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Linking Gender, Environment, and Poverty for Sustainable Development:

A Synthesis Report on Ethiopia and Ghana



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Social Development Department
Sustainable Development Network
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Abbreviations

AAE	ActionAid Ethiopia (nongovernmental organization)
ADB	Asian Development Bank
AfDB	African Development Bank
ARD	Agriculture and Rural Development, World Bank
BNP	Bui National Park
BNPP	Bank-Netherlands Partnership Program
BoARD	Bureau of Agriculture and Rural Development
CAP	Community action plan
CBO	Community-based organizations
CBRDP	Community-Based Rural Development Project
CGIAR	Consultative Group on International Agricultural Research
CICOL	Civil Society Coalition on Land
CIDA	Canadian International Development Agency
CIFOR	Center for International Forestry Research
CIVICUS	World Alliance for Citizen Participation
CREMA	Community Resource Management Area
CSA	Central Statistical Agency, government of Ethiopia
CSO	Civil society organization
DAG	Donor Assistance Group of Ethiopia
DA	Development agent
DHS	Demographic and Health Survey
DIRDP	Dalocha Integrated Rural Development Program
DWWDA	Dalocha Women Water Development Association
EEA	Ethiopian Economics Association
ENERGIA	International Network on Gender and Sustainable Energy
ENRM	Environment and natural resources management
ERA	Ethiopian Roads Authority
ESMAP	Energy Sector Management Assistance Program
ESMT	Environment and Social Management Team
FAO	Food and Agriculture Organization
FGD	Focus group discussion
FHH	Female-headed households
FSTF	Food Security Task Force
GDHS	Ghana Demographic and Health Survey
GDP	Gross domestic product
GHS	Ghana Health Service
GLSS	Ghana Living Standards Survey
GoG	Government of Ghana
GPRS I	Ghana Poverty Reduction Strategy
GPRS II	Growth and Poverty Reduction Strategy
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
GTZ	German Agency for Technical Cooperation
HICE	Household Income Consumption and Expenditure Survey (Ethiopia)

HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
ICT	Information and communication technology
IEG	Independent Evaluation Group, World Bank
IIED	International Institute for Environmental Development
IFAD	International Fund for Agricultural Development
KA	<i>Kebele</i> Administration (lowest level of government structure)
KII	Key informant interview
LAC	Land Use and Administration Committee
LACOSREP	Land Conservation and Smallholder Rehabilitation Project
LAP	Land Administration Project
LLPPA	Local-Level Participatory Planning Approach
MDAs	Ministries, departments, and agencies
MDG	Millennium Development Goal
MERET	Managing Environmental Resources to Enable Transition to More Sustainable Livelihoods
MFP	Multifunctional platform
MMDAs	Metropolitan, municipal, and district assemblies
MMR	Maternal mortality ratio
MoARD	Ministry of Agriculture and Rural Development (Ghana)
MOFA	Ministry of Food and Agriculture
MOFED	Ministry of Finance and Economic Development (Ethiopia)
MOWA	Ministry of Women's Affairs (Ethiopia)
NAP-GE	National Action Plan for Gender Equality (Ethiopia)
NDPC	National Development Planning Commission
NGO	Nongovernmental organization
NPW	National Policy on Women
OECD	Organisation for Economic Co-operation and Development
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PCDP	Pastoralist Community Development Program
PDA	Participatory Development Associates
PE	Political ecology
PPD	Planning and Programming Directorate (of ERA)
PRA	Participatory rural appraisal
PSNP	Productive safety net program
PT	Planning team
REDD	Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
RPCU	Regional planning and coordination unit
RSDP	Road Sector Development Program
SDN	Sustainable Development Network
SNNPR	Southern Nations, Nationalities, and Peoples Region
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
VIP	Village Infrastructure Project
WAD	Women's Affairs Department (Ethiopia)
WFP	World Food Programme
WHO	World Health Organization

WIDP	Woreda Integrated Development Program (Ethiopia)
WUA	Water users association

Executive Summary

Poverty, environment, social development, and gender are important cross-cutting themes of the World Bank and government investment programs, especially within the Sustainable Development Network (SDN). For developing sectoral strategies and programs, economic, environment and social assessments are undertaken, however, these are usually done separately, and most often gender issues are not included. This is a missed opportunity, because joint assessments can map the links between gender, environment, and poverty and help identify approaches that can accelerate the positive synergy and better social/gender, environment, and poverty outcomes; otherwise, the existing negative relationships may slow the development process, and can even lead to unintended results. A joint analysis will also reduce cost of project preparation. This study was undertaken to analyze the links between gender, environment, and poverty; identify approaches; and provide practical suggestions for fostering positive synergies for better outcomes.

The analytical framework for this study draws on the World Bank's three pillars of sustainable development: social inclusion, economic growth and environmental sustainability, and from political ecology literature, which highlights how decision-making processes, power relationships, and social conditions influence environmental policies and development outcomes. The following four propositions derived from political ecology literature guide the analysis: i) socioeconomic marginalization and natural resource degradation are mutually reinforcing processes; ii) protected area conservation and external control of natural resources can disrupt household and community production and social organization; iii) competing environmental interests shape environmental change; and iv) collective action and resilience can help mitigate negative impacts.

The study is based on in-depth analysis of two sub-Saharan African countries—Ethiopia and Ghana. The research methodology was qualitative, and included a series of interrelated analyses: a political ecology literature review, country-specific reviews of literature and data sets, good-practice project case studies in both countries, and participatory appraisals of grassroots perceptions of gender-poverty-environment links. Study sites were selected to include the major agroecological zones and rural livelihood systems in each country. National and subregional participatory forums were conducted to “ground truth” the findings and elicit policy and project recommendations. A seven-week online discussion explored the broader applicability of the framework and study findings.

Environmental, Economic, and Social Contexts in Ethiopia and Ghana

The study findings reveal that Ethiopia and Ghana both have major deforestation and soil degradation, as well as increasing climatic variability and weather extremes (drought, flooding) associated with climate change. Both economies have a strong agricultural base, but Ethiopia is even more agriculture dependent, deriving more than half its gross domestic product (GDP) from agriculture, compared to 31 percent in Ghana. Ethiopia has faced numerous long-term droughts and famines in recent decades, while Ghana has experienced fewer, briefer droughts and floods along with coastal erosion. Ghanaians have greater access to infrastructure. Illiteracy is higher in Ethiopia, at 57 percent for males and 79 percent for females, compared to 37 percent for males and 54 percent for females in Ghana. The maternal mortality ratio (MMR) is high in both countries, but is decreasing more rapidly in Ethiopia. Both countries have young populations, around 40 percent, but the population is growing faster in Ethiopia.

Both Ghana and Ethiopia have pursued decentralization, but the national leaderships have retained a strong hand in governance at all levels, especially in Ethiopia. Policies and land redistribution in Ethiopia have undermined local traditional management of common property resources. In Ghana, common property is the predominant form of land tenure; forests are owned by local communities, but the government has the timber rights. Traditional chiefs and earth priests are formally recognized and serve in parallel to formal government. Civil society organizations (CSOs) are active in both countries.

In both Ethiopia and Ghana, there is variation in gender roles and inequalities across different ecozones and ethnic groups. However, women's status is generally low in both countries. Despite legislation to protect their land rights, women in study areas have insecure access to land; their land rights are largely secondary, coming through their relationships to men. Traditionally in Ghana, customary inheritance practices left widows with limited land or resources. In Ethiopia, traditional practices also transfer land to males, but land certification in both women's and men's names has increased women's food security and their negotiating status within households in some contexts. Labor is a productivity constraint for poor female-headed households without an adult male in rural Ethiopia, because women usually do not plow with oxen due to social norms. Labor is a constraint for women in Ghana as well, in part because they are obligated to work first on their husband's crops. Women in both countries have heavy, time-consuming domestic task burdens.

Dynamics of Gender-Poverty-Environment Interaction

The study findings revealed a number of key challenges that need to be addressed to promote positive dynamics. These challenges include, first and foremost, the marginalization of poor women and men resulting from inequitable land tenure and access to land and other natural resources. Also important are women's time poverty, household food insecurity, limited livelihood options in rural areas, environmental degradation, disputes over natural resources, lack of voice of the poor, particularly women, in environmental governance and decision making at all levels. Underlying these problems in Ghana, and to some extent in Ethiopia, are overlapping formal and informal institutions that shape power relationships, assets, and opportunities according to gender and other social characteristics.

The study findings highlighted the following key areas of gender-poverty-environment interaction.

Socioeconomic marginalization and natural resource degradation. The negative impacts are more extreme in Ethiopia, given the long-lasting droughts, frequent famine, fragmentation of landholdings, and decrease in common rangeland and other common property on which pastoralists and the poor depend for their livelihoods. In Ghana, the labor and resource allocation processes are generally biased against women in the study areas. With the commercialization of land, there is also a risk that male landowners may sell land to developers, leaving other household members without adequate access to productive resources. Food security is highly gendered: the greatest burden of food shortages falls on women, who are responsible for feeding their households and who reduce their own food consumption first during time of scarcity. In Ghana, the lack of food-processing and storage facilities increases food insecurity during the lean season in forest and transition zones. In Ethiopia, food insecurity is widespread due to chronic drought and flooding. The impacts of climate change will continue to increase the challenges faced by poor women and men in Ethiopia and Ghana whose livelihoods depend on the environment.

In both Ethiopia and Ghana, women and girls bear much heavier domestic task burdens than men, leaving little time for education, income generation, or participation in community decision making on natural resources and other development issues. In Ethiopia, women work an average of 38 hours per week on unpaid domestic tasks while men spend only 6 hours; women and men spend 22 and 33 hours per week on economic activities, respectively. In Ghana, women spend an average of 43 hours per week on domestic tasks, while men spend just under 10.

Poor infrastructure contributes to marginalization in both Ghana and Ethiopia. Although both countries have made progress on roads, the lack of transport and communications infrastructure isolates communities, cutting them off from markets, economic opportunities, and social networks and services, including health care. Lack of roads also makes it difficult to bring other types of infrastructure to remote communities. Lack of access to safe drinking water, sanitation, and health services negatively affects people's productivity and health. Ethiopia's water and sanitation services are very limited and underfinanced. Areas without access to safe drinking water in both countries are vulnerable to diseases such as diarrhea and dysentery, and Ghanaians also face malaria and waterborne diseases associated with the hydropower and irrigation programs. Neither country will meet the Millennium Development Goal (MDG) for sanitation.

Protected area conservation and control of natural resources. The appropriation of land, forest, and mineral resources "for the public good"; mining and timber concessions; and resettlement for infrastructure projects can disrupt the livelihoods, food security, and social networks of the people affected. The study found that in Ethiopia, the main impacts have come from enclosure of land for regeneration of vegetation and land certification in individual names, which reduce the common property on which the poor depend. In Ghana, national parks, wildlife sanctuaries, mining and lumbering concessions, and displacement and resettlement for infrastructure have negatively affected the livelihood options of the poor.

Competing environmental interests. In both Ethiopia and Ghana, competing environmental interests have led to arguments and even armed conflict. In Ethiopia, the dispute is mainly between farmers and pastoralists over use of rangelands. In Ghana, control of fertile land is the most common source of conflict, although mining and lumbering have also triggered disputes. Ghana also faces potential conflict within the wider region over shared water resources such as the Volta River, which is used by both Ghana and Burkina Faso. The overlapping and ambiguous systems of rules and authority in Ghana, both formal and informal, provide an enabling environment in which competing environmental interests often escalate to conflict.

Collective action and resilience. In Ghana and Ethiopia, spaces for collective action are most evident in the activities of CSOs and local institutions and in participatory community-driven development projects. Adaptive responses to the impacts of climate change and related food insecurity also foster collective action and resilience. In Ethiopia, savings and credit circles, local customary safety net institutions (*iddir*, *iqub*), and farmer cooperatives play important roles in collective action. Although state ownership, land reform, civil war, and drought have weakened the capacity of local institutions that manage natural resources, these institutions have persisted over time. The church groups and parent-teacher associations are considered important by both women and men in Ghana and have high participation rates. Participation in farmer-based organizations, on the other hand, is low, particularly for women.

Successful approaches for achieving improved gender-environment-poverty outcomes. The study findings identified several initiatives aimed at fostering positive spiral effects. In eastern Ethiopia, as a part of a broader national program supporting collective action to enable the poor to achieve common goals that could not be achieved individually, the regional government introduced cooperatively managed rainwater harvesting projects to agropastoralists to minimize the effects of drought and reduce food insecurity. In Ghana, the Land Conservation and Smallholder Rehabilitation Project (LACOSREP) fostered social solidarity among women and men, encouraged them to act together for community development, and ensured women's participation in water users associations, enabling them to access irrigation water for improved productivity and income. LACOSREP also introduced actions for women to organize joint income-generation activities. Ethiopia's Dalocha Integrated Rural Development Program (DIRDP) promoted collective actions that improved the status of women in a conservative society; women now manage a number of projects and institutions, most importantly the Dalocha Women Water Development Association (DWWDA), which supplies safe drinking water to an estimated 100,000 people. Ethiopia's Managing Environmental Resources to Enable Transition to More Sustainable Livelihoods (MERET) implemented social and gender inclusive actions, especially women's participation in decision making, and achieved important poverty, environmental, and social outcomes such as enhanced poverty reduction and household food security; regeneration of vegetation and water tables; increased water availability; and increased crop yields. The time spent by women and girls collecting firewood and water has been reduced. There has also been expansion of social networks, increased knowledge and technology for natural resources management, increased community awareness of the benefits of managing natural resources, and deeper commitment to sustain project outcomes.

Successful approaches linking gender, environment, and poverty for climate change adaptation. Study findings further indicated that networks of reciprocity, mutual assistance, and inclusive participation are important in helping people adapt to and manage the risks of climate change in their livelihood strategies, for example, agriculture, livestock rearing, forestry, and fishing. Local safety nets built on the collective action of women and men, such as credit and exchange networks, food reserves, or seed banks, are helping poor people cope with climate-related shocks. Collective action institutions play an important role in spreading information, technologies, and practices that support various climate change response strategies, and provide people with opportunities to share experiences with the use of such strategies. In Ethiopia, foreign food aid and government safety net programs became prominent mechanisms for coping with climate change and other shocks. Strategies introduced under Ethiopia's National Adaptation Program of Action include drought/crop insurance, drought and flood early warning systems, rangeland and wetland management, malaria control, and agroforestry. In Ghana, some of the adaptation strategies involve collective action such as communal pooling of resources and reliance on kin and social networks, while others are technical, such as planting crop varieties better suited to variable rainfall and temperature. In the coastal areas of Ghana, in response to the declining supply of fish, some women participate in informal saving schemes and form cooperatives that finance fishing gear and provide loans for men to go to sea. The women who finance the fishermen have first access to the day's catch.

Fostering Positive Gender-Poverty-Environment Dynamics

The following common effective approaches achieved successful results that can be adapted to other countries and sectors, after analyzing the country and sectoral context to foster positive gender-poverty-environment dynamics. These approaches include: (i) reducing marginalization of poor women, men,

and other excluded groups by increasing their endowment, especially access to and control over natural and productive resources and improving their access to protected conservation area and benefit sharing; (ii) enhancing social, legal, and economic opportunities for poor women, men, and other excluded groups for transforming their endowments to income and family welfare; (iii) promoting collective actions in policy and program formulation, especially establishing mechanisms for improved agency/empowerment of women at the household, community and project levels, and environmental protection, and (iv) promoting accountable and gender-responsive institutions that will support an inclusive and participatory sustainable development process.

Fostering positive dynamics in policy formulation and the project cycle. For fostering positive dynamics in either policy, strategy or program formulation, a consultative and inclusive process has to be one of the first steps, and planning needs to span all relevant sectors. Gender-poverty-environment analysis needs to be incorporated into the terms of reference for environmental and social impact assessments. The assessments will identify gender-based constraints and opportunities and help design gender-responsive actions, along with gender indicators to monitor progress. During project implementation, monitoring, and supervision, key activities include supporting gender training of project staff and forming partnerships with women's organizations and CSOs to provide beneficiaries, especially women, with increased participation opportunities and voice in the process. Project completion and impact evaluation questionnaires need to include sex-disaggregated and gender indicators to show progress toward women's benefits and opportunities and value added by women's participation, particularly in environmental and poverty reduction components. Finally, these gender outcomes need to be documented in the implementation completion report.

1. Introduction

1.1 Gender-Poverty-Environment Links

Understanding the links between gender inequality, poverty and environmental degradation, and potential negative spiral effects, and taking responsive actions, can accelerate positive dynamics and promote sustainable development outcomes (AfDB 2007; Agarwal 1997; OECD-DAC 2001; Sarkar 2010). Acknowledging the ways in which nature-society relations are gendered opens space for new approaches to poverty reduction, environmental conservation, and gender-equitable participation in sustainable development policies.

The focus on these connections as a means to inform development policies builds upon political ecology (PE) analysis, which aims to influence policy development and investment programs by offering “chains of explanations” rather than single root causes. PE highlights the sociopolitical dimensions of natural resource access, control, and distribution (Robbins 2004). It acknowledges gender as:

A critical variable in shaping resource access and control, interacting with class, caste, race, culture and ethnicity to shape processes of ecological change, the struggle of men and women to sustain ecologically viable livelihoods, and the prospects of community for sustainable development. (Rocheleau, Thomas-Slayter, and Wangari 1996)

A focus on gender and its relationship to poverty and environment reveals that familial and kin relations and familial property systems shape the gender division of labor, gendered environmental rights and responsibilities, gendered environmental politics, and collective action and resilience (Agarwal 1994; Gezon 2006). PE analysis also highlights the spatially and temporally contingent ways in which gender, poverty, and environment interact.

Key Definitions

“Gender refers to the culturally based expectations of the roles and behaviors of males and females.”

(Integrating Gender Into the World Bank’s Work: A Strategy for Action, World Bank 2002)

The three key dimensions of gender equality are:

- (i) accumulation of *endowments* (education, health, and assets);**
- (ii) the use of those endowments to take up *economic opportunities* and generate income; and**
- (iii) the application of those endowments and opportunities to take actions, or *agency*, affecting individual and household well-being.**

(World Development Report 2012: Gender Equality and Development. World Bank 2011)

“Poverty is the result of economic, political and social processes that interact with each other and exacerbate the deprivation in which poor people live.”

(World Development Report 2000/2001: Attacking Poverty, World Bank 2001)

Sustainable development “meets the needs of the present without compromising the ability of future generations to meet their own needs.”

(World Commission on Environment and Development, 1987)

Green growth is a part of sustainable development that includes environment and environmental policy as sources of economic growth and welfare gains through innovation, efficiency, resilience to shocks, job creation, and poverty alleviation.

(World Bank Concept Note on Green Growth, 2011)

Population pressure on diminishing resources is an important factor in understanding land degradation—including soil erosion and deforestation—and food insecurity. However, study findings show that environmental degradation is accelerated when the national government and a few private individuals take increasing control of lands previously held communally. External control of resources also undermines, with regional variability, community cohesion and the traditional institutions that previously managed the rights to and responsibilities for communally held natural resources (Agarwal 1997). The analysis highlights how social and economic marginalization, inequitable access to natural resources, and a lack of gender-equitable participation in environmental decision making in social institutions (whether community, nongovernmental, or state) have a disproportionate and negative impact on women. To avoid such consequences, attention needs be paid to the specific roles, responsibilities, and opportunities for women and men in particular locales and at different levels.

1.2 Background

The “Gender and Environment Issues Paper” (World Bank 2010b) was drafted as a background paper for the 2011 World Bank Group Environment Strategy, and its findings suggest the following three sets of issues: (i) gender equitable access to resources, (ii) inclusive environmental governance, and (iii) resilience strategies that will promote sustainable and equitable natural resource-based development; manage environmental risks; and transform the growth path. For the preparation of the paper, an eight-year (FY02–09) portfolio review of environment and natural resources management (ENRM) projects was undertaken, and found uneven gender integration over the years. However, the trend toward gender integration is increasing, and 36 percent ENRM projects were found gender responsive in 2009.

Review of project documents reveals that gender analyses are most often incorporated in social assessments conducted during project preparation and appraisal, particularly when social safeguard policies are triggered. However, most of the environment analytical and operational work, for example, project environmental assessments, environmental management plans, country environmental assessments and strategic environmental assessments, does not usually include gender, and it is a missed opportunity. Very few joint environmental and social assessments have been undertaken, and only a few included gender issues. Terms of references for environment and social assessments also do not consistently require gender analysis; therefore, gender-based needs, constraints, potential risks, and possible opportunities are neither identified nor incorporated into the project design, and these investments may not promote gender-based outcomes.

1.3 Objectives and Audience

The objectives of this study are to (i) clarify the dynamics of gender-environment-poverty links that can cause negative social, economic and environmental outcomes, and (ii) identify operational mechanisms that can promote positive synergies across these interrelated areas. The report maps ways to foster positive social, economic, and environmental outcomes, paying particular attention to gender, in the sectors within the World Bank’s Sustainable Development Network. It summarizes findings from two country studies, Ethiopia and Ghana, that contribute to a greater understanding of gender-poverty-environment links and dynamics. Based on these studies as well as on a global literature review and an online discussion, this report offers practical suggestions for promoting synergies between gender, poverty, and environment.

The target audience for project outputs includes World Bank Sustainable Development Network (SDN) management and staff and country teams and country counterparts in Ethiopia and Ghana. Other important audiences include World Bank country teams and country counterparts in other countries, donor agencies, nongovernmental organizations (NGOs), and CSOs working in sustainable development sectors.

1.4 Rationale of the Study and Selection of the Countries

Poverty, environment, social development, and gender are important cross-cutting themes of World Bank and government investment programs, especially within the sustainable development sectors. However, as the findings of “Gender and Environment Issues Paper” (World Bank 2010b) indicate, the environment and social assessments for operations are conducted separately, and most often gender issues are not included. This is a missed opportunity, because identification of the link between gender-environment-poverty could help teams design gender-responsive actions that can accelerate positive synergy and better social, gender, environment, and poverty outcomes; otherwise, the links between gender, poverty, and environment may lead to unintended negative results. A joint analysis will also reduce cost of project preparation. This study was undertaken to analyze the links and identify approaches that can promote positive outcomes.

The two sub-Saharan countries were selected because both suffer from environmental degradation and variability in rainfall and temperature that have been linked to climate change. Large numbers of the population in both countries are dependent on natural resources for their livelihoods. Poverty is also high, and though declining faster in Ghana, the country still has high regional inequality. There are gender disparities, although these vary across regions, ecozones, rural/urban settings, and ethnic groups.

1.5 Scope of the Report

This synthesis report is based mainly on two country case studies of Ethiopia and Ghana that were developed from a series of different but interrelated analyses and background reports, each building on the previous one. An online discussion was conducted to collect feedback on the country findings, as well as for sharing knowledge. An analytical approach was developed from review of PE literature and used to analyze the findings from the two country case studies to understand the dynamics of gender-environment-poverty interactions and how to foster positive links for achieving improved environment, gender, social, and poverty outcomes.

1.6 Organization of the Report

The first chapter introduces gender-poverty-environment links, the literature review leading to the analytical framework, the methodologies used, and the selection of research sites. Chapter 2 compares the environmental, economic, and social-institutional contexts in Ethiopia and Ghana in which gender, poverty, and environment interact. Chapter 3 presents a comparative analysis of gender-poverty-environment interactions in Ethiopia and Ghana. Chapter 4 describes some effective approaches that have promoted positive gender-poverty-environment dynamics through sustainable development projects and policies in Ghana and Ethiopia. Chapter 5 presents the conclusions and next steps. Annexes provide an outline on sectoral tools using the gender-environment-poverty framework; summaries of the

online discussion; the literature review on PE; participatory appraisal findings; project case studies; and the tools package used in the field work.

