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Organizational and Institutional Issues in Climate Change Adaptation and Risk Management

Insights from Practitioners' Survey in Bangladesh,
Ethiopia, Kenya, and Mali

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ABSTRACT

Climate change places demand on existing governance structures to reform and work more effectively than in the past. In response, greater attention to and funding for climate change adaptation—including the efforts of National Adaptation Programmes of Action (NAPAs), the Least Developed Country Fund, the Special Climate Change Fund, the Adaptation Fund, and the E.U. Global Climate Change Alliance—provide an opportunity for institutional, organizational, and human-capacity strengthening. This study was conducted to explore the challenges and opportunities for building human, organizational, and institutional capacity for more effective climate change adaptation in developing countries. It is part of a larger research project titled “Enhancing Women’s Assets to Manage Risk under Climate Change: Potential for Group-Based Approaches,” which is being conducted to help organizations better understand ways in which development projects can assist rural households in adapting to and managing the effects of climate change.

This report provides some reflections and insights on the level of awareness, practices, and organizational and institutional issues being faced by countries as they adapt to climate change, based on interviews with 87 practitioners working in government agencies, local organizations, international organizations, and think tanks reporting involvement in climate change adaptation. Data were collected in Bangladesh, Ethiopia, Kenya, and Mali using both an e-survey platform and face-to-face interviews.

Responses reveal active work within these organizations on climate change adaptation and emphasize their important role in the countries’ efforts to address and adapt to climate change. Responses also reveal strong awareness among these organizations of different aspects of climate change adaptation along the different stages in a climate change adaptation project cycle, which may be a reflection of the active discussions and awareness campaigns during NAPA development in these countries. However, despite the awareness and presence of national strategies and action plans, there seem to be no explicit and clearly defined policy and strategy within these organizations outlining their role in and contribution to the national and collective efforts and, more importantly, no explicit and measurable targets and monitoring and evaluation (M&E) system to track progress and outcomes over time. Reported capacity gaps can be grouped into two categories: training needs and institutional challenges.

In many organizations, there is limited awareness of and emphasis on the need for participation of target groups and beneficiaries during design and planning of climate change adaptation projects. In addition, many respondents reported a need for greater attention to issues related to profitability, financial sustainability, and market access from climate change project design to M&E. Finally, respondents emphasized that climate change projects should pay greater attention to gender, social, political, and cultural issues in their design and implementation. Reflections of respondents also highlighted the need for organizational capacity strengthening for those local organizations working in and providing services to rural communities, and for promoting a culture of impact and M&E within these organizations, in addition to the reported training needs in climate change management and in gender and social analysis.

While this report provides some insights, further empirical analyses are needed to discover more details on strategies that could help trigger mind-set and organizational culture change and to capture the complexity of organizational and institutional issues hindering climate change adaptation efforts that aim at reducing vulnerability and contributing to development outcomes.

Keywords: climate change, organizational analysis, gender

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ABBREVIATIONS AND ACRONYMS

BCCRF	Bangladesh Climate Change Resilience Fund
BCCSAP	Bangladesh Climate Change Strategy Action Plan
CCC	Climate change commission
CCRF	Climate Change Resilience Fund
CSO	civil society organization
KAP	knowledge-attitude-practices methodology
M&E	monitoring and evaluation
NAPA	National Adaptation Programmes of Action
NGO	nongovernmental organization
OECD	Organization for Economic Co-operation and Development
UNDP	United Nations Development Programme
MoEF	Ministry of Environment and Forests (Bangladesh)
BRAC	Bangladesh Rural Advancement Committee
MOA	Ministry of Agriculture (Bangladesh)
NCCRS	National Climate Change Response Strategy (Kenya)
MEMR	Ministry of Environment and Mineral Resources (Kenya)

1. INTRODUCTION

Adverse circumstances and extreme weather events posed by climate change are now a reality worldwide, with major implications especially for poor and fragile states. Climate change impacts, including long-term changes in average temperature and rainfall; sea level rise; and increased frequency of extreme events such as floods, droughts, and storms, have become major concerns for most countries due to their long-term economic and social implications and potential adverse effects on the everyday lives of people. Climate change has put additional pressure on limited natural resources such as water, land, and other scarce resources in developing countries and within poor families. Studies have also highlighted the particular vulnerabilities of women and children, who are most severely affected by the dramatic changes brought about by extreme weather events (Biskup and Boellstorff 1995; Hoddinott and Kinsey 2000; CCC 2009; Goh 2012).

While there is a general consensus that climate change directly affects the way we exist, there remain large knowledge gaps on how best to help poor countries and vulnerable families cope with and manage these changes and to overcome structural and institutional barriers in implementing these measures. There is a growing literature on adaptation measures and risk mitigation approaches implemented in various countries, but little is known about the capacity of local institutions and organizations to manage collective climate change adaptation efforts. At the macro or national level, Dixit et al. (2012) provided an assessment of institutional capacity, focusing on five indicators of a country's overall adaptive capacity: assessment, prioritization, coordination, information management, and climate risk management. At the level of grassroots organizations, Agrawal (2008) provided a conceptual paper on rural institutions in the context of adaptation, emphasizing risk management capacity. At the meso level (that of service providers), however, there seems to be limited analysis of bottlenecks that hinder effective and sustained implementation of climate change adaptation approaches. Climate change is creating serious vulnerabilities that threaten gross domestic product growth, food security, and development, and is therefore placing massive demands on governance structures at these various levels. A positive trend is occurring with the initiation of national climate change action plans and strategies in various countries, and more resources are becoming available for climate change adaptation and risk management. Funding associated with climate change efforts is creating opportunities to strengthen organizational, institutional, and human resources to meet these new demands. Yet so far it is unclear how governments (at the national, decentralized, and local levels) can take advantage of these opportunities to meet these new demands. This study aims to fill this gap in understanding the various types of organizations working on climate change issues, what they do, and the constraints and opportunities they face in working with partner organizations and rural communities to cope with and manage climate change.

This paper aims to

- analyze the perceptions of organizations and their responses to the challenges of climate change for each focus country;
- assess the knowledge and capacity of organizations to respond to the challenges of climate change for each focus country;
- analyze the interaction and linkages between different institutions and organizations in climate change adaptation planning and implementation;
- compare institutional knowledge, attitudes, and practices related to climate change across the four focus counties; and
- suggest opportunities for building organizational and institutional capacity in the four focus countries.

Rather than addressing climate change issues in a broader and general sense, this study particularly focuses on climate change issues related to the agriculture sector and rural livelihoods. We focus on four countries: Bangladesh, Ethiopia, Kenya, and Mali.

This paper is part of a larger research project titled “Enhancing Women’s Assets to Manage Risk under Climate Change: Potential for Group-Based Approaches,”¹ which is being conducted jointly by IFPRI in partnership with the Kenya Agricultural Research Institute, Addis Ababa University, Data Analysis and Technical Assistance in Bangladesh, the Institute of Rural Economics in Mali, and the Center for Development Research and the University of Hohenheim, the latter two in Germany. This project comprises qualitative and quantitative research in the four focus countries to better understand ways in which development projects can assist rural households in adapting to and managing the effects of climate change.

¹ See <http://womenandclimate.ifpri.info/>.

2. DATA AND METHOD

This paper utilizes data from a survey of 87 practitioners in Bangladesh, Ethiopia, Kenya, and Mali, implemented from August 2011 through February 2012 (see details in Table 2.1). It adopts a knowledge–attitude–practices (KAP) methodology, which is commonly used as a diagnostic tool to understand knowledge, capacity, activities, and perceptions of individuals and members of organizations or communities. An important step in the KAP methodology is carefully identifying the indicators and measures of knowledge, capacity, activities, and perceptions that are relevant to study objectives and designing a questionnaire to collect responses on those indicators.

Table 2.1—Distribution of sample respondents in four focus countries

Characteristics of respondents	Number of respondents					% of respondents (Total)
	Bangladesh	Ethiopia	Kenya	Mali	Total	
Total	14	26	36	11	87	100
Type of organization of respondent						
Government agency	3	5	7	3	18	21
Research institute / university / think tank	1	5	8	1	15	17
Local NGO / CSO / foundation / private company	8	7	10	2	27	31
International NGO / technical organization / donor	2	9	11	5	27	31
Sex of respondent						
Female	3	3	12	2	21	24
Male	11	23	24	9	67	76
Age of respondent						
20–25	0	1	1	0	2	2
26–35	2	5	6	1	15	17
36–45	5	9	6	3	23	26
46–55	4	6	23	1	34	39
Over 55	2	4	0	6	12	14

Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–February 2012).

Notes: NGO = nongovernmental organization. CSO = civil-society organization.

Indicators

Agrawal (2008) highlighted the following elements of local institutions working on climate change adaptation:

- Organizational rules that are simple and easy to understand
- Broad local involvement in the organization and its rules
- Fairness in resource allocation
- Clear mechanisms for enforcing rules
- Clear, broadly acceptable mechanisms for sanctioning rule infractions
- Availability of low-cost adjudication
- Accountability of decisionmakers and other officials

Combining these elements with indicators adopted by other studies on organizational design, this paper adopts the following indicators of organizational capacity for climate change-related work:

- Clarity of mission and mandate on climate change
- Policy or strategy on climate change
- Adequacy of resources (physical and financial)²
- Human resources
- Staff motivation
- Organization and management systems
- Monitoring and evaluation (M&E)
- External enabling environment
- Gender responsiveness
- Collective action and group-based approaches

The assessment is divided into three parts. First, we follow a project or activity cycle (from design and planning to implementation and M&E) to trace any gaps between what respondents perceive as important for the success of climate change projects and the actual practices within the organizations. We present the respondents with a predetermined set of elements, indicators, or considerations, which they rate from 0 (not important) to 5 (very important) based on their perception. They then rate the actual emphasis given by their organizations to each of these indicators or considerations. Second, we identify any gaps in skills useful for climate change activities, including gender-sensitive analysis, implementation, and M&E; past training received and its relevance as perceived by the respondents; and training needs in relation to climate change work, gender analysis, and M&E. Third, we identify any problems related to coordination, the organizational system, and the work environment that may demotivate staff working on climate change activities. This is done by presenting respondents with statements that depict ideal scenarios and asking them to rate whether they strongly agree, agree, disagree, or strongly disagree that each scenario exists at their own organizations. We describe the results using tabular analysis, focusing on the differences and commonalities across organization types within a country and across countries.

Questionnaires

The survey questionnaire was rigorously reviewed by the research team and pretested by 10 colleagues from the research team and from the 4 focus countries. The 10-page questionnaire comprised 6 sections: (1) activities of each organization related to climate change, (2) factors considered in the climate change-related project and program cycle, (3) perceptions of factors affecting the success of a project or program on climate change adaptation, (4) current skill sets and trainings needed on gender and climate change adaptation, (5) interactions and linkages, and (6) organizational issues (see Appendix 2 for the questionnaire used).

Sampling Approach

This study used both an e-survey and face-to-face interviews with relevant organizations in the four countries. During the e-survey period, the survey was open to all organizations working on climate change issues in the four focus countries. Only 30 people responded to the e-survey, however, and therefore follow-up face-to-face interviews were conducted. During the face-to-face interviews, the organizations were stratified into (1) government agencies; (2) universities and research institutes; (3)

² We did not attempt to measure “fairness of resource allocation” as suggested by Agrawal (2008), given the complexity of the issue and its equity and moral implications.

nongovernmental organizations (NGOs) and civil-society organizations (CSOs), including private companies and foundations; and (4) international organizations. In each group, 3–5 organizations were selected based on their importance in climate change adaptation and mitigation as perceived and reported by key informants/participants during the process-network mapping (Net-Map) exercise (see Aberman, Birner, and Ali 2011; Aberman, Alemu, et al. 2011; Aberman, Hagland, and Koné 2011; and Ngigi et al. 2011). The final number of organizations interviewed was based on the organization representatives who were willing to be interviewed. The final list of respondents (presented in Appendix Table A.1) represents those key organizations in each group by country.

Characteristics of Respondents

The sample types of organizations for each focus country are presented in Table 2.1. All the organization types (government agencies, research institutes and universities, local NGOs and CSOs, and international organizations) are represented in each country. There are 3 private companies and foundations in our sample, but they come from Bangladesh and Kenya only (that is, none from Ethiopia and Mali). Overall, 31 percent of respondents are from local NGOs and CSOs, another 31 percent respondents are from international organizations, 21 percent are from government agencies, and 17 percent are from universities or think tanks. Seventy-six percent of the respondents are male. The age groups with the greatest representation are 46–55, with 39 percent of respondents, and 36–45, with 26 percent.

The sampled organizations in all the case study countries focus their activities on capacity strengthening and community education on climate change; forest conservation or tree planting; and sustainable livelihood strategies, such as good agricultural practices, soil fertility management practices, and crop diversification, which support climate change adaptation (Appendix Table A.2 lists the specific climate change–related activities of sample organizations). Specific agriculture-related activities include drought-resistant crops (Bangladesh, Ethiopia, and Kenya); organic farming (Bangladesh and Kenya); camel production in arid lands (Kenya); conservation agriculture (Kenya); reducing vulnerability of cotton farmers (Mali); sustainable land and water resources management, including irrigation, watershed management, water and sanitation, water harvesting, erosion control, and sustainable land management techniques (all countries); protection and livelihood strategies in pastoralist communities and rangelands (Ethiopian and Mali); and weather index insurance (Ethiopia and Kenya). Other activities are related to disaster risk reduction and mitigation, including flood mitigation and protection (by NGOs and CSOs, foundations, and donor organizations in Bangladesh), cyclone rehabilitation and emergency preparedness (Bangladesh), and developing and setting up early warning systems (Ethiopia and Kenya). Practitioners surveyed also listed the use and dissemination of energy-efficient biomass stoves in rural communities and research or investment projects on renewable energy as climate change–related activities (Bangladesh, Kenya, and Mali).

3. COUNTRY CONTEXT AND POLICY FRAMEWORK

Bangladesh, Ethiopia, and Mali are among the poorest countries in the world, have low levels of economic growth and human development, and are highly vulnerable to climate change (see details in Table 3.1). While Kenya is better off in terms of economic development compared with the other three countries studied, it still has a low level of human development (UNDP 2011) and faces considerable threats from climate change, which could slow progress toward achieving the Millennium Development Goals and increase the vulnerability of the population. According to the United Nations Development Programme (UNDP 2011), Bangladesh and Mali are ranked 174th and 175th, respectively, out of 187 countries in human development indicators. Bangladesh and Ethiopia are ranked 68th and 76th, respectively, out of 79 countries in food and nutrition security indicators. Bangladesh currently has among the highest proportion of undernourished people and the highest proportion of underweight children under age 5 (more than 40 percent of the population), along with Burundi, Eritrea, Haiti, Zambia, and Angola. Mali has among the highest under-five mortality rate (18 percent), along with Burkina Faso, Chad, Democratic Republic of Congo, Sierra Leone, and Somalia.

Table 3.1—Summary of focus countries’ development, governance, and gender equality indicators

Indicators	Bangladesh	Ethiopia	Kenya	Mali
Human Development Index (2011) (rank out of 187 countries) ¹	146	174	143	175
Global Hunger Index (2012) (rank out of 79 countries) ²	68	76	54	43
Proportion of undernourished in the population (2006–08) (%) ²	26	41	33	12
Prevalence of underweight in children under five years old (2006–10) (%) ²	41	35	16	19
Under-five mortality rate (2010) (%) ²	5	11	8	18
Population living on degraded land ²	11	72	31	60
Number of deaths due to natural disaster (average annual per million people, 2001–10) ²	6	2	2	0
Population affected by natural disaster (average annual per million people, 2001–10) ²	47	35	27	12
Governance indicator (voice and accountability) (percentile rank) ³	37	11	40	55
Governance indicator (political stability) (percentile rank) ³	7	6	10	24
Governance indicator (government effectiveness) (percentile rank) ³	20	42	36	21
Doing business (rank out of 185 countries) ⁴	129	127	121	151
Gender gap (2011) (rank out of 135 countries) ⁵	69	116	99	132
Social Institutions and Gender Inequality index (rank out of 86 countries) ⁶	63	64	46	86

Sources: ¹ UNDP 2011; ² von Grebmer et al. 2012; ³ Kaufmann, Kraay, and Mastruzzi 2011; ⁴ World Bank 2013; ⁵ Hausmann, Tyson, and Zahidi 2012; ⁶ OECD Development Centre 2012.

