



Gender, Climate Change, and Group-Based Approaches to Adaptation

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CLIMATE CHANGE POSES GREAT CHALLENGES FOR POOR RURAL PEOPLE IN DEVELOPING COUNTRIES, MOST of whom rely on natural resources for their livelihoods and have limited capacity to adapt to climate change. It has become clear that even serious efforts to mitigate climate change will be inadequate to prevent devastating impacts that threaten to erode or reverse recent economic gains in the developing world. Individuals, communities, and policymakers must adapt to a new reality and become resilient to the negative impacts of future climate changes. Research has demonstrated that assets, broadly defined to include natural, physical, financial, human, social, and political capital, play a fundamental role in increasing incomes, reducing vulnerability, and providing pathways out of poverty. Assets are essential to poor peoples' ability to cope with climatic shocks and to adapt to the long-term impacts of climate change. Physical assets can be sold to help households cope with shocks, and other assets—such as secure land and water rights, agricultural technologies, livestock, knowledge, and social capital—can assist households in adapting to greater variability in agricultural production resulting from climate changes.

Evidence indicates that disparities exist between men's and women's access to and control over key assets. Rural women in developing countries generally have fewer assets and rights than do men; they are more vulnerable to losing their assets and rights due to separation, divorce, or widowhood; and they have less access to capital, extension services, inputs, and other resources related to agricultural production. Nevertheless, women's asset holdings often have positive effects on important development outcomes, including household food security and human capital formation. Consequently, helping women gain greater access to and control over key assets can increase resilience of households and communities to climate change. Moreover, while the ability of individuals and households to adapt to climate change is essential, it is not a sufficient response to the challenge. The international community has emphasized the need for adaptation and has made more funding available for this purpose. Most of these efforts, however, have focused on top-down approaches and policy solutions. Community-level adaptation strategies are also critical given the location-specific nature of climate change impacts, appropriate responses, and (to some extent) adaptive capacity. Such

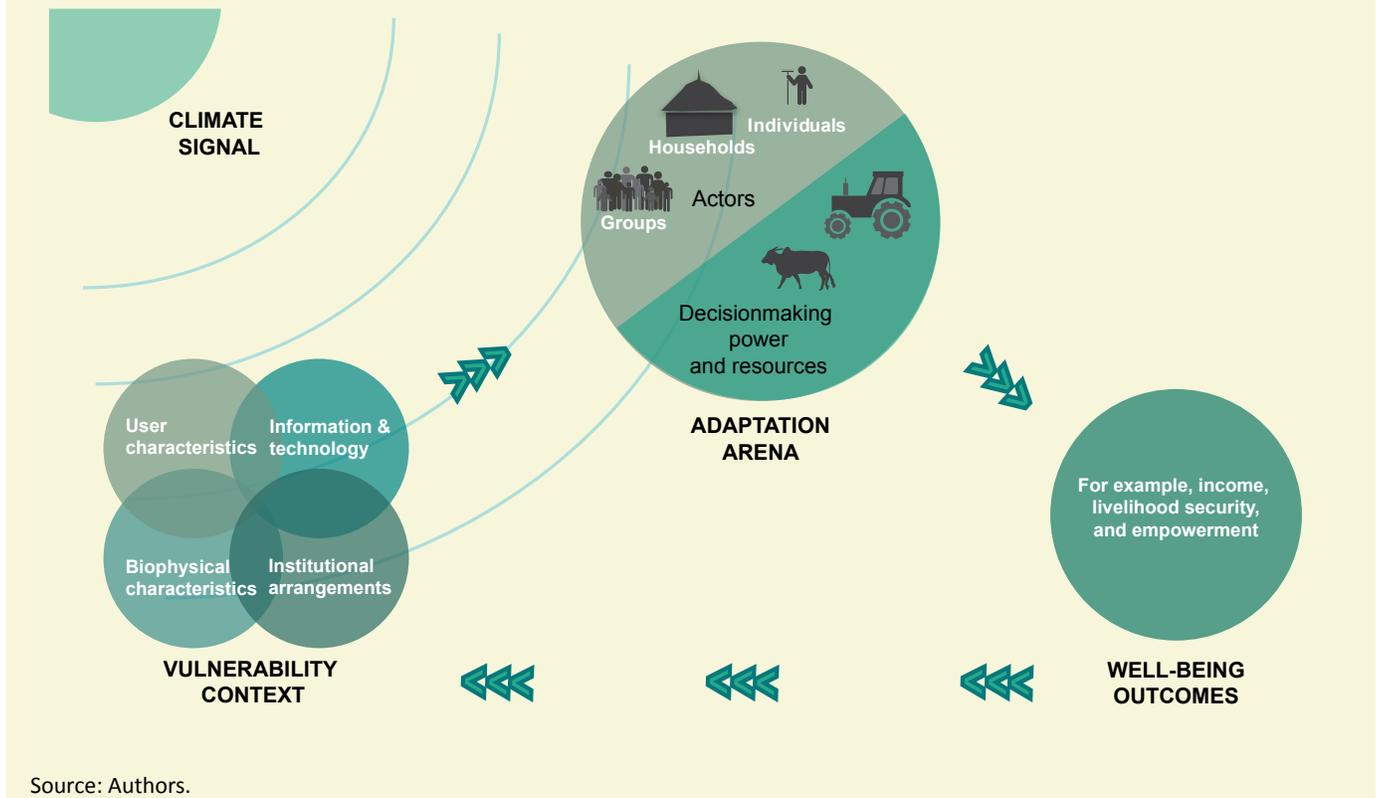
efforts also provide greater resilience to climate change by strengthening and expanding social networks and links with supporting institutions.

