CSISA) PROJECT WAS LAUNCHED IN 2009 TO REDUCE FOOD and income insecurity in South Asia through accelerated development and deployment of new cereal varieties, sustainable management practices for crop and resource systems, and better access to information. The project includes widespread delivery and adaptation of production and postharvest technologies to increase cereal production and raise income. It also involves promotion of (1) crop and resource management practices and (2) high-yielding, stress-tolerant and disease- and insect-resistant rice, wheat, and maize varieties. In particular, the project looks at men's and women's different degrees of ownership, access, and decisionmaking in connection with key livelihood-sustaining assets and whether the introduction of new technologies influences these differences.

Hundreds of millions of people in South Asia depend on cereal cropping and mixed crop-livestock systems for their food, employment, and income. These systems in eastern India, Nepal, and Bangladesh include cultivation of rice, wheat, and maize. The objectives of the Cereal Systems Initiative for South Asia (CSISA) project, which started in 2009, are to decrease hunger and malnutrition and increase the food and income security of resource-poor farm households in the region. CSISA did not initially design program activities to address gender-differentiated constraints on technology adoption (IRRI-CSISA 2009). However, understanding the gendered nature of asset distribution and how this influences individual and household livelihoods is essential to designing effective agricultural research and development for interventions and policies. This understanding will help strengthen, within the context of CSISA, women's access to and control over key agricultural assets. Such an understanding is the goal of this study by the Gender, Agriculture, and Assets Project (GAAP). The study focuses on Bihar and Eastern Uttar Pradesh in rural India, two areas where CSISA operates.

INTERVENTION AND STUDY AREA

CSISA, a collaborative project of the International Rice Research Institute, International Maize and Wheat

Improvement Center, International Livestock Research Institute, and International Food Policy Research Institute, takes a multipronged approach to the accelerated development and inclusive deployment of new crop varieties, sustainable management technologies, and policies.

The economy of the study area in eastern India is largely agrarian. Small and marginal farming households are engaged in crop and animal production, with assigned roles and responsibilities for men and women. Men work as agricultural and nonagricultural laborers. Poor women are more likely than richer women to be engaged in their own farm operations or earn income from off-farm work or from taking care of livestock. Large farm households are more likely than others to earn income from services, while for small and marginal farming households the contribution of income from livestock activities is more important. Some households receive remittances from male migrants.

STUDY OBJECTIVES

This study seeks to (1) identify gendered distribution and control over major assets; (2) assess the impact on the gender asset gap of adopting CSISA-promoted technology; (3) recommend strategies CSISA can use to strengthen women's

access to and control over key agricultural assets. Such access and control can foster improved livelihoods, food security, and well-being.

OVERVIEW OF METHODOLOGY AND DATA COLLECTION

In 2010, as part of CSISA's research activities, baseline socioeconomic surveys reviewed farming practices and the performance of various technologies, as well as constraints on their adoption. However, information on ownership and control of assets was not disaggregated by gender, even though asset control may affect who participates in and who benefits from the project activities. Therefore, additional qualitative research and midline surveys were conducted in three districts with large areas devoted to rice-wheat farming systems: Maharajganj and Deoria in Uttar Pradesh and East Champaran in Bihar. Focus group discussions on asset-related information were conducted with separate gatherings of men and women from upper and lower caste groups. These discussions were followed by in-depth interviews with the principal men and women in 60 households on the importance of assets. In 2012, midline surveys of 318 households in 18 villages were conducted to collect gender-disaggregated data on household composition and assets. The principal man and woman were shown pictures of assets and asked "Who owns this asset? Who uses it? Who decides to dispose of it? How was the asset acquired? What is the value of the asset if you sell it?" Other information on sources of income, labor participation in crop production, access to credit, training, and wives' participation in specific farm and nonfarm matters was also collected. Because of relatively low adoption of CSISA technologies and because the 2010 baseline surveys did not contain gender disaggregated information on assets, the findings are useful for diagnosis, but do not reflect changes in assets attributable to the project.

RESULTS

Farmland, dairy animals, houses, and cellular phones were identified as the most important assets by both men and women. Men gave significantly higher ranking to bicycles while women gave higher ranking to jewelry, reflecting that these two types of assets were most likely to be controlled by men and women, respectively.

Farmlands were mainly owned by the principal male. Wives also participated in land use and decisions to sell or rent out the land but, except for *de jure* heads of households, did not have control of land. Most farms were acquired through inheritance. Since the husband was the officially registered owner of the land, he was identified as the farmer and the recipient or beneficiary of government programs.

