

Gender, Collective Action, and Climate Change

Qualitative Insights from Bangladesh, Ethiopia, Kenya, and Mali

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PEOPLE WHO RELY ON NATURAL RESOURCES FOR THEIR LIVELIHOODS ARE MORE VULNERABLE TO THE adverse impacts of climate change and are more limited in their capacity to adapt. This vulnerability is exacerbated when assets are limited or insecure. The gender dynamics of climate change adaptation are important because women typically control fewer assets compared with men, and women's assets are more likely to be disposed of in times of crises, such as negative climate-related events or "shocks." This policy note summarizes research designed to contribute to the understanding of men's and women's perceptions of (1) climate change, (2) adaptive approaches, and (3) the degree to which assets and group participation affect adaptation strategies. A series of qualitative studies were undertaken in four countries highly vulnerable to the adverse effects of climate change: Bangladesh, Ethiopia, Kenya, and Mali. The research focused on how gender, information and technology, and institutional capacity—represented by participation in farmer groups—play a role in determining adaptive approaches and how men's and women's asset base and decisionmaking power mediate their ability to adapt effectively.

CONTEXT OF THE STUDY

Adaptation to climate change is a complex, multidimensional, and multi-scale process. A framework was developed to comprehensively integrate these components, borrowing aspects from useful existing frameworks (see the companion policy note by Behrman, Bryan, and Goh). Bangladesh, Ethiopia, Kenya, and Mali were chosen as cases studies because of the climate change-related challenges they face. Gender-disaggregated group interviews were undertaken in each of these countries using a participatory rural appraisal approach (Table 1). The interviews included modules on signs and impacts of climate change, asset control and ownership, participation in community groups, adaptive approaches, and constraints to adaptation, each of which is discussed in the following sections. While characteristics like cultural norms and institutional context vary across the countries, all four are seen as being particularly vulnerable to the adverse impacts of climate change as a result of exposure, sensitivity, and a low level of adaptive capacity.

CLIMATE SIGNALS AND IMPACTS

The main sign of climate change raised by respondents across all four countries was the irregularity of weather, primarily rainfall. This highlights the dependence on rainfed agriculture, making the predictability of rainfall and other weather patterns a critical factor in agricultural productivity and food security. While specific characteristics of rainfall changes varied across countries, overall such changes resulted in a lack of ability to plan for the agricultural season due to variability in the onset of the rainy season or increased challenges associated with accessing water for agriculture. In Kenya and Mali, early rains with subsequent dry spells were mentioned as a reason germinated seeds died. Other signs across countries were temperature increases, noted in Bangladesh, Ethiopia, and Kenya, and increased prevalence of extreme weather events in Bangladesh.

Perceived impacts of climate change largely centered on water scarcity and tended to differ by gender, with men emphasizing crop-related impacts and women emphasizing scarcity of water resources for household use. Some second-

TABLE 1 Study country characteristics

Characteristic	Bangladesh	Ethiopia	Kenya	Mali
Employment in agriculture ^a	21 percent	38 percent	32 percent	19 percent
Agriculture as a percent-age of GDP ^b	18 percent	49 percent	30 percent	42 percent
Agricultural focus	Rainfed and groundwater-irrigated rice production Dependence on high-yielding varieties relying on groundwater irrigation Fisheries, livestock and forestry sectors are also important	Largely rainfed agriculture Predominantly small-scale mixed crop and livestock production Dependence on traditional farming techniques, overgrazing and deforestation lead to depleted soils	Largely rainfed agriculture Livestock production also plays a major role in food security and livelihoods Conflict exacerbates climate vulnerability	Largely rainfed agriculture Developing improved cultivars in high rainfall zones Conflicts over natural resources common, especially between farmers and pastoralists
Key climate change vulnerabilities	Extreme flood frequency Encroachment of salt water in coastal areas, depleting groundwater aquifers	Variable/unpredictable rainfall and droughts	Variable/unpredictable temperature and rainfall Terrestrial surface water resources are very vulnerable to the impacts of climate change	Declining soil productivity and population growth Two-thirds of the country falls within the Sahara desert
Group interview details	30 group and 30 key-informant interviews in 15 villages across 7 agroecological zones (approximately 300 participants in total)	12 group interviews at 6 sites in 2 regions across agroecological zones (90 participants in total)	10 group interviews in 5 districts (140 participants in total)	10 group interviews in 5 villages in 2 production systems (approximately 100 participants in total)

Source: Compiled by authors (see Aberman et al. 2014 for full source list).