These low development indicators are a product of political and social challenges in these countries. Ethiopia is among the countries with weak voice and accountability. Bangladesh, Ethiopia, and Kenya are among those with the highest political instability (Kaufmann, Kraay, and Mastruzzi 2011). Mali had performed better in terms of political and social stability until the recent conflict, which started in 2012, crippled much of the country. Furthermore, the Doing Business Indicator ranks Mali as 151st among 185 countries (World Bank 2013). The other three countries also have low rankings in terms of ease of doing business, ranking 121st to 129th of 185 countries. Bangladesh and Mali are ranked lower in government effectiveness than are Kenya and Ethiopia (World Bank 2013). In terms of gender equality, Mali has the worst ranking among the four focus countries, and among the worst in the world (Hausmann, Tyson, and Zahidi 2012; OECD Development Centre 2012). Ethiopia has the second-lowest gender equality ranking among the four focus countries, with Bangladesh and Kenya better in this area.

(Hausmann, Tyson, and Zahidi 2012; OECD Development Centre 2012). Gender inequality (bias toward women) exacerbates women's vulnerability to climate change and has serious implications for children's food security, nutrition, development, and well-being.

The four focus countries are highly vulnerable to climate change and have initiated strategies, action plans, and funding mechanisms to adapt to it. The following subsections review studies on the effects of climate change on these four countries and their policy and institutional responses. While policies are in place and institutional structures are designed to foster coordination and collective planning and implementation, there remain various challenges and constraints to meeting the increasing need for effectiveness, efficiency, and responsiveness to demand among these countries' organizations and institutions. Table 3.1 describes these key challenges as compiled from existing studies.

Bangladesh

As shown in Table 3.1, Bangladesh is highly vulnerable to natural disasters, experiencing 6 million deaths and about 47 billion affected reported from 2001 to 2010 (UNDP 2011). A recent study showed that at least 174 natural disasters affected Bangladesh from 1974 to 2003 (Sapir et al. 2004). Climate change is linked to greater incidence, intensity, and unpredictability of extreme events such as floods, drought, and cyclones, among others, which directly and indirectly affect the life and livelihood of people almost every year. Several studies have quantified the effects of climate change (including rising temperature, drought, sea level rise, and increased frequency of extreme weather events and natural disasters) and the potential impact of these changes on agricultural productivity, food security, and development. Karim and Iqbal (2000) reported that salinity-affected areas in coastal Bangladesh have increased from 0.83 million hectares in 1990 to 3.05 million hectares in 2001 and led to reduced grain production. If these trends continue, further agricultural production would be lost to sea level rise. OECD (2003) estimated a gross domestic product decrease of between 28 percent and 57 percent from a 1 meter rise in sea level. Increases in temperatures have already caused significant crop production losses (Karim 1993; Islam et al. 2008). The Climate Change Cell reports that an increase in the frequency of extreme weather events, such as floods and tropical cyclones, can hinder the country's development for decades, since many of the sectors and institutions providing basic livelihood services to the poor are not able to cope even with today's climate variability and stresses (CCC 2009).

The Bangladesh government has implemented various initiatives to address these challenges. The National Adaptation Program of Action (NAPA) has been initiated to provide guidance for adaptation measures taken up to combat climate change impacts. Among the four countries, Bangladesh is the most advanced in terms of implementation. In 2008, the government developed a Bangladesh Climate Change Strategy Action Plan (BCCSAP) and in 2010, it established a Climate Change Resilience Fund (CCRF), amounting to US\$175 million,³ with pledge contributions from various donors, to implement the activities spelled out in the BCCSAP. The six main pillars of the BCCSAP are (1) food security, social safety, and health; (2) comprehensive disaster management; (3) developing climate-proof infrastructure; (4) research and knowledge management; (5) mitigation and low-carbon development; and (6) capacity building. The secretariat of the CCRF is established at the Ministry of Environment and Forests (MoEF). Of the total activities funded by the Bangladesh CCRF, 85 percent will be implemented by government institutions, 10 percent by nongovernmental organizations (NGOs) and other civil-society organizations (CSOs) under the community-based program, and 2 percent by the World Bank in the form of analytical work and technical assistance under BCCSAP's fourth and sixth pillars.⁴

Major policy documents of the government include climate change considerations. For example, the 2011 revised version of the National Agriculture Policy has included climate change as one of its three priority areas (Bangladesh, MoEF 2011). The National Agriculture Technology Project does research on climate change-sensitive crop varieties. The Disaster and Climate Risk Management in

³ All dollar amounts are in US dollars.

⁴ <http://bccrf-bd.org/page/about-bccrf.html>

Agriculture Project is another project integrated into the Comprehensive Disaster Management Programme under the Ministry of Food and Disaster Management in collaboration with Department of Agricultural Extension of the Ministry of Agriculture.⁵ The Agricultural Extension Policy of 1996 puts emphasis on sustainable agriculture; however, considerations regarding climate-resilient varieties and cropping patterns need to be incorporated. MoEF suggests integrating guidance on climate change and disaster risk reduction issues into its Integrated Pest Management Policy and putting priority on production of climate change–resilient seed production in the National Seed Policy (Bangladesh, MoEF 2011).

The major agriculture-related climate change adaptation strategies used in Bangladesh include switching to climate change–resilient varieties, changing cropping patterns, introducing new irrigation techniques, providing subsidies for diesel fuel or electricity for irrigation, adopting sustainable land management practices, introduction of early warning systems, providing input subsidies, and improving the timely supply of and access to inputs (Bangladesh, MoEF 2011). Strategies to increase resilience to extreme weather events include an early warning system, cyclone rehabilitation, flood mitigation, a massive program of constructing cyclone shelters in the coastal area, and construction of embankments in the coastal area to obstruct the penetration of surge water, among others (Bangladesh, MoEF 2011; practitioners' survey).

Given the importance of resilient varieties and sustainable land management practices as adaptation strategies, organizations belonging to the national agricultural research system have a key role in climate change adaptation in Bangladesh. The three main research institutes developing resilient varieties are the Bangladesh Rice Research Institute (BRRI), which has released and is working on various salt-tolerant, submergence-tolerant, and short-duration rice varieties; the Bangladesh Institute of Nuclear Agriculture, which has released various short-duration varieties; and the Bangladesh Agriculture Research Institute, which is working with heat-tolerant wheat and tomato varieties (Bangladesh, MoEF 2011). Breeder and foundation seeds from BRRI are mass-produced by the Bangladesh Agricultural Development Corporation and disseminated by the Department of Agricultural Extension to farmers for cultivation. Other research institutes include the Bangladesh Center for Advanced Studies, the Bangladesh Fisheries Research Institute, the Bangladesh Institute of Development Studies, and the Bangladesh Livestock Research Institute (Aberman, Birner, and Ali 2011).

The main government agencies that are instrumental in climate change adaptation are the Ministry of Agriculture (MoA), MoEF, the Ministry of Food and Disaster Management, the Ministry of Water Resources, the Ministry of Fisheries and Livestock, and the Local Government and Engineering Department (Aberman, Birner, and Ali 2011). Under these ministries, the key departments are the Department of Agricultural Extension, the Disaster Management Bureau, the Directorate of Livestock Services, the Department of Agricultural Marketing, and the Department of Fisheries. The Soil Resources Development Institution of MoA is working to improve soil health. For example, MoA is encouraging farmers to use organic fertilizers like compost and farmyard manure to improve soil health. Farmers are advised to use green manure and biofertilizers instead of chemical fertilizers to sustain soil health. Agronomic practices like intercropping with leguminous crops, reduced tillage, crop rotation, and mulching are being adopted by farmers to maintain soil fertility. The main NGOs that are instrumental in implementing projects, and often the ones that have direct contact with rural producers, are BRAC (formerly Bangladesh Rural Advancement Committee), CARE Practical Aid, and WaterAid (Aberman, Birner, and Ali 2011). Several donors are working on climate change adaptation strategies in Bangladesh, including USAID, UNDP, and the World Bank.

⁵ <http://dcrma-dae.gov.bd/>

Ethiopia

In Ethiopia, more than 70 percent of the population is living on degraded land (UNDP 2011), and the country is highly vulnerable to drought and flood. Recurrent drought events in the past have resulted in huge loss of life and property as well as migration of people, while major floods, which caused loss of life and property, occurred in different parts of the country in 1988, 1993, 1994, 1995, 1996, and 2006 (Ethiopia, NMA, 2007). Climate change models under a range of different emissions scenarios suggest that the median temperature increase for Africa is 3–4°C by the end of the 21st century, which is roughly 1.5 times the global mean temperature response (Herrero et al. 2010). While precipitation is expected to increase over much of East Africa, the increase in temperature will likely offset any gains from increased rainfall due to increased evapotranspiration. Moreover, extreme events, such as droughts and floods, are likely to become even more frequent. Causes for vulnerability of Ethiopia to climate variability and change include very high dependence on rainfed agriculture, underdevelopment of water resources, inadequate road infrastructure in drought-prone areas, low health service coverage, rapid population growth, and a low level of economic development (Ethiopia, NMA, 2007). Given Ethiopia's dependence on rainfed agriculture and limited resources to adapt to climate changes, long-term changes in temperature and rainfall are expected to decrease net revenues from agricultural production (Deressa and Hassan 2009). In addition, more than these long-term changes in average temperature and rainfall, increases in hydrological variability and the frequency of extreme events will expose the sector and those dependent on it to even higher levels of production and livelihood risks (You and Ringler 2010). Deressa, Hassan, and Ringler (2008) reiterated the strong correlation between Ethiopia's vulnerability to climate change and its poverty, suggesting that integrated rural development schemes aimed at alleviating poverty would increase the country's capacity to adapt to climate change.

In 2007, the NAPA for Ethiopia was initiated and coordinated by the National Meteorological Agency. A steering committee with representatives from several stakeholder institutions was established to provide overall guidance and oversight for the project. These institutions include the Ministry of Water Resources, the Ministry of Agriculture and Rural Development, the Ministry of Finance and Economic Development, the Disaster Prevention and Preparedness Agency, the Ethiopian Science and Technology Agency, the National Meteorological Agency, Addis Ababa University, the Institute of Biodiversity Conservation and Research, the Ethiopian Rural Energy Promotion and Development Center, and the Christian Relief and Development Association, the latter representing NGOs. NAPA priorities include the following (Ethiopia, NMA, 2007):

- Promoting a drought/crop insurance program
- Strengthening/enhancing drought and flood early warning systems
- Development of small-scale irrigation and water harvesting programs in arid, semiarid, and dry subhumid areas
- Improving/enhancing rangeland resource management practices in the pastoral areas
- Community-based sustainable utilization and management of wetlands in selected areas
- Capacity-building program for climate change adaptation
- Realizing food security through a multipurpose large-scale water development project in the Genale-Dawa River Basin
- Community-based carbon sequestration project in the rift valley system
- Establishment of a national research and development center for climate change
- Strengthening of the malaria containment program in selected areas of Ethiopia
- Promotion of on-farm and homestead forestry and agroforestry practices in arid, semiarid, and dry subhumid parts of Ethiopia

Kenya

As with Ethiopia, Kenya is expected to experience a significant increase in temperature by the end of the century. Annual precipitation is expected to increase by approximately 0.2 to 0.4 percent per year; however, regional variations in precipitation are vast, with the coastal region likely to become drier while the highlands and northern Kenya are likely to become wetter (Herrero et al. 2010). Extreme events are likely to become more intense. In particular, wet extremes (defined as high-rainfall events that occur once every 10 years) are projected to increase, while dry extremes are projected to be less severe (Herrero et al. 2010). Moreover, the coastal areas of Kenya will experience a rise in sea level that will have damaging effects on the production of tree crops situated along the coast and other economic activities in this region (Herrero et al. 2010). These changes will have a profound impact on agricultural production, and the country is expected to experience yield losses for key staple crops such as maize, wheat, groundnuts, and irrigated rice (Herrero et al. 2010). Overall, the economic impacts of climate change in Kenya across sectors are estimated to range from \$1 billion to \$3 billion per year (Kenya, MEMR 2010).

In response, the government of Kenya formulated and published a National Climate Change Response Strategy (NCCRS). To operationalize the NCCRS, the government has worked through the Ministry of Environment and Mineral Resources (MEMR) to initiate a process to develop a National Climate Change Action Plan. Separate plans are being developed for adaptation and mitigation strategies—a NAPA and a set of nationally appropriate mitigation actions. Agriculture is a major focus on Kenya's NCCRS. Kenya's Agricultural Sector Development Strategy has also included climate adaptation as a priority (Kenya, ASCU 2010). On adaptation, it includes accelerated investment in weather information systems, research on drought-tolerant crop varieties, soil and water conservation, water harvesting, and strengthening integrated pest management systems, among others. On mitigation, Kenya has already established itself as a leader in agricultural mitigation by hosting a variety of innovative land-based carbon projects, including Vi Agroforestry's Agricultural Carbon Project, which turns sustainable agricultural practices into carbon credits, as well as biogas development programs (Ecoagriculture 2012). The Office of the Prime Minister initiated the development of a Kenyan climate change bill in collaboration with the Kenya Climate Change Working Group (KCCWG), a coalition of more than 200 CSOs advocating for action on climate change in Kenya. If passed into law, the bill would establish a national Climate Change Authority as the entity that would coordinate activities across sectors and guide the implementation of the NCCRS (Ecoagriculture 2012).

The Climate Change Secretariat has been established within MEMR to coordinate climate change activities across sectors. In addition to the secretariat within MEMR, climate change units have been established within the relevant government ministries, including the Ministry of Agriculture (MoA). The mandate of the MoA Climate Change Unit—staffed by four full-time officers and supported by desk officers from MoA's other five departments—is to act as a knowledge broker to support the mainstreaming of climate change into all of the Ministry's projects and programs. It will be involved in development and implementation of policy on climate change in MoA, development of programs and projects, coordination and partnership building with relevant stakeholders, and mobilization of resources for these activities. It has a plan in place to develop a Consultative Forum on Climate Change and Agriculture that would be an interdisciplinary group of experts to advise the Climate Change Unit (Ecoagriculture 2012).

Another recently created government institution leading on climate change is the Office of the Prime Minister's Climate Change Coordination Unit (CCCU). Though small, the CCCU is able to provide high-level political support to climate change activities in Kenya. Its existence is seen as evidence that the government is prioritizing climate change action. The CCCU has a small climate change fund that supports relevant activities within government agencies such as the National Environmental Management Authority and the Kenya Wildlife Service, as well as the civil society-led KCCWG. Despite these initiatives, several experts have also highlighted that the current institutional setup for climate change activities is rather complex due to the involvement of numerous stakeholders and sometimes confusing with overlapping responsibilities across the various committees (Ecoagriculture 2012). Climate change

adaptation and mitigation efforts within the country may be better achieved by revisiting the current structure and streamlining it for simpler processes and easier collaboration.

Mali

As with the rest of the continent, climate change scenarios for West Africa show increasing temperatures (Mertz et al. 2009). However, there is less certainty regarding changes in rainfall conditions, with some models suggesting increases and others decreases in average precipitation (Christensen et al. 2007; Haarsmaa et al. 2005; Held et al. 2005). As with other countries in the region, these changes in average climate conditions, as well as potential increases in the frequency of extreme events, threaten agricultural production and other important sectors of the country (Kurukulasuriya et al. 2006). Mali, a country whose economy is largely based on agriculture, is highly vulnerable to climate change. Projections by FAO suggest that in the worst-case scenario (that of the most severe adverse climate change), the loss of value-added from agriculture production due to climate change is projected to be as large as 16 percent by 2050 (FAO 2012). While human development indicators will likely change minimally and urban population is likely to be absorbed by the rapidly growing industry and services sectors, the impact of climate change will likely be felt most by the rural population (expected to still account for 55 percent of the total population in 2050), who are mostly supported by agriculture (FAO 2012). In FAO's (2012) worst-case scenario, an additional 1.13 million people in rural areas could fall below the poverty line by 2050; along with the projected loss in food production and forest resources, this situation could compromise food security in the rural areas.