1.7 Analytical Approach and Methodology

The recent *World Development Report 2012: Gender Equality and Development* (World Bank 2011c) notes three key dimensions of gender equality: (i) accumulation of *endowments* (education, health, and physical assets); (ii) the use of those endowments to take up *economic opportunities* and generate income; and (iii) the application of those endowments and opportunities to take actions, or *agency*, affecting individual and household well-being. These key dimensions of gender equality provide the framework used to formulate the analytical approach used in this report.

1.8 Literature Review and Analytical Approach

This report's focus on gender-poverty-environment as a means to inform development policies draws upon the field of PE, a subfield of anthropology and geography. This approach highlights decision-making processes and the political, economic, and social conditions that influence environmental policies and development outcomes. PE "combines the concerns of ecology and broadly defined political economy" to explain how environmental problems, and consequently their solutions, are "social in origin and in definition" rather than the result of "overpopulation," "inappropriate technology," or "poor management" on behalf of local and state officials (Blaikie and Brookfield 1987,7). In essence, a key focus of PE is how distribution of, access to, and control over natural resources are shaped by power relations (Neumann 2005; Peet and Watts 1996, 2004; Robbins 2004; Rocheleau, Thomas-Slayter, and Wangari 1996).

PE focuses on the ways in which gender is integral to discussions of poverty and environment, and reveals how familial and kin relations and familial property systems shape the gender division of labor, gendered environmental rights and responsibilities, gendered environmental politics, and collective action and resilience (Gezon 1996). In tandem with a focus on gender, poverty and environment, the field of PE highlights the spatially and temporally contingent ways in which gender, poverty, and environment interact (Agarwal 1997). A key influence in shaping the PE approach has been the work Bina Agarwal, whose research findings indicate that while population pressure on diminishing and degrading resources is an important factor in understanding land degradation, that is, soil erosion, deforestation and diminished food security, the increasing control of previously communally owned lands by the national government and a few private individuals may have accelerated environmental degradation, and poor women experienced more negative impacts than poor men (Agarwal 1997).

Building on this and other work, PE highlights how social and economic marginalization, uneven access to natural resources, and a lack of gender equitable participation in environmental decision making in social institutions has a disproportionate impact on women. While unintended, these factors have led to increased livelihood insecurity and a lack of empowerment and voice for women who are already more vulnerable to impacts on livelihood and climatic shocks shaping food security (Ogra 2008). To avoid such consequences, PE maintains that the focus should be on specific roles, responsibilities, and opportunities that women and men possess in particular locales and at different scales. PE literature critiques the formulation of development policy that may not recognize forms of power and inequality produced through racial, ethnic, caste, and class differences that shape gender hierarchies (Nightingale 2011; Sundberg 2004).

Drawing on these insights from PE, this analytical framework presents a fresh approach to better understand the interconnections among gender, poverty, and environment. The analytical approach draws on the World Bank's three pillars of sustainable development: social inclusion, economic growth, and environmental sustainability (World Bank 2008c) and PE literature. The framework is based on the premise that social, economic, and environmental factors interactively affect the livelihood alternatives and life choices of different people—male and female, young and old, rural and urban, minority and indigenous—in different ways. When information about social, economic, and environmental conditions and their dynamics are combined, the impact of development decisions on the quality of life of those groups in a specific area, country, or region can be more adequately assessed and addressed.

Drawing on the PE literature, four propositions were selected for analyzing key dynamics of gender, poverty, and environment interactions. These propositions have fluid boundaries and are seen as simultaneous processes. The first two explain common nature-society relationships, namely socio-economic marginalization and natural resource degradation and protected area conservation and natural resource control. These two relationships lead to competing environmental interests and/or mobilization for collective action among local producers, households, and communities as they undergo a variety of resilience strategies to cope with shifting environmental circumstances.

Socioeconomic marginalization and natural resource degradation are mutually reinforcing processes. Political and economic change influences ecological transformations and vice versa. With environmental degradation, marginalized households and communities face increased challenges in securing labor and/or capital inputs needed to manage changing ecosystems, often resulting in increased natural resource degradation and a decline in natural resource productivity. In many cases, exogenous policies compel local producers to overexploit natural resources, which further heightens socioeconomic marginalization (Robbins 2004; Peet and Watts 2004).

PE acknowledges that the value of a resource depends on the resource user. In examining different valuations of the environment, a pivotal concept is that of “land managers”¹ (and institutions working on behalf of the land manager) and their historical, political, and economic relationships with nature require serious consideration (Blaikie and Brookfield 1987, 239; Peet and Watts 2004, 7). PE argues for a “plural approach” to understanding the multiple ways that the natural environment is valued at various levels, from local households and communities to global social institutions and markets, with particular focus on the ways household power dynamics respond to global policies. Political ecologists argue that local circumstances and lack of other livelihood options explain why farmers choose certain kinds of land-use techniques that may indeed lead to increased soil degradation (Blaikie and Brookfield 1987; Robbins 2004). Political ecologists argue that when surpluses are small, prices weak, labor restricted and household economic capacities limited, farmers tend to overexploit soil, while household power relations to the market influence farmer land-use choices (Peet, Robbins, and Watts 2011). And while not every farmer will degrade their land base, PE argues that where significant degradation occurs, land managers are commonly responding to painfully strong pressures, usually coming from global market forces passed down to regional and local markets (Robbins 2004; Peet, Robbins, and Watts 2011).

¹ “Land managers” are farmers, fishers, ranchers, miners, hunters, resource gatherers, and so forth.

In addition, increased integration of local production systems into regional and global markets, while the local farmers may not be informed or prepared for the implications, can have contradictory outcomes. Increased market integration may lead to overexploitation of natural resources on which local people (usually the poor) depend. At times, increased poverty and worsened land and natural resource degradation may be the result of market-oriented policies without mitigation measures (Peet, Robbins, and Watts 2011; Robbins 2004). For instance, increased pressures to produce for the market emerged during the global food and financial crises, but when global food prices dropped, farmers received even less for their labor and production costs (Rossett 2010). Gender roles and responsibilities shape the ways in which these processes are experienced. Increased poverty and degradation have specific consequences for women and children in the production of everyday livelihood activities (Gururani 2002; Sultana 2011).

Protected area conservation and natural resource control can disrupt household and community production and social organization. Protected area conservation policies, including the appropriation of land for the “public good,” mandated by state officials and global institutions, can often disrupt household and community livelihoods, production, and social organization. Often these enclosures are justified through exogenous characterizations of local production practices as “unsustainable,” despite longstanding and continuously productive natural resource practices in these areas (Mollett 2010; Sundberg 2004). In addition to protected area enclosures, state concessions to foreign or domestic companies for logging and mining operations that limit or exclude local people from the use of natural resources, often through formal demarcation, also have negative consequences (Bebbington 2009). Measures that limit local access to natural resources also have gendered outcomes. While chronic food insecurity arises due to natural resource degradation and socioeconomic marginalization, the shocks of and reactions to displacement and/or loss of access to natural resources through the creation of protected area conservation can lead to overexploitation of declining resources outside of protected area boundaries. In addition, displacement and strict enforcement of enclosure boundaries may lead to spiraling poverty, malnutrition, and heightened gender inequalities as patriarchal and matriarchal forms of inheritance and distribution shift in the context of new spaces (either through new regulations and enforcement or through physical dislocation) of livelihood production if alternatives are not provided to adequately compensate women, as well as men, for the loss of access to those resources (Katz 2004; Peluso and Vandergeest 2001).

The management of communal resources, such as land and forest, and/or the right to negotiate concessions for third party use of community resources, that is, logging, oil exploration, mining, plantations, is often controlled by wealthy community members and men. The labor practices in mining, logging, commercial agriculture, and other such concessions are also generally male dominated. Women tend to remain marginalized from decision-making processes and are rarely factored in as important resource managers (Mollett 2006). Food security is highly gendered because women and girls are usually responsible for food provision, and most often they are the first to reduce food consumption when it is scarce. Collecting, processing, and selling nontimber forest products, such as herbal medicines, shea nuts and bamboo, can provide a means for women with little or no access to land to feed their families, but when forest areas are protected, they may not have any access to forest products and lose livelihood options (FAO 1998).

Competing environmental interests shape environmental change. Competing environmental interests have always shaped environmental change, nonetheless, the cumulative results of socioeconomic marginalization and natural resource degradation, along with the processes of protected area

conservation and control, increase natural resource scarcities. Natural resource enclosure and appropriation by state officials, development institutions, private interests, and social elites intensify competing interests between groups, and sometimes within them as well (Robbins 2004; Neumann 2005; Peet and Watts 2004; Rocheleau, Thomas-Slayter, and Wangari 1996).

Increased degradation resulting from increased market integration and/or decreased control/access to natural resources can lead to environmental conflicts ranging from disagreements to armed confrontation (Turner 2004; Zimmerer and Bassett 2003; LeBillon 2004). These conflicts reflect how societies are arranged around social divisions of labor and power that unevenly influence development participation and outcomes. Socioculturally biased assumptions on the gender roles and responsibilities of participants (along with other social categories of difference such as race, class, and caste) often lead to the formulation of inequitable, unsustainable policies and uneven or negative development outcomes. An example of competing interests is when displaced populations from the protected area continue to exploit resources illegally from that area, or when landless farmers migrate to remote forest regions and clear trees for livelihood (Agarwal 1997; Jackson 1996).

Collective action and resilience building can help mitigate negative impacts. While competing environmental interests resulting in conflict are a negative consequence of the relationship between socioeconomic marginalization and natural resource degradation, along with protected area conservation and control, they also open space for collective action and the fostering of resilience strategies. In response to changing socioeconomic and environmental conditions, women and men build alliances to mitigate their increasingly marginal positions (Robbins 2004; Rocheleau, Thomas-Slayter, and Wangari 1996). As women and men address changing circumstances resulting from marginalization and degradation, which limit access to local resources and increase conflict over environmental resources, a common response is collective mobilization to reduce the negative impacts of the changes. Women and men create alliances across multiple identities built around shared livelihood insecurities and increasing poverty. Increased local participation and voice in policy decisions, in which women may play key leadership roles through community organizations, provide means by which development planners and practitioners can empower local people to shape more sustainable development policies and outcomes (Elmhirst 2011; Robbins 2004; Rocheleau, Thomas-Slayter, and Wangari 1996). For example, a study of community forest management in parts of India and Nepal found that groups with a high proportion of women in their executive committee, the principal decision-making body, showed significantly greater improvements in forest condition in both regions. The beneficial impact of women's presence on conservation outcomes is attributable to women's contributions to improved forest protection and rule compliance. More opportunities for women to use their knowledge of plant species and methods of product extraction, as well as greater cooperation among women, are also likely contributory factors (Agarwal 2009). By fostering such organizations and promoting women's roles in them, development planners and practitioners can empower local people to shape more sustainable development policies and outcomes (Elmhirst 2011; Rocheleau, Thomas-Slayter, and Wangari 1996; Robbins 2004).

1.9 Methodology

The study included a series of different but interrelated analyses of interactions between gender, poverty, and environment. Each analysis built on the previous one, starting with a desk review of global literature and country-specific literature and data sets for Ethiopia and Ghana. This was followed by case studies in both countries of projects effectively addressing gender-poverty-environment links. Participatory appraisals captured grassroots perceptions of these interactions, and national and subregional participatory forums were

held to ground-truth the findings and elicit policy and project recommendations. The study methodology was largely qualitative. A seven-week online discussion with academics, practitioners, and other stakeholders, both within and outside the World Bank, was hosted by the Independent Evaluation Group (IEG) to explore broader applicability of study findings and conclusions.²

Key research questions include:

- What have been the trends in changing gender disparity, poverty, and environmental degradation in Ethiopia and Ghana? Are these trends different when compared by eco-zones, rural and urban areas, and among ethnic and socioeconomic groups?
- What areas have the highest degree of gender disparity, poverty, and environmental degradation? What factors appear to be associated with the greater degree of inequality, poverty, and environmental degradation?
- Is there a negative cycle of gender disparity, poverty, and environmental degradation? What factors are associated with such negative cycle? How is the gender-environment-poverty nexus being impacted by sustainable development sector investments?
- Are there examples where the negative cycles were reversed by policy and programs? What types of activities can be incorporated into sustainable development programs to foster positive synergy within the gender-environment-poverty nexus?

A review of PE literature was conducted to develop an analytical approach to gender, environment and poverty dynamics, and how they are impacted by sustainable development sector policies and programs.

Country-specific desk reviews examined qualitative and quantitative secondary data on poverty, gender inequality, and environmental degradation in Ethiopia and Ghana. These studies examined the interrelationships between the three elements as well as their interactions with sustainable development sectors such as agriculture, water, transport, mining, and energy.

Project case studies were conducted in both Ethiopia and Ghana to document good-practice sustainable development projects that effectively addressed poverty-environment-gender interrelationships. These projects were implemented by government or NGOs and supported by different donors. In Ethiopia, initial reviews were conducted on nine projects from sustainable development sectors in different ecozones, and, using the criteria (box 1), four were selected. In Ghana, seven projects from sustainable development sectors in different ecozones were identified for initial review and, using the criteria, four were selected.

² See <http://genderinevaluation.ning.com>.

Box 1. Criteria for Selecting Good-Practice Projects

- i. Were gender and social analysis conducted during preparation?
- ii. Did the design incorporate actions and indicators for reducing environmental degradation, poverty and gender disparity, and increasing gender equitable participation opportunities and benefits and voice in decision making?
- iii. Did the project include actions for internalizing gender mainstreaming strategies by recruiting social/gender specialists in projects, providing gender training, and establishing gender-inclusive institutions?
- iv. Were regular assessments carried out and the project design refined based on findings?
- v. Did the project achieve substantial gender, environment, and poverty outcomes?

Case data were collected through an extensive review of project documents and studies; key informant interviews with staff in project implementation agencies, development agencies, and social development and gender focal points in agencies; and from focus group discussions in selected project beneficiary communities. The documents reviewed included social and environmental assessment reports, midterm reviews, impact evaluations, and other studies conducted as well as other relevant documents from project implementers and funders.

Box 2. Key Case Study Questions

- What are the objectives and key components of the project? What is the overall budget for the project? What portion of that budget focused on gender-poverty-environment links?
- What were the gender-environment-poverty links affecting the project?
- What aspects of gender, environment, and poverty were addressed by the project?
- What aspects of the links between gender, environment, and poverty were addressed by the project? At what points in the project cycle were they addressed?
- Was a gender analysis conducted as a part of a social or environmental assessment or other study? What were the findings? How was that information incorporated into the project?
- How were the perspectives of male and female stakeholders (in communities affected by the project) incorporated? Did the consultations with these stakeholders address gender, poverty, and environment?
- Were safeguards triggered? Was gender addressed in the resettlement, environment, and indigenous peoples action plans?
- What approaches, activities, and so forth to address the gender-poverty-environment links were proposed in the project design? Were the approaches and/or, activities implemented? Were they modified? Describe in detail the activities and approaches and how they were implemented over the project cycle. How effective were they?
- Was the beneficiary data sex disaggregated? Were any gender indicators included in the results framework? Were indicators modified during implementation? How and why?
- Is there evidence that focus on the gender-poverty-environment nexus enhanced project outcomes? Provided positive impacts on female and male beneficiaries? Or impacts on sustainability or effectiveness? Describe the evidence in detail.

Table 1. Methods Used for Case Study Review

Document review	Key informant interview (KIIs)		Focus group discussions (FGDs) and participatory community mapping	
	Ethiopia	Ghana	Ethiopia	Ghana
Social and environmental assessment reports, midterm reviews, impact evaluations, and other studies conducted as well as other relevant documents from project implementers and donors.	(a) Nine KIIs, three from each site, with representatives of kebele administrations, development agents, and members of project committees (b) Staff in project implementation agencies, donors, and social development and gender focal points in agencies	(a) Fifteen KIIs, three from each site, with representatives of local government and members of project committees (b) Staff in project implementation agencies, development agencies, and social development and gender focal points in agencies	Six FGDs (15–20 people each) were held with projects beneficiaries, women and men separately	Eight FGDs (20–25 people each) were held with communities in project sites, with four separate groups—women, men, youth, and children

In Ethiopia and Ghana, tools used for beneficiary and institutional assessments included focus group discussions (FGDs), key informant interviews (KIIs), and participatory mapping. In Ethiopia, a total six FGDs were held with project beneficiaries—women and men separately—in Abraha-Atsbaha kebele (Tigray Region), Burka-Dilapa kebele (SNNP Region), and Baraak kebele (Somali Region). A total of nine KIIs, three from each site, were conducted with representatives of kebele administrations, development agents (DAs), and members of project committees. A similar approach was taken in four ecozones in Ghana to assess project benefits. Participatory community mapping of natural resources and social services and institutions was organized to better understand the gender and poverty dynamics related to access to natural resources and social services. Systematic identification and mapping was conducted, along with rating and ranking of natural resources and their utilization and management, as well as access to social services and institutions. The participatory mapping exercises included the use of GPS to mark the locations of natural resources, social services and institutions, and were presented under each case study.

Local perception of gender-environment-poverty link. *The sites were chosen to reflect the diversity of the agroecological zones in Ethiopia and Ghana and participatory rural appraisal (PRA) tools were used to generate community views. These communities were selected to elicit their views on the gender-environment-poverty nexus, how it is affecting their lives, and whether any actions were taken to reduce environmental degradation and poverty and increase social/gender inclusion. In Ghana, these PRA activities were conducted in eight communities from four districts within the four ecological zones. The communities selected were: the Anyaman and Goi communities in the Dangbe East District in the Coastal Savannah Zone; the Seneso and Old Konkrompe communities in the Atebubu-Amanten District in the Transitional Zone; the Nobewam and Duampompo communities in the Ejisu-Juaben District in the High Forest Zone; and the Dorongo and Datuku communities in the Bolgatanga and Talensi-Nabdam District in the Northern Savannah Zone. The field teams held separate focus group discussions with men, women, children, and the youth on issues such as poverty and vulnerability, gender relations, environmental*

sustainability, shocks and adaptability measures, and the impact of development projects on the poverty-gender-environment nexus. The total number of participants for the PRA activities was 466.

Table 2. Methods Used for Understanding Local Perception of Gender-Environment-Poverty Nexus Using PRA

Methods	FGD	KIIs	Wealth ranking and participatory community mapping	Participant observation
Ethiopia	Six FGDs (15–20 people each) were held with projects beneficiaries, women and men separately	Nine KIIs, three from each site, with kebele administrative representatives, and DAs	All sites	All sites
Ghana	Eight FGDs (20–25 people each) were held with communities in project sites, with four separate groups—women, men, youth, and children	Twenty-five KIIs, with representatives of local government, district assemblies, and tribal chiefs, earth mothers, and village elders	All sites	All sites

In Ethiopia, three communities in three ecological zones were selected for getting feedback on local perceptions: Kiltie Awlaelo Woreda, Tigray Region; Dalocha Woreda, SNNP Region; and Shinele Woreda, Somali Region. For each site, focus group discussions were conducted for men and women separately. The participants were selected carefully, to ensure representation of different wealth groups (rich, middle, and poor) as well as female heads of households and women from male-headed households. KIIs were conducted to complement the FGDs and cross-check and validate data and information from different sources; a total nine were completed, three KIIs at each site. The key informants were kebele administration leaders and DAs. They provided local perceptions of gender-poverty-environment interrelationships and their impacts on infrastructure, agriculture, and natural resource management projects. Over 200 community members and project officials participated in the field work.

Box 3. Key Questions for PRA Exercise

1. How do different groups of people (women and men in particular) in the communities define or understand the concepts of gender, poverty, and environment? Can informants rank households in their communities in to wealth groups and what would be the criteria for such ranking? How do people perceive and explain the differences in rights, roles, and responsibilities of men and women in their local traditions and customs?
2. Do people perceive links between gender, poverty, and environment? What specific examples and illustrations of links can informants give? Can people express their perceptions in terms of negative as well as positive links? Is poverty increasing or decreasing? Is gender inequality increasing or decreasing? What are the trends in relation to environmental degradation/recovery and access to natural resources by different groups of people? What specific examples can be given for perceived trends?
3. More specifically, how do different groups of people in the communities perceive issues of gender and gender relations; trends in gender inequality/equality in relation to the distribution of roles and responsibilities or the gender division of labor among women and men; ownership, access, and control over assets; the well-being of men and women in relation to nutrition, health, and education; trends related to women's participation in local governance and decision-making institutions; and violence against women and harmful traditional practices?
4. How do people perceive trends in environmental and other kinds of shocks and the vulnerability of different groups of people (poor and rich, men and women, pastoralists and agriculturalists, and so forth) to shocks and natural disasters, the responses, and coping mechanisms?
5. What are the factors and causes behind perceived trends of change in the links between gender, poverty, and environment?
6. Based on perceived conditions and trends, what suggestions do people have to reverse negative links and strengthen positive links relating to gender, poverty, and environment in their local communities?

Tool package for field work. Various PRA tools such as FGDs; KIIs; wealth ranking; participatory community mapping; scoring, rating and ranking; seasonal calendar, vulnerability, and trend analysis; transect walk; and participant observation and more were used to provide feedback on the local perceptions on the gender-environment-poverty nexus from case study project beneficiaries. A field guide on PRA was developed by two firms working in Ethiopia and Ghana with the World Bank team. Other guides included the FGD guide, the semi-structured KII questionnaire, and gender analysis tools such as (i) activity profiles; (ii) access and control profiles; (iii) sociopolitical profiles; and (iv) income and expenditure profiles. Several video conferences were organized with the firms for finalizing the methodology, field guide, and tool package. Both firms used the same methodology and tools so that results are comparable between the two countries. Details of the tool package are in annex 7.

Workshops and participatory forums at the national and ecozone levels presented the key findings and recommendations from the project case studies and PRAs. The workshops and forums then sought to refine and validate the findings through additional feedback in small and large group discussions.

Online discussions within and outside the World Bank on findings from the country case studies evaluated the potential for wider application in other countries. A large number of experts participated and nearly 20 participants shared additional good-practice cases that addressed gender-poverty-environment links in a broad range of countries. The discussions provided input on key elements needed

for developing tools that can help government and development practitioners design policies and projects that foster positive synergy and better social, gender, poverty, and environmental outcomes.³

1.10 Research Sites and Characteristics

Although available time and resources did not allow for a fully representative sampling, the selection of sites for the PRAs and project case studies aimed to capture the major rural livelihoods and ecozones in each country. This allowed the PRAs and project case studies to provide a feel for the diverse natural resources, economic activities, social institutions, and gender relations in Ethiopia and Ghana.

1.10.1 Ethiopia

In Ethiopia, the field work was conducted in three rural communities in different parts of the country during early October and mid November 2010. The field team included both men and women. Separate FGDs were held for women and men. Efforts were made to include communities from the major agroecological zones and varying livelihood systems and sociocultural backgrounds. The three PRA communities include a highland mixed farming community in the Tigray Region, a lowland farming community in the Sothorn Nations, Nationalities, and Peoples' Region (SNNPR), and a pastoralist community in the Somali Region of Ethiopia. The main characteristics of the communities are summarized in table 3 below.