This restricted female farmers' opportunity to receive farm inputs and participate in training activities. Without registration of joint ownership, widows were also vulnerable to loss of land to in-laws or sons.

Dairy animals were reported as owned by husbands or jointly; use of dairy products and decisions to sell or buy animals was mostly joint. The few households that raised small livestock, where both husband and wife claimed ownership, use, and control, tended to come from the lower castes.

The common agricultural machinery, including tractors, cultivators, rotavators, combines, threshers, rice mill/hullers, and water pumps, were more often rented than owned due to high costs. More upper caste than lower caste households had access to machinery. Men were the major owners of machinery and water pumps. No women owned, used, or controlled any agricultural machinery or equipment, even though these could reduce their drudgery and free time for farm- and home-based food processing activities.

Almost half of the houses were jointly owned. A slightly higher proportion of *kutchha* houses made of temporary materials than *pucca* houses made of brick were jointly owned. Husbands were the major owners of mobile phones, giving them more access to information and contacts, as well as CSISA appointments.

Aside from tangible assets, a few respondents from the lower castes mentioned the importance of remittances, savings and human capital (training and organization), and access to employment. These assets were also mostly held by men: no women participated in any training or used credit.

While there were no differences across caste in the percentages reporting access to major assets such as farm land and dairy animals, differences in quantity and value were wide. A higher proportion of the upper castes had large farms, and the values of the dairy animals, houses, expensive clothing, jewelry, television, and cellphones of the upper castes were greater than those of the lower castes. Analysis by gender showed that the values of assets owned by men were higher than those owned by women. Overall, the gender wealth gap for each of the major assets indicated that the gender gaps were more severe than suggested by the ownership incidence measures alone. Not only were women less likely, for the most part, to own assets but the assets they did own were likely to be fewer in number and less valuable than male-owned assets (the exceptions to this rule being clothing and jewelry). Thus, the challenge is to make access to assets and resources more equitable between different social groups and between men and women.

The project's promotion of mechanization for rice-based cropping systems had limited adoption and high disadap-

tion because most farms were small and lacked the capital to purchase large machinery. Thus adoption will depend on the availability of service providers and farmers' access to other sources of income. The upper castes had more access to agricultural machinery, even through rentals.

Labor-saving technologies will affect women's participation as unpaid and hired workers in seedbed preparation and transplanting of seedlings. The outcomes were reduced drudgery and health risks for women who work on their own farms and loss of income for women who work as agricultural wage laborers.

CONCLUSIONS AND POLICY IMPLICATIONS

This study provides a greater understanding of CSISA-promoted technologies' potential impacts on existing gender disparities in asset distribution and control and how gendered asset distribution can affect livelihood strategies. The study also helped identify strategies to strengthen women's access to productive assets. Gender inequalities in assets, particularly farmland, persist due to deeply embedded social norms that shape inheritance patterns. However, there are positive signs: some land is reported to be jointly owned by husbands and wives, who make joint decisions to use, sell, or mortgage the land.

Small livestock are important assets for poor women, who can use crop-livestock technologies to increase productivity from improved fodder, breeds, and management practices.

Women do not own agricultural machinery or production and postharvest equipment. To benefit fully from agricultural innovations women need increased access to agriculture-relevant physical assets (land and machinery) and human capital (education and extension services). To anticipate the displacement of labor and disruption of livelihoods due to widespread use of large machinery made available through service providers, development programs should increase women's ability to earn agricultural and nonagricultural income. Group-based programs targeting women have greater potential to address gender relations within the household and society than programs targeting women as individuals.



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To correct a lack of attention to gender concerns in the first phase of the project, a Gender Strategy Plan for phase 2 (Paris 2013) will go beyond promoting large machinery and focus more attention on crop intensification and diversification, which will increase the farm income of small farming households—women's income in particular—and improve nutrition among household members. This intensification and diversification process includes increasing women's access to training (including training in how to raise community mat nurseries for mechanical paddy transplanters) and seeds of improved varieties. It also involves introducing post-harvest and processing technologies as agribusiness ventures and conducting rigorous research on the adoption of CSISA-promoted technologies and their differential effects on the assets of men and women, within and across different social categories.

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FOR FURTHER READING

- Paris, T., V. Pede, J. Luis, R. Sharma, A. Singh, and J. Estipular. 2013. *Gender, Caste, and Asset Control: Implications for Agricultural Projects in Rice-Wheat Systems of Eastern India*. IFPRI Discussion Paper. Washington, DC: International Food Policy Research Institute, forthcoming.

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