Mali has undertaken several initiatives on climate change adaptation. Mali signed the United Nations Framework Convention on Climate Change in 1992 and the Kyoto Protocol in 1999. The country is also a signatory to the United Nations Convention to Combat Desertification and the Convention on Biological Diversity. Mali's NAPA was completed in 2007, led by the Ministry of Environment, with technical and financial support (\$200,000) from UNDP and with contributions of \$2.6 million from the Global Environment Fund.⁶ This initiative brought several benefits, including an increased visibility of climate change issues within the government, raised awareness of climate change and existing adaptation measures among the population, and creation of a planning tool, but there remains a lack of financial resources and staff capacity to implement projects (Goulden et al. 2011).

Mali's NAPA has its critics. Some international NGO representatives have commented that even though the NAPA mentions the need for local participation and consideration of local realities, the proposed actions do not reflect this principle, and many local government officials are not even aware of the NAPA's existence (Djoudi, Brockhaus, and Locatelli 2011). Watts (2012) also highlighted the inability of the NAPA to go far enough in setting out integrated strategies and instruments and to incorporate the climate change-induced conflict and conflict-sensitive approaches. For this reason, institutional adaptation responses are still at an early stage in Mali and lack of capacity hinders the development of a sophisticated conflict-sensitive approach from which this case study might draw more lessons.

UNDP has been especially active in supporting the Malian government in creating and implementing several programs, including a joint UNDP / World Bank agricultural policy improvement program in Mali, which emphasizes the need for sustainable land management. In addition, several key projects have been undertaken to increase adaptive capacity and resilience to climate change. The project Enhancing Adaptive Capacity and Resilience to Climate Change in the Agriculture Sector in Mali, supported by UNDP, aims to strengthen capacities to prevent and manage the impacts of climate change on agricultural production and food security, strengthen climate resilience of agricultural production systems and the most vulnerable agropastoral communities, and disseminate best practices generated by the project. A project on integrating climate resilience into the agricultural sector for food security in rural areas in Mali, supported by FAO, aims to strengthen community-level capacity to explore and test new

⁶ <http://content.undp.org/go/newsroom/2009/december/fiche-pays-le-mali-et-les-changements-climatiques.en>

technologies and management methods through the existing and growing network of farmer field schools, as well as mainstreaming climate change considerations into agricultural-sector planning at the national and provincial levels. Other key programs include the Malian National Program for Renewable Energy for the Advancement of Women, funded jointly by the Malian government and UNDP, and a project titled Strengthening National Climate Policy and Strategies for Adapting to Climate Change, which aims to integrate climate considerations into the investment program for sustainable natural resource management, develop a procedure for the appropriate inclusion of climate considerations in strategic environmental assessments, pilot innovative measures for climate change adaptation in the management of key natural resources (water, vegetation) for and with rural population groups, and raise public awareness of climate change.

Three clusters of institutions are active in climate change adaptation in Mali—government agencies, research institutes, and CSOs—with the support of donors and international organizations (Aberman, Haglund, and Koné 2011). The Agency for the Environment and Sustainable Development and the Ministry of Environment and Sanitation are the main government agencies working on climate change adaptation activities. Among research organizations, the Institute of Rural Economy is an important bridge between the networks of research organizations and government agencies. The Institute of Sahel and AGRHYMET Regional Center (a specialized institute of the Permanent Interstate Committee for Drought Control in the Sahel, composed of nine member states, including Mali) are also active in providing information and acting as a bridge between government and international research organizations. The Permanent Assembly of Chambers of Agriculture of Mali (APCAM) is the most visible CSO supporting climate change issues in Mali. APCAM represents farmers, fishers, and those involved in forest-related activities in various policy dialogues related to climate change adaptation and development in general. APCAM is a member of the National Council of the Environment and Land Management.

4. AWARENESS AND PRACTICE IN ORGANIZATIONS WORKING ON CLIMATE CHANGE

This section compares the four study countries in terms of gaps between the respondents' perceived importance of a set of considerations related to climate activities or the project cycle (design, targeting, implementation, and monitoring and evaluation [M&E]) and the actual weight given to these considerations in practice within their organizations. This section also describes the level of interaction with local and grassroots organizations and the level of gender responsiveness of organizations working on climate change projects in the four countries, according to the respondents. The results are drawn from the e-survey and face-to-face interviews of 87 practitioners working on climate change-related projects or activities (see Table 2.1).

Gaps between Awareness and Practice During the Design Stage

The knowledge–attitude–practices (KAP) approach asks the respondents to rate from 0 (not important) to 5 (very important) a set of 10 predetermined elements that could be considered in the design and planning stage of a climate change adaptation activity or project: (1) technical feasibility, (2) suitability to agroecological and local conditions, (3) environmental impacts, (4) acceptability to target groups, (5) participation of target groups during design and planning, (6) financial sustainability, (7) profitability, (8) market access, (9) political and social constraints, and (10) gender issues.

Across the four countries, all predetermined design elements related to project design were rated important or highly important by a majority of respondents (see Table 4.1). These results indicate strong awareness among respondents of the key elements and considerations needed for designing and planning successful climate change activities. These are encouraging results, suggesting active discussions of the importance of key elements during development of NAPAs and other climate change strategies in those countries.

Table 4.1—Distribution of respondents rating various factors as important or very important in activity design (%)

Factors in climate change activity design	Bangladesh (12)*	Ethiopia (22)	Kenya (36)	Mali (11)
Technical feasibility	100	100	97	100
Environmental impacts	100	100	97	91
Suitability to agroecology and local context	100	96	94	100
Gender issues	100	100	94	100
Financial sustainability	93	100	97	100
Acceptability to target groups	93	100	94	91
Participation of target beneficiaries during design	93	100	91	91
Political and social constraints	93	96	82	91
Market proximity and access	83	92	88	91
Profitability	100	100	94	100

Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Note: * Figures in parentheses are the numbers of respondents. Total number of respondents can be less than that cited in Table 2.1 since a few of the respondents did not answer some of the questions.

However, a few organizations placed less importance on some of the key elements that are generally thought to be crucial for the successful design of climate change projects. Proximity and access to markets, and political, social, and cultural considerations were most frequently rated as not important or of limited importance across the countries. In addition, one or two organizations in each country placed low importance on (1) acceptability of the activity to target groups, (2) engagement or participation of target groups in project design and planning, (3) profitability, (4) financial sustainability, (5) environmental considerations, and (6) gender issues. The low importance that a few organizations placed

on target group participation in the whole project process suggests a need to strengthen awareness of these factors among organizations, especially local and even international nongovernmental organizations (NGOs). Likewise, some respondents' low emphasis on the importance of markets, profitability, and financial sustainability demonstrates the need to raise awareness of the effects of these factors on the poor. Poor populations, who are particularly vulnerable to climate change due to their fewer resources compared with the assets needed to absorb risks and adapt to changes, depend on markets to sell their products and services, and provide their labor. Therefore, government and local NGOs and civil-society organizations (CSOs), and even international NGOs, should be educated on the need to incorporate strategies for income generation, livelihood diversification, and increasing market access into climate change adaptation projects. In Bangladesh, one local NGO rated suitability to agroecology and one local foundation rated gender issues as not important considerations in the design and planning of climate change activities, again demonstrating the need for greater efforts to raise awareness of why and how to incorporate these factors.

Despite strong awareness and recognition of the importance of various considerations during activity design, many organizations working on climate change do not integrate these considerations into their actual practices. In all four countries, many respondents reported that not much attention is given to the financial sustainability of projects and activities related to climate change in their organizations (see Table 4.2). For example, in Mali, 7 out of 11 respondents (64 percent) said that financial sustainability is given less emphasis in the actual design of climate change projects in their organizations than is needed. This reflects the heavy dependence on ad hoc and short-term projects (mainly funded by governments and international NGOs), with financial sustainability of the targeted activity beyond the period of project funding being rarely achieved.

Table 4.2—Distribution of respondents reporting gap between perceived importance and actual practice of various activity design considerations (%)

Factors in climate change activity design	Bangladesh (12)*	Ethiopia (22)	Kenya (36)	Mali (11)
Technical feasibility	7	11	8	0
Environmental impacts	7	4	14	0
Suitability to agroecology and local context	14	11	11	0
Gender issues	7	4	14	0
Financial sustainability	21	22	11	64
Acceptability to target groups	7	8	19	0
Political and social constraints	7	22	11	0
Market access	29	15	31	0
Profitability	14	11	8	0
Engagement of target beneficiaries	7	8	6	0

Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Note: * Figures in parentheses are the numbers of respondents. Total number of respondents can be less than that cited in Table 2.1 since a few of the respondents did not answer some of the questions.

In many organizations in Bangladesh, Ethiopia, and Kenya, there is little focus on increasing market access during the design of projects or activities related to climate change, despite participants' perceived importance of this consideration. In Ethiopia, the biggest gap between participant perception and actual practice relates to political and social constraints. In Kenya, one of the biggest gaps relates to market access and acceptability of the activity to target groups. In Mali and Ethiopia, the biggest gap relates to the presence of local groups for implementation.

Ensuring financial sustainability and continuity of the activity beyond the project span is an area that can be strengthened within organizations with climate change–related programming across all four countries. According to respondents in Bangladesh, Ethiopia, and Kenya, greater attention to market access and the profitability of climate change–related activities is needed within some organizations. Some organizations in Bangladesh and Mali could do more to promote acceptability of the technology,

project, or activity by target groups and communities in the design of climate change projects. Respondents in Ethiopia and Kenya also highlighted that organizations should pay more attention to political, social, and cultural constraints in the design and planning stages. Across all countries, some respondents noted the need for realistic and rigorous needs and gaps assessment before designing activities and targeting beneficiaries.

Gaps between Awareness and Practice During the Targeting Stage

Though most of the organizations said they employ vulnerability assessment, very few responded to an open-ended question asking for the targeting strategy used by their organization. Most of the respondents reported that they use groups or organizations as their beneficiaries or partners. Five respondents in Bangladesh reported targeting groups; in Ethiopia, 10 respondents reported targeting groups and 2 said they do not target and work with groups; in Kenya, 13 reported targeting and 3 said they do not target; and in Mali, 4 reported targeting and 1 said it does not target (other respondents did not answer this section). The groups or organizations being targeted include cooperatives, farmers' organizations, farmer field schools, self-help groups, watershed associations, water user associations, and associations in general.

The most consistently cited targeting criteria in the four countries are : (1) risk of drought or other extreme climate changes; (2) hunger, food insecurity, or nutrition status; and (3) poverty. Land access or land tenure was also commonly cited in Bangladesh, while it was the least cited factor in Mali. Political stability was among the most cited in Mali and the least cited in Bangladesh. Other targeting criteria reported less frequently across all four countries include market access, presence or capacity of service providers (extension, credit, inputs, and so on), and ability of target beneficiaries to afford complementary inputs. Capacity or knowledge of potential beneficiaries was considered as an important targeting criterion in Ethiopia and Mali but was considered less important in Bangladesh and Kenya.

The four countries rated differently the importance of the presence of existing formal or informal groups or social networks as a targeting criterion. A quarter of respondents in Bangladesh and 13 percent in Kenya rated it as not important, while all respondents in Ethiopia and Mali rated it important or very important.

In terms of gap between actual practice and perceived importance, 30–50 percent of respondents in Bangladesh reported that their organizations paid less attention to market access; the presence and capacity of service providers (extension, credit, and inputs); and hunger, food security, and nutrition than they deemed was appropriate, while 20 percent indicated that their organizations should pay more attention to the risk of drought, land access, and political stability (see Table 4.3). In Ethiopia, at least 20 percent indicated their organizations should pay more attention to the capacity and knowledge of target beneficiaries, market access, the ability of target beneficiaries to afford complementary inputs, and land access in targeting their climate change–related activities. Respondents in Kenya and particularly Mali appeared to be largely satisfied with the level of attention devoted to the specified targeting criteria within their organizations.

Table 4.3—Distribution of respondents based on reported gap between perceived importance and actual practice of targeting (%)

Targeting criteria	Bangladesh (12)*	Ethiopia (22)	Kenya (36)	Mali (11)
Poverty level	10	22	4	0
Risk of drought or other extreme climate changes	20	6	4	0
Hunger, food insecurity, or nutrition status	34	19	7	0
Gender issues	18	20	20	0
Market access	50	10	7	0
Presence of existing groups	10	11	0	0
Presence or capacity of service providers	30	17	11	0
Political stability	20	13	14	0
Land access	20	29	16	0
Capacity or knowledge of potential beneficiaries	11	21	11	0

Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Note: * Figures in parentheses are the numbers of respondents. Total number of respondents can be less than that cited in Table 2.1 since a few of the respondents did not answer some of the questions.

Gaps between Awareness and Practice During the Implementation Stage

The majority of respondents rated all the elements related to project implementation as important or very important. The factors considered most important during project implementation by the respondents were acceptability of the project within the target community, availability of local groups within targeted communities to take on implementation, and active participation of target beneficiaries and intended users. The respondents considered the following factors to be less important: ability of female participants to travel to the project site, having both male and female project staff, availability of transportation for field operations, and public infrastructure in the project area (for example, roads, irrigation). All respondents rated increasing participation of women in the project as very important in Ethiopia and Mali, while 9 percent of respondents in Bangladesh and 7 percent in Kenya rated it not important.

In terms of gaps in actual practice, the results suggest that more attention to the acceptability of the project within the target community is needed in all four countries (see Table 4.4). Furthermore, several organizations, particularly in Ethiopia, need to spend more time considering what public infrastructure is needed to support their projects. In Ethiopia and Mali, responses indicate that organizations need to focus more on increasing the ability of female project staff to travel to the project site and increasing the number of women participating in climate change–related projects. In Mali, responses show that organizations need to focus more on the availability of transportation for field operations, the availability of local groups within targeted communities to take on implementation, and active participation of target beneficiaries and intended users during project implementation.

Table 4.4—Distribution of respondents based on reported gap between perceived importance and actual practice in implementation (%)

Factors in climate change activity implementation	Bangladesh (12)*	Ethiopia (22)	Kenya (36)	Mali (11)
Participation of target beneficiaries and intended users in project implementation	8	11	8	25
Acceptability of the project within the community	4	11	25	0
Availability of local groups within targeted communities to take on implementation	4	17	3	25
Availability of transportation for field operations	0	11	16	25
Consultation of both men and women prior to project implementation	3	11	3	0
Having both male and female project staff	7	15	7	0
Ability of female project staff to travel to project site	3	20	4	0
Increasing participation of women in the project	7	20	7	25
Public infrastructure in project area (roads, irrigation)	4	22	16	0
Regular monitoring and making adjustments along the way	7	16	7	0
Regularity of funding or funds releases	0	5	0	0

Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Note: * Figures in parentheses are the numbers of respondents. Total number of respondents can be less than that cited in Table 2.1 since a few of the respondents did not answer some of the questions.

Gaps between Awareness and Practice during Monitoring and Evaluation

The majority of respondents rated the predetermined M&E indicators as important or very important. The most highly rated factors were active participation by intended beneficiaries and measures of environmental sustainability. Factors that were rated not important by some respondents were changes in household income, changes in access to services and information, and changes in the productivity of plots.

In Bangladesh and Ethiopia, one striking observation is that for almost all of the factors related to M&E, there was a large gap between what the respondents considered important and the actual practices within their organizations (see Table 4.5). All respondents in Kenya reported that their organizations placed less emphasis on strengthening social networks than is needed. In Mali, many respondents suggested that their organizations should pay greater attention to promoting active participation of beneficiaries in M&E and to tracking changes in food security.

Table 4.5—Distribution of respondents based on reported gap between perceived importance and actual practice in monitoring and evaluation (M&E) (%)

M&E indicators	Bangladesh (14)*	Ethiopia (26)	Kenya (36)	Mali (11)
Participation of beneficiaries	45	26	11	67
Coordination	27	28	8	0
Income controlled by women	36	35	14	0
Food security	36	25	3	27
Groups and networks strengthened	55	20	55	0
Household assets	36	25	3	0
Environmental sustainability	9	15	14	0
Productivity	36	30	7	9
Food consumption	27	30	3	0
Access to service and information	18	30	3	0
Empowerment of the poor	30	25	7	0
Household income	30	25	7	0

Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: * Figures in parentheses are the numbers of respondents. Total number of respondents can be less than that cited in Table 2.1 since a few of the respondents did not answer some of the questions.