Table 3. Main Characteristics of the Communities in the Study Sites

	Region		
	Tigray (northern Ethiopia)	SNNP (southwestern Ethiopia)	Somali (southeastern Ethiopia)
Woreda	Kilte-Awlalo	Dalocha	Shinile
Kebele	Mahabere-Weyni	Dile-Datie	Harre
Agroecological zone	Highland farming	Lowland farming	Pastoralist
Livelihood system	Mixed livestock/farming	Cereal farming	Pastoralism
Community	Tigray	Silti	Somali
Dominant religion	Orthodox Christian	Muslim	Muslim
Population (kebele)	5,593	1,523	9,100
Inheritance system	Patrilineal	Patrilineal	Patrilineal

Brief profile of selected sites

Mahebere-Weyni Kebele is located in Kilte-Awlaelo *Woreda (district)*, Eastern Zone of Tigray Region, which is about 815 kilometers (km) north of Addis Ababa, the capital city of Ethiopia. The kebele is located about 15 km south of Wukro (the *woreda* town). According to information obtained from the kebele administration, the total land area of the kebele is 12,435 hectares (ha), of which 1,405 ha (11 percent) and 907 ha (0.07 percent) constitute cultivated and grazing land, respectively. A large area of land, about 40 percent, is designated as a closed conservation area, which includes much of the woodlands, from which livestock are excluded and firewood collection is prohibited. The total number of

³ The World Bank Social Development Department partnered with the Independent Evaluation Group (IEG), which hosted the e-discussion on the IEG Gender and Evaluation Platform from May 2 through June 17, 2011.

households is 1,298, of which 328 (25 percent) are female headed (FHHs). The total population of the kebele is 5,593 (2,625 males and 2,968 females). Agriculture (mixed crop and livestock production) is the main source of livelihood in the kebele. According to information obtained from the DAs, the kebele is categorized as *woina-dega* (mid-altitude in terms of the traditional classification of agroecological zones).

Dile-Datie Kebele, Dalocha Woreda, Silti Zone, SNNPR, is located at about 10 km north of Dalocha town, and is 1 of the 17 rural kebeles in Dalocha Woreda. The population is 1,573, of which 48 percent of the population is male. There are a total of 206 households, with 29 percent female headed, which is slightly higher than the national average of about 25 percent. An average of 7.6 persons live in one household in Dile-Datie, and this is also more than the national average of 4.9 persons per household. Dile-Datie is a farming community occupying the badly degraded northern tip of Dalocha Woreda. Average farm holdings are about 1.5 ha. Total land area of the kebele is about 787 ha, of which 85 percent is farmland (including privately owned patches of grazing land) and 3 percent is enclosed area. The remaining land houses settlements and or is badly degraded. Communities in Dile-Datie Kebele obtain their water from unsafe sources, mainly the Kalid and Damgeren streams—both seasonal. Compared to other kebeles in Dalocha, Dile-Datie is poorer in natural resource endowments and income.

Harre Kebele is located in Somalia Region, Shinile Woreda, 610 km east of Addis Ababa. Harre differs from the other two study sites in that it is a predominantly pastoralist community. The land area of the Kebele is about 60 km², with a total of 1,300 households in the kebele, of which 150 (11.5 percent) are female-headed households, less than half the percentage in the other two cases. The population in the study kebele is homogenous in terms of ethnic and religious composition, consisting mainly of the Issa clan of the Somali ethnic group and Muslims. The study area falls within the arid ecological zone (*bereha*), the southeastern lowland pastoralist area in general, and the northern plains of the Somali Region in particular, with a high altitude and temperature ranging from 28–35°C and average annual rainfall of about 350 millimeters (mm). Seasonality is an important factor in the livelihoods of pastoralist

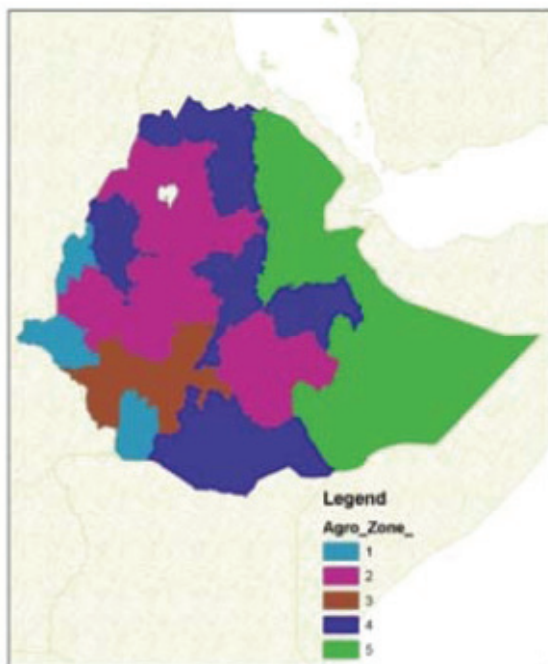


Figure 1. Agroecological Zones in Ethiopia

Source: Ethiopia Task One Background Report, 2010,

Note: Zones 2 and 3—highland, cereal cultivation; zone 4—highland, drought prone, pastoralism; zone 5—arid lowland, mostly pastoralism.

communities, with a pervasive influence on all aspects of life. Above all, the distribution of rainfall, and hence the availability of pasture and water, and the associated system of seasonal migration, which are all pillars of the pastoralist livelihood, are determined by seasonality. This in turn affects the productivity of livestock, the conditions of food supply, and marketing activities.

1.10.2 Ghana

In Ghana, eight community study sites were selected, including two from each of the four major ecological zones: the Coastal Savannah, High Forest, Transition, and Northern Savannah. These communities were spread across four administrative districts. The selection of specific sites within each ecozone was based on the following criteria:

- Level of poverty
- Level of environmental degradation
- Level of gender disparity
- Vulnerability to natural disasters
- Beneficiaries of good-practice sustainable development projects.

Four field teams consisting of four persons each conducted the field work, one in each ecozone. The field work took place August 18–28, 2010, and used methodology and tools similar to those used by the Ethiopia team. The field teams were made up of men and women. The field teams held separate focus group discussions for men, women, children, and youth on issues such as poverty and vulnerability, gender relations, environmental sustainability, shocks and adaptability measures, and the impact of development projects on poverty-gender-environment nexus. The total number of participants was 466.

Table 4. Main Characteristics of the Three PRA Communities in Ghana

	Agroecological zone							
	Coastal Savannah		High Forest		Transition		Northern Savannah	
District	Dangbe-East		Ejisu-Juaben		Atebubu-Amanten		Bolgatanga and Talensi-Nabdam	
Community	Anyaman	Goi	Nobewam	Duampomp o	Seneso	Old Konkrompe	Dorongo	Datuku
Livelihood system	Farming and fishing	Farming and fishing	Farming and fishing	food and cash crop	Farming	Farming	Farming and livestock	Farming
Population	8,500	7,500	4,000	1,200	300	1,200	501	3,400
Inheritance	Patrilineal	Patrilineal	Patrilineal	Matrilineal	Matrilineal	Matrilineal	Patrilineal	Patrilineal

Brief profile of selected sites

Dangbe East District is in the coastal savannah zone that occupies the entire east coast from the Central Region through the Greater Accra Region to the Volta Region. It is the most densely populated region. It has a dry, equatorial climate, with a mean annual rainfall of 740–890 mm; it receives the least amount of rain and is the driest

region. The main livelihoods in this zone are fishing and farming in the rural areas, while the urban centers have a complex economy of global orientation (Ghana Task One Background Report, 2010). The communities selected from this district were Goi and Anyaman. The main livelihoods in Goi are fishing and farming. Goi is located between the sea and a lagoon and has farmland growing mainly vegetables, maize and cassava, as well as economic trees like neem and mango. Fishing and farming are undertaken primarily by men, although women farm cassava independently as well as help their husbands with the family farm. Women fish in the lagoon, but do not go to sea. Women are involved in the processing and sale of fish and vegetables. Members of the community are also involved in petty trading such as the sale of provisions, purified water, cooked food, clothes, and the buying and selling of fish and other food stuffs.

Like Goi, **Anyaman** relies on fishing and farming. Both men and women are involved in farming; however, only men undertake fishing at sea. Women are involved in the processing of the fish through smoking, salting, and selling. Some women undertake small-scale fishing in the lagoon. Community members are also involved in petty trading of similar items as their counterparts in Goi. Some are also involved in the provision of professional services such as tailoring, masonry, and drafting of building plans. Economic resources available to the community include land, sea, lagoon, labor, and salt. There are also economic trees such as mango, medicinal trees like neem, and animals such as goats, sheep, and fowl.

Atebubu-Amanten District, located in the transition zone, is a major food crop area and a migrant receiving region. The Transition Zone experiences 1,000–1,500 mm of rainfall and a maximum monthly temperature of about 30°C between March and April, with the lowest of about 26°C in August. Humidity is normally higher (75–80 percent) during the rainy season. Two communities were selected for the PRA exercise: Seneso and Old Konkrompe. Seneso is a small rural migrant community consisting of around 300 people of northern descent drawn from six different ethnic groups—Dagartis, Bonos, Konkombas, Wala, Kusaasi, and Mossi. The Dagartis form the largest ethnic group in the community, and the Bonos, who are indigenes, form the smallest. Land is the key natural resource for the community because farming is the main livelihood activity. Farms produce maize and groundnuts, mainly for sale, and vegetables including garden eggs for home consumption. Other economic activities include petty trading in provisions, cooked food, *pito* (local drink made from sorghum) brewing and charcoal burning, which is done mostly by the Sissalas. In the Transition Zone, the vegetation is mostly grass, which is used in roofing mud houses. The community has seen very little development; the most notable infrastructure is the 32 km laterite road that links the community to the district capital, Atebubu.

The population of the other selected community, **Old Konkrompe**, is about 1,200. Although the community lies only 7 km from the district capital, Atebubu, it is isolated due to the extremely poor condition of the main access road. Because of the poor quality of the road, trucks rarely visit the community, which makes it difficult to export or import products. The main occupation of the community is farming, with the major crops being yams, maize, cassava, garden eggs, groundnuts, chili peppers, and rice. These crops are normally cultivated on a subsistence basis, with a small proportion of individual farm outputs sold to middlemen and traders from major urban centers. There is a significant production of *gari* (roasted grated cassava) and cassava flour in the community as a result of the

installation of the Multifunctional Platform (MFP)⁴. The three boreholes are the main source of water for the community. There are two rivers in the catchment area of the community, which were the main sources of water in the past, but because of guinea worm infestation, the community now depends on the boreholes for drinking. While some people fish in the rivers, the river is not used in irrigation farming because of guinea worm.

***Ejisu-Juaben District**, located in the Forest Zone, has a bimodal rainfall pattern, with annual rainfall records above 1,900 mm distributed throughout the year. Two communities were selected, Nobewam and Duampompo. The Nobewam community is located in a resource rich area with fertile land suitable for the cultivation of a wide range of crops including cereals, roots and tubers, vegetables, and cash crops like cocoa. The agricultural sector currently employs about 80 percent of the population. One of the other most dynamic sources of income is galamsey (illegal gold mining). In addition to those two industries, women are also engaged in petty trading, mainly in groceries. Access to the main road, and its close proximity to the regional capital, Kumasi, have led to a number of development projects in the community. Key natural resources include the forest, with a variety of timber products and game; fertile, swampy land for agricultural purposes; and 11 rivers and streams for both agricultural and domestic purposes. Within the swampy areas is a large deposit of clay.*

Like Nobewam, the community of **Duampompo** is situated along a major road—Kumasi-Konongo. Both women and men are employed in the farming sector. The majority of the women are involved in buying and selling of foodstuffs in town and along the main road. Other livelihood sources include civil service, mechanics, and tailoring. Key natural resources include the forest, with a variety of timber products and game, and fertile, swampy land for agricultural purposes. This community is also fed by 11 rivers and streams, which again have significant clay deposits.

Bolgatanga and Talensi-Nabdam District, Northern Savannah Zone, is predominantly a grassland agroecosystem with scattered shrubs and trees. It has a unimodal rainfall distribution, and an annual average rainfall of 1,000 mm. Mean monthly temperature varies from 36°C in March to 27°C in August.

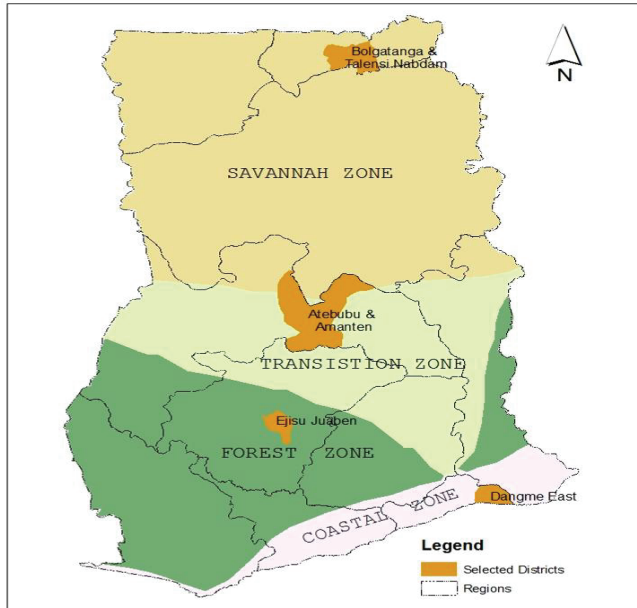
The selected community of **Dorongo** derives its livelihood from agricultural production, animal rearing, charcoal burning and firewood collection as well as shea nut processing, petty trading, and illegal gold mining. Both male and female members of the household engage in farming. Primary crops cultivated include groundnuts, maize, millet, guinea corn, rice, and vegetables. Petty trading in groceries is primarily conducted by women. Natural resources available to the community include gold, pastures for animals, forest, and economic trees including shea nut trees.

The other community, **Datuku**, resides in a remote area. The main modes of transport are motorbikes and bicycles, owned largely by men, which are used for both private and commercial transportation. Agricultural production is the primary income-generating activity for both men and women. Activities like growing millet, guinea corn, maize and rice, as well as rearing animals, are dominated by men. Women are involved in shea nut picking and processing, petty trading, production of crops such as groundnuts, bambara beans, millet and guinea corn as well as raising of animals and fowl on a small

⁴ The MFP is a 10 horsepower diesel engine, mounted on a steel chassis that powers a variety of end-use equipment such as grinding mills, dehuskers, battery chargers and water pumps. The engine can also generate electricity for lighting, refrigeration, and water pumping.

scale. Both men and woman are engaged in illegal gold mining. Natural resources include land, gold, pasture for animals, trees, and water.

Figure 2. Agroecological Zones in Ghana



Source: Ghana Task 1 Background Report 2010.

2. Environmental, Economic, and Social Contexts in Ethiopia and Ghana

An integrated analysis of environmental, economic, and social systems in each country provided a basis for understanding the links between gender, poverty, and environment. Social and economic systems adapt to, but also change, the environments in which they operate. The study found commonalities as well as differences in the Ethiopian and Ghanaian studies. In general, Ghana has more natural, economic, and human resources for addressing sustainable development challenges. In addition to differences between the two countries, there are differences between ecological zones, between rural and urban settings, and between women and men within each country. Women's status is generally low in both countries.

2.1 Socioeconomic Status

2.1.1 Ethiopia

Poverty. Poverty has been high, but the incidence of poverty declined from 45 to 39 percent during 1990–2005. Poverty varies between regions, from 49 percent in Tigray to 27 percent in Harari in 2005. Between 1990 and 2009, Ethiopia averaged an annual GDP growth of over 8 percent. Agriculture produces almost half of the country's GDP, and dramatic increases in farm production drove much of the country's recent growth. In 2009, gross national income was near \$300. Inequality on a national basis rose slightly from 1996 to 2005, reflected in a change in the Gini coefficient from 0.29 to 0.30, although it decreased in rural areas taken as a whole (MoFED 2008).

Population. The majority of the population, estimated at 83 million in 2009, is concentrated in one-third of the country, the highlands and middle highlands. The most densely populated region, SNNPR, averages 300 people per square kilometer, while the pastoralist regions contain areas with less than 10 people per square kilometer (LIU 2010). In 2007, 84 percent of the population resided in rural areas. In 2007, 44 percent of the population was under 14 years old. The 2005 Demographic and Health Survey (DHS) reported the total fertility rate per woman as 6.0 in rural areas, 2.4 in urban areas, and 5.4 nationally. The DHS also reported that over a quarter of women showed signs of malnutrition. Their mortality rate of 6.39 per 1,000 people in the six years prior to the survey was significantly higher than the rate for men, 5.94 per 1,000. Despite declines since 2000, maternal mortality remained one of the highest in the world, accounting for more than one in five deaths among women aged 15–49. Over a third of the country's children still suffered from malnutrition, and infant mortality remains high, at over 80 per 1,000 live births in rural areas.

Literacy and education. Data from the Welfare Monitoring Surveys show that 38 percent of the population aged 10 years and older was literate in 2004/5. Among rural residents, only 31 percent were literate, compared to 74 percent of urban residents. The gender disparity in literacy is greatest in rural areas, where 43 percent of men but only 19 percent of women were literate. In 2008, the adult literacy rate was 17 percent in rural Afar and 13 percent in rural Somali, both well below the national rural average of 31 percent (World Bank and IFPRI 2010).

Gender and residence also shape access to another important source of information and learning: the radio. Nationally, in 2005, 16 percent of women and 31 percent of men listened to the radio at least once a week. The rates were lowest in the pastoralist regions, especially for women. In Somali, 5 percent of

women listened to the radio at least once a week, compared to 22 percent of men. In Afar, the proportions were similar, 8 percent of women and 29 percent of men. In Gambella, in the far west of the country, radio access is also rare, with less than 8 percent of women and 33 percent of men listening at least once a week (CSA 2006a).

School enrollment rates in Ethiopia have increased dramatically in recent years, especially among rural girls, although actual enrollment is still low. Between 1995/96 and 2004/5, net national enrollment rose to 80 percent in primary schools and 65 percent in secondary schools. In recent years, the government has undertaken an initiative to increase the number of schools and provide mobile primary education in pastoralist zones (World Bank and IFPRI 2010). Despite these promising trends, enrollment rates remain very low, especially in rural areas. In 2004, only one of every three rural girls of primary school age was enrolled in school, only 10 percent of rural boys were enrolled in secondary school, and only 6 percent of girls were enrolled (MoFED 2008). Less than one-third of pastoralists of either gender have access to education.

Migration. National government policy has historically discouraged rural-to-urban migration. Because the nonfarm economy and labor market in rural areas are weakly developed, labor mobility associated with nonfarm economic activities is also low. Fear of forfeiting land rights appears to be one of the principal factors dissuading people from undertaking long-term migration. Migration that does occur is usually seasonal and for agricultural purposes, mostly for harvesting (Ellis and Woldehanna 2005).

Status of basic infrastructure. Ethiopia lacks crucial infrastructure, and remains below African averages. Road travel is the dominant mode of transport for both freight and passengers, and currently the road density is 0.57 km per 1,000 people and 42.6 km of road per 1,000 km². Water and sanitation sectors are characterized by low service levels, limited financing, and capacity constraints, especially at local governmental levels, as well as by limited community participation. Water scarcity is acute in rural areas, especially in low-lying and dry frontier regions of Somali, Gambella, and Afar. Rural populations draw water from unprotected springs, hand-dug wells, shallow and deep-drilled wells, ponds, lakes, streams and rivers, and on average, households need approximately two hours to get their daily water (World Bank 2010f). Ethiopia has one of the lowest per capita energy consumption levels in the world and traditional energy resources such as fuelwood, dung, crop residues, and human and animal power are estimated to generate 95 percent of the energy consumed. The dependence on traditional biomass fuels puts a lot of pressure on forests and the ecosystem. Only 5 percent of Ethiopians have access to electricity, mostly in urban areas (Foster and Pushak 2011).

2.1.2 Ghana

Poverty reduction. Ghana has made significant progress in poverty reduction, with the poverty rate decreasing from 51 percent in 1991 to 28.5 percent in 2005/6 (GSS 2008). The three northern regions are the poorest; they contain approximately 30 percent of Ghana's total population and 70 percent of its poor population (GoG, NDPC, and UNDP 2010). Ghana's economic growth has been substantial in recent years, reaching 6.2 percent in 2008 compared to an average of 4.4 percent between 2000 and 2003, with most of the growth coming from the mining and cocoa sectors. Previously, agriculture accounted for nearly 40 percent of GDP, but during 2006–9, agriculture declined to about 30–31 percent, while service and industry sectors accounted for about 48–50 and 19–21 percent, respectively (GSS 2010).

Population. The estimated population is 24 million and density ranges from 897 people per square kilometer in the Greater Accra Region to 31 per square kilometer in the Northern Region (GSS 2008). The population growth rate (about 2.2 percent per year) has been due mainly to declining mortality and fertility rates. Women had an average of 4.0 children, ranging from 3.1 in urban areas to 4.9 in rural areas. Fertility also varies dramatically by region. Women in the Greater Accra Region have an average of 2.5 children, compared with 6.8 children in the Northern Region (GSS, GHS, and MI 2009). Life expectancy is low, at 58 years for women and 56 years for men (WHO 2006). Major factors affecting life expectancy include lack of access to affordable, quality health care and safe drinking water; inadequate sanitation; and high rates of HIV/AIDS, malaria, and infant mortality (UNDP Ghana 2007). HIV/AIDS and malaria account for 25 percent of all deaths for all ages. The Ghana Maternal Health Survey of 2007 showed a slow decline in maternal deaths, from 503 per 100,000 live births in 2005 to 451 in 2008 (GSS, GHS, and MI 2009). 2009 Childhood mortality is decreasing in Ghana. In 2008, 50 children per 1,000 live births died before their first birthday. Infant and child mortality levels in rural areas are higher than those in urban areas.

Education. About 45.9 percent of the adult population in Ghana is illiterate; the level of illiteracy among females, at 54.3 percent, is higher than among males, at 37.1 percent. Factors contributing to lower literacy rates for females include early marriage and a cultural preference for educating boys. The proportion of males who have attended school is higher than females in both urban and rural areas. In the three northern regions, the proportion of women who have been to school is much lower: 22.5 percent in the Northern Region, 34.8 percent in the Upper West Region, and 16.9 percent in the Upper East Region, compared with the national average of 55.6 percent (GSS 2008).

Migration. Ghana's population is highly mobile. Previously, men would migrate, but recently, female adolescents have been migrating from the north to the southern cities of Accra and Kumasi to work as porters and accumulate wealth in preparation for marriage (Wouterse 2010). In 2000, about 52 percent of the population was categorized as migrant. The proportion of migrants in the rural High Forest Zone was 60 percent, slightly more than in other urban and rural localities. Overall, 36 percent of the national population were immigrants and 16 percent were return migrants. About 4 of every 10 residents of the Greater Accra, Volta, and Western regions were immigrants.

Status of basic Infrastructure. Unlike many African countries, Ghana has infrastructure that covers its entire territory, helping to integrate the different regions. The infrastructure networks correlate with population density. Two road corridors link the north and south. A national power grid and fiber-optic communication networks connect all major population centers. The country also has relatively extensive water resource infrastructure and important pockets of irrigation infrastructure. Ghana is connected by power transmission lines to Côte d'Ivoire and by the West Africa Gas Pipeline to Nigeria (through Benin and Togo). Important intercountry road corridors run through Ghana, including the coastal road from Lagos to Dakar and a key north-south route into Burkina Faso (Foster and Pushak 2011). Ghana has made impressive progress in electrification, increasing coverage from 44 percent in 2003 to 56 percent in 2008. While 74 percent of urban households have access to electricity, only 16 percent have access in rural areas. The government of Ghana estimates that over 86 percent of households nationwide use wood or charcoal fuel. Wood is used in rural areas, and charcoal predominates in the urban areas (GoG 2010a).

2.2 Environment and Natural Resources

2.2.1 Ethiopia

Ecosystem. Ethiopia's climate zones and ecosystems contrast greatly. There are mountains and lowlands, floods and droughts, and cold nights and baking heat. The country hosts a wide range of native species, many of them rare or endangered. Ethiopia's rainfall is erratic and often intense, its groundwater is hard to access, and surface waters are mainly located away from population centers. The country's highly eroded topsoil is not being replenished, and its forests, rangelands, and other common areas have either been put under the plow or overexploited, limiting the supply of wood, grass, and other natural products. The Great Rift Valley, which slashes across the country from the northeast to the southwest, has created a complex of mountains, plateaus, and valleys bordered by low-lying areas to the south and far west. Altitude rises to 4,600 meters in the mountains and sinks below sea level in the plains. Mean temperatures range from under 10°C in the mountains to over 25°C in the vast arid planes to the south.