^a Employment in agriculture computed with FAOSTAT 2011 country data (economically active population in agriculture as share of total population, <http://faostat3.fao.org/>).

^b Agriculture value added as a share of Gross Domestic Product from World Data Bank indicators for 2012 (<http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>).

ary impacts of climate change were also raised. In Ethiopia participants linked the decreasing crop yields to malnutrition and famine, whereas in Bangladesh and Kenya heavy rains and floods were linked to water-borne disease. In addition, in Bangladesh, Kenya, and Mali, scarce water resources were linked to increasing inter- and intracommunity conflicts. In Mali, participants emphasized these adverse social impacts, including the negative effects of mass migration and the breakdown of the family structure and family values.

ASSET USE IN ADAPTATION

Across countries, jewelry and small animals tend to be owned or controlled by women. In Mali, women were also described as controlling vegetable gardens, but female control of land is tenuous, with ownership remaining with the husband (or, upon the husband's death, his brothers). Assets owned by women were typically gifted at marriage (for example, jewelry and, in Ethiopia, trees) or purchased by the women themselves. Main crops and large livestock were considered the property of men by default. In Ethiopia, moreover, women control some less important grains, whereas men control the staple grains and any marketable crops. In all cases, women's

assets were seen as the most suitable for sale in the case of climate change-related shocks.

ADAPTATION APPROACHES

All participants discussed the use of varieties suited to new climatic conditions, such as drought-resistant varieties (Kenya) and early maturing varieties for shorter rainy seasons (Kenya and Mali). In Bangladesh and Ethiopia, participants noted changing planting patterns, such as planting fruit trees and traditional plants that were better able to withstand rainfall variation. The need to take up or intensify irrigation was noted in Bangladesh and Kenya, as well as applying soil conservation and other water management practices. All countries discussed attempts to diversify livelihoods through the production of fruits, vegetables, dairy, or livestock for sale, or through urban and international migration. In Bangladesh and Kenya, women said they now purchased clean water, whereas in the past they were able to access suitable water from wells, rivers, and other free sources. In Ethiopia, participants mentioned now having to boil water for consumption. In Bangladesh, people were also paying more for irrigation water because using traditional methods to access shallow ground-

water were no longer effective due to lowered groundwater levels.

Farming cooperatives and other community groups were discussed in all countries as mechanisms for accessing credit, agricultural inputs, and trainings on new agricultural practices. In Bangladesh, interviewees also noted turning to groups for help with natural resource management and community conflict resolution. In Ethiopia, they emphasized soil conservation and water management. In Kenya, men stressed that group participation allowed people to stand up to crime and corruption without fear of repercussions, and women felt that groups ensured greater accountability and transparency in the distribution of food aid.

Participants across the four countries described selling households' assets to cope with climatic shocks. Assets controlled by women were considered the most suitable to sell in such situations. Other longer term ex ante coping strategies included decreasing food intake.

CONSTRAINTS TO ADAPTATION

Barriers to adaptation included the inability to afford appropriate improved inputs, such as drought-tolerant seed. In Bangladesh and Kenya, respondents emphasized the need for financing to invest in income-diversifying options, such as small businesses and kiosks. The need to improve the capacity to adapt through trainings was raised in all countries, including trainings and tools for traditional agricultural practices (Ethiopia); seed production (Mali); tree planting (Mali and Kenya); value-addition and marketing (Kenya); and income-diversification skills, such as woodwork, market gardening, and production of other crops such as peanuts (Mali). Some contextual factors, including corruption, crime, drug trafficking, and lack of security due to ethnic and political violence, were identified in Kenya as consequences of climate change-related stresses and barriers to climate change adaptation. Bangladesh respondents described elite capture as a constraint—for example, the tendency of wealthy or well-connected households to monopolize water resources in times of drought.