In Mali, respondents suggested two additional indicators that are important to measure during M&E: (1) active participation of target groups in project implementation and (2) changes in household security. Respondents in Mali also suggested that the impact of the activity on other actors and service providers (for example, municipalities, technical service providers, and NGOs) is important to consider.

Awareness of Factors for Climate Change Activity or Project Success

When respondents were asked what they thought were the indicators of a successful climate change project or activity, there was a wide range of responses across countries. In all four countries, most participants agreed with the set of indicators of project success presented to them. However, in each case, a few respondents considered some of the predetermined indicators not to be important. In Bangladesh, a few respondents reported that beneficiaries' need to have access to credit and other complementary inputs was not important for project success. In Ethiopia, a few respondents did not consider that projects need to be consistent with the development goals of the community to be successful. In Mali, several indicators of project success were not deemed important by a few respondents, including the need for greater attention to gender, work with groups or social networks, and increased food security and agricultural productivity. In Kenya, some respondents disagreed or strongly disagreed with all the predetermined indicators of project success. Across countries, many respondents considered the following as key indicators of project success: increased food security, working with groups and using community-based approaches, and consistency with community development goals.

Access to extension services was considered important in Ethiopia and Mali, and increased food security was considered an important sign of project success in Ethiopia and Kenya. Incorporation of gender concerns was considered one of the most important indicators of project success in Ethiopia but not in the other countries.

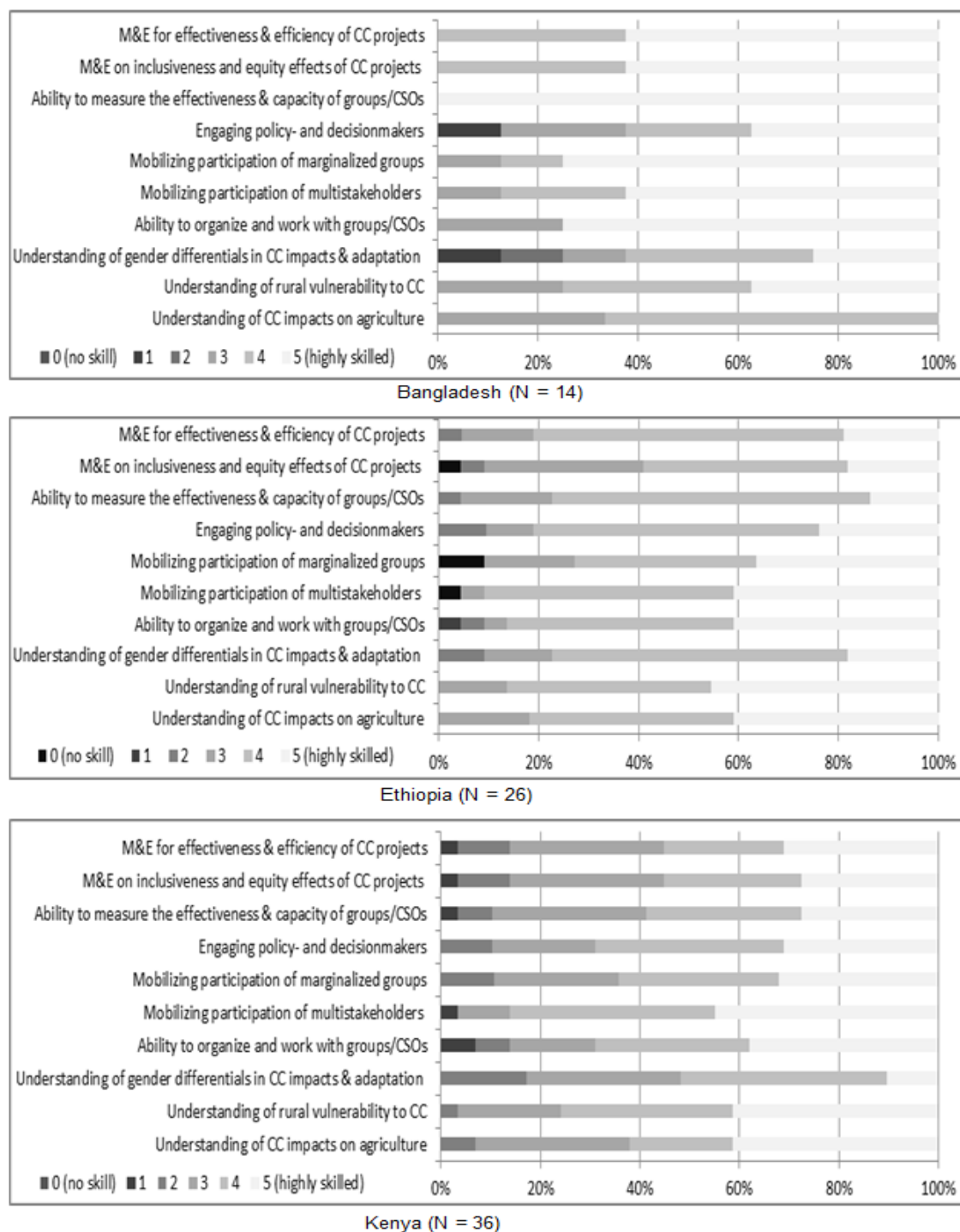
Aside from the predetermined factors, respondents provided additional indicators of project success. Several of the respondents across all four countries consistently emphasized the need for long-term sustainability and continuity after project termination. For example, in Bangladesh, an established or improved community-based extension system, developed local expertise, and improved farmer-to-farmer knowledge exchange were considered additional indicators of project success. In Kenya, some respondents emphasized the need to also look at building and sustaining adaptive capacity. In Ethiopia, some respondents highlighted the need for coordination, synergy, and complementarity of various organizations, projects, and initiatives for an activity or program to be successful. Impact on the communities and rural population were considered important in Mali; measures of happiness and satisfaction of target beneficiaries and communities, and measures of improvement in food safety were also highlighted in Bangladesh.

Gaps in Knowledge and Skills on Climate Change

Figure 4.1 shows that the level of skills in and knowledge of climate change adaptation analysis, project design, implementation, and M&E vary from organization to organization and across countries. The darker shades mean weaker skills and knowledge, and the lighter shades indicate higher ones. Some organizations in the four countries reported strong skills in and knowledge of climate change adaptation (illustrated by the proportion of very light shades), although a large proportion reported some gaps in skills and knowledge (illustrated by middle shades) and a few organizations across the four countries reported major gaps (illustrated by the very dark shades). Figure 4.1 also indicates that a few respondents in Bangladesh, Ethiopia, and Kenya seem to have limited skills in and knowledge of the process of climate change adaptation (indicated by a greater proportion of darker shades in Figure 4.1). In particular, several respondents in Bangladesh reported having limited understanding of gender differentials in climate change impacts and adaptation, and of how to engage policymakers and decisionmakers. In Ethiopia and Kenya, several respondents reported a lack of skills related to M&E of climate change projects, including indicators on inclusiveness and equity; mobilizing and organizing participatory

processes with policymakers, partners, and stakeholders; and understanding gender impacts of climate change. In Mali, several respondents reported that they lacked skills in organizing and working with groups/CSOs.

Figure 4.1—Distribution of respondents based on skills and knowledge on climate change adaptation



Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: M&E = monitoring and evaluation. CC = climate change. CSO = civil-society organization.

The practitioners surveyed mentioned various training and capacity-strengthening needs (see Appendix Table A.3), the most frequently mentioned needs being M&E of climate change impacts; measuring, reporting, and verifying carbon credits; designing and implementing projects that promote climate-smart or climate-resilient agriculture; mainstreaming poverty, environment, disaster, child, ethnic minority, and gender issues into integrated community-based adaptation and mitigation processes; communication, advocacy, and negotiation to engage policymakers and mobilize resources for climate change; designing group-based approaches; improving tools, methods, and hands-on practice for statistical and economic analyses, assessment, and evaluation of climate change; and incorporating gender analysis and M&E into agricultural and development projects, programs, and strategies.

Limited Attention to Gender Responsiveness

Gender responsiveness is evaluated in terms of awareness of and attention to gender issues during activity design, targeting, implementation, and M&E; gender training received and its relevance; skills in gender analysis and M&E; and gender training needs.

Consistent with the fact that almost all respondents in all four countries considered attention to gender issues to be highly important during activity design and planning, almost all of the predetermined indicators were rated important or very important by respondents. In particular, acceptability of the activity or project to both women and men, and differences in needs and perceptions of women and men about the technology or activity were considered important. However, many respondents reported that their organizations did not pay sufficient attention to gender issues. About a quarter of respondents in Bangladesh reported that their organizations paid less attention to gender issues than is warranted. A large proportion of respondents in Kenya indicated they felt that greater attention and importance should be given to the difference in men's and women's mobility outside the home. In Mali, many respondents reported that their organizations did not pay enough attention to differences in responsibilities of men and women in agriculture.

While almost all respondents reported that their organizations pay considerable attention to gender issues during the design and planning stages of the activity or project, more than 70 percent of the organizations surveyed in Kenya and Ethiopia and 60 percent in Mali do not collect, analyze, or report gender-disaggregated data as part of their climate change projects and activities (see Table 4.6). The proportion of organizations collecting, using, or reporting gender-disaggregated data is highest in Bangladesh (three-fourths of respondents). In all the countries, there seems to be a dilution effect in terms of gender integration from design to implementation to monitoring—that is, there is much greater emphasis on gender issues during project design, which tends to disappear during implementation and especially during M&E.

Table 4.6—Distribution of respondents based on reported gap between perceived importance and actual practice of gender-disaggregated monitoring and evaluation indicators (%)

	Bangladesh (14)*	Ethiopia (26)	Kenya (36)	Mali (11)
Use of gender-disaggregated data				
Do not collect, analyze, or report gender-disaggregated data	25	76	72	59
Collect, analyze, or report data on women, men, girls, and boys in household	41	14	19	15
Collect, analyze, or report data on female-headed households and male-headed households	34	11	9	26

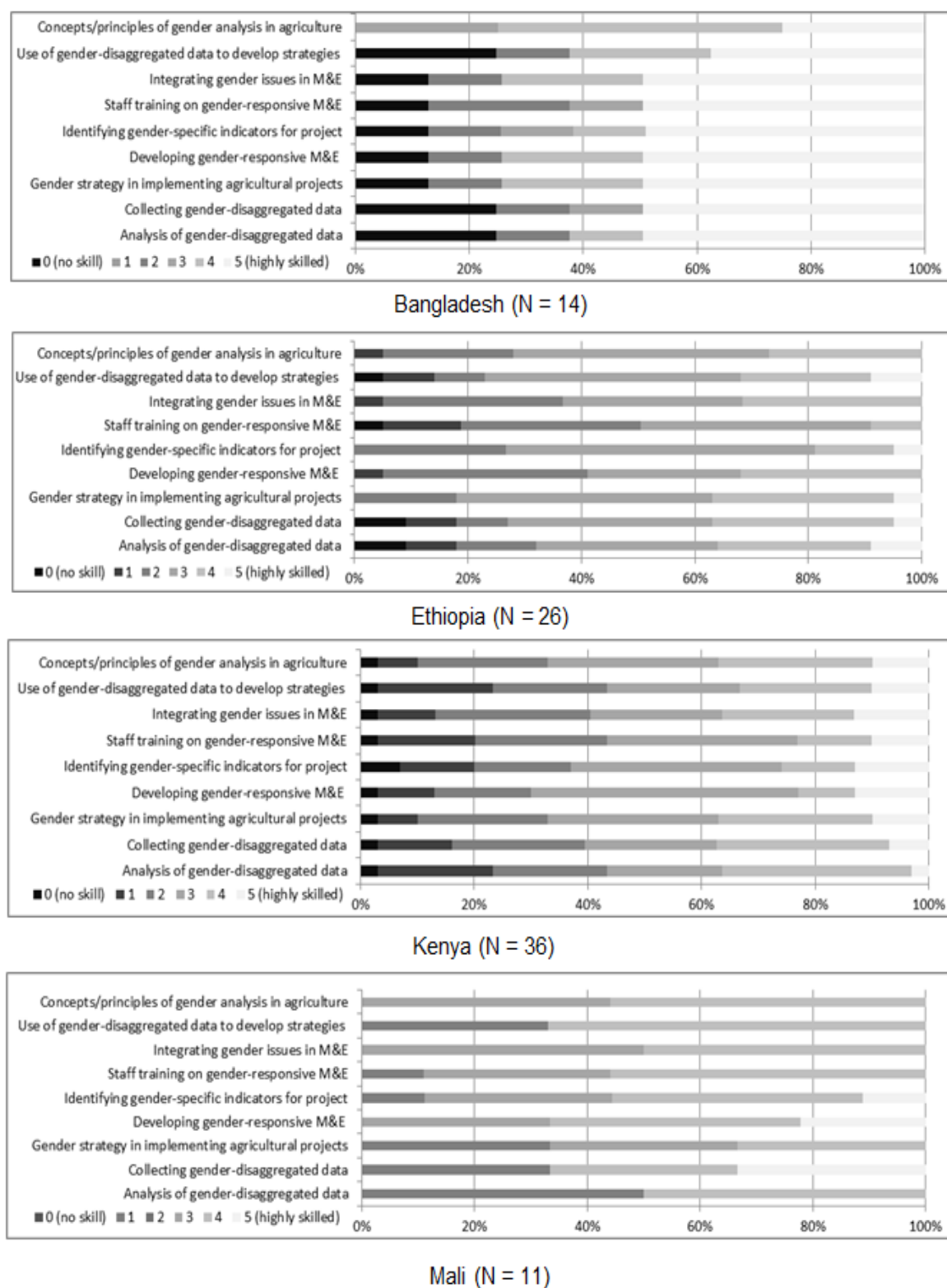
Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: * Figures in parentheses are the numbers of respondents. Total number of respondents can be less than that cited in Table 2.1 since a few of the respondents did not answer some of the questions.

Is this lack of gender responsiveness about lack of skills and capacity? There seems to be no clear pattern between limited gender responsiveness and limited skills or capacity for gender analysis and M&E. For example, more respondents from Bangladesh than from the other three countries reported more frequent gender-disaggregated data collection or reporting, but Bangladesh has the highest number of those reporting no skills in gender analysis, gender-sensitive M&E, and gender mainstreaming. Interestingly, Bangladesh also has also the highest number of those reporting strong skills in gender analysis, gender-sensitive M&E, and gender mainstreaming (see Figure 4.2). That is, respondents in Bangladesh either have no skills or are highly skilled, while respondents from the other countries reported having skills toward the middle of the spectrum. Nevertheless, Figure 4.2 clearly depicts that many practitioners and other staff in their organizations lack skills in gender analysis, gender-sensitive M&E, and gender mainstreaming (depicted by a large proportion of darker shades). The lack of skills in gender analysis, gender-disaggregated M&E, and gender mainstreaming is also evident when respondents were asked about skills in climate change adaptation more broadly (Figure 4.1). This finding cuts across organization types (government, local NGOs/CSOs, research and academic, and international organizations). Greater gender awareness, then, does not necessarily imply greater skills in gender-responsive activities; rather, the opposite may be true. That is, those who reported greater awareness of the importance of the gender dimension realize that there are gaps in skills and knowledge. Therefore, the gaps identified by practitioners suggest there are great opportunities to develop capacity in gender analysis, M&E, and mainstreaming.

Particular skills development and training needs on gender that were mentioned in Bangladesh include collecting gender-disaggregated data, analysis of gender-disaggregated data, and use of gender-disaggregated data to develop strategies for addressing gender. Respondents in Ethiopia mentioned gender analysis in agriculture, climate change, or both; designing and integrating gender-responsive M&E components in projects, programs, and strategies; and training on gender mainstreaming in organizations and activities. Kenyan respondents brought up basic concepts, principles, and strategies to address gender issues in agriculture and climate change adaptation as well as how to develop gender-responsive M&E systems. In Mali, needs expressed were gender-responsive project monitoring; gender-disaggregated data collection; and gender analysis in agriculture, climate change, or both (see Table 4.7).

Figure 4.2—Distribution of respondents based on gender-analysis and gender-integration skills



Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Note: M&E = monitoring and evaluation.