Water resource. Ethiopia has large amount of freshwater resources, but their efficient exploitation is difficult due to the terrain. As a result, Ethiopians use only about 2 percent of this resource (MoWR 2002). The country's river basins deliver 90 percent of the country's surface water to regions where only 40 percent of the population lives, while a mere 10 percent is delivered to regions where 60 percent of the population lives (MoWR 1999, 2002).

Forest resource. Ethiopians have converted much of their forestland to agricultural use and have harvested the trees from the remaining forests. By 2006, forest area covered less than 4 percent of the country. These vestigial forests are concentrated in the southwest. As the country loses its remaining forest, fuelwood collection is consuming woody resources where they are found. While not all regions of the country are losing wood faster than it can be regenerated, one study found that over 60 percent of the country's woredas, principally those in urban and heavily populated rural areas, are now exceeding their sustainable supply limits (MoARD 2004).

Mineral resource. Ethiopia has exploited only a small proportion of its estimated mineral deposits. Commercial and small-scale miners currently extract gold, marble, limestone, and small amounts of tantalum. Although large-scale mining directly employs very few people, studies indicate that up to half a million people, half of whom are female, participate in artisanal mining enterprises in different parts of the country (MoFED 2006).

Climate change. Initial assessments suggest that Ethiopia is very vulnerable to climate change impacts. The frequency of droughts and floods will increase. Based on this history, the probability of drought is highest in the lowland areas in the east, southeast, and northeast. The other major expected climate impact, flooding, also has a long history in Ethiopia. Several floods struck in the mid-1990s, but the phenomenon has been known prior to those dates, as well as more recently. The Afar, Somali, Gambella, SNNP, and Amhara regions have all proven susceptible to flash and seasonal river floods. In addition to these changes in precipitation, the country's annual minimum temperature has exhibited a general warming trend over the past 55 years, and this is expected to continue (EEA and EEPRI 2010).

2.2.2 Ghana

Ecosystem. Ghana's four ecological zones include the Coastal Savannah, High Forest, Transition, and Northern Savannah. Levels of environmental degradation vary according to zone, based on the

prevailing natural resource risks. The Northern and Coastal Savannah zones are the most degraded. The forests of the southern half of Ghana have also been degraded by agriculture and logging. Ghana has a relatively large amount of cultivated land per capita. However, most lands are characterized by poor fertility and degradation. Severe erosion affects many regions, particularly the Upper West, Northern, and Ashanti regions. Ghana has diverse forest habitats that are home to numerous endemic species. The southwestern part of the country, including the Bia, Ankasa, and Kakum protected areas, is one of the world's 25 richest and most endangered terrestrial ecoregions. Ghana's rich biodiversity is gradually being depleted by poaching, habitat loss, deforestation, agricultural expansion, commercial logging, mining, and the bush meat trade. It also continues to lose its remaining closed forests at an alarming rate. Ghana's total forest area declined from 7,448,000 ha in 1990 to 4,940,000 in 2010 (FAO 2010). Remaining forest and natural habitat areas are increasingly degraded into savannah by agricultural encroachment, commercial logging, extraction of nontimber forest products, mining, hunting, grazing, and burning.

Water resource. Ghana has large amount of water resources, but the quality and quantity of water available varies markedly from season to season. The southwestern part of the country has better water resources than the coastal and northern areas. The availability of water is decreasing overall due to rainfall variability, rapid population growth, environmental degradation, pollution of rivers, and draining of wetlands (World Bank 2010f).

Mineral resource. Ghana has sizable deposits of manganese, diamonds, aluminum, bauxite and gold, but gold remains the key mineral resource for the country's economy. Most of the mineral resources are concentrated in the southwest, along with recently discovered offshore oil and natural gas (Foster and Pushak 2011). There are several large and many small limestone and dolomite deposits as well. Ghana became an oil-producing country in December 2010, when the first commercial production of oil began. The country's off-shore Jubilee oil field is the largest recent discovery in West Africa, and in June 2011, additional significant oil and natural gas deposits were discovered (Quandzie 2011).

Climate change. Initial assessments suggest that Ghana is very vulnerable to climate change impacts, particularly in the savannah zones. Climate change is expected to exacerbate land degradation pressures, reducing the land's capacity to buffer further climate change impacts. Decreased rainfall, increased variability of rainfall, and temperature rises could have negative impacts on agricultural productivity, increase the incidence of droughts and floods, and exacerbate desertification, particularly in the northern savannah.

2.3 Formal and Informal Institutions

2.3.1 Ethiopia

Decentralization. On a formal level, Ethiopia has moved strongly toward decentralization and equality over the past two decades. Successive laws have reaffirmed the Constitution's proclamations of democracy and equality. National institutions have been reformed and new ones created to realize these ideals. Decentralization has brought elected governments to the federal, regional, district, and community levels. However, budgeting remains centralized, and national planning guidance drives local agendas. Initiatives have been launched to meet the needs of women, pastoralists, and the country's poorest.

Social norms disempower women. Within the household, despite some indications that men's traditional authority over women has been waning in recent decades, women typically remain

subordinate to their husbands, especially in rural households (Bevan and Pankhurst 2007). Social norms dictate that productive household assets are controlled by the head of the household. Although women bring few significant assets into marriages, they effectively lose ownership of any land or livestock they do bring. Decisions on crop selection, renting out land, or selling livestock are made by the male heads of households. Men also make decisions on most large expenditures and manage the household revenue (Quisumbing and Maluccio 2000, table 2.6). As with other social institutions and practices in Ethiopia, there is much variation in these norms.

Effectiveness of customary institutions. Beyond the household, influential, wealthy men continue to dominate local informal institutions, civil society organizations, and local government. Customary institutions include the *iddir*, family- or locality-based saving associations that provide members bereavement insurance. In the *iddir*, husbands represent married couples, although women can vote in elections for the executive committee. Women who head households are members and can be elected. Recently, women-only *iddirs* have been formed, mostly in urban areas (Bevan and Pankhurst 2007; Ethiopia Task One Background Report). Other important community organizations include the *iqub*, or savings and credit circles, and the *debo*, *wonfel*, or *jigie*, through which men share labor. Women and men form and participate in *iqub*, which have existed at least since the early nineteenth century and are now increasingly supported by NGOs (Spielman, Cohen, and Mogues 2008; Bevan and Pankhurst 2007). The government has not yet tapped directly into the financial and social capital of these existing institutions to assist in the provision of services (World Bank 2010b). Although less well documented, customary institutions also address various aspects of natural resource management, such as allocating traditional forest management rights and herding and grazing management systems (McKee 2007). Survey data from 2005 suggest that members of approximately 40 percent of all rural households participate in at least one such institution (Spielman, Cohen, and Mogues 2008).

Women have less agency/voice. Men engage in local traditional and formal institutions beyond the household much more than women do. Women participate slightly more often in traditional institutions than in local government, but in each case they have considerably less voice than nonpoor men (Bevan and Pankhurst 2007). Women consistently interact less frequently with people in leadership positions. One 2004 IFPRI survey reported that while 12 percent of men had attended a meeting at the district level at least once, only 5 percent of women had. Women hold a similarly slim percentage of village and community leadership positions and leadership positions in political parties (Ethiopia Desk Review Background Report).

2.3.2 Ghana

Decentralization. Ghana has gone through a number of efforts to decentralize political and administrative authority from the center to the local level. The decentralized public administration system consists of 10 regions governed by regional coordinating units and 170 districts governed by district assemblies. The area councils are in charge of the subdistricts; the lowest government level, located at the village level, is the unit committee. The Local Government Act of 1993 established district assemblies to empower local people to participate in the development process and to provide access to decentralized services. However, central governments have been slow to allocate authority and resources to the decentralized structures (World Bank and IFPRI 2010).

Inheritance laws. In Ghana, common property is the predominant form of land tenure. Forests are owned by local communities, but the government has the right to cut timber (AfDB 2007; Blocher 2006).

Traditional chiefs and earth priests are formally recognized and serve in parallel to formal government in Ghana. Traditional land tenure is recognized in government land policy (UNDP Ghana 2007). A person's kinship status in Ghana plays a significant role in determining his or her opportunities to participate in decision making or ability to access economic opportunities, benefit from social services, inherit property, or attain social or political positions. In Ghana's matrilineal descent systems, entitlement to property and social position are based on the mother's lineage (a son inherits the property of his mother's brother). In patrilineal systems, property and position flow from the father's lineage (usually the first son inherits from his father). In double descent systems, both parents' lineages confer property and title. Since 1985, the government has passed laws aiming to restructure the traditions of inheritance to ensure fair distribution of property to the deceased man's spouse and children. Marriage in Ghana is considered to be a union between families as well as between a husband and wife. Polygamy is allowed, and taking more than one wife is viewed as testimony to a man's wealth and power.

2.4 Gender Disparities

2.4.1 Ethiopia

Women lack endowment. In Ethiopia, the region with the lowest female literacy rate is Somali (15 percent). Similarly, a look at broad gender disparities at the regional level in Ethiopia shows that the region ranking highest on the gender parity index (that is, with the lowest gender disparity) is Addis Ababa (0.81), followed by Harari and Dire Dawa. The region ranking lowest on the index (that is, with the highest gender disparity) is Somali (0.41), followed by Benishangul-Gumuz, Oromiya, and SNNP.

Land titles improved women's agency. Despite legislation to protect their land rights, women have insecure access to land, deriving their land rights largely through men. In Ethiopia, traditional practices also transfer land to males, but land certification in both women's and men's names has increased women's food security and their negotiating status within households in some contexts (Ethiopia Desk Review Background Report, 2010). Land holdings are extremely small in Ethiopia (CSA and UNFPA 2008).

Female headed households face labor constraints. In Ethiopia, 23 percent of households are headed by women. Labor is a serious constraint for female household heads, because social norms prohibit women from plowing with oxen. This leaves many women with no option but to lease out their land (Gebreselassie 2011). While not all female-headed households in Ethiopia are poor, they constitute 47 percent of the lowest income group (CSA 2006a).

Gender-based violence, particularly domestic violence, is common in both urban and rural families and violence is accepted by many as proper form of discipline for wife and children. Polygamy occurs in both urban and rural settings, and over 14 percent of currently married women are in a polygamous union. About 1 in 11 men is in a polygamous union (DHS 2005). Afar, Oromiya, Gambela, and Benishangul Gumuz regional states have the highest number of polygamous families, while Amhara, Addis Ababa, and Tigray regions have the lowest. Older and illiterate women residing in the rural Gambela, Affar, and SNNP regions are more likely to be in a polygamous union (DHS 2005).

2.4.2 Ghana

Inheritance law. Traditionally, in Ghana, customary inheritance practices left widows with no land or resources and rituals further demeaned their status, despite the fact that women grow most of the food crops and play important roles as traders. Existing legislation attempts to ensure that widows and divorcees have access to resources, but too often traditional practices prevail (UNDP Ghana 2007).

Female headed households face labor constraints. Female-headed households are prevalent in Ghana, comprising 37 percent of households in urban areas and 34 percent in rural areas. Labor is also a constraint for female household heads in Ghana, as well as for women in other households, who are usually obligated to work first on their husband's crops and fully control only their children's labor. Labor is particularly challenging for women with small children or no children, widows, and elderly women, all of whom are vulnerable to poverty and food insecurity (Dejene 2008).

Violence against women. Polygamy is common in Ghana, and 18 percent of currently married women are in polygamous unions, 15 percent men reported having one cowife, and 3 percent said they had two or more cowives (GDHS 2008). Rural women are more likely to be in polygamous unions than their urban counterparts, and it is more common among women with no education and those in the lowest wealth quintile. Regional variation in the prevalence of polygamy ranges from 6 percent in Greater Accra to 37–38 percent in the Northern and Upper West regions and 31–32 percent in the Volta and Upper East regions. Domestic violence is also common; however, men are less likely (22 percent) than women (37 percent) to think that a husband is justified in beating his wife (GDHS 2008). A bill to reduce domestic violence was approved in 2007.

2.5 Gender in National Policy and Its Implementation

2.5.1 Ethiopia

PASDEP. One of the eight pillars of the 2006 *A Plan for Accelerated and Sustained Development to End Poverty* (PASDEP) strategy was “Unleashing the Potential of Ethiopia's Women.” The 1993 National Policy on Women (NPW) mandated the creation of administrative structures necessary to provide basic social services to rural women. Consequently, a Ministry of Women's Affairs was formed, as were bureaus in other ministries, offices at regional and district levels, and a position at the kebele level. Successive national action plans on gender were followed by the National Action Plan for Gender Equality (NAP-GE), a policy component of the PASDEP. The NAP-GE includes a specific goal for enhancing the role of women in environmental management. Steps toward expanding rural women's access to and control over productive resources such as land, agricultural extension services, and credit can also be found in the NAP-GE (Ethiopia Literature Review, Abebe 2010; MoFED 2006).

Gender equality commitments in national policies. In Ethiopia, commitments to equity and women's rights are reflected in the country's policies on poverty, agriculture, rural development, safety nets, water, transportation, and environment. However, the results of these commitments are less visible on the ground because the informal social institutions both within and outside of formal government, households, and communities resist the ideals of equity. The lowest level of governance, the kebele, consists of an elected council, an executive committee and social courts, and is responsible for conveying the interests of the citizens to higher levels of government and adjudicating disputes (Spielman, Cohen, and Moguees 2008). Women, poor men, the illiterate, and the young are largely excluded from leadership positions at the kebele level. Instead, men of relative wealth and influence tend to dominate these

positions. These men are often drawn from traditional institutions, where they play multiple roles as religious leaders, elders, and clan leaders (PRA study, Abebe et al. 2010). One study found that, while all committees surveyed included women, none of the leadership positions were held by women, except in the one committee where all members were women (Mogues et al. 2009b). Similarly, women participated as representatives in only one-fifth of the Land Use and Administration Committees in the Amhara Region, and just 8 percent in the Oromia Region. Participation by women in public meetings in the land certification process was also consistently low (Ali et al. 2006). In the Productive Safety Net Programme, although approximately 40 percent of the development agents working in the program are female, women constitute very few of the local Food Security Task Force (FSTF) members, and an even smaller percentage of the FSTF leadership positions (Sharp 2006).

2.5.2 Ghana

GSGDA. The government of Ghana developed the *Ghana Shared Growth and Development Agenda* (GSGDA 2010–2013; GoG 2010a) as a medium-term policy framework expected to consolidate growth, address social inclusion and foster sustainable natural resource management, and one of its principles is to “ensure gender equity in access to productive resources such as land, labor, technology, capital/finance, and information.” The GSGDA acknowledges that gender has not been effectively mainstreamed into the formulation and implementation of public policies. To remedy this situation, the GSGDA addresses gender-poverty-environment links and includes numerous measures to reduce female poverty, mainstream gender in development and growth in the sustainable development sectors, and include women in all spheres of governance to promote gender equality.

Women in decision-making positions. Ghana has made significant strides in reducing disparities in the representation and participation of men and women in public life. However, marginalized social groups and women still have limited representation in elected bodies. Women constitute 9 percent in the national parliament (GoG, NDPC, and UNDP 2010). Participation of women in district assemblies is also low—5 percent. Ghana has 30 percent quotas for appointed women in district assemblies, area councils, and unit committees. Although women hold roughly 32 percent of the civil service positions and 24 percent of those in local government, these are predominantly secretarial and clerical posts. Only 12 percent hold decision-making positions (Ghana Desk Review Background Report, 2010). This limited female representation in political and administrative positions limits the ability of community-based groups to voice women’s concerns to district assemblies and the responsiveness of local government to women’s needs and issues of gender inequality.

3. Dynamics of Gender-Poverty-Environment Interactions

Community perception is an important guide for policy and program formulation

“The interaction between social-environment-economic dimensions of one’s living environment must be defined by the beneficiaries themselves.”

Participant, online discussion Online discussion on Linking Gender, Environment and Poverty Report
(World Bank Background Report, 2011c)

Participants have a holistic view about relationship between gender, environment and poverty. The participatory rural appraisal studies in Ethiopia and Ghana revealed that rural residents had a holistic and pragmatic view of the relationships between gender, poverty, environment, and sustainable development projects. Women and men viewed these dynamics in terms of the impacts on their livelihoods and opportunities. They recognized that changing rainfall and temperatures, more frequent floods, deforestation, and declining soil fertility had exacerbated poverty, particularly for widows, female heads of households with children, the elderly, and people with disabilities. They realized that human activities, such as logging, house construction, cutting and burning forests for farming, grazing, charcoal production, and collection of firewood from forests and mangroves have contributed to this environmental degradation. Some were aware that improving the economic status of women could help families and communities move out of poverty. They had experienced both positive and negative impacts of sustainable development projects on the environment and their local and household economies, and they had seen differential impacts on women and men (PRA Background Reports for Ethiopia and Ghana 2011).

The analytical approach introduced in chapter 1 was used for comparing the dynamics of gender-poverty-environment interactions in Ethiopia and Ghana in terms of (i) socioeconomic marginalization and natural resource degradation; (ii) protected area conservation and control of natural resources; (iii) competing environmental interests; and (iv) collective action and resilience. The main findings from participatory rural appraisal are given below.

3.1 Marginalization and Natural Resource Degradation

Mutually reinforcing forces. The participatory appraisal studies reveal that the socioeconomic marginalization and natural resource degradation are mutually reinforcing processes in Ethiopia and Ghana. This process affects poor rural women most severely because of their limited access to land and other natural and financial resources, and because of time poverty due to their reproductive and domestic workload. In both countries, climate change has had a negative impact on crop production, and in Ethiopia it has diminished the capacity of rangelands to support herds. Communities stressed that growing population pressure on diminishing resources has promoted a negative cycle of poverty, hunger, social exclusion, and further environmental degradation. The negative impacts are more extreme in Ethiopia, which has suffered frequent and severe droughts. In addition, landholdings are fragmented in Ethiopia, and there has been a decrease in common rangeland and other common property on which pastoralists and the poor depend for their livelihoods. Limited access to resources, food insecurity, time poverty, poor infrastructure, health impacts, and vulnerability to climate change all illustrate the

gendered interplay between socioeconomic marginalization and environmental degradation as it plays out differently in Ethiopia and Ghana (Ethiopia and Ghana PRA Background Reports, 2011).

3.1.1. Community perception of marginalization and poverty

“If your parents keep asking you to go to your uncle, aunt or a friend’s house to eat when you are hungry, it means you are poor.”

—Young girl FGD participant in Nobewam, Ghana

Ghana PRA Background Report, 2011a

Participants view about marginalization. In Ethiopia, all communities in study areas perceive marginalization and poverty as multidimensional issues, and assets are used as the main criteria for wealth ranking. For the farming communities (SNNP and Tigray regions), land and oxen are the main asset, while livestock is the main asset for pastoralist communities (Somali). The main manifestations of poverty identified by communities include: inability to provide for basic needs for the household (especially food, but also health care, housing, children’s education) and lack of cash reserve for emergencies. The two farming communities felt that, overall, poverty and vulnerability were declining, while the pastoralist Somali community indicated the opposite. The positive perceptions of poverty reduction trends in the two farming communities are related to development project interventions including an improved safety net, which stabilized basic consumption, improved access to basic services, and increased agricultural production and marketing. In contrast, in the pastoralist case study site, the overall perception was of a downward spiral into poverty and destitution caused by the severe and recurrent drought episodes in recent years, environmental degradation, and declining access to natural resources aggravated by market shocks.

Participants view about poverty. FGD participants identified several factors as causes of poverty. During the FGDs, participants also recognized that wealth and poverty are not always fixed and immutable conditions. Three main categories of poverty causes were identified by participants as (i) shocks—such as drought, chronic illness, or death of able-bodied household member; (ii) lack of resources, including access to basic productive assets such as land and oxen as well as credit, inputs, services and infrastructure, and environmental degradation and diminishing access to natural resources; and (iii) individual agency, effort, or responsibility. It was often asserted in both women’s and men’s FGDs that the only sure way of getting out of poverty is through individual effort and hard work, not through charity. This argument implies that individuals can be responsible for their own actions and conditions and individual character/behavior and effort (in relation to work and saving, for example) do account for poverty and wealth. According to key informants (kebele officials), people who moved out of poverty or improved their position in the study area in recent times used the following main strategies: (i) improved agricultural production and income, by obtaining more land through renting and intensifying production through irrigation and modern inputs; and (ii) nonfarm activities such as skilled construction work (masonry), trade, and others.

In Ghana, poverty and well-being were defined by communities in terms of three key characteristics: assets, family, and power/influence within the community. For fishing communities, assets include boats, nets and outboard motors; for farming communities, assets include land, livestock, and vehicles. Men’s focus groups in all the four agroecological zones defined household well-being as the ability to have basic needs like food, shelter, clothes, health, and education. The women’s focus groups defined poverty as inability of

the household to afford food, shelter and clothing for the family, or provide good education for children. The participants differentiated rich and poor households by asset base, family size, and power and voice (influence within communities and households).

Communities cited a diverse range of reasons for falling into poverty, but across all the agroecological zones, environmental management was seen to be a primary cause, with overfarming and diminishing crop yields a major factor. In Duampompo, many families have been farming on their piece of land for more than two decades without applying fertilizer, resulting in declining yields. Farmers cited the lack of capital and credit as a major impediment to farming, as well as the high cost of leasing land. In the Coastal Savannah Zone, the negative effects of climate change on fishing activities have pushed people into agriculture, and the subsequent increase in demand has pushed the price of land up, making it inaccessible to poorer farmers. Across all the agroecological zones, natural disasters are also seen as a major contributor to poverty. Flood, drought, sea erosion, and flooding have the potential to destroy homes and livelihoods. Lack of jobs in the community kept many people in poverty. Illness or death, particularly in the case of the family bread winner, was cited as a cause of poverty by women in Goi. For the men in Goi, it was the increasing cost of funerals; borrowing money with high interest rates to pay for these funeral expenses could bankrupt an individual or an entire family. Respondents across all the agroecological zones also pointed to lack of infrastructure as a cause of poverty; poor road networks reduce commercial opportunities, such as accessing markets and social facilities, including health and education.

3.1.2. Community perception of gender-based marginalization

“It is always the men who have the final say.”

— Female FGD participant, Anyaman

Ghana PRA Background Report, 2011a

In Ethiopia, the FGDs on local perceptions of gender relations included a number of themes such as gender division of labor; gender-based access, ownership, and control over assets; access to social services and well-being; power and political participation; and gender-based violence and harmful traditional practices. In all three case study sites, both the women’s and men’s groups identified the gender division of labor by the limited participation of men in domestic activities and high level of participation of women in all agricultural activities, except plowing with oxen (in the farming communities) and in livestock rearing activities in the pastoralist community, along with most of the domestic work. Both women’s and men’s groups in all communities stressed that there is also a tendency to undervalue women’s work by magnifying and attaching greater importance to certain male-oriented tasks such as plowing with oxen (in the case of the two farming communities), herding of larger livestock, and the role of men in seasonal migration (in the pastoralist community). In all case study communities, both groups acknowledged that women shoulder multiple responsibilities and work for longer hours than men. Women’s participation in economic activities is perceived to have increased over time and both groups agreed that women carry a greater work burden. In the pastoralist community in particular, increased poverty and vulnerability in recent years have obliged women to engage more in alternative income-generating activities, such as petty trade and services, because men’s earning roles have declined due to massive loss of livestock caused by recurrent and severe droughts.

Community perception of the gender labor division is similar in all communities in Ghana. Communities stressed that traditionally, heavy labor agricultural activities, such as clearing of new agricultural land, plowing, harvesting of crops like yam and cassava, stump removal, and bulk transportation of produce like yam on bicycles and carts to storage, are considered male activities. Other associated agricultural activities including land preparation, sowing, maintaining farm until harvest, harvesting cereals and vegetables, drying produce, head portage, storing produce, and the marketing and sale of produce are more commonly undertaken by women. In both Nobewam and Duampopo, communities reported that men do all the initial work on the farm, after which the women take over and work the farm until harvesting. Where women have their own farm land, the expectation is that they will farm their husband's land first and their own second. In Duampopo, the women's group noted that the men will often decide how a woman allocates her time and where and when she will farm. In polygynous situations, women are given their own parcels of land to farm to support their own children. In the fishing communities, fishing at sea is undertaken by men and boys while the processing and sale of fish are the women's responsibility. Some women undertake small-scale fishing in the local lagoons.