This policy note summarizes the findings of two literature reviews on the gender-differentiated impacts of climate change and the scope for community-based adaptation. It also outlines the framework used to guide these analyses and the other papers summarized in this series.

A FRAMEWORK FOR GENDERED ADAPTATION TO CLIMATE CHANGE

The policy notes in this series explore the connections among climate change, gender, assets, and collective action. A framework was developed to incorporate these components, drawing on the Sustainable Livelihoods Framework of the UK Department for International Development; the Institutional Analysis and Development Framework, pioneered by Elinor and Vincent Ostrom (both now deceased); the Gender and Assets Framework of the International Food Policy Research Institute (IFPRI); and the climate change framework of the Third Assessment Report of the Intergovernmental Panel on Climate Change (see Figure 1 for

FIGURE 1 An integrated framework on gender and climate change



how this framework is conceptualized). This consolidated framework illustrates the pathways through which climate change affects well-being at the individual, household, and community levels. It can be used to promote an understanding of the differential impacts of climate change on men and women and, similarly, an understanding of men's and women's differential responses. In the context of vulnerability to climate change and the process of adaptation, this framework emphasizes the value of information, livelihood resilience, institutions, and asset accumulation.

The Climate Signal

The climate signal encompasses long-term changes in average climate conditions, as well as changes in climate variability, such as the timing, intensity, and duration of precipitation, and extreme weather events like droughts and floods. The response of actors and systems depends on the characteristics of the climate stimulus, including the degree of exposure to the stress, and the scale and magnitude of climate-related events.

The Vulnerability Context

The impact of climate change on the well-being of individuals, households, and communities, and their ability to respond to those changes, depends on the context in which climate change occurs. This encompasses all the factors that determine climate change vulnerability at the individual, household, group, or community levels. The climate change literature often defines vulnerability in terms of exposure, sensitivity, and adaptive capacity; a perspective that is more suitable for a broad, top-down view of vulnerability in terms of sectors, systems, and regions. In efforts to sharpen the focus on human vulnerability, however, this new framework draws on the Sustainable Livelihoods Framework and Institutional Analysis and Development Framework to describe the determinants of livelihood vulnerability, as well as their interlinkages.

The framework categorizes the main components of vulnerability as biophysical characteristics, user characteristics, information and technology, and institutional arrangements, all of which are dynamically interrelated. Each of these components is further defined below.

- ▶ **User Characteristics.** Some actors or groups can be considered more vulnerable to climate change impacts given their livelihood activities, assets, social characteristics, and cognitive ability. For example, those that rely on natural resources for their livelihoods may be more sensitive to climate change impacts. Other users may face difficulties in pursuing particular adaptation options by a lack of access to or control over assets or by the inherent constraints of their social status. Gender, in particular, is one user characteristic that may have profound impacts on the ability of individuals to cope with climate change. The vulnerability and adaptive capacity of particular users also depends on cognitive factors—for example, the ability to perceive the risks posed by climate change and the willingness to accept the need to take action to respond—and normative factors—such as social or cultural norms of behavior or beliefs that may limit action despite awareness and knowledge of the risks.
- ▶ **Biophysical Characteristics.** Biophysical characteristics refer to the sensitivity of physical and ecological systems that define the natural limits of adaptation. Such limitations are often viewed as thresholds beyond which change becomes irreversible and the ability to adapt becomes limited. Climate change may alter ecosystems beyond the point at which human activities can be supported. For example, water availability may decline to an extent that makes certain types of agricultural production nearly impossible. These changes in biophysical systems have profound effects on the individuals, households, or communities that access and depend on those resources. Moreover, climate change may exacerbate tensions between environmental conservation and ecosystem services on the one hand, and agricultural production and food security concerns on the other.
- ▶ **Information & Technology.** The ability and nature of the adaptation response depends on an individual's, household's, or community's access to information about climate risks and the appropriate responses to those risks. While many communities have developed their own systems for monitoring climate conditions, this information may not be adequate to inform adaptation if the climate changes in unprecedented ways. Furthermore, climate uncertainty often results in reluctance by farmers to make investments in production technologies, such as fertilizer, which would enable them to improve their well-being over the long run. Access to climate information and technologies for adaptation is, therefore, essential