Table 4.7—Number of respondents and their gender training needs

Training needs	Number of respondents
BANGLADESH	
Collecting gender-disaggregated data	5
Analysis of gender-disaggregated data	7
Use of gender-disaggregated data to develop agricultural projects or development strategies for addressing gender	4
ETHIOPIA	
Gender analysis in agriculture, climate change, or both	7
Designing and integrating gender-responsive M&E	6
Training on gender mainstreaming	5
Adaptation activity designs that encourage the involvement of females, role of women in climate change adaptation, skill development for women in agriculture as an adaptive mechanism	3
Designing gender-specific projects; developing gender-responsive goals, outcomes, and outputs	3
Assessment tools for climate change impacts, especially gender-differentiated impacts	2
Pastoralism, gender, and climate change adaptability	2
Tool for collecting and analyzing gender-disaggregated data	2
Gender auditing	1
How to integrate gender issues in policy, strategy, and program frameworks	1
Implementing gender-responsive climate change-related policies and actions	1
KENYA	
Different actions and strategies to address gender issues in agriculture and climate change adaptation (specific mention of how to empower women in climate change adaptation, training women in climate change adaptation and climate information, training small-scale enterprises during drought and famine, training marginalized groups, gender strategies in energy, gender strategies in water, gender strategies to improve food security, gender strategies in disaster management)	10
Concepts and principles, and detailed gender analysis in agriculture, climate change, or both	5
How to develop gender-responsive M&E on climate change	5
Use of gender-disaggregated data to develop strategies for addressing gender	3
Developing tools for collecting gender-disaggregated data	3
Understanding effects of climate change on gender	3
Formulating gender-sensitive policies and strategies on climate change adaptation	3
Development of gender-responsive goals, outcomes, and outputs	2
Developing gender-responsive proposals	1
How to implement IASC Gender Marker	1
MALI	
Gender-responsive project monitoring	4
Gender-disaggregated data collection	3
Gender analysis in agriculture, climate change, or both	5

Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: IASC = Inter-agency Standing Committee; M&E = monitoring and evaluation.

Attention to Collective Action and Group-Based Approaches

In all four countries, working with groups and community-based approaches were considered important factors for the success of climate change projects or activities (see Tables 4.8 and 4.9). In Bangladesh, respondents said the use of group-based approaches is given less importance as a targeting criterion but once target communities and beneficiaries are selected, group-based approaches are given more attention and emphasis in the project's implementation. In Kenya, all respondents reported that the organizations working on climate change need to pay greater attention to the importance of strengthening social networks during M&E.

In Mali and Ethiopia, the gap between perceived importance and actual focus on social networks and group-based approaches was even wider. Seventeen percent of the respondents in Ethiopia and 25 percent of the respondents in Mali indicated that group-based approaches should be used and implemented more in their organizations.

Table 4.8—Distribution of respondents based on responses on the importance of group- and community-based approaches to climate change adaptation (%)

Working with group or community-based approaches as a success factor in climate change adaptation	Strongly agree	Agree	Disagree	Strongly disagree
Bangladesh (14)*	82	18	0	0
Ethiopia (26)	63	37	0	0
Kenya (36)	64	25	6	6
Mali (11)	55	36	9	0

Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: * Figures in parentheses are the numbers of respondents. Total number of respondents can be less than that cited in Table 2.1 since a few of the respondents did not answer some of the questions.

Table 4.9—Distribution of respondents based on responses on availability of local groups (%)

Availability of local groups within targeted communities to take on implementation as a consideration during implementation	Perceived importance			Gap (perceived - actual)
	Not important	Important	Very important	
Bangladesh (14)*	0	0	100	10
Ethiopia (26)	0	16	84	17
Kenya (36)	7	7	87	3
Mali (11)	0	0	100	25

Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: * Figures in parentheses are the numbers of respondents. Total number of respondents can be less than that cited in Table 2.1 since a few of the respondents did not answer some of the questions.

5. ORGANIZATIONAL AND INSTITUTIONAL ISSUES

This section compares the four countries in terms of indicators of organizational and institutional capacity (clarity of mission and mandate on climate change, policy or strategy on climate change, resources, staff motivation and incentive systems, and organizational management systems). This analysis draws heavily on the e-survey and face-to-face interviews of 87 practitioners working on climate change-related projects or activities (see Table 2.1).

Clarity of Mission and Mandate on Climate Change

All of the sample organizations have a clear agenda and were able to list a number of activities related to climate change adaptation, disaster risk reduction, or disaster management. All of them reported that they have a role to play in climate change adaptation, mitigation, or risk management. Activities reported by sample organizations vary, reflecting the complexity of the issue and the need for varied and locally specific adaptation projects cutting across different sectors (see Appendix Table A.1). Responses also reveal strong awareness of the issues related to climate change adaptation along different stages of the project cycle, which may be a reflection of the active discussions and awareness campaigns during development of these countries' National Adaptation Programs of Action (NAPAs).

Presence of Policy or Strategy on Climate Change

All of the sample organizations have a clear idea of their role in climate change adaptation and mitigation. However, not all of them have a strategy or policy that details their role, mandate, and resources in this regard. While all the study countries have implemented or are in the process of initiating a NAPA, the sample organizations do not seem to have clear and measurable climate change targets or a system of monitoring and evaluation (M&E) to collect data and report on target achievement. This may be a reflection on the lack of clear, achievable targets for outcomes and impacts in the NAPAs of these countries. This weak M&E cuts across all organization types and across the four countries (see details in Table 5.1).

Table 5.1—Country comparisons on various indicators of organizational and institutional strategies in climate change adaptation among sample organizations

Indicators	Bangladesh	Ethiopia	Kenya	Mali
Clarity of mission and mandate on climate change	●●●	●●●	●●●	●●●
Policy or strategy	●	●	●	●
Resources	●●	●	●	●
Human resources	●●	●●	●●●	●
Organization and management	●●	●●	●●	●
Financial incentives and benefit packages	●	●	●●	●●*
Staff morale and job satisfaction	●●	●●	●●	●●●*
External environment	●	●	●	●
Attention to gender	●●●	●	●	●
Engagement by the community and groups	●●	●●	●	●
Monitoring and evaluation	●	●	●	●

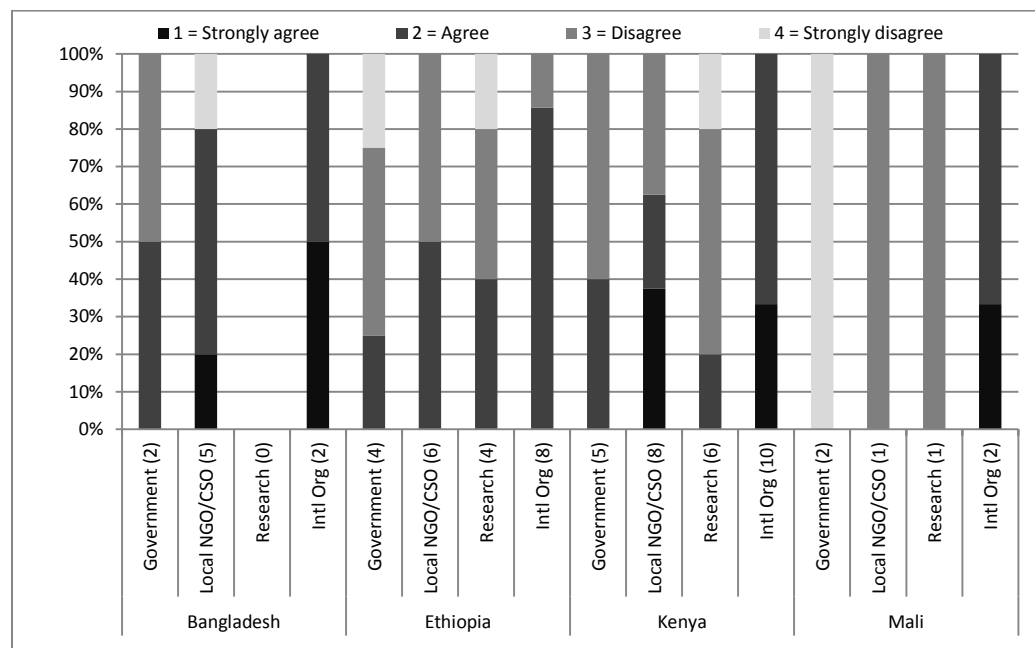
Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: ● = weakest; ●●●● = strongest. * From four or five responses only.

Adequacy of Resources

Sample organizations' representatives were asked whether they agreed with the following statement: "Staff in your organization have enough resources available to carry out their work as required by professional norms." The majority of respondents in Bangladesh and Kenya and half of those in Ethiopia agreed or strongly agreed with this statement, but the majority of respondents in Mali disagreed or strongly disagreed. These responses indicate that many of the sample organizations, especially in Ethiopia and Mali, may not have adequate resources to carry out their climate change-related work (see Figure 5.1).

Figure 5.1—Distribution of respondents based on adequacy of resources



Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

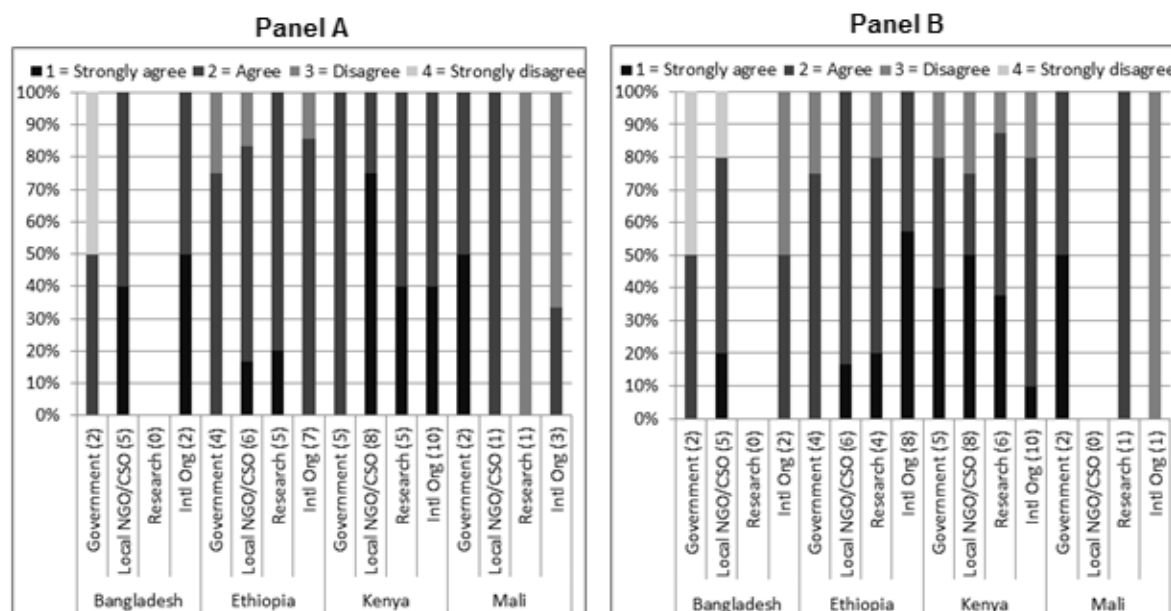
Notes: The statement presented to respondents was "Staff in your organization have enough resources available to carry out their work as required by professional norms." Figures in parentheses are the numbers of respondents. NGO = nongovernmental organization. CSO = civil-society organization.

Human Capacity

Respondents were asked whether they agree with the following statement: "The majority of people in your organization are well qualified to do their job." All respondents agreed with this statement in Kenya, as did 88 and 89 percent in Bangladesh and Ethiopia, respectively (see Figure 5.2). However, 46 percent of respondents in Mali did not agree with the statement. These responses indicate a particularly strong human resource base in the sample organizations in Kenya and considerable capacity in Ethiopia and Bangladesh, compared with much lower capacity in Mali to carry out climate change-related work. Respondents were also asked whether they agree with this statement: "Your workload is adequate." Responses to this statement could signal adequacy of human resources given the workload and activities in the organizations. The majority of the sample practitioners reported just enough workload, although a few disagreed with that statement, including some from government agencies in Bangladesh, Ethiopia, and Kenya; international nongovernmental organizations (NGOs) in Bangladesh, Kenya, and Mali; local NGOs and civil-society organizations (CSOs) in Bangladesh and Kenya; and researchers from Ethiopia and Kenya. These responses indicate that some organizations working on climate change in these four

countries face constraints related to human capacity (quality or quantity). Training and capacity strengthening, especially over the longer term, can help. However, better human resource planning and management can also strengthen institutional capacity to implement climate change activities.

Figure 5.2—Distribution of sample organizations based on perception of human resource base



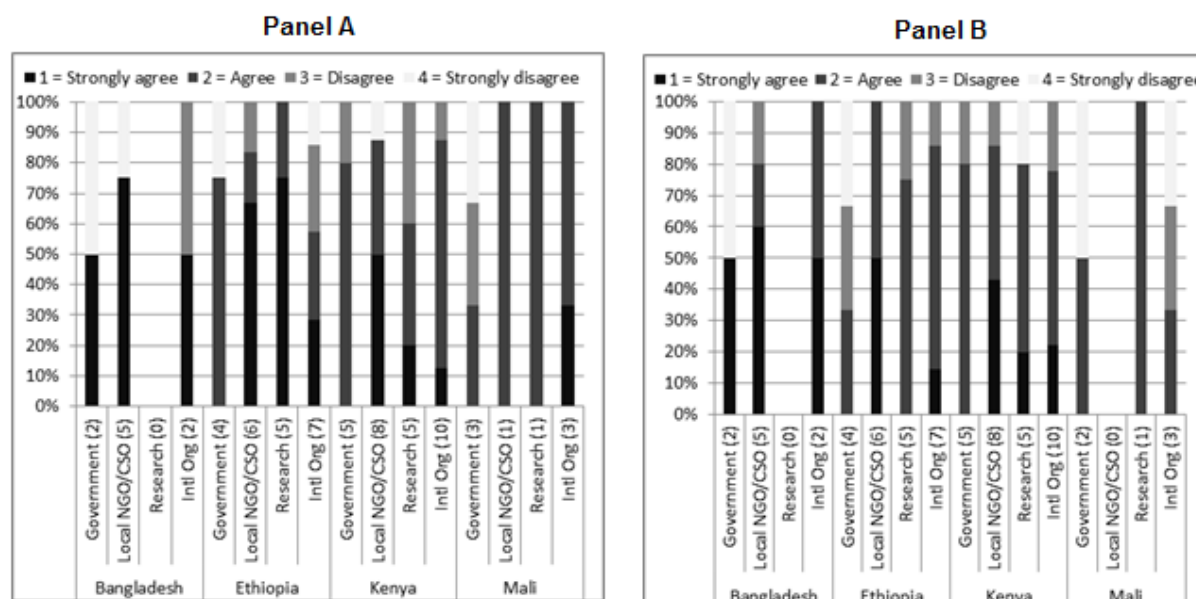
Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: Panel A. Statement presented to respondents was "The majority of people in your organization are well qualified to do their job." Panel B. Statement presented to respondents was "Your workload is adequate." Figures in parentheses are the numbers of respondents. NGO = nongovernmental organization. CSO = civil-society organization.

Organizational Management Systems

Nine statements were posed to respondents to capture the adequacy of organizational management systems within the organizations. Most of the respondents reported satisfaction with the transparency of staff appraisal, promotion, and hiring; organizational management systems; and organizational processes in getting or responding to feedback from clients or stakeholders. However, a few respondents from the government agencies across the four countries reported dissatisfaction (see Figure 5.3 for illustrations of responses to two of the statements). There were also one or two respondents from local NGOs/CSOs, research institutions, and international NGOs reporting some dissatisfaction with the transparency and organizational management systems within their organizations. Such responses imply that additional resources for climate change activities that may be available would likely be constrained by existing weaknesses in coordination and management systems within some of the organizations surveyed.

Figure 5.3—Distribution of respondents based on perception of transparency and adequacy in organizational management systems



Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: Panel A. Statement presented to respondents was “Staff in your organization are promoted purely on the basis of merit.”