Both women's and men's groups stressed that women are also involved in income-generating activities such as shea nut processing and gari production. Firewood collection for use at home or for sale is traditionally carried out by women and girls, except in Dorongo, where men engage in the firewood business because they know that there is money in it, and they have bicycles or donkeys to carry the firewood. The collection of water remains very much a female activity. Women and girls are primarily responsible for the collection of water for household and farming use; for a man, collecting water is seen as an emasculating task. In some communities gender roles remain strictly defined. As one male respondent in Seneso said, *"If a man washes his own clothes then his marriage is not going on well."* Also, the men in the FGD in Nobewam said that men who help their wives carry firewood and foodstuffs from the farm lose respect in the community.

Several communities noted, however, that these patterns in gender roles are gradually changing. Citing the influence of radio and television programs as well as the influence of the church, women in Duampopo and Nobewam indicated that the men in the community are gradually becoming involved in household chores.

3.1.3 Community perception of environmental degradation

"Our forest is gone. What is left of it now is grass."

— Female FGD participant, Nobewam

"About twenty years ago we used to experience between 17-20 times drizzling in a day. But now it does not even drizzle up to five times in a day."

— Male FGD participant, Duampopo

"We are at the mercy of the rain—it can either choose to come early or late, low or high."

— Male FGD participant, Nobewam

Ghana PRA Background Report, 2011a

In Ethiopia, FGDs and key informant interviews in all communities revealed that land and soil degradation are the most severe problems in the two farming communities, especially in the highland

farming community in Tigray. Drought and rainfall variability are identified as the two most important types of shock affecting livelihoods in all the three study sites. Local informants also stressed that the frequency and severity of drought episodes and climatic variability have increased in recent years. There is clear recognition of links between shocks, gender, and poverty in local perceptions in all the study sites. Participants in both women's and men's FGDs indicated that women, especially pregnant and lactating women, small children, the elderly, and the disabled are most vulnerable to shocks. In all three of the study communities, both women and men participants identified gender roles and responsibilities as the main factors for differences in vulnerability to shocks. For example, it was frequently noted that shocks, as well as environmental degradation, are associated with food scarcity and shortages of natural resources (water, fuelwood, fodder). Because women are responsible for the management of household food resources and provision of basic needs, they face the brunt of the pressures, strains, and stresses.

The FGDs revealed that there were differences of opinion in different communities about environmental degradation in Ghana. The Seneso and Old-Konkrompe communities from the Transitional Zone complained of deforestation, loss of vegetation, soil degradation resulting from larger human activities such as cutting down trees for firewood, charcoal burning, house construction, and removing trees for infrastructure or farming. Nobewam and Duampompo communities in the Forest Zone blamed deforestation on the timber contractors and construction companies. The communities agreed that loss of the forests is having a devastating effect and has led to a change in the weather patterns. The lands that have been cleared now account for more violent and destructive wind storms. Communities also attribute the irregular rainy seasons to the loss of trees. The excessive burning of wood for charcoal has also contributed to soil degradation. Loss of forests has had a serious economic impact, because the loss of shea nut trees has specifically affected women's livelihood. Similarly, there has been a loss of a large number of trees that were previously used for medicinal purposes. The destruction of forests has led to the virtual disappearance of wild game, including buffalo and elephants. This has meant a loss of bush meat as a source of food and income for many people. Even snails and mushrooms, once harvested at no cost by the very poor, have been drastically reduced. In coastal regions, the number of birds has dropped significantly because children hunt these as alternate food sources. In the Northern Savannah Zone, firewood has become a rare commodity and women need to walk farther and farther in their search for wood. This has drastically reduced the potential to derive income from the sale of firewood—previously a viable income source for women.

All communities stressed that rainfall patterns have changed significantly over the last 15 years. The rains come at different times, heavier in some, lighter in others. In Dorongo, respondents noted that previously the rainy season used to be about nine months (April to November), now it is closer to six (June to October). In the Coastal Savannah Zone, where they expect two rainy seasons, Anyaman and Goi communities reported that in some years there is only one. This makes it difficult to know when to plant and when to harvest. Groundwater sources are also problematic. In many communities, streams are polluted, with a high prevalence of waterborne diseases, and unsuitable for domestic consumption. Streams and boreholes are more likely to reduce or even dry up during the dry season, and wells must be dug deeper and deeper. In Duampompo, it was reported that most of the streams dry up during the dry season, a situation which was not the case two decades ago. Human pollution is also a factor. The lagoon in Goi is heavily polluted with human waste and plastic bags.

The coastal communities commented on the impact of climate change on the ocean. Rising tides have brought the sea to their doorstep, destroying property and forcing the relocation of many residences. It

was also noted that the construction of the Tema Harbour had affected the water flow. Fishermen said that their ocean yield had dropped considerably. Less fish has meant a reduction in fish for sale and for domestic consumption. Reasons for lower yields included rising ocean temperatures and overfishing.

3.1.4. Limited access to resources

Ethiopia PRA findings indicate that land certification in women's and men's names appears to have had a positive impact on women's access to resources and on their negotiating power in the household. However, access to labor appears to be the greatest constraint limiting productivity for rural women in Ethiopia. In Ghana, labor is a constraint, but access to land and other natural resources seems to be an even more serious limitation.

Communities in Ethiopia noted that female-headed households and women in male-headed households face limitations on labor, capital, and time. This constrains their capacity to invest in cultivating their fields and increases their reliance on diminishing forest products and wild vegetation. While gender plays a limited role in determining access to the limited common property resources available to the poorest Ethiopians, it does play an important role in determining the benefits derived from these resources. Communities noted that gender strongly influences roles in the value chain of firewood and some nontimber forest products. Men dominate the more lucrative forest product value chains, such as charcoal, construction poles, and large-scale fuelwood supply. In the market providing fuelwood to Addis Ababa, women earn 22 percent less than male traders (Ethiopia Desk Review Background Report, Abebe et al. 2010).

Land titles empower women

"Nowadays men think twice before taking unilateral decisions and actions, since they know that in case of conflict and divorce, the woman is more likely to leave with half of the family assets."

— Male FGD participant in the Tigray Region

Ethiopia PRA Background Report, 2011b

All communities in Ethiopia stressed that women's property rights in general, and land rights in particular, have improved in recent decades. However, significant constraints persist, including the relatively small holdings of female heads of households and the various constraints they face in effectively controlling and managing land and agricultural production. One of the most serious constraints faced by women regarding effective control over land is the traditional taboo against women plowing with oxen. Because of this taboo, many female heads of households are forced to rent out their land and derive only a fraction of the agricultural produce. It should also be noted that the taboo on women plowing (women are engaged in almost every aspect of farming except plowing) is being challenged, mainly by women in the lowland farming community, but also by those in the highland farming community to some extent.

There were different reports from older and younger women regarding women's participation in plowing. During FGDs in Ethiopia, some women from the farming communities in Dile-Datie and Mahabere-Weyni stated that as far as farming is concerned, plowing is the only task that remained exclusively performed by men. While there was a general consensus on the fact that the cultural barrier is still preventing women from plowing, some younger women from farming communities disagree with

the statement and argue that the cultural barrier may be impeding, but it is not preventing them from plowing anymore. Some participants stated that they have not known or even heard of any woman who has plowed in their community, but younger women disagreed and argued that they do know women plowing in their community, and they themselves have been and still are plowing. They argued that it is the obsolete tradition and not the lack of physical fitness that is preventing more women from plowing. Box 4 tells the story of two women farmers, who were also FGD participants.

However, in the same FGD at Dile-Datie, a group of older women argued that women can do everything else except plowing. They may try to help men in plowing, but cannot make good farmers themselves, because of maternal constraints. They stressed that younger women may have the energy that plowing requires, but it would be very difficult for women to plow fields after they become mothers. One woman participant reported that after she lost her husband she had tried to plow herself, but she gave up soon, because she was already overburdened with domestic chores and children. She felt that women, especially those married with children, do not have the time and energy to engage themselves fully in farming and the farm will suffer as a result. She also noted that women in her community have recognized the value of educating girls and sent all the girls to school, and this has added to women's domestic burden. In the end, there was disagreement about what prevents women from plowing; 6 out of 13 women said that the reason was tradition, 7 out of 13 women said that it was lack of physical capacity.

Box 4. Breaking the Taboo: The Cases of Two Young Women Farmers in Dalocha

During a PRA exercise in Dile-Datie Kebele, Dalocha Woreda, a young woman shared her experience of plowing with oxen, traditionally an exclusively male domain in Ethiopia.

I lost my father when I was a teenager. I was the oldest in the family. My brother was too young replace my father. Following local tradition, my mother remarried my paternal uncle as a co-wife, hoping that he would help raise her young children. But my uncle, knowing that my mother and her children were at his mercy, made clear his intention to take our land illegally and refused to plow our fields. At that point, I decided to do it myself, which I did until my young brother was old enough to take over the responsibility. In fact, I continued plowing intermittently when my little brother was in school or away for other business. Villagers and passersby discouraged me, saying I was doing something that only men should do. Therefore, whenever I plowed, I had to wear men's clothes to keep my identity a secret.

Another woman from the same region, who is single and currently attending school in grade 8, shared her story.

I too lost my father early in my childhood. I had no brothers to plow our land to support me and my mother. I traveled outside our village and plowed there to avoid our neighbors talking all sorts of nonsense about me; and this had worked. But, last year, I plowed a field inside our village hoping that things have improved, but they have not. It is painful when people call a woman "WONDA-WOND" (meaning manly or mannish) for the simple fact that she plowed using a pair of oxen. It is equally unfair to label men "SETA-SET" (meaning womanly) who tries to assist women in their domestic chores.

Source: Ethiopia PRA Background Report, 2011b.

During the FGDs, communities indicated that land and soil degradation are the major problems in the two farming communities in the Tigray and SNNP regions. In the highland farming community in Tigray, various efforts were being made to reverse land degradation through different soil and water conservation activities. However, the small, fragmented, and declining holdings constitute formidable challenges to food security and poverty alleviation.

The observations and mapping exercise conducted during the PRA study reveal the complex relationship of access and management of water resources, which can be summarized as follows. First, the highland farming community owns a large and reliable clean drinking water supply system, while there is little improvement or even worsening conditions in the other two study sites. Although, the number of sites is too few to make generalizations, the findings reflect trends at the national level. Significant progress has been made in recent years in improving access to drinking water supply, but there are still significant variations at local levels and a substantial proportion of the rural population is still without access to clean water. Second, a divergent process characterized by increasing water supply coverage on one hand, and deterioration in the conditions of natural water sources (rivers, springs, lakes) on the other, are caused by environmental degradation, rising pressure from growing human and livestock population, pollution, and other factors. Third, growing demand and competition over access to water resources exists within communities for different uses (domestic, livestock, small-scale irrigation) and across communities (down and upstream users), and integrated management of water resources to ensure equity and sustainability is lacking. These problems can be taken as symptomatic of the main and probably common challenges facing sustainable utilization of water resources and underline the urgent need for integrated water resources management in which gender, poverty, and environmental sustainability are top priority.

The communities also stressed that overall conditions and trends related to household energy and access to fuelwood are negative and deteriorating in all the sites, although the severity of the problem varies by site to some extent. FGDs with two agricultural communities revealed that access to fuelwood is subject to the same pressures as access to grazing land (deforestation and conversion of woodlands into farmland and area enclosure), and as a result, village commons are no longer sources of fuel. In addition, at present, collecting fuelwood from closed conservation areas is not allowed. However, the problem of access to fuel varies: it is more severe in the highland farming community where cow dung is the main cooking fuel, and dung work, perceived as “dirty work,” is almost exclusively the responsibility of women and girls. In the case of the lowland farming community in Dalocha, the problem is not that severe, and biomass is the main cooking fuel. The poverty dimensions of these trends is that the decline of village commons and increasing reliance on individual resources puts more pressure on poor households with limited land and livestock resources and agricultural production, especially on women and girls, who are responsible for fuel collection.

Inheritance and household labor practices determined by social norms

“If my wife farms on her own without helping me, then I will not agree to that.”

—Male FGD participant, Transition Zone

“Women come into marriage with nothing and leave with nothing.”

—Female FGD participant, Transition Zone

Ghana PRA Background Report, 2011a

In Ghana, farmland is considered to be the most important productive resource in all study communities. Field work revealed that access to farmland has shifted over the past 15 years, with land becoming more accessible to all members of the community regardless of demographics. Land usage has, however, typically been restricted in the case of migrants and women. For women, restrictions on access vary depending on the system of inheritance and social norms. In most communities in the Northern Savannah Zone, women in the FGDs stressed that women are unlikely to inherit land from their own families because it is feared that when they marry, they will take their land with them. Adult daughters in the house can help their mothers and fathers to farm, and in some cases, they can also be given small portion of land for their own farms. According to the women in Datuku FGDs, women cannot own land after marriage, but have access to its use through their husbands. One of the reasons for this is because women are coming from different homes into the men's family, and can be thrown out anytime, especially when there is any misunderstanding between the husband and wife. In addition, in some families when the husband dies, the wife can continue to farm on the land, and in other families, the members can seize the land and deprive the widow. In the Transition and Forest zones, communities reported that women could own land, including family lands. Regarding family lands, a woman could only have access through the family head and a witness who could be either a brother, uncle, or husband. Among the eight communities that were covered by the field work, two (Old Konkrompe and Duampompo) have a matrilineal inheritance system. Across all the agroecological zones, most women have to purchase or rent land or acquire it through their husbands. Even where women are able to own, purchase or rent land, they still tend to be under-represented as farm owners because their ability to farm on their own is limited to due to their domestic work burden. Their farm sizes are also smaller compared to the men.

Communities did, however, suggest that the trend is changing and that women increasingly now own their own farms, the result of several factors, including an increase in capital from trading activities; communities allowing women to request land without needing to be vouched for by a close male relative; and women proving their capacity as farmer owners.

In Ghana, FGDs indicate that labor and resource allocation processes are generally biased against women. Women are obliged to help cultivate their husbands' crops as well as their own. Fewer women than men obtain land, and when they do, the plots are consistently smaller and less fertile. Less than one-third of the women who head households own land (GoG 2007). Women's land rights under customary law tend to be secondary rights, derived through their membership in households and lineages and secured primarily through marriage, particularly in rural areas. Such secondary rights tend to be very insecure, because they are usually not clearly defined or documented. Their rights are subject to change, uncertain in duration, and often dependent on continued good relations between the parties involved. Even where women can inherit land, customs tend to restrict their rights, and they do not have full ownership and cannot transfer land. Widows and divorcees rarely receive a share of the land (Ghana PRA report 2011). Although increasing commercialization of land provides women opportunities to purchase land, poor women lack the resources to do so. Women in FGDs also stressed that there is a risk that male landowners may sell land to developers for profit, leaving the household without adequate productive resources. Research also indicate that land-poor households become dependent on exploitation of diminishing natural resources – both wood and other forest resources such as honey, gum Arabic, resins, shea nuts, spices, snails, and medicinal products, which may further degrade the environment (Quisumbing et al. 1998; UNDP Ghana 2007).

3.1.5 Food insecurity

“The burden of managing the dwindling food resources of the family falls on the shoulders of women.”

— Male FGD participant, SNNPR

“You would not have found us here today if it were not for the safety net.”

— Female FGD participant, Tigray Region

Ethiopia PRA Background Report, 2011b

FGDs in Ethiopia revealed that the greatest stress of food shortages falls on women because they are responsible for household food provision. While FGDs indicated that there is no discrimination between men and women in the allocation of food, women usually will be the first to reduce their own food intake when food is scarce. Rights to collect, process, and sell nontimber forest products can allow women who have little or no access to land to feed their families (FAO 1998; Dellink and Ruijs 2008; IFAD 2008). In Ghana, FGDs in the Transition Zone revealed that lack of food processing and storage facilities increases food insecurity in the lean season. Deforestation and land degradation also lower the water table and reduce crop and livestock production. In the northern regions, Dorongo and Datuku communities stressed during FGDs that droughts and floods have displaced families (Ghana Task 1 background report 2010a). In Ethiopia, food insecurity is widespread, and many communities depend on government and other development agencies for food aid (Ethiopia task 1 Background report 2011).

3.1.6 Time use in domestic and reproductive activities

“After toiling long hours together in the field, men and women come home; while men often rest, women continue with their domestic activities. Women’s work never ends.”

— Female FGD participant, Tigray Region

Ethiopia PRA Background Report, 2011b

Study findings revealed that women in both countries spend a large amount of time every day on domestic and reproductive activities that limit their economic and social opportunities. Women’s limited time or “time poverty” as a critical development issue was first highlighted in a major study conducted in sub-Saharan Africa in 2006, revealing that women in some countries walk nearly 6 km per day to collect water and fuel (Blackden and Wooden 2006). Research in developing countries also reveals that women and girls in households with no energy and water services spend between two and nine hours per day on water, fuelwood, and fodder collection and cooking activities (World Bank 2001a). Women’s caregiving responsibilities, combined with cultural restrictions and lack of information, also limit their mobility and time for other activities (IEG 2007). Time spent collecting natural resources, particularly fuelwood and water, some accessible only at a great distance, has an opportunity cost. This is particularly the case for women and girls, who have the primary responsibility for collecting fuel and water. The burden of performing these tasks limits their opportunities to participate in education, skills development, community governance, and income-generating activities (Katz 2004). Thus access to schooling for women and girls, among other opportunities, is limited by their gendered roles and responsibilities. While women in Latin America face similar challenges, the situation can be further aggravated, because often the access to water is controlled by wealthy and powerful community members—usually men—

and thus access to water depends upon a women's ability to remain in the good graces of those who control communal resources (Mollett 2006).

Time poverty as a constraint was also highlighted in country field work and the online discussions. In both Ghana and Ethiopia, FGDs revealed that women and girls bear much heavier domestic task burdens than men. Women and girls spend long hours doing the bulk of the domestic chores on top of their livelihood activities. These times vary significantly from one region to another based on the availability of water, fuelwood, roads, and alternative energy sources. Communities in Ghana noted that women in the Northern Savannah Zone travel up to 12 km daily seeking wood and water, and women in the Transition Zone travel nearly 14 hours to and from markets and 20 hours to mills to process grains and other products (Ghana PRA Background Report). Published reports also indicate that in Ethiopia, women work an average of 38 hours per week on unpaid domestic tasks, while men spend only 6 hours (CSA 2006a). Women in Ghana spend an average of 43 hours per week on domestic tasks, while men spend less than 10 (Heintz 2005).

Study findings also indicate that the collection of biomass fuel degrades natural resources, which further impoverishes women and limits the environmental management choices available to them. Biomass fuel (firewood, charcoal, branches, leaves, twigs, crop residue, and dung) constitutes more than nine-tenths of the energy consumed in Ethiopia. Collecting wood contributes to deforestation, and taking crop residue and dung from fields further degrades the soil (Ethiopia Desk Review Background Report, Abebe et al. 2010). The government of Ghana estimates that over 86 percent of households nationwide use wood or charcoal for cooking and small-scale food processing (UNDP Ghana 2007). The health of women and girls is threatened by exposure to smoke from cooking meals and smoking fish (GoG 2010a).

3.1.7 Lack of infrastructure

Research indicates that poor infrastructure isolates communities from markets, social networks and economic opportunities, and negatively impacts their productivity and health by making it difficult to access health services. Despite significant improvements in Ethiopia's road networks, the road density is below African averages. The network is least developed in the southeastern part of the country (Foster and Pushak 2011). FGDs in the Northern Savannah Zone in Ghana revealed that poorly designed roads have caused severe soil erosion and flooding of houses. Communities also complained that expansion of the road network has opened up areas to greater population pressure and exploitation of natural resources (Ghana PRA Background Report, 2011a).

In Ethiopia, despite improved transport infrastructure (all-weather road) and transport service (public transport), women in the study sites were observed travelling on foot carrying heavy loads—30 to 45 kg on their back. For instance, half a dozen of the potters (all female, because pottery making is women's work in Dalocha) were observed transporting an estimated 35 kg of traditional clay products over a distance of 25 km—from Alkaso village to the Dalocha market. When asked why they could not use freight transport services, women gave two important reasons: first, transport charges are way beyond their means because their products are sold very cheap. According to the women, the value of the products they were carrying might not even cover the transport expenses. Secondly, the potters group (six women) said that motorized vehicles are not suitable for transporting fragile products such as clay products. The other option is to use intermediate means of transport such as donkey- or horse-driven carts. However, unlike its neighboring woredas and despite availability of community roads, most of

them in a very good condition, intermediate means of transport are not well developed in Dalocha (Ethiopia PRA Background Report, 2011b).

As highlighted in the government report, Ethiopia's water and sanitation services coverage is very low. Most water comes from unprotected strings, ponds, lakes, streams and rivers, as well as from hand-dug and drilled wells (MoFED 2006). During FGDs, women and men in Ethiopia stressed the lack of safe water to be the most crucial problem they face (Ethiopia PRA Background Report, 2011). In contrast, Ghana is one of five African countries that have achieved the Millennium Development Goal (MDG) target for water supply (Foster and Pushak 2011). Even though statistics show widespread access, most households do not have a regular supply (UNDP Ghana 2007). Ghana's sanitation rate is low though, and not on track to meet the MDG (Foster and Pushak 2011). During FGDs in the Coastal Zone, communities indicated that user fees constrain sanitation access by the poor (Ghana PRA Background Report, 2011a).

3.1.8 Health impacts

The study findings also reveal the gendered negative health impacts of marginalization and natural resource degradation. The time-consuming labor that women and girls must perform, which becomes more arduous in the face of dwindling resources, has a direct impact on their health and well-being. Carrying heavy loads of water and firewood can result in injuries among women. Research also indicates that water shortages and lack of equitable water access often lead to an abandonment of hygienic practices and an increase in waterborne diseases (Gururani 2002; Sultana 2011). This imposes greater demands on the time of women and girls who take care of the sick (Ahmed 2000). Women and girls also bear disproportionate risks from indoor air pollution. In 2004, indoor air pollution from solid fuel use was believed responsible for almost 2 million deaths per year in developing countries. Indoor air pollution is the second largest environmental risk factor leading to illnesses and death, after unsafe water and sanitation (Ezzati and Kammen 2002; Green 2005; Rehfuess, Mehta, and Pruss-Ustun 2006; World Bank 2006b; WHO 2011).

Women in both Ethiopia and Ghana face all these risks. Communities in areas without access to safe drinking water in both countries complained of outbreaks of diarrhea and dysentery. Research also indicates that climate change is increasing the incidence of diseases such as malaria, cholera, and trypanosomiasis in Ethiopia, increasing the burden on women who care for the sick (EEA and EEPRI 2010).

During the FGDs, communities in the Northern Savannah Zone complained of increasing incidences of malaria due to stagnant water in small dams and irrigation canals. A study conducted by Alhassan in 2009 revealed that the construction of the Akosombo Dam in Ghana may have led to a significant increase in waterborne diseases such as bilharzias, river blindness, malaria, and urinary schistosomiasis among the inhabitants of the lakeside villages. Prior to construction of the dam, urinary schistosomiasis affected only about 1 to 5 percent of the population. By 1979, the disease was prevalent in the area, affecting around 75 percent of the lakeside residents (Alhassan 2009). Irrigation and other water projects can also lead to an increase in malaria when preventive measures are not taken. Malaria is one of the leading causes of morbidity and mortality, especially among pregnant women and children under the age of five. Malaria adversely affects birth outcomes and can lead to a spontaneous abortion, preterm labor, low birthweight, and stillbirth. Malaria accounts for an estimated 22 percent of under-five mortality and 9 percent of maternal deaths in Ghana (GSS, GHS, and MI 2009).