CONCLUDING COMMENTS

Participants in group discussions were starkly aware of subtle climatic changes—and their impacts, such as the reduced ability to access sufficient clean water. Some groups pointed out a diminishing ability to cope with this reality as they are forced to sell limited physical assets to cope with negative climate-related events (shocks), leaving them even more vulnerable. Those with a stronger asset base—whether in



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terms of financial assets or skills or training—were in a better position to respond to climate-related changes and shocks. Most of the agriculture-related adaptive approaches taken, and those desired, were largely based on new technologies, such as drought-tolerant or early maturing seeds or new irrigation technologies. At the same time, people were choosing to return to more “traditional” practices, such as planting older, less marketable but more drought-tolerant, crops; however, information on these traditional practices had become less accessible. Increased pressure on critical resources had changed social and cultural norms related to resource access. For instance, Kenyan women noted that cattle herders now chased them off water points in times of drought; participants in Mali lamented the disintegration of the traditional family structure as young people emigrated and adopted foreign values; and in Bangladesh participants mentioned intra- and intercommunity conflict over natural resources, and a tendency for elite capture in times of scarcity.

These types of social conflicts could be addressed to some extent through developing the institutional capacity of the communities through group participation and trainings. In Bangladesh, some respondents noted that group participation was helping community members to work together more effectively and to manage conflict within and across communities, and in Kenya, people pointed to group participation as a way of standing up to crime and corruption.

Group participation was seen as an important mechanism for enabling adaptation activities and asset development by both men and women. In particular, it was seen as a mechanism for developing human capital and for group investments in expensive technologies. Women noted that groups offered opportunities for loans. In some groups, men pointed to women's loans as a means of coping with shocks.

Participants also noted the secondary impacts of climate change on other sectors, such as education, health, and nutrition. For instance, adverse climate impacts may lead to lack of resources to invest in medical treatment, nutrition, or education, whereas poor health, nutritional status, and human capital limit the extent to which people can invest energy and resources in alternative adaptive strategies. Thus, coping with climatic shocks and adapting to long-term climate change is based on complex social interactions among men and women and their differing—and independent—priorities and decision-making processes. Nevertheless, while it is important to take into account the gender-specific dynamics of climate change—adaptation strategies and their implications for overall well-being outcomes, the results of this research also illuminate the degree to which women’s and men’s adaptive approaches are inherently intertwined.

FOR FURTHER READING

Aberman, N.-L., S. Ali, J. A. Behrman, E. Bryan, P. Davis, A. Donnelly, V. Gathaara, D. Koné, T. Nganga, J. Ngugi, B. Okoba, and C. Roncoli. 2014. *Climate Change Adaptation, Assets, and Group-Based Approaches: Gendered Perceptions from Bangladesh, Ethiopia, Mali, and Kenya*. IFPRI Discussion Paper. Washington, DC: International Food Policy Research Institute, forthcoming.

Bryan, E., and J. A. Behrman. 2013. *Community-Based Adaptation to Climate Change: A Theoretical Framework, Overview of Key Issues and Discussion of Gender Differentiated Priorities and Participation*. CAPRI Working Paper 109. Washington, DC: International Food Policy Research Institute. <http://dx.doi.org/10.2499/CAPRIWP109>.

Davis, P., and S. Ali. 2014. *Exploring Local Perceptions of Climate Change Impact and Adaptation in Rural Bangladesh*. IFPRI Discussion Paper 1322. Washington, DC: International Food Policy Research Institute. www.ifpri.org/sites/default/files/publications/ifpridp01322.pdf.

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The project is supported by the Federal Ministry for Economic Cooperation and Development, Germany, and is undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM).

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This publication has been prepared as an output of the project Enhancing Women’s Assets to Manage Risk under Climate Change: Potential for Group-Based Approaches. It has not been peer reviewed. Any opinions stated herein are those of the author(s) and are not necessarily representative of or endorsed by the International Food Policy Research Institute.

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