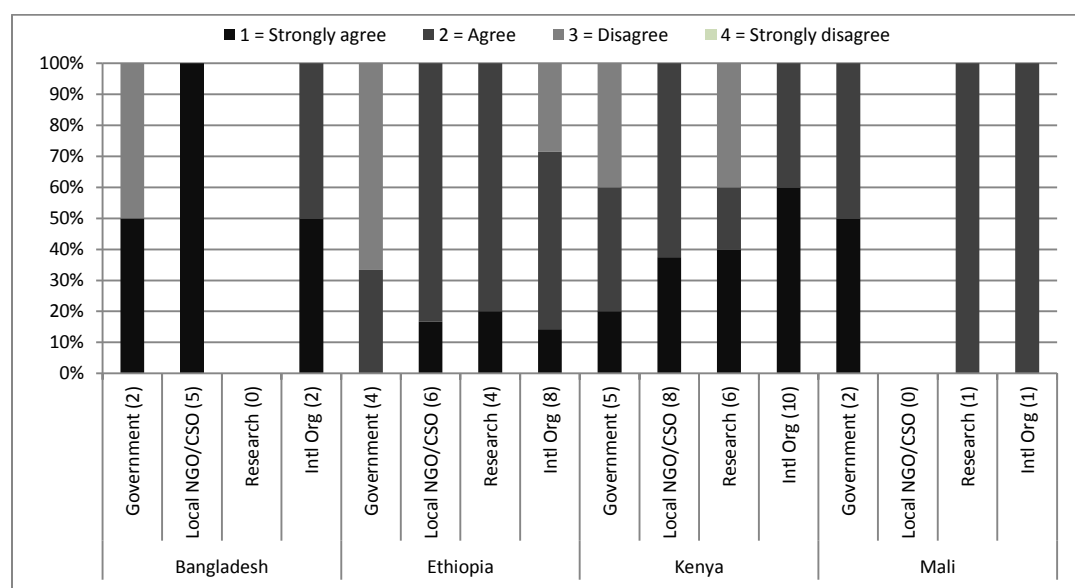
Panel B. Statement presented to respondents was “Performance appraisals in your organization are carried out in a fair way.” Figures in parentheses are the numbers of respondents.

NGO = nongovernmental organization. CSO = civil-society organization.

Staff Morale

The responses were favorable to the following statement: “You are satisfied with your job.” In all the countries, more than 80 percent of the respondents reported that they are satisfied with their job (see Figure 5.4). About 11 percent of practitioners in Bangladesh, 19 percent in Ethiopia, and 14 percent in Kenya reported not being satisfied with their job. These respondents mainly come from government agencies in these three countries and from universities in Kenya.

Figure 5.4—Distribution of respondents based on staff morale



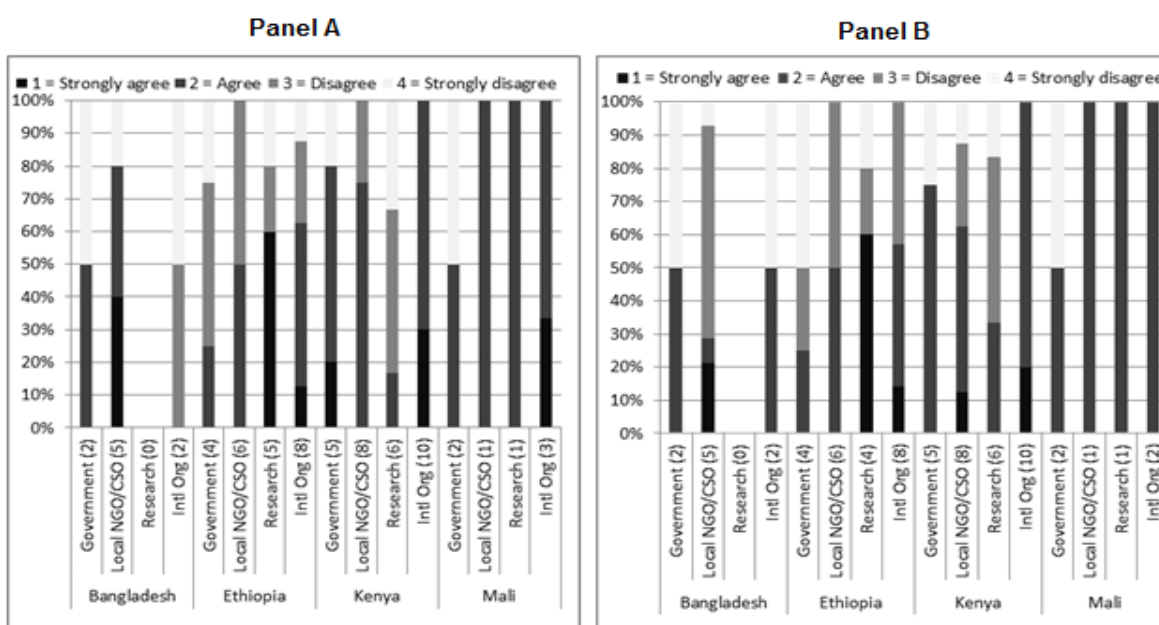
Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: Statement presented to respondents was “You are satisfied with your job.” Figures in parentheses are the numbers of respondents. NGO = nongovernmental organization. CSO = civil-society organization.

Incentives

Respondents were also asked whether they agreed with five statements pertaining to salary and benefits within their organizations. The results showed substantial dissatisfaction with the level of salary and benefits within government agencies across the four countries (see the large proportion of lighter shades in Figure 5.5). The level of dissatisfaction was also high in Bangladesh regardless of the organization type (even international NGOs). In Ethiopia, a large proportion of respondents reported being dissatisfied with financial incentives across all organization types, but especially within the government and local NGOs/CSOs. In Kenya, a large proportion of researchers from think tanks and universities reported being dissatisfied with financial incentives, while fewer from government and local NGOs/CSOs reported dissatisfaction. Fewer practitioners in Mali expressed dissatisfaction with salaries and benefits, but this may be due to the small sample size (only 5 or 6 responded to these questions, many from international NGOs), which may not be representative of the situation within many organizations in the country. Overall, the responses reflect the need to channel some of the available climate change resources to provide better financial incentives to staff, especially within government, local NGOs/CSOs, and researchers working on climate change, or to devise other strategies that would incentivize them to work hard and to contribute fully to the objectives of the organizations toward climate change adaptation and other organizational goals.

Figure 5.5—Distribution of respondents based on satisfaction with financial incentives and benefits



Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: Panel A. Statement presented to respondents was “Your salary encourages you to work better.” Panel B. Statement presented to respondents was “Your salary and other benefits received allow you to maintain a decent standard of living.” Figures in parentheses are the numbers of respondents.

NGO = nongovernmental organization. CSO = civil-society organization.

Table 5.2 details nonfinancial factors that respondents reported to be motivating. This list suggests the variety of nonfinancial rewards that can be utilized to incentivize public servants and nongovernment staff working on climate change issues. In all countries, there was frequent mention of impact on the community and on the poor, as well as seeing tangible results of the climate change work, as the major motivating factor for respondents to perform well in their climate change–related work. Other motivating factors seem to vary a bit by organization type in each country. In Bangladesh, the most frequently mentioned motivators were working for development or having an impact on the poor and being able to work closely with farmers and the community (cited by 5 respondents from government, donors, and foundations). The second-most-cited source of motivation in Bangladesh was teamwork or being part of a good team (with explicit mention of team characteristics such as honesty, accuracy, and timeliness). In third place were having challenging and exciting work and having an opportunity to learn. Similarly, in Ethiopia, the most frequently mentioned motivations (21 respondents) were working for development, making an impact on the poor, offering benefits to the community or country, and having tangible results. The second-most-cited sources of motivation were more resources and funds (4 respondents) and gaining a learning experience (4 respondents); these were followed by being able to work on environmental issues (3 respondents) and having an enabling work environment and professional independence, and freedom for innovation and creativity (3 respondents).

Table 5.2—Number of respondents and reported sources of motivation to perform well in climate change-related work

Motivating factors	All	Research institutes/ universities	Local NGOs/CSOs	Govt agencies	Donor/intl orgs
Bangladesh					
Development, empowerment of the poor, and impact on the poor	5		1	3	1
Teamwork and characteristics of the team (honesty, accuracy, timeliness)	4		4		
Challenging and exciting work	3		3		
Learning experience	3		1	2	
Working closely with the farmer and community	2		1	1	
Conducive work environment	1		1		
Happiness/satisfaction on the job	1		1		
Recognition from manager and colleagues	1				1
Significant return on investment	1		1		
Useful guidance from supervisor	1		1		
Ethiopia					
Benefits/impact on community or poor	8	1	5		2
More resources	4	1	2		1
Learning experience / training / exposure visits	4		2		2
Benefit to organization	3	1	2		
Benefits to country	3	1	1		1
Smooth work environment; professional independence	3		1		2
Tangible results	3		1	1	1
Being able to work on environmental issues and environmental sustainability	3		2		1
Developing a sense of ownership in beneficiaries, participation of stakeholders	2				2
Freedom from politics, greater transparency	2	1	1		
Recognition of efforts	2				2
Satisfaction of beneficiaries	2			1	1
Collaboration / creating knowledge for partners	2		2		
Equality / gender sensitivity	2			2	
Financial incentives	1				1
Awareness of climate change impacts	1			1	
More activities	1	1			
Personal interest	1	1			
Professional commitment	1		1		
Satisfaction with research project in general	1	1			
Kenya					
Farmer empowerment, improved livelihoods of the poor	17	4	4	4	5
Achieving project's targets and objectives	6	1	2	1	2
More resources/funds	6	2	2	1	1
Recognition and awards / recognition and guidance from supervisor	6		4		2
Better remuneration / financial package	5		2	1	2

Table 5.2—Continued

Motivating factors	All	Research institutes/ universities	Local NGOs/CSOs	Govt agencies	Donor/intl orgs
Kenya (continued)					
Enabling environment / freedom from politics / more support from government	4	3	1		
Good working environment / better facilitation	3		2		1
Personal and professional development / training and skills development provided	3	1	2		
Recognition of climate change and its impacts / more organizations and individuals joining the project	3		1	1	1
Being facilitated to use current technology	2	1		1	
Freedom for innovation and creativity / minimal supervision	2				2
Being able to do regional/cross-country work	1	1			
Better facilities, Internet access	1	1			
Effective teamwork	1				1
Uptake/commercialization of products	1	1			
Mali					
Impact on the poor and the community	2		1	1	
Ability to work on climate change and on agriculture issues	2			2	
Recognition of climate change and its impacts / more organizations and individuals joining the project	1			1	
More collaborators / support on climate change and on project	1			1	
Graduates of the program excelling in different organizations	1			1	

Source: Raw data derived from IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: NGO = nongovernmental organization. CSO = civil-society organization.

In Kenya, the most commonly cited motivating factor was impact on the poor and improved rural livelihoods (17 respondents), and this figure is even higher when tangible results and achieving project objectives are added (mentioned by 6 respondents). Recognition and awards as well as more funds and resources were also commonly cited (6 respondents each). A conducive, enabling environment and freedom from politics, as well as a better work environment and freedom for innovation and creativity in the organization, were also commonly cited (9 respondents in total). Financial incentives and a better remuneration package were cited by 5 respondents in the government, local organizations, and international organizations. In Mali, reported motivating factors were having an impact on rural producers, development, and the poor (2 respondents); working on the topic of climate change or agriculture (2 respondent); working on a project related to agriculture (2 respondents); raising awareness of climate change in the communities; more collaboration; and seeing graduates from the program/project successfully employed and working on climate change issues. These are important entry points for organization management and leadership to align incentive systems with employee motivators in order to achieve organizational objectives; they are also important inputs to strategies for staff development and for creating a conducive and dynamic organizational culture.

6. SOME REFLECTIONS AND CONCLUDING REMARKS

This report provides some reflections and insights on the perceptions of staff, organizational practices, and organizational and institutional issues being faced by organizations involved in climate change adaptation activities in four countries. The results are based on interviews with 87 practitioners working in government agencies, local nongovernmental and civil-society organizations, international organizations, and universities and think tanks reporting to be involved in climate change adaptation. The serious threats posed by climate change place greater demand on existing governance structures to reform and work more effectively, but with National Adaptation Programs of Action (NAPAs) and more climate change funds available, there is also greater opportunity for institutional, organizational, and human capacity strengthening.

Responses reveal the active work of these organizations on climate change adaptation and emphasize their important role in each country's efforts to address and adapt to climate change. Responses also reveal strong awareness of the factors along different stages of the project cycle that are essential for the success of climate change adaptation projects. Despite this awareness and the presence of national strategies and action plans, however, there seem to be no explicit and clearly defined policies and strategies within these organizations to contribute to the national and collective efforts and, more importantly, no explicit and measurable targets or systems for monitoring and evaluation (M&E) to track progress and outcomes over time. This lack may be a reflection of the lack of clear, achievable targets on outcomes and impacts in the NAPAs of these countries. Some of the gaps in skills, awareness, practices, and human resources can be more easily addressed by training and learning programs. However, some of the identified gaps are more structural and organizational in nature. While organizational and management training could help, changes in management structure and practices and in organizational culture may also be needed.

The results show that within many organizations there is limited awareness of and emphasis on many key considerations during each stage of the project cycle, including the need for participation of target groups and beneficiaries during design and planning; the importance of profitability, financial sustainability, and market access; and attention to gender, social, political, and cultural issues in the design and implementation of climate change projects. While attention to gender issues is perceived as important during the design and planning stage of projects, it seems to be receiving much less attention during implementation and even less during M&E. In particular, many respondents reported that gender-disaggregated data collection, monitoring, and reporting are rarely done as part of their organizations' climate change-related activities. Given the greater vulnerability of women to climate change and the resulting implications for children's development, food security, and well-being, greater capacity building and resources are needed to improve gender-sensitive impact assessment moving forward.

Respondents also reported limited accountability of their organizations to the affected rural communities and a lack of M&E to track and report progress over time. Many of the M&E indicators that were perceived to be important or highly important by respondents were reportedly not emphasized within their organizations. Other organizational challenges reported by respondents included limited transparency, limited mobility to do work, lack of coordination among staff in the organization, inadequacy of resources in the organization to work on climate change issues (especially in Kenya and Mali), and mismanagement or leakage of resources that demotivates those working on climate change and further impedes the impacts of climate change-related efforts. These results suggest a need for organizational capacity strengthening for those local organizations working in and providing services to rural communities and groups, and for improving M&E within these organizations, in addition to the more common technical training activities for climate change management and gender and social analysis. These efforts should be coupled with greater commitment from management and higher authorities to promote the organizational changes needed to make projects more effective. More resources and training will not be enough to make climate change efforts work to reduce the vulnerability of the

poor and marginalized groups without a greater commitment and cultural change within the organizations themselves.

While this report provides some insights, further empirical analyses are needed to discover more details on strategies that could promote changes in organizational culture and to capture the complexity of organizational and institutional issues hindering climate change adaptation efforts.

APPENDIX: SUPPLEMENTAL TABLES

Table A.1—List of organizations surveyed and climate change–related work

Organization type	Organization name	Focus	Role in climate change	Specific project
BANGLADESH				
Academe/ research	Bangladesh Centre for Advanced Studies (BCAS)	Research	BCAS is a key team member for climate change and agriculture.	
Academe/ research	Bangladesh Unnayan Parishad	Research	Our organization is involved with various research projects related to climate change adaptation / risk management in agriculture and rural livelihood.	A pilot study on climate change adaptation and risk management in flood-prone and salinity-affected areas, reviewing international climate change negotiation, and a pilot study on adaptation and risk management
Foundation/ private	Arannayk Foundation; also called Bangladesh Tropical Forest Conservation Foundation	Project implementation	Conservation of forests and biodiversity through improving livelihood of forest-dependent communities so that their dependence on forests is reduced	All 27 ongoing projects supported by the Arannayk Foundation are on forests and biodiversity conservation (www.arannayk.org). The main outcomes of the projects are (a) forests and biodiversity are conserved and (b) the livelihoods of forest-dependent communities are improved.
Government	Poverty– Environment– Climate Mainstreaming (PECM) project	Project implementation, policy	PECM project is mainstreaming climate change adaptation into the development planning and budgeting process. In doing so, the project is reviewing eight agriculture-sector projects and eight rural development–sector projects and advising the project teams on how to better mainstream climate change adaptation into these projects.	
Government	Department of Agricultural Extension (DAE), Ministry of Agriculture	Project implementation, advocacy	DAE is working in 4 climate-vulnerable areas of Bangladesh (drought-prone, coastal saline-prone, flood- and flash flood-prone) in 52 subdistricts of 26 districts.	Disaster & Climate Risk Management in Agriculture Project
Government	Water Resources Planning Organization (WARPO)	Policy	WARPO is a macro-planning organization of the water sector. Respondent is one of the coordinators within the six who make the Bangladesh NAPA.	