3.1.9 Vulnerability to climate change

“In the past, the rains started in the same exact week, if not day, each year. . . . The belg rains [light rains from March to May or June] start on or around 15th March as if they have an appointment with us [farmers]. . . . This has changed now. The rains are not predictable anymore. Sometimes they start as late as June or July and stop shortly before September, before the crops mature, or extend as late as November, destroying the mature crops before they are harvested. Either way, crops are damaged and farmers are affected.”

— Male FGD participant, Burqa-Dilapa Kebele, Ethiopia

“We are at the mercy of the rain. It can either choose to come early or late, low or high. But what we can do and have been doing is to reduce our dependence on the rain.”

— Male FGD participant, High Forest Zone, Ghana

Ethiopia and Ghana PRA Background Reports, 2011

Research indicates that continued climate change impacts may increase the challenges faced by women and poor people in Ethiopia and Ghana whose livelihoods depend on the environment. Deforestation, loss of soil resources, and loss of water access are weakening the resilience of the men and women who have least control over natural resources. Social differentiation and access to resources, shaped by both formal and informal institutions, affect the vulnerability of different groups to climate and other shocks. Women, children, and the elderly are the most vulnerable to these risks. The lack of assets, productive resources, skills, livelihood options, and social capital create vulnerability, as does dependence on the availability and abundance of natural resources for livelihood and survival strategies. As rainfall patterns change and natural resources degrade, fuel and water collection tasks will become even more difficult, and women will continue to disproportionately suffer the effects of water and food shortages (World Bank 2010b).

Ethiopians have long experienced climate change and its impacts on the environment and natural resources. Continued climate change is expected to bring greater variability, and extreme weather events will further drive degradation of the country’s ecosystems (EEA and EEPRI 2010).

In Ethiopia, FGD participants at all sites indicated that drought (including unpredictable and erratic rainfall) and flood are the two most important shocks that affect farmers in the study area. Groups in Dalocha recalled the drought episode of 1984/85 that was still fresh in the memories of older FGD participants. One older female FGD participant who endured this event remembered it vividly and stated that the *“bellies of the sky dried up”* for two consecutive years. Participants also stated that they knew some children and elderly who had died in their kebele during the famine.

People in the Tigray Region also indicated that there has been severe environmental degradation caused by soil erosion. Common grazing land was destroyed as a result of hundreds of years of free grazing as an open-access resource, and that has led to accelerated soil erosion and hence persistent food insecurity. Participants in the Tigray Region FGD stated that poverty and food insecurity caused by land degradation were the characteristic features of their community in the past. According to male participants, growing variability and unpredictability in climatic conditions—rainfall in particular—are the two most important climate change-related challenges in their community. They stated that rainfall

has become more unpredictable in the past 30 years and this has made their community vulnerable to environment-related shocks, especially food insecurity. Rainfall variability continues to destroy livelihoods, and people remain poor and vulnerable. Communities also indicated that unpredictable rainfalls were also causing floods, which are another serious problem.

Ghana government data indicate that the poorest, most marginalized, and most vulnerable people live in the northern and coastal savannah areas (GoG 2008). The north has the most degraded environment and experiences severe and frequent flooding and drought, as well as erratic weather conditions. On the coastal savannah, the rise in sea level is eating away coastal land. Since sociocultural and land tenure practices deny women sufficient access to fertile lands, their plots of low-quality land tend to be most severely affected by climate change processes (Dankelman et al. 2008). Flooding and drought have displaced many people, leaving them homeless, landless, and separated from their social networks in both rural and urban localities (Amoateng 2009; World Bank 2010f; World Bank and GFDRR 2011).

In Ghana, communities in all sites complained that rainfall, either too much or too little, is the biggest environmental shock they face. There are frequent floods, due to excessive rainfall, and breaches in river banks and dams. There is sea level rise and coastal land erosion that destroys property and farmland. This is further influenced by the increasing prevalence of high winds. In Anyamam, it was noted that forest degradation has increased the effects of high winds and that those who do not plant trees around their homes are most affected. The poor suffer because their houses are built with mud and clay and they lack the resources to relocate; the better off suffer because they have assets in their homes and shops/stores and are seen to have a lot to lose. Women are also considered to be vulnerable because they have more perishable assets, such as clothing, foodstuffs, and money that can be destroyed by floods.

Other shocks cited by communities in the Transition Zone include major bush fires. In December 1998, Seneso was gutted by bush fires that swept through most parts of the community, affecting almost half of the houses. The community described this as a major environmental shock. In 2006, in Old Konkrompe, locust plagues destroyed a season's crops. Because many people in the community did not have reserves, the locusts were economically devastating. A dramatic increase in malarial mosquitoes in Datuku because of the dam was also cited as a major environmental shock and health burden.

3.2. Protected Area Conservation and Control of Natural Resources

Conservation measures may include prohibiting communities from using land within an enclosed park or displacing communities from locations deemed biodiversity hotspots. In either case, protected area enclosures can exacerbate preexisting cleavages and competition for access to natural resources (Mollett 2010; Radel 2011; Sundberg 2004). In the region of Garwhal, in the state of Uttarakhand, India, villagers living on the periphery of national parks and wildlife sanctuaries find their access blocked to resources such as fuelwood, fodder, grazing land, thatch grass, medicinal plants, fruits, and building materials (Ogra 2008). These studies indicate that the appropriation of land, forest, and mineral resources may disrupt the livelihoods, food security, and social networks of the people who depend on them. Lands may be appropriated "for the public good," as in the cases of conservation areas, mining and timber concessions, and resettlement for hydropower projects. But resources may also be placed off limits as a result of land certification in individual names, reducing common property. Both processes have increased pressure on the remaining common lands on which the rural poor depend. This has reduced the livelihood options of the poor, particularly women.

3.2.1 Protected areas

In response to the decreasing availability of grass and wood resources, government and communities in Ethiopia have adopted the practice of closing off certain areas for regeneration. Enclosure rules commonly allow community members to cut and carry a limited quantity of natural products, such as grass or other fodder, but they prohibit grazing and collection of fuelwood and medicinal and wild food plants from enclosed areas. This process began in the early 1990s, and such restrictions have proven an effective method of restoring natural resources. The protection improves the conditions within the enclosures themselves, increasing soil health and decreasing topsoil erosion. When planted with trees, the enclosures produce timber over the long term. On the other hand, these restrictions oblige women and members of the poorest households to travel farther to collect fuelwood, natural products, and subsistence resources from other common property or open-access lands. While enclosures allow for the regeneration of resources within their bounds, they intensify the pressure on surrounding lands, resulting in further degradation. Enclosures cutting through rangelands disrupt the interconnected rangeland ecosystems (Ethiopia Desk Review Background Report 2011; Dida 2010).

During the FGD in the Tigray Region, the men's group in the smallholder mixed farming system stressed that livestock constitute a very critical asset that support their two livelihood strategies (crop and livestock), and are vital for production and food security. However, competition for limited land resources between crop production and livestock grazing is a major challenge, and due to the dual pressures of converting grazing land into farmland and area closure (as a conservation measure), village grazing commons are disappearing or play a very small role as a source of livestock feed. Although there is land officially designated as grazing land, it is of limited value for livestock feed due to the barren and degraded nature of the land. On the positive side, however, farming households have access to grass – cut and carry – from closed conservation areas.

The poverty implication of the declining access to village grazing commons is that increasingly households have to rely on their own resources (private grazing land, crop residue) and hence the pressure intensifies on resource-poor households. Livestock now have to be confined in the homestead area (tethered grazing/zero grazing), and women have to get grass and other food, which in turn increases the role and burden of women in livestock production.

As revealed by the FGDs in Somali communities, the situation in the pastoralist case study area is significantly different from the two agricultural communities. In the pastoralist community, the main principles and practices governing access to rangeland are communal ownership, management of grazing land, and rights of access based on both kinship (clan system) and territory. In the pastoralist community, exclusion from or restricted access to grazing land of any group within the community was not a problem, and alienation or enclosure of common grazing land as private farm or for individual pasture production is still nonexistent. The problems affecting grazing land include recurrent and severe drought, degradation of rangeland due to increasing pressure, and invasion by alien species of plants.

There were differences of opinion on land enclosure among women participating in the FGDs in the Dalocha farming community. One group of women (mostly elite) stressed that they are happy with the enclosure of village commons, because soil and water conservation activities coupled with closure of badly degraded grazing areas have led to significant environmental recovery, and hence, gains in agricultural productivity in their community. Other women participants admitted that the enclosure has denied them access to firewood from the commons, but they said that benefits from enhanced supply of

grass (purchased at reasonable prices) for animal feed and roof cover outweigh the cost. Despite their consensus in the need for enclosure of certain degraded lands in their community, women in the FGDs also indicated that they were not consulted during the processes of identifying and demarcating areas for enclosure. According to key informants (officials), lack of consultation with women was not meant to exclude them from participating in such important community-level decisions. Rather, it was believed that since closure of the commons is beneficial to all members of the community, local authorities thought it is sufficient to consult heads of households rather than cross-sections of the community. Both men and women shared the perception that the physical environment improved after the enclosure.

Despite the rosy picture that local people's perceptions portray, especially those of men's discussion group and local officials, the poor communities reported that closure of village grazing commons is adversely affecting them. The poor are often either landless or near landless, and landholding in female-headed households is substantially lower than in male-headed households. As a response to limited land resources, resource-poor men and women depend more on common property resources (village grazing commons in particular) for subsistence as well as livelihood. Therefore, poor women and men suffer disproportionately – at least in the short to medium term – from the closure of village grazing commons.

Government data indicate that an estimated 16 percent of Ghana's land has been set aside as forest resources, natural parks, and other wildlife reserves to preserve biodiversity (GoG 2008). During the FGDs in Ghana's High Forest Zone, participants stressed that the demarcation of forest reserves was causing food insecurity, particularly for the poor who depend on collecting and selling forest products such as snails, mushrooms, and firewood. Women who sell produce in the markets along the Konongo-Kumasi Road have to purchase it from neighboring villages because the reserve blocks their access to farmland (Ghana Workshop Background Report). Research reveals that before the construction of the Bui hydropower dam in Ghana, residents of the area expressed little concern about the impact of flooding the Bui National Park, explaining that they did not have access to this strict conservation area and did not benefit from its resources (Alhassan 2009).

3.2.2 Concessions to lumber and mining companies

Studies indicate that the concession of timber and mineral rights to international and Ghanaian companies provides government revenue, but excludes local people from productive resources, and such concessions, like the national parks, have negative impacts on livelihoods (Osei-Tutu et al. 2010). Furthermore, the extractive activities of these companies, particularly surface mining, can threaten the long-term viability of the forests and arable land on which poor women and men depend for subsistence (World Bank 2006a; Owusu-Koranteng 2008). Poor landless women, who predominate in and depend on marketing nontimber forest products, and poor men and women who mine small amounts of gold (*galamsey*), are particularly negatively affected by these agreements that prohibit access to their means of livelihood. Affected household heads receive limited compensation for appropriated land; few women receive any compensation for loss of livelihood (Osei-Tutu et al. 2010; Owusu-Koranteng 2008).

3.2.3 Displacement and resettlement for hydropower and other infrastructure

A study by Alhassan in 2009 indicates that the construction of the Akosombo dam in Ghana led to the resettlement of about 80,000 people in 52 settlements, and it had socioeconomic impacts on people in the lower Volta, downstream of the dam. The study further revealed that the dam has significantly altered the ecosystem of the lower Volta basin, where farming was structured around the rise and fall of the river

that deposited nutrient-laden silts along the floodplains. Lack of annual flooding, reduced water levels, and resulting salinization of the soil drastically reduced subsistence agriculture production and animal grazing and diminished the natural dispersal of mangrove seedlings. Low water levels also led to the collapse of riverine fishing. Women and men in downstream communities responded by intensifying mangrove cutting to sell for fuelwood, further depleting this resource.

3.2.4 Land certification

Land titles enhance women's agency

"Divorced men have to leave the house to their ex-wives and children and build a new one for themselves."

— Female FGD participant in Somali

Ethiopia PRA Background Report, 2011b

Female FGD participants in Ethiopia stressed that women's access to and control over land has remarkably improved in recent years due to rural land certification. The group further indicated that, per the new legislation, upon divorce, property will be equally divided between husband and wife without much difficulty. The house is in addition to women's share of other property, mainly land and livestock. Similarly, despite some irregularities in some families who do not have sons, a woman inherits property upon death of her husband. Despite the legal provision that enshrined women's inheritance rights unconditionally, the women's group stated that it is easier for a woman to inherit property upon her husband's death if the couple has common children—preferably sons—from their marriage.

Regarding women's property ownership and inheritance rights, male FGD participants in Ethiopia stated that any change to the previous situation is against their interest. Nevertheless, their views are generally positive. Men particularly appreciated the ban on polygamy, which they believe is among the major causes of poverty (due to large family sizes in the face of steadily declining farmland holdings) in their community. For example, one participant reiterated that unlike the old days, upon divorce, *a woman can go with her half*—thanks to the new family law. The men's group felt that it is only fair to allow women to have an equal share over household resources, but they also considered the new changes as being *"too much too soon."* Both men's and women's groups underscored that the effective implementation of the laws, which empowered women and made it very difficult for men to look for more wives to marry, has been a significant blow to the age-old tradition of polygamy, both in the study area and elsewhere in rural Ethiopia where it is commonly practiced.

Research indicates that land certification appears to have reduced the amount and quality of common property resources. In some cases, this has promoted serious resource degradation and soil erosion on the remaining common lands. The process has focused on allocating certificates to individually held agricultural land: certificates were not provided for household plots, and common property resources were inconsistently included in mapping exercises. As a result, certification has not increased the security of tenure of common property resources; instead it has increased pressure on those lands (Ali et al. 2007). In some places, in anticipation of the certification process, farmers have cleared communal forest areas in order to register them as private agricultural land (McKee 2007). The certification process does not adequately address tenure in pastoral areas where land is communally owned. It remains to be seen whether de facto exclusive communally owned rights to rangelands will be recognized or whether the

land will be redistributed. Either result—if the state formalizes these rangeland holdings, or fragments them among multiple holdings—will be detrimental to pastoral livelihood, and especially to the resource rights of women in pastoralist communities (Debsu 2009).

3.3 Competing Environmental Interests

Studies indicate that in both countries, competing environmental interests have led to arguments and even full-scale armed conflict. In Ethiopia, the main conflict is between farmers and pastoralists over use of rangelands. In Ghana, control of fertile land is the most common source of conflict, although mining, lumbering, and succession of the chieftaincy have also contributed to disputes (Care International 2007; UNDP Ghana 2007). Local conflicts over natural resources can disrupt livelihoods, hinder access to assets and resources, and destabilize community relationships. They can also escalate into larger conflicts, contributing to a sense of insecurity and reducing the perceived trust in and legitimacy of formal institutions (Kuehnast et al. 2008).

Studies further indicate that in Ethiopia, area enclosures and the appropriation of rangelands by private interests and social elites have intensified the competition between groups, and sometimes within them as well. Regular conflict between farmers and herders over rights to rangelands testifies to the mounting tensions, as environmental degradation and government policy reduce the availability of rangeland. Tensions are exacerbated by the gradual deterioration of customary tenure regimes, which are crumbling under a series of macroeconomic shocks, frequent droughts, extreme resource degradation, and pressure on water resources. Droughts have led to extensive violence over limited water resources (Michel and Pandya 2009). In Ethiopia, from 2004 to 2006, at least 250 people were killed in clashes over water wells and pastoral lands.

However, disputes are different in Ghana, as they are most frequently over the control of fertile land, but can also involve ethnicity, chieftaincy, and religious practices. Disputes sometimes lead to violence between ethnic groups, religious groups, and families. Occasionally conflicts arise between nomadic groups and farmers, particularly over access to water resources and grazing pasture (Care International 2007). Selection of a chief can lead to conflict if a royal lineage feels excluded from the process (Care International 2007; UNDP Ghana 2007). There has been conflict between the government, farmers, and logging companies over access to forest resources, particularly the concessions given for logging without first consulting farmers. Cocoa farmers invaded forests, cutting trees to establish farms; forestry officials then destroyed the farms. Farmers retaliated by cutting down trees planted by the government, and there has been rampant illegal logging (Marfo 2006). Poaching has often resulted in conflicts between forestry workers and local communities whose residents feel they have a right to use forest resources (Osei-Tutu et al. 2010).

Studies also indicate the potential for wider regional conflict over shared water resources such as the Volta River, which is used by both Ghana and Burkina Faso. Currently the Volta provides a large proportion of Ghana's hydroelectric power. Burkina Faso is planning increased use of the river for power, irrigation, and water supply to Ouagadougou. Combined with the impacts of climate change, this increase in water use in the upper basin could negatively impact power-generation capacity in Ghana, which could lead to conflict between the two countries over rights to use the Volta (Care International 2007).

Communities also perceive that the overlapping and ambiguous systems of rules and authority in Ghana, both formal and informal, provide an enabling environment for resource-related conflict. For example, the role of traditional authorities, such as village chiefs, in the local government system is not clearly specified, and the functions of local governments and decentralized ministries, departments, and agencies overlap. In addition, marginalized social groups, women, and youth have little or no representation in elected local bodies or in traditional structures, which reinforces inequity and social exclusion. Empirical evidence from other regions suggests that escalation of disputes is more likely when laws and customs are ambiguous and difficult to enforce (Kuehnast et al. 2008).

Participants in the national and local ecozone level workshops in Ghana viewed the traditional authorities—the chiefs and earth priests—as taking charge of resource management, with support from unit committees. But participants also recognized a variety of different authorities and rule systems governing different natural resources that can create conflict. In the two Northern Savannah communities, farmers, the primary users, managed the water resources. In the Forest and Transition zone communities with boreholes, the unit committees or borehole committees managed them. In Old Konkrompe in the Forest Zone, traditional beliefs restricted use of the river on certain days and forbade the use of particular streams. In the Coastal communities, the chief and elders limited fishing to enable the fish stock to reproduce (Ghana PRA Background Report, 2011a)

3.4 Collective Action and Resilience

The study findings reveal that, in both countries, spaces for collective action are most evident in local institutions, CSOs, and participatory, community-driven development projects. Community-based adaptive responses to climate change impacts and related food insecurity also foster collective action and resilience.

3.4.1 Local institutions and CSOs

Studies indicate that, in Ethiopia, influential, wealthy men continue to dominate local informal institutions, CSOs, and local government. Men engage in local traditional and formal institutions beyond the household much more than women do. Women participate slightly more in traditional institutions than in local government, but, in both contexts, they have considerably less voice than nonpoor men (Bevan and Pankhurst 2007).

Research indicates that cooperatives represent a significant element of the agricultural extension apparatus in the regions of Ethiopia where they are prevalent. These voluntary farmer-based organizations are organized to provide inputs, credit, and sometimes equipment to members. Nationally, 9 percent of households belong to an agricultural cooperative (Bernard and Spielman 2008). Criteria for organizing cooperatives include the requirement that women sit on the leadership committee, yet women rarely serve as chairpersons. Men are five times more likely than women to hold a leadership position within a cooperative (Spielman, Cohen, and Mogues 2008; World Bank and IFPRI 2010).

Studies reveal that customary institutions include the *iddir*, a clan- or community-based savings association that provides bereavement insurance to its members. Husbands represent married couples in the *iddir*, although women can vote in elections of the executive committee (Bevan and Pankhurst 2007; Ethiopia Task One Background Report 2010). Another important community organization is the *iqub*, or savings and credit circle, which has existed at least since the early nineteenth century, but is increasingly supported by NGOs.

Both women and men participate in the *iqub* (Spielman 2008; Bevan and Pankhurst 2007). The Ethiopian government has not yet tapped directly into the financial and social capital of these existing institutions to help provide services (World Bank and IFPRI 2010). Although less well documented, customary institutions also address various aspects of natural resource management, such as allocating traditional forest management rights and herding and grazing management systems (McKee 2007). Survey data from 2005 suggest that approximately 40 percent of all rural households participate in at least one type of customary institution (Spielman, Cohen, and Mogues 2008).

However, studies indicate that state ownership of land and natural resources, land reform, conflict, and drought have all weakened the capacity of the local institutions that have always existed below the level of the national government. The ability of these institutions to manage farmland, forest, and grasslands has risen and fallen over time. But, despite these stressors, local institutions in Ethiopia have persisted in enforcing rules that govern the land and land-based resources of their communities. Customary tenure regimes have been most active in managing agricultural lands. They continue to control common property in the extreme west and southern rangelands, and in recent decades, communities in the north have also begun to protect common areas (USAID 2008).

Collective actions and awareness are changing social norms

“My wife has been in a meeting with you [the study team] the whole morning today, and she was unable to [to] cook my lunch as a result. I did not say anything to her, despite my empty belly. Do you think she would have gone unpunished for that some years back? No, not at all. In my opinion, this is a big change in our mindset.”

— Male FGD participant, Mahabere-Weyni

“Projects including PCDP come and go as usual, but the Eskasheto (revolving loan fund) doesn’t. It will remain with the community, serving its members.”

—Female FGD participant

Ethiopia Case Study Background Report, 2011a

Communities from Mahabere-Weyni, a highland farming community in the Tigray Region, reported during FGDs that women have substantially increased their engagement in local public and political decision-making processes and institutions in recent years. This includes participation in formal elections and representation in the kebele administration, the water committee, the education and training board, and the food security committee. Women have also acted as leaders in food-for-work and productive safety net development projects. They have strengthened their independent women’s associations, especially concerning gender and women’s rights issues (Ethiopia PRA Background Report, 2011).

The PRA findings indicate that these activities appear to be gradually changing social norms. In the participatory discussions, women agreed that they have started to see positive changes as a result of their participation in community-level structures. However, they also expressed concern that their participation is still nominal; committees are still dominated by men. Women committee members are not able to freely express their views, in part because they lack experience when it comes to talking in public, particularly in front of men. On the other hand, male participants were more vocal about the positive changes in men’s attitudes toward women’s participation in meetings and community-level leadership, especially since the start of the Pastoralist Community Development Program (PCDP) II. An elderly male

participant stressed during the discussion that in the past, nobody cared about women's participation in committee meetings and leadership positions. These days, however, almost every committee in their kebele has female members, and women are free to attend public meetings. Access to the community revolving loan fund under the PCDP is empowering women. Women beneficiaries in the PCDP project areas stressed the importance of the *eskasheto* (revolving loan fund) established under the project, noting that this institution will remain with the community and continue to provide benefits, even after the project is completed.

Ghana has a long history of CSOs, and recently, with more favorable legislation and a framework for CSO engagement, there has been an increase in the number of women's organizations and networks. Women's CSOs have expanded their agendas from social welfare and service delivery to include legal and political advocacy on governance, women's political participation, and enforcement of women's legal rights (Dawuni 2009).

A study of gender and governance in rural services in Ghana found that across the country, church groups were considered the most important. Parent-teacher associations also had relatively high membership. Focus group participants reported significant numbers of women participating in community-based women's organizations; roughly 45 percent of the women in male-headed households, and a larger percentage of women in female-headed households were members. Participation of women in water and sanitation committees was only 20 percent. Participation in farmer-based organizations was low for men, between 12 and 20 percent, and even lower for women, between 2 and 6 percent (World Bank and IFPRI 2010).

3.4.2 Participatory community-driven projects

In Ghana, the Land Conservation and Smallholder Rehabilitation Project (LACOSREP) included women as leaders in the water users' associations (WUAs) and, through this, in irrigation management. The functional literacy groups and the WUAs also fostered social solidarity among women and the perceived need to act together for community development, which had not been the case previously due to the dispersed settlement pattern. The literacy groups provided a space for women to cooperate and organize joint income-generation activities (Wahaj 2009; Ghana Case Study Background Report, 2011).