to enable actors to anticipate long-term risks and make the appropriate adjustments to increase their resilience. However, despite significant scientific gains in predicting the climate, climate information is often lacking at the local level due to uncertainty in climate projections and seasonal forecasts or lack of information on particular climate indicators, such as rainfall variability. Even when climate information is available, incorporation of scientific climate information into local decisionmaking may not occur very often because of poor communication of such information.

- ▶ **Institutional Arrangements.** Adaptation capacity depends on access to assets, information, and biophysical characteristics but must also be viewed within the institutional context in which it takes place. Institutions, including markets, laws, policies, organizations, and social and cultural norms, influence how an individual, household, or community perceives, is affected by, and responds to climate change. That is, institutions have a large influence on how climate risks and impacts are distributed across different social groups and populations, and they affect the roles governing access to and control over the resources and assets necessary for adaptation. Adaptation also depends on institutional capacity, in the sense of the degree of social capital; the ability of community members to work collectively; and their ability to access resources and information from higher-level institutions, such as government agencies and nongovernmental organizations. However, social and cultural norms, and other rules governing behavior, influence the extent to which individuals and groups within a community are able to participate in and benefit from collective adaptation.

The Adaptation Arena

Adaptation can improve well-being outcomes, while at the same time reducing vulnerability to future climate changes by increasing the ability of actors to withstand change and cope with its adverse effects. Actors at multiple scales—from the individual to the community—have different perceptions, needs, and preferences, and make adaptation decisions based on their decisionmaking power and access to/control over resources (such as assets, time, lifestyle, values, and so on). In this integrated framework, the adaptation arena is dynamic. Well-being improvements resulting from adaptation decisions taken today may reduce future vulnerability to climate change and variability and give actors

more freedom to implement future decisions. On the other hand, the inability to take protective measures against future climate change and extreme events may reduce well-being and increase vulnerability over time. In addition, the changing external environment in which adaptation decisions are made, which encompasses policy shifts, changing social networks, and the availability of new technologies and information, also affects the scope of responses available to actors.

The Well-Being Outcomes

Adaptation decisions affect the well-being outcomes of individuals, households, groups, and communities—for example, in terms of their basic needs, income levels, livelihood sustainability, personal and property-related security, and the degree of empowerment. The effect of actions taken to adapt depends on the type of responses available and those chosen. For instance, strategies that increase resilience to climate risks before shocks actually occur, such as diversifying livelihoods or taking out insurance, are likely to have positive outcomes on well-being, but coping strategies adopted after shocks are experienced, such as selling assets, keeping children home from school, or expanding agricultural production unsustainably, may have negative outcomes, including reduced incomes, resource degradation, and loss of empowerment over time. Well-being outcomes also affect future vulnerability to climate change and, thus, future adaptation options.

THE DIFFERENTIAL EFFECT OF CLIMATE SHOCKS ON MEN'S AND WOMEN'S WELL-BEING AND ASSETS

A review of the literature suggests that considerable differences exist in the ways that climate change and climate shocks affect men and women in the areas of agricultural production, food security, human health, natural resources, conflict and migration, and natural disasters. The gender-differentiated impacts of climate change are neither straightforward nor predictable. They vary by context and are mediated by a host of sociocultural, economic, ecological, and political factors.

In terms of agricultural production, increasing climate variability tends to lower agricultural production and has different impacts on women's and men's well-being and assets, including land, livestock, financial, and social capital. The extent to which crop losses result in asset and livelihood losses for both women and men depends on the context, as well as on men's and women's household roles and

asset holdings. Increasing climate variability causes both women and men to invest more time and labor in agricultural production, but women's workloads tend to be heavier because of their additional domestic commitments. Women, however, have less access to agricultural technologies and inputs, which puts them at a disadvantage in adapting to climate change impacts.