Table A.1—Continued

Organization type	Organization name	Focus	Role in climate change	Specific project
Intl NGO	WaterAid	Project implementation	Focusing on climate change adaptation focusing on safe water supply, integrated water resource management, and sanitation and hygiene promotion for the vulnerable communities	Working on some study and collaborative research like identification of hot spots for climate change, focusing water supply, and developing vulnerability assessment tools. We are piloting and promoting climate-resilient water and sanitation facilities, and are involved in a few adaptation projects in coastal areas.
Intl NGO	Practical Action Bangladesh	Research, project implementation and M&E, advocacy, policy	Involved in project Alternative Strategies for Community-Based Flood Mitigation in South Asia, which involves technology identification and promotion for disaster risk-reduction strategies and management for flood-affected communities	
Local NGO/CSO	Krisoker Saar (Farmers' Voice)	Research, project implementation and M&E, advocacy, policy	Krisoker Saar (Farmers' Voice) is a tiny farmers' research institute evolved from the local community itself through a nonconventional way of institutional formation and development.	Under the program Changing Climate, Development Ownership and the Local People—Breaking the SILENCE, Krisoker Saar (Farmers' Voice) is working on organic farming, nature conservation, child education, translating national and international treaties, attending conventions, and awareness raising.
Local NGO/CSO	Palli Karma Shahayak Foundation	Project implementation	One of the NGOs that will be working on various climate change projects under the Bangladesh Climate Change Resilience Fund (BCCRF)	Name of the project is Community Climate Change Program. The project has not yet started its work, and they are now preparing the project-relevant documents.
Local NGO/CSO	Shushilan	Research, project implementation and M&E, advocacy	Shushilan is a local agroecology and rights-based NGO working in the southwest coastal region for ensuring livelihood security of the resource-poor community through promoting sustainable agricultural farming system and environmental health. Wetland resource management with focus on aquaculture is one of the principal components of Shushilan's development initiatives in the region.	
Local NGO/CSO	Environment and Social Development Organization (ESDO)	Research, project implementation and M&E, advocacy, policy	ESDO has been conducting awareness and skill development of alternative livelihoods and agriculture to address climate change adaptation and risk mitigation. Major activities: community education and awareness, environmental education for all, life skills training for men and women, information accessibility through rural information technology center, and demonstration of organic agricultural and integrated crop management systems	Climate change adaptation and mitigation through eco-village for sustainable livelihoods and conservation of biodiversity

Table A.1—Continued

Organization type	Organization name	Focus	Role in climate change	Specific project
Local NGO/CSO	Shakhor Environment and Education Development Society	Research, project implementation, advocacy	Shakhor is working in the northern part of Bangladesh, where most of the areas are severely affected by the drought and river erosion, focusing on awareness-raising and education program.	Change Makers is our regular awareness program for children and youths. Here we are applying a child-to-child approach. First of all we are selecting some schools and students to raise their awareness.
Local NGO/CSO	BRAC (formerly Bangladesh Rural Advancement Committee)	Research, project implementation and M&E, advocacy	Activities of BRAC to combat the adverse effects of climate change: To ensure food security against the effects of climate change in the coastal regions of Bangladesh, BRAC has introduced, with farmers' participation, year-round cropping techniques.	1. Aila relief and rehabilitation activities that had been taken after Aila cyclone to rehabilitate the affected population of the southern part of Bangladesh, 2. developing BRAC's emergency response capacity in Bangladesh
ETHIOPIA				
Academe/ research	Environmental Economics Policy Forum for Ethiopia (EEPFE) at Ethiopian Development Research Institute (EDRI)	Research, policy	Doing research on climate change issues	
Academe/ research	Mekelle University	Research	The organization conducts a survey on weather and insurance.	Impact of the Horn of Africa Risk Transfer for Adaptation program on farmers' livelihood and decision making—Mekelle University undertakes the surveys for this project.
Academe/ research	Addis Ababa University	Research	Mainly via research on climate change impacts/risks on water resources and flood risk	The research is only at proposal stage: integrated water resource management and climate change adaptation of Akaki Basin, Ethiopia.
Academe/ research	Ethiopian Economic Association	Research	Working on research on climate change	
Academe/ research	Forum for Social Studies	Research	We conduct policy research on climate change and rural livelihoods, and organize workshops and lobby.	Example of research: "Climate Change and Rural Livelihood In Northern Ethiopia: Assessment of Climate Change Response Measures in Pastoral Areas"
Donor / intl technical org	World Bank	Project implementation, policy	World Bank finances both upstream work and programs/projects on climate change adaptation / risk management in developing countries.	Examples of projects: Ethiopia Sustainable Land Management Project and Ethiopia Agricultural Growth Project. Both are largely aligned around agricultural productivity, livelihoods enhancement, and income generation.

Table A.1—Continued

Organization type	Organization name	Focus	Role in climate change	Specific project
Donor / intl technical org	United Nations Development Programme (UNDP)	Project implementation , advocacy, policy	UNDP is a partner of the government of Ethiopia in climate change mitigation and adaptation. UNDP provides technical and financial support for climate change actions including policy and strategy development support, analysis and demonstration of good practices, development of tools, diversification, and sustainable financing.	African Adaptation Programme, Millennium Development Goals Fund—environment, climate change and vulnerability, disaster risk reduction and livelihood recovery
Donor / intl technical org	Deutsche Gesellschaft für Internationale Zusammenarbeit – Sustainable Land Management (GIZ-SLM)	Project implementation	The organization is involved in sustainable land management. Most of the activities being carried out are climate change adaptation measures.	Global Climate Change Alliance (GCCA) project. One component of GCCA involves piloting climate change actions in sustainable land management programs while also implementing with strategies to “lock in” the gains secured by climate change—smart agricultural innovation and land rehabilitation.
Donor / intl technical org	United Nations Environmental Programme (UNEP)	Project implementation	Enabling pastoral communities to adapt to climate change and restoring rangeland environments	Enabling pastoral communities to adapt to climate change and restoring rangeland environments: This joint environment program is aimed at strengthening the capacities of the environment, communities, and other relevant stakeholders to respond to situations that threaten the lives and well-being of a significant proportion of the population.
Donor / intl technical org	USAID- —Ethiopia, Economic Growth and Transformation Office	Research, project implementation and M&E, advocacy, policy	Implements pastoral livestock projects, climate change adaption projects, among others	Pastoralists’ Livelihood Initiative project, which aims to protect and strengthen pastoralists and ex-pastoralists through strengthened early warning and response, strengthened economic opportunities, improved natural resource management, and community-based animal health service, among others
Government	Addis Ababa Environmental Protection Authority (AAEPA)	Research, project implementation and M&E, advocacy	AAEPA maintains tree nurseries, and tree planting is conducted annually for environmental rehabilitation and climate change mitigation. It has conducted a series of awareness-raising programs on climate change mitigation.	Awareness-raising project on climate change and urban forestry
Government	Ministry of Water and Energy	Project M&E, policy	Focusing on conserving natural resources through wise utilization, especially we are disseminating energy-efficient biomass stoves for the rural community.	

Table A.1—Continued

Organization type	Organization name	Focus	Role in climate change	Specific project
Government	Federal Environmental Protection Authority (EPA)	Policy	Federal EPA is the focal institution for climate change issues.	
Government	Environmental Joint Program in Ministry of Agriculture	Project implementation	Direct implementation of climate change adaptation project	Enabling pastoral communities to adapt to climate change and restoring rangeland environments program, which has three components: capacity building, climate change adaptation mainstreaming in development/policy, and livelihood enhancement
Government	National Meteorological Agency (NMA)	Research	The National Meteorological Agency has been instrumental in the formulation of the first national NMA report. It undertakes a survey of people on the impact of climate change and develops a suitable mechanism of early warning.	Africa Adaptation Program: Undertakes survey of people on the impact of climate change and develops suitable mechanism of early warning
Intl NGO	Horn of Africa Regional Environment Centre	Research, project implementation, advocacy	This unit is one of the programs of my organization, which all are related to environmental concerns (for example, renewable energies, biodiversity protection, horn greening, and environmental governance).	Climate change adaptation and protection of livelihoods in pastoralist communities (South Omo); involved in introduction of enclosed rangeland management in Nyangatom territory
Intl NGO	CARE Ethiopia	Research, project implementation and M&E, advocacy	Involved in climate change adaptation action research project	Africa Climate Change Resilience Alliance (ACCRA), which is a consortium made up of various international NGOs, and working in Ethiopia, Mozambique, and Uganda. ACCRA aims to increase governments' and development actors' use of evidence in design and implementation of both humanitarian and development interventions (http://community.eldis.org/accra/).
Intl NGO	Norwegian Church Aid (NCA)	Project M&E	NCA supports natural resources management in drought-prone areas.	NCA supports integrated livelihood projects that are based on the principles of watershed development; project components include soil and water conservation, area closure, physical and biological activities, improved agricultural activities and income-generating activities, and introducing fuel-saving stoves.
Local NGO/CSO	Ethiopian Civil Society Network on Climate Change	Research, advocacy	Through implementing capacity-building projects, raising the awareness of the public on climate change, organizing experience-sharing programs, engaging in international negotiations	

Table A.1—Continued

Organization type	Organization name	Focus	Role in climate change	Specific project
Local NGO/CSO	Ethiopia Wetlands and Natural Resources Association	Project implementation , advocacy	We implement projects that help communities to build their resilience capacity toward the shocks from climate change, which involves creation of awareness on climate change, environmental management, and support toward livelihood diversification.	Integrated watershed management projects (several projects we implemented), which aim to maintain ecosystem integrity of wetlands/watersheds, reduce vulnerability of people to environmental shocks and enhance environmental consciousness among stakeholders.
Local NGO/CSO	Poverty Action Network in Ethiopia (PANE)	Research, advocacy, policy	Climate change is one of the major problems affecting the agriculture sector and rural livelihood. PANE is contributing research and advocacy to strengthen mainstreaming of climate change issues in pro-poor policies and strategies.	PANE is not an implementing agency; mainly engaged in researches and dialogues; produced the document titled “The Impact of Climate Change on Plan for Accelerated and Sustained Development to End Poverty / Millennium Development Goals Implementation in Ethiopia”
Local NGO/CSO Local NGO/CSO	Sustainable Land Use Forum Forum For Environment	Project implementation Project implementation , advocacy	In doing sustainable land use and management practices Our organization creates awareness in these areas as part of climate change work.	
Local NGO/CSO	Pastoralist Forum Ethiopia	Advocacy	As our organization works with pastoralists it tries to show how pastoralists are being affected by climate change by preparing conferences, training, and workshops.	Pastoral land tenure and climate change adaptation project—conference with the theme of pastoralism and climate change organized in August 2010
Local NGO/CSO	Enhancing Pastoralist Research & Development Alternatives (EPARDA)	Research, project implementation and M&E, advocacy	Implements risk management project for pastoral livelihood, drought risk reductions, drought cycle management	Adaptability of pastoral livelihood with the current climate change, that is, degradation of pasture lands; introduction of drought-tolerant animal (camel); livelihood diversification
KENYA				
Academe/ research	Kenya Agricultural Research Institute (KARI)	Research	KARI is mandated to carry out research in crops (food, horticultural, and industrial crops), livestock (production and health), natural resources management (soil, water, biodiversity conservation, range management) and socioeconomic areas. We have set up a climate change unit.	
Academe/ research	Maseno University	Research	Professor of geography, specialized in climatology with special focus on climate change and agriculture in Africa	Managing agricultural water in a changing climate in tropical Africa, including educating rural communities on simple rainwater harvesting techniques during rainy seasons, mulching to conserve soil moisture, agrobiodiversity, and producing more food with little water, meaning, improving seed varieties

Table A.1—Continued

Organization type	Organization name	Focus	Role in climate change	Specific project
Academe/ research	Kenyatta University	Research	Research on the functionality of effective microorganisms, especially arbuscular mycorrhiza fungi and rhizobia, in low-input systems	Nitrogen fixation by soybeans in smallholder systems in Kenya; functionality of arbuscular mycorrhiza fungi in low-input systems
Academe/ research	University of Nairobi	Research		
Academe/ research	Kenya Forestry Research Institute (KEFRI)	Research	Through afforestation and reforestation programs and agroforestry	Forest cover and carbon sequestration in central Kenya
Academe/ research	Kenyatta University	Research	The department offers a master's course in climate change and sustainability.	Climate change and sustainability program (master's in environmental studies)
Academe/ research	National Chung Hsing University	Research	Climate change–related research	My thesis focuses on the uses of forages in ruminant nutrition. The issues in climate change will be addressed maybe on how much methane is produced based on diet formulations.
Academe/ research	Intergovernmental Authority on Drought and Development (IGAD) Climate Prediction and Applications Centre	Research	Provision of climate change adaptation services to farmers	
Donor / intl technical org	International Center for Biosaline Agriculture	Research	I was involved in related research projects while in Ethiopia. Currently, my organization does research in this same area/field.	A project conducted in Ethiopia: economics of adaptation to climate change. Done in 2010, it was about climate change–related events in the past, adaptation, future scenarios, ways of adaption, requirements and constraints.
Donor / intl technical org	FAO	Project implementation , policy	Supporting short- and long-term adaptation/mitigation, helping rural and vulnerable communities to adapt their farming skills to climate change, carrying out assessments and monitoring implementation, planting drought-resistant crops and keeping of small stock that would not rely on so much fodder, mainstreaming gender in agriculture, and enhancing food security at household level by supporting women's access to and control over small stock	(1) Mitigation of Climate Change in Agriculture; (2) Arid Lands Resource Management Programme, which implements drought management activities in 30 counties; (3) Improved Community Disaster Risk Reduction, which aims to improve community resilience to drought and improve timeliness in coordination of drought response
Donor / intl technical org	Vétérinaires Sans Frontières Germany	Project implementation	Drought preparedness, drought management initiative	Preparedness and emergency projects; promotion of food security in Africa through livestock production and marketing
Donor / intl technical org	World Agroforestry Centre (ICRAF)	Research	Developing and training on climate-smart agricultural practices	FAO's Mitigation of Climate Change in Agriculture pilot

Table A.1—Continued

Organization type	Organization name	Focus	Role in climate change	Specific project
Donor / intl technical org	International Livestock Research Institute	Research	Climate change is one of our research mandates.	FAO's Mitigation of Climate Change in Agriculture project
Donor / intl technical org	Alliance for Green Revolution in Africa	Project implementation , policy	Through the existence of various programs that include soil health program, seeds program (improved and drought-tolerant seeds), policy program on climate change, and markets program	Soil health; integrated soil fertility and usage practices employing soil and water conservation practices and aspects of conservation agriculture; promotion of organic material, enhanced agroforestry activities, and replantable seed breeds
Donor / intl technical org	CGIAR Program on Climate Change, Agriculture and Food Security (CCAFS—CGIAR Research Program 7)	Research	The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) explores new ways of helping farmers to adjust to global changes in climate and helping decisionmakers to weigh up the pros and cons of different policies.	This program is new and currently in the phase of undertaking household and village baseline surveys. In the meantime a number of projects and activities are being undertaken in three different regions: East and West Africa, and the Indo-Gang.
Foundation/ private	K-Rep Bank	Project implementation	Promoting renewable energy	Maji ni maisha Solar project: promotion of water use for hydropower use of renewable energy (clean climate), promotion of solar system for lighting, and use of biogas through agriculture
Government	Ministry for Development of Northern Kenya and Other Arid Lands	Project implementation and M&E, advocacy, policy	Liaison / resource person on climate change adaptation / risk mitigation mainstreaming in agriculture and rural livelihoods	Adaptation to Climate Change in Arid and Semi-Arid Lands of Kenya (KACCAL)
Government	Adaptation to Climate Change and Insurance Project (ACCI)	Project implementation	Directly related. Project is piloting climate change adaptation strategy development and building capacity of farmers directly and through service providers (private, public, and partnership).	ACCI, which aims to assist the farming community to adapt to climate change. One of the major strategies is promoting good agricultural practices for adapting to climate change (adaptation strategies)
Government	Ministry of Livestock	Research, project implementation	We implement activities on rangeland resource monitoring and livestock production.	Camel production in the arid and semiarid lands, and promotion of rangeland promotion feeds
Government	Ministry of Fisheries Development	Project implementation and M&E, policy	In the management and development of the fisheries sector in Kenya, through extension services and enrollment of regulations to reduce impacts of climate change	
Government	Ministry of Water and Irrigation	Project implementation and M&E, policy	Providing water for irrigation	