In Ethiopia, in 2002, the regional government introduced water-harvesting projects to agropastoralists in Mieso, in the eastern part of the country, to minimize the disastrous effects of drought and reduce food insecurity. Part of a broader national program, the project sought to harvest rainwater in ponds constructed and managed by organized groups. Supporting collective action at the grassroots level was an explicit policy mechanism intended to enable the poor to achieve common goals that could not be achieved individually due to capacity constraints or coordination problems. Before the launch of the program, water-well maintenance in the communities was carried out by self-organized groups, but the government water-harvesting project required external facilitation. The nature of sanctioning and rule enforcement also differed in the self-organized and externally initiated schemes. While peer influence and the threat of temporary exclusion from access were the customary practice for water-well management, monitoring by chiefs, with the possibility of fines, was the mode of enforcement for water harvesting. The fact that harvested water, though jointly produced, was privately controlled and allocated meant that informal organizations could rely on the threat of exclusion to discourage free-riding. Because water wells are common property, access rules based on traditionally accepted practice, or informal community

control, are less effective in the face of prolonged stress, where cultural norms are trumped by the imperative of survival (Beyene and Korf 2008).

3.4.3 *Adaptation to climate change*

Adaptation is a dynamic social process. Studies stress the importance of social capital in climate change adaptation, because a community's capacity to adapt is based in part on its ability to act collectively. The key elements of social capital—trust, reputation, and reciprocal action—are important aspects of adaptive capacity, affecting the performance of the public and private institutions that build resilience to climate change risks (Adger 2003). Networks of reciprocity are important for risk management in agriculture, forestry, and fishing. Local safety nets built on collective action, such as credit and exchange networks, food reserves, or seed banks, can help poor people cope with climate-related shocks. Cooperatives and other types of collective action can help smallholders achieve economies of scale and reduce transaction costs associated with individual contracts. Collective action institutions play an important role in spreading information, technologies, and practices for various climate change response strategies, as well as in sharing experiences and information (Meinzen-Dick, Markelova, and Moore 2010).

Government data indicate that the climate challenges in Ethiopia are greater than in Ghana, because the overwhelming shocks of drought and famine are often more severe than what local adaptation mechanisms can address, particularly under conditions of increasing environmental degradation. The land reform of 1975 largely eliminated the role of rich landlords and moneylenders; as a result, during the large-scale famine of the 1980s, people found it difficult to access informal assistance, and social networks became narrower. Foreign food aid and government safety net programs became prominent and permanent mechanisms for coping with climate change and other shocks (Ethiopia PRA Background Report, Abebe and Shanko 2011). Ethiopia's National Adaptation Program of Action strategies include drought/crop insurance, drought and flood early warning systems, rangeland and wetland management, malaria control, and agroforestry (EEA and EEPRI 2010).

During PRAs, local people in the study communities reported their various coping mechanisms, some of which are common to all sites, while others are site or livelihood specific. Reducing consumption, asset disposal, and greater reliance on informal transfers are the common coping mechanisms practiced in all sites. Migration is also a common practice, but long-distance migration with livestock in search of pasture and water is specific to pastoralist livelihoods. Although typically not a famine crop, greater reliance on cactus (known locally as *Beles*) for food was mentioned in the highland community. A related but interesting coping mechanism is reliance on *Enset*, mentioned in the lowland farming community. This strategy combines the use of a drought-resistance food crops and reliance on social networks across farming system: households in the lowland cereal farming community received or borrowed *Enset* from relatives in other neighboring districts, with *Enset* farming system.

Long-distance migration in search of employment or pasture and water for livestock is not an option for women in male-headed households. Reliance on environmental resources (sale of fuelwood and charcoal) is perceived as a coping mechanism for the poor and women. However, it is no longer a coping mechanism in the two agricultural communities due to deforestation and environmental degradation, while in the pastoralist site, increasing poverty and vulnerability is forcing more people (including formerly better-off households) to rely on the sale of fuelwood and charcoal.

Another important finding from local perceptions is that local coping mechanisms are not static and do change and adapt to political, policy, economic, and sociocultural conditions. For example, according to informants, the role of social networks as an informal safety net has changed over time, the new trend has been the narrowing of the circle toward close relatives and neighbors. More importantly, it is believed that the capacity and willingness to provide social support are undermined by the generalized process of impoverishment because of recurrent and severe droughts. This perception is strong, especially in the pastoralist study site. This indicates that although there is no doubt that local coping mechanisms and informal social safety nets are very important, the key question at present is the viability and effectiveness of indigenous coping mechanisms and social safety nets when faced with formidable challenges, from both the frequency and intensity of shocks, as well as risk factors and vulnerabilities arising from other sources and processes of change (Ethiopia PRA Background Report, Abebe and Shanko 2011).

The PRA studies in Ghana found some similar approaches to adaptation to climate change and food insecurity in all the ecozones. Some are technical, such as planting crop varieties that can better withstand variable rainfall and temperatures, while others involve collective action such as communal pooling of resources and reliance on kin and social networks. Communities indicated that there are two main responses to increasing hardship and poverty. The first is migration to other economic centers, usually nearby larger towns. In some cases, migration is to more distant commercial centers such as Tamale, Techiman, Ejura, Kumasi, or Accra. Commercial diversification is the other main strategy. Both men and women across the four ecozones indicated that they became involved in other petty trading activities to support their income. This may involve the sale of different types of goods or produce, or the development of alternate activities like basketmaking or weaving in place of dwindling stock of trees for firewood in the Savannah and Transition zones (Ghana PRA Background Report 2011).

Communities agreed that family and social networks are one way people cope with disasters. In Dakutu, when people are displaced as a result of a rainstorm, family members, friends, and other people in the community contribute thatch to roof the victims home and others contribute food and old clothing to enable those affected to reconstruct their lives. Seeking credit is another strategy adopted. In Datuku, communities are setting up embankments with stones to protect the soil from erosion. They also plant elephant grasses around their farm fields. In Nobewam and Duampompo in the Forest Zone, farmers indicated that they were diversifying their crops, planting drought-resistant plants like cassava and crops with quicker maturity times such as tomato, rice, and spring onions (box 5).

Communities reported that in Seneso, the National Disaster Management Organisation is supporting the planting of teak trees to encourage reforestation, and also to create natural fire breaks. In the coastal communities, community leaders have demarcated protected areas. Ponds are also being constructed to harvest water and offset poor rainfall. In Datuku, to cope with windstorms, poor households tie stones with wires/ropes and pass over the roofs from one end to the other to prevent the wind from lifting the roofs. People also cut long, heavy sticks and lay them on the windward side of the roof.

Box 5. Adaptation through Agriculture Diversification—Dorongo

Rockson Abagna, a 47-year-old man from the Dorongo community, used to depend mainly on rice and vegetable farming for his livelihood. Since the construction of the dam, Rockson has joined forces with other farmers in the community to farm in the irrigable area. So far, he has 30 years of experience with the dam.

He noted that out of the 230 people who use the water for farming, 70 are women. Men normally cultivate tomato, pepper and onion, and the women cultivate mostly the leafy vegetables (lettuce, beans leaf, keanaf). Though it is more lucrative to cultivate tomato, he said women are not able to venture into it because it is time consuming, tedious, and involves a considerable financial and labor outlay, which women can't afford.

Even though Rockson cultivates two main crops, tomatoes and peppers, he prefers growing tomatoes more than peppers because of the high return on tomatoes. Peppers have a limited market, hence they are sold within the community to women for resale in the nearby city market in Bolgatanga, whereas tomatoes are sold to middle men and women who come with loading trucks from Kumasi and Accra to purchase the tomatoes by the crate. Rockson said that on average, he harvests 45 crates from a one acre tomato farm, while an acre of pepper yields the equivalent of 9 crates. With regards to pricing, for example, the cost of one crate of tomatoes ranges from GH¢30 (US\$20) to GH¢50 (US\$35), while the same amount of peppers would sell for around GH¢13 (US\$9).

Ghana PRA Background Report 2011a

In the coastal areas, in response to the declining supply of fish, some women participate in informal saving schemes and form cooperatives that finance fishing gear and provide loans for men to go to sea. The women who financed the fishermen have first access to the day's catch (Dankelman et al. 2008). In Anyamam and Goi, while some fishermen have diverted into vegetable and fruit farming as a means of coping with dwindling fish catch, others have resorted to the illegal use of light to increase their catch. Some fishermen in Goi and Anyamam are also migrating to coastal towns in Nigeria, Togo, or Benin. Migration may be seasonal or permanent, with remittances sent to remaining family members (Ghana PRA Background Report, 2011a).

4. Fostering Positive Gender-Poverty-Environment Dynamics

The analysis of gender, poverty, and environment in rural Ghana and Ethiopia revealed a number of key challenges that need to be addressed to promote positive dynamics. These challenges include, first and foremost, the marginalization and exclusion of poor women and men resulting from inequitable tenure and access to land and other natural resources. Also important are labor constraints, women's time poverty, food insecurity, limited livelihood options, environmental degradation, and disputes over natural resources. Underlying these problems in Ghana, and to some extent in Ethiopia, are overlapping formal and informal institutions that shape power relationships, assets, and opportunities according to gender and other social characteristics. The subsequent online discussion also underscored the importance of women's limited access to productive resources, including but not limited to land, women's time poverty, and lack of voice of the poor, particularly women, in environmental governance and decision making at all levels.

The good-practice project cases in Ghana and Ethiopia and other background reports identified a number of promising approaches for fostering positive gender-poverty-environment dynamics across sustainable development sectors. These approaches include: (i) reducing the marginalization of poor women, men, and other excluded groups by increasing their endowment, especially access to and control over natural and productive resources; (ii) enhancing economic opportunities for translating endowments to incomes; (iii) improving poor people's access to protected conservation areas by community management and shared benefits; (iv) establishing transparent and fair resolution or grievance redress mechanisms to reduce disputes/conflicts resulting from competing environmental interests; and (v) promoting collective actions in policy and program formulation, especially establishing mechanisms for strengthening women's agency. These approaches will also require transformation of social norms and establishment of accountable and gender-responsive institutions that will support inclusive and participatory sustainable development processes.

4.1 Brief Descriptions of Project Case Studies and Outcomes

The eight projects selected from Ethiopia and Ghana were in different sectors within sustainable development, namely agriculture and rural development, natural resource management, livelihood, energy, disaster risk management, and transport. These projects included two from the transport sector—Ethiopia's Road Sector Development Program (RSDP) and Ghana's Konongo-Kumasi Trunk Road Rehabilitation; three natural resource-focused food security projects—Ethiopia's Managing Environmental Resources to Enable Transition to More Sustainable Livelihoods (MERET) and Dalocha Integrated Rural Development Programme (DIRDP), and Ghana's Land Conservation and Smallholder Rehabilitation Project (LACOSREP); a pastoral development project—Ethiopia's Pastoral Community Development Program (PCDP); an energy pilot—Ghana's Multifunctional Platform (MFP); and a community-driven development initiative—Ghana's Community-Based Rural Development Project (CBRDP). All the projects incorporated actions that addressed the social and institutional constraints poor women and men face as a result of their socioeconomic marginalization and its effect on natural resource degradation. These projects included poor women and men's access to natural and productive resources, their participation in management of common property, and protective measures. These projects also enhanced women's social and economic opportunities by facilitating access to finance, productive inputs, marketing facilities, skill development, and literacy improvement. Each project also supported women's agency and empowerment by promoting collective action and voice in decision making in the public

domain, with to the goal of strengthening women's position in the contest for natural resources and increasing community resilience to climate change. A brief description of the projects and their outcomes are given below; details are in annex 6.

4.1.1 Ethiopia: Dalocha Integrated Rural Development Programme—DIRDP (Phases I–III, 1989–2003)

This phased program was implemented by ActionAid to reduce poverty, improve quality of life, and enable the poor have control over their own lives. Though the project is closed, the local government has continued to support the environmental conservation practices initiated by DIRDP, which are widely believed to have improved groundwater recharge and provide a major source of clean water supply for Dalocha. Various project assessment reports indicate that DIRDP treated more than 13,700 ha of highly degraded land and reduced the soil erosion rate in treated and protected areas by more than 70 percent. As a result, 6,600 households raised their production by about 10 percent. The project helped poor households to access resources, such as livestock, houses, education, and leadership skills, and to engage in savings and credit schemes. The project also promoted livelihood and crop diversification, grain stores, and dairy goat activities by providing skills and knowledge about agriculture and good soil management practices.

Outcomes and impacts. The outcomes include adoption of improved agricultural technologies, especially for horticulture and high-value crops; public works for soil and water conservation; and new and renewed community infrastructure, such as schools, clinics, water structures, and roads. The program resulted in increased resilience to climate shocks, improved nutritional status and health, improved educational status, and greater appreciation of schooling. Postprogram evaluations indicate that DIRDP's interventions improved the status of women in Dalocha. In this conservative area, women are now able to participate in meetings and training, speak freely, and express their views publicly. Moreover, women now manage and exclusively control a number of projects and institutions, such as the dairy goat program, grain mills, and the Dalocha Women Water Development Association (DWWDA). DWWDA, an autonomous community-based organization, successfully manages a relatively large and complex water supply system that supplies safe drinking water to an estimated 100,000 people.

4.1.2 Ethiopia: Managing Environmental Resources to Enable Transition to More Sustainable Livelihoods Project—MERET, 2002–11

This phased program was supported by the World Food Program to improve livelihood and food security opportunities for the most vulnerable, particularly female-headed households, through the sustained use of the natural resource base. The project was implemented in Tigray, Amhara, Oromiya, and SNNP regions, and the five major components are (i) food (grain and oil) for conservation work, provided for up to three months per year; (ii) physical conservation, including local construction of cultivation terraces, check dams, and ponds; (iii) biological conservation, including area closure and management of degraded lands to enable natural regeneration of vegetation; (iv) livelihoods, such as beekeeping, horticulture, forage, and nursery development; and (v) capacity building, including training on community management and business, and demonstration sites. The social and gender-inclusive actions included a livelihoods approach, local-level participatory planning, results-based management, and an emphasis on women's participation in decision making. The project included the formation of community watershed planning teams, elected by the community, that develop and implement watershed development plans using a participatory process. Working with natural resource development agents and kebele administrators, the teams mobilize and raise the awareness of community members

and facilitate priority setting, selection of activities, mobilization of resources, and selection of project participants.

Other activities include water conservation measures, investment in capacity building for community management of natural resources, interventions for sustainable disaster risk management, and activities to build social capital and the ability to act collectively to solve community problems. The project implemented a graduated strategy for food assistance that moved from food for work to technical support and financial support for small revolving loans for income-generating activities. Some degraded areas were closed for regeneration using locally developed physical technologies, such as sediment storage dams, eyebrow basins, and percolation pits. These are all variations on basic conservation structures that have been adapted to the highlands' steep terrain and intense rain bursts.

Outcomes and impacts. Project assessment reports indicate several outcomes including regeneration of vegetation and water tables, increased water availability, and increased crop yields. The time spent by women and girls collecting firewood and water has been reduced. There has been a positive impact on livelihoods, poverty reduction, and food security. Women's empowerment has been fostered through their participation in decision making, conservation work, and income generation. With expansion of social networks, there has also been community empowerment, increased knowledge and technology for natural resources management, increased community awareness of the benefits of managing natural resources, and commitment to sustain project outcomes.

4.1.3 Ethiopia: Pastoral Community Development Program—PCDP (Phases I and II, 2003–13)

This phased program is being implemented by Ethiopia's Ministry of Federal Affairs Federal Project Coordination Unit and regional project coordination units (RPCUs) to increase the resilience of pastoralists to external shocks and to improve the livelihoods of beneficiary communities. This program has three major components: (i) sustainable livelihoods—community investment fund and rural livelihoods program to provide access to savings and cooperatives, support systems, and grants; (ii) risk management—early warning system and response fund, along with strategic disaster preparedness and mitigation support; and (iii) participatory learning and knowledge management for participatory learning—knowledge generation and research at the community level, and information exchange and networking systems at the federal and regional levels. This program is being implemented in 57 woredas of the Afar, Somali, Southern, and Oromiya regions.

PCDP works to establish inclusive institutions and empower women through three basic approaches: (i) involving women in the planning and development of projects so that their needs are addressed; (ii) supporting the income-generation activities that have proven most beneficial to women; and (iii) training the project team and partners in gender awareness. A number of the specific activities supported under PCDP for improving community resilience to climate shock include: (i) microscale irrigation and rangeland management activities; (ii) investments in rural livelihood activities less susceptible to environmental shocks; (iii) strategic natural resource investments for disaster preparedness such as improved water supply, catchment management, and range improvement; and (iv) development of regional preparedness strategies for natural disasters. Community members identified, prioritized, and designed activities meeting their own needs; they then prepared a community action plan that was submitted to the Woreda RPCU for approval and financing. Women called for potable water, grain mills, renovation and expansion of existing irrigation scheme, microfinance, expansion of schools and

community and access roads, as well as small-scale financial services. The action plan also included women participating in a rural savings and credit cooperative.

Outcomes and impacts. The project facilitated 1,804 community-driven microprojects. Women accounted for 47 percent of the beneficiaries of the sustainable livelihood component. Schools, health centers, water facilities, and grain mills were built near pastoralist settlements, benefiting 200,000 people. Women are carrying out income-generating activities such as petty trading and microenterprises.

4.1.4 Ghana: Second Land Conservation and Smallholder Rehabilitation Project—LACOSREP2, 2000–2006

This phased project is being implemented in the Upper East Region of Ghana, the second poorest region of the country, by the Ministry of Food and Agriculture (MOFA). The program has been supported by the International Fund for Agricultural Development (IFAD) since the 1990s. The design of the second phase (LACOSREP2) addressed challenges revealed in the first phase by incorporating capacity building for water user associations (WUAs) and increasing women's access to land and water and their role in project planning (Wahaj 2009). Project objectives include increasing farm productivity through training and demonstrations on new technologies; constructing rural infrastructure to reduce women's labor burden; and mitigating possible risks of health and negative environmental impacts. The target beneficiaries were at-risk, poor, rural smallholders, landless farmers and women, particularly female household heads.

The project designed and implemented gender equitable actions including access to resources such as 40 percent quotas for women to irrigated land. The project negotiated with chiefs, *tindanas* (earth or land priests), husbands, and male community leaders to allocate land to women because customary inheritance practices excluded them. The project also provided training on improved farming and livestock management, economic incentives to women and men for participation in environmental conservation works in their communities, and provided access to credit for income-generation initiatives. The project also supported participatory environmental conservation, and both women and men were involved in catchment protection activities such as reforestation and maintenance of dams to make water available throughout the year and provide wind breaks to shelter reservoirs from windstorms. Other important actions were inclusive environmental resources governance, especially at least 40 percent membership in WUAs. At the end of project, women comprised an average of 38 percent of WUA members; however, in some dam sites, women's participation is nearly 80 percent. Women's access to irrigated land and their decision making in WUAs improved their productivity. Sale of crops from their irrigated land enabled women to invest in farming and trading, as well as education and improved household nutrition. Women planted *vetiver* grass to stabilize dam walls and reduce the risk of flash floods. Vetiver grass was also used by women as an alternative material for basket weaving. Dams and wells increased the availability of water, reducing the water collection time burden for women and girls, enabling them to participate in irrigated agriculture and income-generation activities. Improved dams and wells also reduced the risk of waterborne diseases.

Outcomes and impacts. Improvement in income sources, assets (storage and processing facilities, labor-saving devices), and food security; agriculture diversified with livestock rearing; erosion and flood damage minimized through catchment protection; increased soil productivity; community awareness of social conservation; women's workload reduced, allowing time for additional productive activities; women's participation in community and household decision making increased.

4.1.5 Ghana: Community-Based Rural Development Project – CBRDP, 2004–11

Supported by the World Bank and implemented by the district assemblies in Ghana, this nationwide project is the second phase of a community-driven development program. The Village Infrastructure Project was the first phase (1998–2004). The objectives of this program are to enhance capacity of local administration and communities to deliver need-based services, especially rural infrastructure. Gender concerns were incorporated into all project activities as an important cross-cutting issue, particularly for promoting local development, institutional strengthening, and environmental sustainability. Public consultations were conducted to identify key issues and determine how the concerns of women and men will be addressed. Project guidelines required the participation of vulnerable groups within the community, specifically the poorest of the poor, the elderly, widows and widowers, and women. Taking a bottom-up approach, with full participation from all groups, local priorities were implemented. Project implementers and communities received training to ensure smooth implementation process. Furthermore, rural/community banks were accredited to provide microcredit facilities. The government of Ghana, along with other agencies, provides funding for credit facilities.

Outcomes and impacts. Community infrastructures helped improve rural people's access to social and economic facilities and services, especially to markets, transportation of agricultural inputs to farms, as well as farm produce to home and storage facilities. Rehabilitation of education and health facilities enhanced enrollments and access to services. The cold storage facilities helped women preserve their fish easily, using less time; previously they did this through smoking, which had negative impacts on their health.

4.1.6 Road Sector Development Program – RSDP (Phases I–III, 1997–2010)

Funded by the World Bank, this is a 15-year program to restore and expand Ethiopia's road network to reduce poverty and increase employment by promoting growth and mobility in a socially and environmentally sustainable manner. Using a participatory process with communities, the RSDP has worked to integrate transportation interventions into the larger sustainable development context. A critical element of this effort has been to better understand the dynamics of gender and environment at the community level and to incorporate this knowledge into program planning and implementation. The RSDP has strengthened integration with other sectors through proactive collaboration with various agencies, such as the Ministry of Health and the National HIV/AIDS Coordination Office. As a result, there has been increased focus during planning and implementation on the location of social sector and administration services.

A number of specific studies have improved understanding of community transportation needs, especially the Transport and Poverty Observatories (TPOs), which are used to track key socioeconomic progress indicators. Collaboration with communities improved through the development of woreda-level integrated development plans that integrate transport into broader development goals, including both transport and nontransport interventions, as well as employment opportunities. The RSDP prepares a thorough resettlement action plan for affected populations in a participatory manner and provides specific support to excluded groups. To improve capacity to address gender and the environment issues, the Ethiopian Roads Authority has created an Environmental and Social Management Team. This team supports the integration of social services into RSDP planning, the equitable resettlement of project-affected people, and greater female employment in labor-based construction.

Outcomes and impacts. The program constructed or rehabilitated more than 75,000 km of roads, doubling the access of rural communities to all-weather roads, with lower transportation costs and shorter travel times. It increased income opportunities for men and women through alternative livelihood options, agricultural diversification, and access to markets. It also improved local environmental conditions by planting trees on the side of road and ensuring proper drainage and waste management.

4.1.7 Ghana Konongo-Kumasi Trunk Road Rehabilitation Project, 2004–8

Supported by the Danish International Development Agency (DANIDA), the objective of this project was to encourage economic and social development through reducing transport costs, increasing road accessibility, and improving road safety. This road is in Ashanti Region, connecting the northern part of the country to the southern part. The Konongo-Kumasi Trunk Road had the highest number of reported accidents in Ghana in the late 1990s and in early 2000, and the communities around the road had high HIV (human immunodeficiency virus) prevalence. The components included rehabilitation of 46 km of road, along with socioeconomic activities such as market stalls, fencing of schools along the road, boreholes for potable water, public toilets, drains, and walkways; HIV/AIDS education; road safety awareness campaigns in schools; vehicular emissions standards; and capacity-building programs for communities. The project implemented an inclusive approach that helped achieve poverty, gender, and environmental outcomes. The approach included a participatory process to ensure representation of women and men on the fund board and that voices were heard during decision making; construction of market stalls along road to provide year-round trade; formation of women's groups to facilitate access to credit and quotas for women's participation as road construction laborers and supervisors; and women's representation on tender boards in road prioritization and decision-making forums and in planning, implementing, monitoring, and evaluating subdistrict projects. Furthermore, environmental restoration of 800 ha of arable land, 67 ha of forest, and 164 ha grass land was supported.