The literature suggests that climate change may also affect men's, women's, and children's food security differently, but women and children are often more affected in terms of their health and development. In times of stress, as in the case of climate shocks, women often reduce their own food intake or sell assets, such as jewelry or livestock, to ensure their household's food security, while men seek additional income-earning opportunities. The differential impacts on women's and men's physical health are not clear in the literature, apart from one study suggesting that the indirect effects of malnutrition put women and children at higher risk of contracting diseases in postdisaster situations. There is limited evidence of the differential impacts of climate-related events on men's and women's physical, psychological, and emotional health, but women often report more psychological and emotional distress following climate shocks.

Climate variability increases the scarcity of basic household resources, such as water, fuel, and fodder, and in turn increases women's workloads in terms of the time and the energy required to source, collect, and carry these resources to meet household needs. The additional time devoted to this single activity is also likely to have negative impacts on the longer term health and well-being of women and girls, and can erode their economic opportunities to participate in education, training, and income-earning activities. Natural resource scarcity precipitated by climate change may also increase conflicts over available resources. Evidence is still patchy, but better methods and approaches to investigating the impact of climate change on human security and conflict are being developed. It is likely that climate-induced migration of men in search of work has consequences for both men and women, albeit in different ways.

The immediate impact of climate-related disasters such as hurricanes and floods on individuals is determined by their ability to evacuate to safety in time. Sociocultural factors, such as social norms that prevent women from moving freely in the community or learning to swim, and access to information, such as early warning systems, determine who survives natural disasters. Women tend to be more

vulnerable and have less access to resources, assistance, and support than do men in the aftermath of extreme climate events.

COMMUNITY-BASED ADAPTATION

Community-based adaptation includes any group-based approach that

- ▶ requires collective action and social capital,
- ▶ incorporates information about long-term climate changes and their anticipated impacts into planning processes,
- ▶ integrates local knowledge and perceptions of climate change and risk-management strategies,
- ▶ emphasizes local decisionmaking processes,
- ▶ accords with community priorities and needs, and
- ▶ provides poverty reducing or livelihood benefits.

The literature on collective action and participatory development suggests that community-based adaptation depends on the ability of communities to work collectively through social networks to manage the risks of climate change. Some of the preconditions of successful community-based adaptation include well-defined rules that conform to local conditions (for example, those dealing with the appropriation and provision of resources, conflict resolution, monitoring mechanisms, and sanctions for violators of the rules). Moreover, external agencies must recognize the right of communities to organize, and local organizations should have strong linkages to other supporting institutions and governance structures, such as agencies and organizations involved in economic development, social protection, and risk management. Another important principle for effective collective action is that all members of the group participate in decisionmaking and rule-setting. In practice, however, the extent to which the needs, interests, and priorities of all members of the community are incorporated depends on local power structures. Several other factors may also affect the success of collective action depending on the local context, including group size, the heterogeneity of group members, and the adaptability of the institution to change.

While lessons from the literature are useful in guiding community-based adaptation, climate change may complicate collective action by introducing new shocks into communities or by intensifying existing ones. For example, communi-



ties may use collective action to build resilience to drought that occurs every decade but may be unprepared for severe droughts that occur more frequently than that. In addition, collective adaptation requires location-specific information on anticipated climate changes and appropriate responses, which may not be available in many communities. In many cases, climate change may introduce a considerable degree of uncertainty that complicates collective decisionmaking.

THE GENDER IMPLICATIONS OF COMMUNITY-BASED ADAPTATION

The broader impact of community-based adaptation ultimately depends on who is able to participate. Given a growing body of evidence indicating that climate change and climate shocks differentially affect men and women, gender should be an important consideration in the adaptation process. The literature indicates that adaptation is an inherently “political” process that produces “winners” and “losers.” The scope of participation may differ among members taking part in community-based adaptation. In many contexts, women lack access to the assets necessary for participation, such as land, financial capital, information, or social capital. Women, especially from poor households, are also more likely to face time constraints that limit their ability to participate.

The literature also points to gender differences in setting priorities through group-based approaches to adaptation. Women often have greater responsibility for household food production and preparation, whereas men have greater involvement in market-oriented production. Thus, women may prioritize community-based strategies that promote long-term food and nutrition security, such as

community-level projects, trainings, and facilities focused on food storage and preservation or the development of community gardens with micronutrient-rich food. Similarly, given women's focus on household consumption of water, fuel, and fodder (as previously discussed), women may prioritize community-level investments in domestic water supplies, such as rainwater collection or other types of community water storage, and alternative energy sources, such as biomass, biogas, solar power, improved stoves, and battery-operated lamps. Moreover, given women's domestic workloads, including caring for children, the sick, and the elderly, they are likely to prefer community-based adaptation strategies that allow them to stay close to home.

FOR FURTHER READING

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