Table A.1—Continued

Organization type	Organization name	Focus	Role in climate change	Specific project
Government	Kenya Forestry Service	Project implementation , policy	Providing support to rural communities–based adaptation and mitigation activities in the agricultural/forestry sector	Readiness activities—the process seeks to ensure the country and stakeholders (communities) are ready to participate in climate change response activities.
Intl NGO	Farm Africa	Project implementation and M&E, advocacy, policy	Farm Africa implements projects on agriculture and rural livelihoods in Ethiopia, Kenya, South Sudan, Tanzania, and Uganda, targeting smallholder farmers, livestock herders, and communities living around forests.	Kenya Dryland Farming Project (2009–11). The project introduced conservation agriculture in Mwingi and Kitui Districts in Kenya. In addition the project reintroduced orphaned crops like sorghum and millet, cowpeas and green grams, together with cassava.
Intl NGO	Farm Concern International	Project implementation	We focus on empowering smallholder farmers, building resilience to climate change.	
Local NGO/CSO	Kenya National Federation of Agricultural Producers	Project implementation and M&E, advocacy, policy		
Local NGO/CSO	Kenya Climate Change Working Group	Advocacy, policy	Have project objectives on capacity building	Mutomo community cassava project—livelihood diversification
Local NGO/CSO	Aridlands Resource Management Project	Project implementation	We work in the Northern Kenya where drought has been recurring almost after two years. Our activities have been to support sustainable livelihoods or create new ones and food security. Such activities include drought early warning system and mitigation.	Use of dry-seasonal grazing zones, for example, in Isiolo District, managed by the community-elected Range Users Association
Local NGO/CSO	Rural Women's Empowerment and Development Organization (RUWEDO)	Project implementation , advocacy	RUWEDO is organizing women on food security at household level.	Designing capacity-building program for rural women on climate change mitigation
Local NGO/CSO	Community Research in Environment and Development Initiatives	Project implementation and M&E	Educate, train, raise awareness, demonstrate, provide support to farmers and rural households on climate change adaptation methods that can be used	Strengthening capacity for climate change adaptation in land and water management in Bungoma County. (Just starting the project now.) Funded by FAO through KARI; . Activities: identify, prioritize, and document existing agroforestry management practices for climate change adaptation, and strengthen/establish farmer groups and farmer group facilitators in the selected watersheds
Local NGO/CSO	Elyon Trust	Project implementation	Organic sustainable agriculture	Sustainable agriculture food production

Table A.1—Continued

Organization type	Organization name	Focus	Role in climate change	Specific project
Local NGO/CSO	Adventist Development and Relief Agency	Project implementation	The organization is engaged in provision of water for both human and livestock populations.	Water improvement for Mwingi District Kasanga Emergency project. Drilling of boreholes in the Mwingi project to increase the access of water to the community. Construction of subsurface dams, health and sanitation facilities, as well as roof catchment
Local NGO/CSO	Kenya Rainwater Association	Project implementation	Promoting rainwater management	Mvua–GHARP (Great Horn of Africa Rainwater Partnership): rainwater harvesting and management as well as complementary technologies
Local NGO/CSO	Greenbelt Movement	Project implementation , advocacy	Training community members on climate change adaptation projects and implementation of the same	Rural/grassroots community adaptation, water harvesting, forestry adaptation, and mitigation projects. Trains communities on climate change adaptation and gathers information on their understanding. Currently implementing adaptation/mitigation forestry projects
MALI				
Academe/ research	Rural Economy Institute	Research	Research on climate change adaptation.	There are several projects related to climate change that are running in the institute, for example, a project related to adaptation and resilience to climate change and developing resilience of livelihoods to reduce poverty in semiarid areas of West Africa, initiated by the Association of Agricultural Research Organizations in Western and Central Africa (CORAF/WECARD) with International Livestock Research Institute and national institutions.
Donor / intl technical org	FAO)—Mali	Research, project implementation and M&E, advocacy, policy	To provide technical assistance to integrate climate resilience into agricultural production for food security in rural areas in Mali (	
Donor / intl technical org	Project to Support Environmental Policy	Project implementation	Monitoring and evaluation of development of forest and watershed	
Donor / intl technical org	UNDP	Project implementation	Integrates climate change within the sector-development program and provides technical assistance	National Project for Renewable Energy for the Advancement of Women (PENRAF)

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Organization type	Organization name	Focus	Role in climate change	Specific project
Government	Direction of National Production and Animal Industries	Project implementation and M&E, advocacy	For adequate management of pastoral regeneration of degraded rangelands	
Government	Project on Climate Change Adaptation	Project implementation	Enhance resilience and coping strategies in the agricultural sector in Mali including use of early-maturing varieties, timely and early supply of inputs, and anti-erosion measures	
Government	Agency for the Environment and Sustainable Development	Project implementation and M&E, advocacy, policy	Coordinates the implementation of National Policy for Environmental Protection and ensures integration of adaptation measures to the adverse effects of climate change in municipal planning	
Intl NGO	Oxfam	Research, project implementation and M&E, advocacy, policy	By supporting small farmers to adapt to climate change	Strengthening the cotton program beneficiaries to adapt to climate change in Mali
Local NGO/CSO	Permanent Assembly of Chambers of Agriculture of Mali (APCAM)	Advocacy	APCAM is an institution that represents farmers, fisherfolks, and those involved in forest-related activities in policy dialogues; and is at the heart of the problem of climate change adaptation. APCAM is a member of the National Council of the Environment through land management.	APCAM focuses on advocacy, and not on project implementation, but it is planning reforestation projects at the Chambers of Agriculture.

Source: IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: NGO = nongovernmental organization. M&E = monitoring and evaluation. CSO = civil-society organization.

Table A.2—Reported climate change–related activities of sample organizations

Climate change–related activities	Bangladesh				Ethiopia				Kenya				Mali			
	Govt. (3)	Local NGO/CSO (8)	Re-search/Univ. (1)	Intl. Org. (2)	Govt. (6)	Local NGO/CSO (9)	Re-search/Univ. (5)	Intl Org (7)	Govt (7)	Local NGO/CSO (13)	Re-search/Univ (7)	Intl Org (9)	Govt. (3)	Local NGO/CSO (2)	Re-search/Univ (1)	Intl Org (5)
Livelihood strategies for climate change adaptation		Yes				Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Organic farming		Yes								Yes		Yes				
Agricultural/crop diversification						Yes	Yes	Yes								
Climate-resilient agriculture									Yes		Yes	Yes				Yes
Vulnerability analysis and adaptation for cotton farmers									Yes		Yes	Yes				Yes
Supply producers with seed varieties in a timely matter													Yes			
Soil fertility management									Yes							
Reintroduced orphaned crops like sorghum, millet, and cowpeas										Yes						
Low-input farming systems											Yes					
Research on climate change–sensitive crop varieties	Yes															
Adaptation strategies in arid and semiarid lands									Yes			Yes				
Research on impact of climate change			Yes		Yes		Yes			Yes	Yes	Yes				
Research on water resources							Yes									
Weather insurance programs							Yes		Yes							
Research on natural resources mgt.																
Review of intl. treaty on climate change		Yes														
Information-sharing platforms								Yes						Yes		
Awareness raising on climate change		Yes			Yes	Yes			Yes	Yes	Yes	Yes				
Child and youth education on climate change		Yes														
Flood mitigation		Yes		Yes												
Watershed management																Yes
Water harvesting		Yes		Yes						Yes	Yes					
Water and sanitation		Yes								Yes						
Drought-prone areas		Yes				Yes										
Macro-planning for water sector	Yes															
Forest conservation		Yes			Yes					Yes	Yes	Yes				Yes
Carbon sequestration											Yes					
Management of pastoral land					Yes	Yes		Yes	Yes				Yes			
Developing early warning systems					Yes			Yes			Yes					

Table A.2—Continued

Climate change–related activities	Bangladesh				Ethiopia				Kenya				Mali			
	Govt (3)	Local NGO/CSO (8)	Re-search/Univ. (1)	Intl. Org. (2)	Govt. (6)	Local NGO/CSO (9)	Re-search/Univ (5)	Intl Org (7)	Govt (7)	Local NGO/CSO (13)	Research/Univ (7)	Intl Org (9)	Govt. (3)	Local NGO/CSO (2)	Re-search/Univ (1)	Intl Org (5)
Cyclone rehabilitation and emergency response capacity	Yes															
Community disaster risk reduction					Yes				Yes							
Integrating climate change into municipal planning													Yes			
Fisheries sector									Yes							
Renewable energy									Yes							
Energy-efficient biomass stoves					Yes											
Sustainable land management					Yes				Yes							
Mitigation of climate change in agriculture					Yes				Yes				Yes			

Source: IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: NGO = nongovernmental organization. CSO = civil-society organization.

Table A.3—Reported demand for training and capacity strengthening related to climate change

Organization name	Organization type	Training need 1	Training need 2	Training need 3
BANGLADESH				
Poverty–Environment–Climate Mainstreaming Project	Government	Process of designing and implementing integrated community-based adaptation	Mainstreaming poverty, environment, disaster, child, ethnic minority, and gender issues into community-based adaptation and mitigation process	
Department of Agricultural Extension (Ministry of Agriculture)	Government	Early warning and forecasting	Vulnerability and risk assessment	Clean development mechanism preparation process
Farmers' Voice	Local NGO/CSO	Funding mechanism	Politics in climate change adaptation and risk mitigation in agriculture and rural livelihoods	Advocacy; forming movement and strong advocacy group
Environment and Social Development Organization	Local NGO/CSO	Climate-resilient agriculture	Climate risk management	Sustainable livelihood approach
Arannayk Foundation; also called Bangladesh Tropical Forest Conservation Foundation	Local NGO/CSO	Measuring carbon from forests		
WaterAid	Intl org	Understanding the climate science and factors for change	Adaptation framework and economic analysis	Communication of climate change
Practical Aid	Intl org	Project analysis skill combined with theory and practical aspects of the climate change–based project	Proper documentation skill and language with higher writing ability	Training-of-trainers skill to develop others in the team or outside
ETHIOPIA				
Addis Ababa Environmental Protection Authority	Government	Gender and climate change	Adaptation mechanisms	Mitigation measures
Federal Environmental Protection Authority	Government	Vulnerability and adaptation assessment	Statistical models related to climate change adaptation	Tools and methods of generating collection on climate change adaptation
Environmental Joint Program in Ministry of Agriculture	Government	Results-based M&E	Resource mobilization / fund raising for climate change programs	Negotiation skill in climate change adaptation and mitigation issues
National Meteorological Agency	Government	Training on gender issues		
Ethiopian Civil Society Network on Climate Change	Local NGO/CSO	Training on project cycle management, including project costing and designing	M&E system for climate change adaptation projects	
Forum For Environment	Local NGO/CSO	Impacts of climate change on agriculture	Adaptive mechanisms (innovative) that can be used by communities	Sociology for adapting to climate change (behavioral aspects)

Table A.3—Continued

Organization name	Organization type	Training need 1	Training need 2	Training need 3
Enhancing Pastoralist Research & Development Alternatives	Local NGO/CSO	Participatory risk assessment	Gender and climate change adaptation	Climate change and local economic development
Forum for Social Studies	Research	Mainstreaming adaptation into development planning	Linking risk management and adaptation with weather forecasting and risk insurance for social protection	
Addis Ababa University	Research	Better knowledge of current climate projections in Africa and East Africa especially	Sensitivity of local crops/seeds in Ethiopia to temperature and rainfall variations	More knowledge on microfinancing for women in rural areas
World Bank	Intl org	Measurement, reporting, and verification of greenhouse gas mitigation and carbon finance	M&E of climate change impacts	
United Nations Development Programme	Intl org	Disaster risk management	Scaling down climate models	
Deutsche Gesellschaft für Internationale Zusammenarbeit – Sustainable Land Management (GIZ-SLM)	Intl org	Baseline data collection and analysis to observe the trend	M&E framework development on results-based M&E system	Effective implementation of climate change adaptation projects
United Nations Environment Programme (UNEP)	Intl org	Climate change impact on agricultural activities	Climate change adaptation and mitigation	Mainstreaming climate change in development
USAID-Ethiopia, Economic Growth and Transformation Office	Intl org	Disaster risk management	Impact assessment	
CARE Ethiopia	Intl org	Climate-smart agriculture	Carbon financing	

Table A.3—Continued

Organization name	Organization type	Training need 1	Training need 2	Training need 3
KENYA				
Ministry of Livestock	Government	Aspects of carbon sequestration in the rangeland soils	Emission of carbon through wetlands and rice fields	How to measure carbon sequestration in the rangeland soils and bore ground
Kenya Climate Change Working Group	Local NGO/CSO	Agroforestry technology	Poverty eradication technology	Gender equality training
Community Research in Environment and Development Initiatives	Local NGO/CSO	Understanding of gender differentials in climate change impacts, adaptation, and risk management options	Engaging policy- and decisionmakers	M&E inclusiveness and equity effects of climate change adaptation projects
Aridlands Resource Management Project	Local NGO/CSO	M&E effectiveness and efficiency of climate change adaptation projects	Disaster risk reduction training	Advanced rainwater harvesting
Adventist Development and Relief Agency	Local NGO/CSO	Early warning systems	Global approach to climate change	Mitigation measures to climate change
Kenya Rainwater Association	Local NGO/CSO	Use of climate models in decisionmaking	Climate-smart agriculture and concept understanding	
Greenbelt Movement	Local NGO/CSO	Measuring capacity, effectiveness, and performance of groups and community-based organizations	Collection of gender-disaggregated data	
K-Rep Bank	Private company	Exposure to actual practices and case studies		
University of Nairobi	Research	More on participating approaches and methodologies	Gender inclusiveness	Policymakers engagement (policy brief formulation, and so on.)
Intergovernmental Authority on Drought and Development (IGAD) Climate Prediction and Applications Centre	Research	Dynamics of climate with agriculture	Seasonal climate patterns	Knowledge of climate change over the locality
Kenya Forestry Research Institute (KEFRI)	Research	M&E on initiated projects in climate change	Measurement, verification, and reporting	Gender mainstreaming on climate change
Kenyatta University	Research	M&E	Gender issues in climate change adaptation	
International Center for Biosaline Agriculture	Intl org	Methods and tools of assessing climate change effects/impacts		

Table A.3—Continued

Organization name	Organization type	Training need 1	Training need 2	Training need 3
CGIAR Program on Climate Change Agriculture and Food Security (CCAFS—CGIAR Research Program 7)	Intl org	Gender differentials in climate change impacts, adaptation, and risk management options	Designing group-based approaches	Monitoring and evaluating inclusiveness and equity effects of climate change adaptation projects
FAO	Intl org	Climate change impact evaluation; climate change adaptation in agriculture; gender adaptation to climate change impacts; basic training on climate change	Difference between climate variability and climate change; gender and climate change; carbon credits	Measuring mitigation / carbon stocks; agricultural livelihoods' impact on climate change
World Agroforestry Centre (ICRAF)	Intl org	How carbon credit works and how to farmers from East Africa can benefit	Monitoring of climate change	How to implement climate change projects without compromising farm productivity
International Livestock Research Institute	Intl org	Livestock feeding versus greenhouse gas emissions	Crop by-product utilization in crop livestock systems	Soil fertility and manure management
Farm Africa	Intl org	Gender differential in climate change	M&E	
MALI				
Direction of National Production and Animal Industries	Government	Carbon credit	Integrating climate change into national development plans	Intensification of adaptation measures and mitigation
Project on Climate Change Adaptation	Government	Assessment and monitoring	Gender issues in climate change adaptation	
FAO-Mali	Intl org	Impact of the food resources of food animals on water resources	Pasture regeneration	Sustainable land management

Source: IFPRI e-survey and face-to-face interviews (August 2011–January 2012).

Notes: NGO = nongovernmental organization. CSO = civil-society organization. M&E = monitoring and evaluation.

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