Outcomes and impacts. The project evaluation indicates that women's income increased due to market sales, communities increased access to schools and social services, pedestrian and vehicular accidents declined, and HIV/AIDS awareness increased.

4.1.8 Multifunctional Platform (MFP) Pilot Project, 2005–8

This pilot was supported by the United Nations Development Programme (UNDP) and implemented by the Kumasi Institute of Technology, Energy, and Environment to reduce poverty and environmental degradation in Ghana by providing modern energy services to communities living in remote areas and supporting productive and income-generating applications. The pilot was designed after consulting with community women and men and incorporated actions identified by beneficiaries. The pilot also collected baseline data, sex disaggregated, for monitoring and evaluation. Women became members of management committees, which increased their self-esteem. Technical training was provided to increase the women's capacity to manage the platforms for profitability and sustainability.

Outcomes and impacts. The pilot supported transformation of socioeconomic activities in the communities by increasing household incomes; ensuring food security during the dry season; empowering women to make decisions regarding management of the MFPs; improving interhousehold relationships; and keeping girls in school for longer. The pilot supported income diversification and increased food security for households and increased access to land and credit. All of these outcomes enhanced the status of women in the household and communities. It also improved information and

communication technology (ICT) connectivity, because communities are able to charge their mobile phones. Finally, the program reduced deforestation, because communities used energy from the MFP. On average, women saved about four hours a day, which they invested in business activities. Energy generated by the platform was also used to pump water from boreholes. This has reduced women's use of unclean water sources and the time spent waiting in line for water at the community water site.

4.2 Effective Approaches in Ethiopia and Ghana

The field work identified a number of promising approaches for fostering positive gender-poverty-environment dynamics across sustainable development sectors. Detailed descriptions are provided below.

4.2.1 Reducing Marginalization and Natural Resource Degradation

The following approaches helped reduced marginalization of women and men, and reduced degradation of natural resources.

4.2.1.1 Increased access to land: Land certification in women's names

Land certification improved security. In Ethiopia, land certification has raised women's and men's sense of security in their holdings and has begun to lay a foundation for tenure to slow or reverse the decline in agricultural environmental resources. Research indicates increased investments in soil conservation structures, trees, and land productivity (Holden et al. [2009], cited in Damte [2011]). As noted earlier, female and male study participants think that issuing certificates in women's names, individually or jointly with husbands, has strengthened women's tenure, increased their odds of keeping land after divorce or widowhood, and increased their bargaining power in household decisions about land (Ethiopia PRA report, 2011b; Holden 2008). An early, large-scale survey found that the administration of the certification process was not biased against the poor or women; 85 percent of women were very aware of the process (Ali et al. 2006). However, follow-up studies found that women did not play a significant role in local decision making as the process rolled out. Only one-fifth of the kebele-level Land Use and Administration Committees (LACs), created to implement the process, included women representatives. Customary patterns in land rights apparently influenced the process, although there was great regional variation (Ali et al. 2006, 2007).

Positive outcomes from land titles. Community perceptions related to the overall trend of women's property rights are positive and optimistic; both women and men in Ethiopia believe that women's property rights have improved over time. This is especially so in the Tigray Region, where both customary laws as well as political commitment are favorable toward women's property rights. Women in the farming communities noted that improved and more secure property rights have contributed to greater voice and participation of women in household decision making, and greater willingness among women and men to cooperate and work harder for the benefit of their households, because women now know that they will not be "*chased away empty handed*" (Dile-Datie, Dalocha, SNNPR). This implies positive links between property rights and access to resources enhancing women's agency and decision making roles, at least at the household level, which in turn contribute to greater mutual trust, a sense of security, asset building, and poverty alleviation.

4.2.1.2 Increased access to land and other productive resources for women and other excluded groups

Enforcement of land titles is important. Participants in the online discussion emphasized the importance of rights to land and natural resources, looking at a wider spectrum of rights than just land tenure (World Bank 2011c). Analysis of gender-poverty-environment dynamics in both Ghana and Ethiopia revealed that traditional practices limiting women's property rights are at the core of the negative spiral of inequality, poverty, and resource degradation. While legislation provides equal rights to property, customary rules often prevent implementation of these policies. Ambiguities in the overlapping formal and informal systems create opportunities for elite capture and further marginalization of poor people without title to land, particularly women. Addressing these dynamics requires raising awareness and negotiating with traditional and formal power structures to create space for women to access and control land. Other measures include enforcement of land rights legislation; steps to raise public awareness of land rights legislation; inclusion of women in leadership roles in WUAs and community resource management programs; and measures to ensure that land titling does not exclude women or eliminate their use rights. Other related programs such as collective action by women producers and capacity-building programs for literacy, business, and other skills can also accelerate potential benefits for poor women with land titles.

Land title has positive effect on women's access to resources. In Ethiopia, the government land certification program had a positive effect on women's access to resources. Field work indicates that participants, including community decision makers and women themselves, believe that the issuance of certificates has strengthened women's tenure, both for women in male-headed households and for female household heads. It appears to have strongly increased the likelihood that a woman will be able to keep land after divorce or after the death of her husband. Certificates also appear to have increased women's bargaining power in household decisions regarding land. For example, men are more likely to consult their wives regarding land rental (Holden 2008). The process has also strengthened the tenure of women who are heads of households, who held land much less securely before the land reforms. However, the gain in productivity from registration is much more moderate for female-headed households than for male-headed households, perhaps because of the shortage of labor (Bezabih and Holden 2010).

Actions to follow policy. In Ghana, the Shared Growth and Development Agenda proposed: efforts to remove cultural barriers to land acquisition and ownership by women; establishment of agribusiness zones and land banks with special consideration of the needs of women; improved allocation of resources to districts for efficient and cost-effective extension service delivery, especially to women farmers; increased access to labor, credit markets, information, technology, and business services; and encouraging women farmers and traders to form strong district, regional, and national associations (GoG 2010a).

Findings from LACOSREP. Recognizing that women's lack of access to land and credit was undermining poverty reduction and that empowerment of women through access to land posed a threat to the traditional authority structure, LACOSREP2 staff negotiated with chiefs, earth priests, and male leaders to allocate irrigated land to women during the dry season. Even though women's plots were one-fourth the size of men's, this improved women's opportunities to generate income from farming and trading and increased their control over the income they earned. LACOSREP2 also enhanced livelihood diversification; increased economic opportunities of women through their access to credit facilities; improved food production; improved animal husbandry; and increased income levels for poor men and women (Ghana Case Study Background Report 2011).

4.2.3 Improving poor people's access to protected conservation and benefit sharing

The following initiatives improved poor people's access to protected land and benefit sharing. As a result, poor people protected and regenerated forest resources.

4.2.3.1 Community Resource Management Areas (CREMAs)

Innovative practice in Ghana. Ghana's CREMA initiative is based on recognition that the failure of modern government systems to incorporate common property regimes has often resulted in the institutional appropriation of forest resources. The approach recognizes that forest-dependent communities are poor because successive policies have denied them the option of using these resources for their livelihoods (World Bank 2006a). CREMA creates incentives for farmers to use and manage natural resources on a sustainable basis by devolving management rights and responsibilities to them. Toward this end, a CREMA organizational structure is formed with a basis in existing decision-making structures such as traditional authorities. This includes formation of a CREMA Executive Committee and a Community Resource Management Committee and development of a constitution backed by district assembly bylaws, establishing farmers as a corporate body to which the Wildlife Division can devolve authority (Collaborative Wildlife Resource Management Unit 2004).

Community management of forest improved livelihood. The International Conservation Union, A Rocha Ghana, and the Collaborative Resource Management Unit of Mole National Park in Ghana have been creating opportunities for alternative, sustainable livelihoods in two villages adjoining the park. Residents of the CREMA villages elected to learn more sustainable beekeeping practices and marketing skills. Thus far, 98 people own 300 hives, and honey profits have increased by 140 percent. Traditional *gari* processing and shea nut butter extraction methods were labor and resource intensive. The introduction of low-cost technology enabled women in the CREMA communities to set up a cooperative processing center that has increased their productivity, reduced pressure on the environment, and decreased demands on women's time and energy. The introduction of donkeys and carts opened up new markets for products from CREMA areas, where sales and profits previously were limited by lack of reliable transportation (A Rocha n.d.). Fire belts have been successfully established by these CREMA communities as well.

4.2.4 Establishing transparent resolution mechanisms to reduce disputes and conflicts from competing environmental interests

Traditional institutions can reinforce exclusion. The analysis of gender-poverty-environment dynamics in Ghana revealed competition and disputes over diminishing resources and exclusion of women from access to and control of resources. Equitable institutions to mediate disputes and protect access rights can contribute to ensuring that disputes do not escalate and that exclusionary practices are changed. While it is often preferable to build on existing mechanisms for mediation, such as chiefs and elders, in many instances these institutions reinforce gender exclusion and represent the interests of men only. Some female participants in group discussions suggested that the district assembly provided more gender-equitable judgments than the traditional authorities (Ghana PRA Background Report, 2011).

WUAs providing dispute resolution. To some extent, the WUAs under LACOSREP2 fill the dispute resolution role for irrigated land in the dry season. The project identified three groups of water users—farmers, livestock owners, and fisherman—and formed an executive body with members from associations of each of these groups. The recognition of these different stakeholders has reduced conflict

and facilitated watershed protection measures (Wahaj 2009). The government of Ghana is considering establishing special land courts within the commercial courts system to expedite settlement of land disputes. Gender issues in access to land will also be addressed (GoG 2010a). Under the Community-Based Rural Development Project, the Food and Agriculture Organization (FAO) was commissioned to prepare a conflict resolution training guide for implementation of subprojects. The training was part of the capacity building provided to participating communities (FAO 2006).

Alternative dispute resolution in LAP2. The second phase of the Land Administration Project (LAP2) includes alternative dispute resolution mechanisms. Experience from LAP1 showed that the demarcation of boundaries of customary lands has the potential to lead to disputes. Disputes may also arise in the process of systematic title registration or in the provision of documentation to customary landholders and tenants. LAP2 will build upon and deepen the LAP1 experience with alternative dispute resolution to help manage disputes as they arise. In addition, guidelines for participation, roles, and responsibilities in boundary demarcation will be developed and included in the implementation manual (Ghana National Workshop on the Synthesis Report, 2011).

4.2.5 Enhancing social, legal, and economic opportunities

The following examples from field work provides results of women's economic and other opportunities

Women's income changed social norms and improved women's status within household and communities

"My husband did not allow me before to attend PTA meetings of our children because he thought it as male responsibility. But that has changed because of awareness raised by project and I provide for most of the educational needs of the children."

—Female FGD participant, High Forest Zone

"We don't have to worry our husbands for money if we have it, because we are helping to meet our own needs. This promotes good relations and peace in the house. It gives you respect because you also can do something for yourself as well as for the family." Female FGD participant, Northern Savannah Zone

"My grandson is able to sell some of the gari that I produce using Multi-Functional Platform for his educational needs."

—Female FGD participant, High Forest Zone

Source: Ghana Case Study Background Report, 2011b.

4.2.5.1. Opportunities for income diversification for women

Credit facility enhances income. Trading processed food and other products provides a means for poor women to diversify and increase their incomes, increasing resilience in the face of climate change (box 6). In Ghana, FGD participants mentioned that women's increased income has contributed to changing male attitudes in the household. In Ethiopia, PCDP income-generation activities proved most beneficial to women. Moreover, support for these activities helped ensure that the project's support for male-dominated traditional institutions did not increase gender inequality, but rather decreased it, *by integrating women's voice into these traditional institutions*. Female participants in FGDs for the study identified microfinance, grain mills, potable water, and roads as particularly important in supporting their income diversification (Ethiopia Case Study Background Report, 2011b).

DIRDP promotes high value crops and income generation by women. As a result of DIRDP's interventions to address gender issues, the project includes income-generation projects controlled by women, such as the dairy cow program and grain mills. Introduction of high-value crops such as oranges, guavas, bananas, avocados and vegetables, not previously grown in the area, along with training and inputs, has benefited women and children the most, according to focus group participants. Households outside the project area copied this approach (Ethiopia Case Study Background Report, 2011).

Box 6. LACOSREP2 Provides Economic Opportunities for Women

Teata-Laal, a 56-year-old widow with three children, is a treasurer for the WUA. She also has a nursery for raising mangos, moringas, and cashew seedlings for sale. She cultivates keanaf and okra. Mango seedlings are sold for 50 Ghana pesewas each, and cashews go for 30 Ghana pesewas each. Teata-Laal noted that she makes GH¢40 (US\$27.50) on average in the season.

In recounting how the LACOSREP project has changed her livelihood, she said *"I used to sell stationeries including books and pencils to take care of my household. With the inception of the dam, I now rely on proceeds from the planting at the dam site to settle debts, purchase school materials for my children. The children help me in the farm after school hours and during holidays to weed, sow, apply fertilizer, and harvest for sale."* She believes the scale up of sustainable infrastructure projects in the country is a valuable way to support vulnerable households, especially households with female single parents.

Source: Ghana Case Study Background Report, 2011b.

Technology helped diversify livelihood. The MFP Project in Ghana allowed women to diversify their livelihoods by processing and marketing gari and other foods. Women were able to produce over 15 bags of gari per day using MFP, compared with 1 or 2 bags per day from manual processing. Sale of the processed foods, such as gari and shea butter, increased their income and food security. The proceeds could even be used to educate children. The engagement in gari processing and sale also enabled women to access loans from the Association of Progressive Entrepreneurs and Development. Moreover, the income from MFP improved women's voice in decision making in their homes and in the community. Women were represented on the management committee for the MFP Project, the water management committee, and the unit committee for the first time. Community members felt that MFP also had a positive impact on the environment because people previously employed in charcoal production were now employed in food processing, though charcoal production continues (Ghana Case Study Background Report, 2011a).

Community infrastructure helped women's traders in expanding their opportunities. The cold store constructed under the CBRDP enabled women fishmongers to keep their fish fresh longer. The market stalls, public toilets, and boreholes constructed along the rehabilitated Konongo- Kumasi trunk road increased income for women traders. The income enabled women to educate their children and increased their status and negotiating power in the household (Ghana Case Study Background Report, 2011a).

4.5.2 Measures to reduce time and effort required for domestic tasks

Technology, energy and water services can help reduce domestic work burden for women and increase their productivity and income. The following provides examples from Ethiopia and Ghana.

Energy services and technology in close proximity to home saves time, reduces women's drudgery, and improves food security

"Through the MFP a lot of cassava can be processed at a time. This was not possible when we were using our hands."

— Female FGD participant, Transition Zone

"The MFP has saved me from walking long distances to mill my goods."

— Female FGD participant, Transition Zone

"Because of the MFP energy services closer to my home, gari [cassava meal] is always available, so there is no hunger in my home."

— Female FGD participant, Old Konkrompe, Transition Zone

Source: Ghana Case Study Background Report, 2011b.

Women's time poverty is an obstacle to economic growth for households and communities. Measures to reduce the time that women and girls spend in water and wood collection and domestic work are necessary to enable girls to attend school and women to access other economic and social opportunities such as participating in community decision making.

Importance of labor-saving technology highlighted in Ethiopia strategy. In Ethiopia, the National Action Plan for Gender Equality (NAP-GE), linked to the pillars of the Plan for Accelerated and Sustained Development to End Poverty (PASDEP), includes objectives to "enhance women's access to labour saving technology and know-how and redistribute roles between men and women." It seeks to increase investment in infrastructure, such as water supply, flour mills, energy, food preparation devices, and transportation that can reduce women's heavy workload (MoWA 2004, 22). RSDP, PCDP, DIRDP, and MERET recognized women's constraints and all provided potable water, which reduced women's and girls' work burdens and increased the number of girls attending school. MERET specifically prioritized interventions that reduced women's work burdens while encouraging their role in community decision making. The RSDP reduced the burden of travel on women in eight pilot woredas by linking services such as water supply, energy sources, grinding mills, school, and health care facilities in close proximity to rural households (Ethiopia Case Study Background Report, 2011).

The MFP reduced women's domestic workload. In Ghana, the Shared Growth Development Agenda aims to promote increased access to modern forms of energy for women to reduce their domestic burden and ensure their participation in the formulation of energy interventions (GoG 2010a). The MFP enabled community women to process cassava into flour in 20 minutes, saving more than 11 hours over the previous time spent walking to the nearest mill and waiting. The time saved is now applied to diversified economic activities such as petty trading, paid cassava harvesting, transporting and peeling cassava, and processing a variety of foods such as gari (roasted grated cassava), *kulikuli* (fried groundnut paste after the oil has been extracted), *koko* (maize or millet porridge), *kenkey* (fermented maize dough), and *pito* (drink made from sorghum). These activities have increased women's incomes and decision-making

power at both the household and community levels and reduced their dependence on natural resource-degrading livelihoods (Background report on national workshop 2011d). Girls have also benefited from the MFP. In the Northern Savannah Zone, schools in Dorongo and Datuku have seen an increase in girls' attendance (Ghana Case Study Background Report, 2011a).

Transport services save travelling time. The rehabilitation of the Konongo-Kumasi Road dramatically reduced traveling time to nearby commercial centers, which has benefited women who market produce and goods. In the Coastal Savannah Zone, improved roads have reduced traveling time from Goe to other commercial towns from three hours to 30 minutes; in Seneso in the Transition Zone, traveling time to Atebubu has been reduced from 14 hours (two days) to just 2 hours (Ghana Case Study Background Report, 2011a).

Close access to water services reduce women's domestic workload. Across the ecozones, the study findings reveal that providing water facilities has dramatically reduced the physical burden and time spent by women and girls in fetching water. The provision of potable water through standpipes and boreholes has also reduced the incidence of waterborne diseases such as cholera and guinea worm in communities where these were prevalent, thus reducing the burden on women as caregivers for the sick. These health improvements have enabled many poor men and women to devote more time to their farming activities and economic ventures, leading to improved productivity and higher incomes (Ghana Case Study Background Report, 2011a).

4.2.6 Promoting collective actions in policy and program formulation and accountable institutions

To promote collective actions, increase participation, and foster empowerment of women and other often excluded groups, it is essential to understand the wider institutional power context and power relations that influence participation. The analysis can be conducted using the framework for identifying gendered power relationships and overlapping systems of authority regarding access, use, and control of natural resources, land, and other markets (labor, financial, goods). This can help develop policies and programs that will not reinforce gender and other inequities, or undermine existing institutions that manage natural resources equitably and sustainably.

4.2.6.1 Gender-responsive stakeholder and institutional analysis

In Ethiopia, the NAP-GE forms the core of the gender strategy in the 2005–2010 PASDEP. The action plan includes an element to strengthen gender analysis and the gender sensitivity of the PASDEP monitoring and evaluation system, including data collection and analysis.

Gender responsive analysis helped project outcomes. For the RSDP in Ethiopia, woredas developed integrated action plans based on a participatory assessment of the socioeconomic situation of women and men and its relationship to the environment. The study findings enabled the woredas to identify risks, target local needs, and develop plans to mitigate potential negative effects of road building on the environment, as well as negative effects on women and men. Some mitigation measures included use of labor-intensive methods rather than heavy machinery to protect the environment and provide employment for local men and women. Other measures included planting trees, digging drainage ditches, and building soil conservation structures (Ethiopia Case Study Background Report, 2011a).

The GSGDA recognizes that it is important to gain a better understanding of local traditional institutions and their control over resource exploitation at the local level to ensure that women as well as men can participate in making decisions about resource management. The GSGDA also charts a development process for a natural resource management plan involving the full range of stakeholders and active participation of women and gender advocates in public consultation (GoG 2010a).

In preparation for an agriculture and food security project in the Northern Savannah Zone, Care International analyzed the marginalization of women, youth, and the elderly in terms of property rights, access to resources, extension, and services. Care International also examined barriers to voice and participation of the poor in natural resource management decision making by local authorities and traditional leaders in contexts of inadequate accountability and weak civil society (Care International 2009).

4.2.6.2 Cross-sectoral planning and coordination

Multisectoral planning improves outcomes. Since gender-poverty-environment dynamics cut across sectors, it is essential to plan beyond the parameters of a single sector. Single-sector approaches often have limited impact because other sectoral issues affect their outcomes. Each of the good-practice projects in the Ghana and Ethiopia studies used an integrated, cross-sectoral approach, and the two governments are increasingly forming cross-sectoral coordinating groups for programs and projects.

Multisectoral coordination enhanced equitable benefits. In Ethiopia, the RSDP sought to integrate the needs of a broad range of female and male beneficiaries. It did so through collaboration with a variety of government agencies, such as the Ministry of Health and the National HIV/AIDS Coordination Office. As a result, project planners gave increased consideration to the location of health care facilities, churches, schools, and administration services. For example, the RSDP has met critical transportation needs by integrating access to health services, of particular importance to mothers, into its planning. Even though roads inherently provide widely dispersed public services, the RSDP planners proactively sought to understand the distributional impacts of the project's investments. They took steps to increase the utility of the new infrastructure to underserved populations, thus reducing negative impacts in an equitable manner (Ethiopia Case Study Background Report, 2011).

Integrated approach enhances outcomes. As its name suggests, the Dalocha Integrated Rural Development Program (DIRDP) took an integrated approach, working across sectors. Its broad design allowed it to address immediate challenges by providing participants different types of support simultaneously. For example, it provided literacy training to cooperative leaders, taught women both horticultural and marketing skills, and built roads to health centers. At the same time, the project built capacity more broadly and increased the long-term sustainability of these activities through support to education and health services. DIRDP also restored common natural resources and provided public services such as schools, improved water sources, and health clinics (Ethiopia Case Study Background Report, 2011).

Livelihood programs need multisectoral approach. The Ethiopia Pastoralist Community Development Program (PCDP) has taken a livelihood-focused approach. Although much of the project focuses on animal husbandry, it has also provided support to women's efforts in petty trade and microenterprise, once these activities have demonstrated potential for success. In addition to improving management of rangeland for common use, the PCDP has increased access to water, health centers, and schools—

resources that, without other constraints, are accessed as freely by women as men (Ethiopia Case Study Background Report, 2011).

In Ghana, the SGDA approaches environmental problems by examining the economic, social, and political dimensions as well as the technical aspects. The agenda directs policy measures toward cross-sectoral management addressing climate change, biodiversity, mineral resource extraction, integrated water resource management and natural disasters, and seeks to enhance community and CSO participation in environmental governance (GoG 2010a).

Transport project incorporated socioeconomic component and improved gender-based outcomes. The Konongo-Kumasi Trunk Road Rehabilitation Project incorporated a socioeconomic subcomponent that included construction of market stalls and public toilets along the road. The Community-Based Rural Development Project included infrastructure for agricultural development and social and human development, as well as community-based natural resource management. The Second Land Conservation and Smallholder Rehabilitation Project (LACOSREP2) addressed water resources, rural infrastructure, income generation, agricultural development, and catchment area protection (Ghana Case Study Background Report, 2011a).

Governments fostering cross-sectoral approach. The government of Ghana is fostering cross-sectoral coordination of natural resource management through the National Sustainable Land Management Committee, established in 2007 to promote the sustainable land and water management agenda at the policy and strategic levels. The committee is chaired by the Environment Protection Agency of the Ministry of Environment, Science and Technology, and includes representation from the Ministry of Food and Agriculture, Forestry Commission, Water Resources Commission, Energy Commission, National Development Planning Commission, Ministry of Finance and Economic Planning, and Friends of the Earth, Ghana (World Bank 2010e).

Meaningful participation of all social groups and incorporation of their suggestions are important elements for policy and program formulation

"If your voice is heard but your views are not taken or the assistance you are seeking does not come, then there is no difference if you are heard or not."

—Youth FGD participant, High Forest Zone

"Beneficiaries should let the donor agencies know that their projects are not being implemented at the community level with the active involvement of community members. Donors need to monitor how their funds are being used and for what results."

—Female FGD participant, Coastal Savannah Zone

Ghana Case Study Background Report, 2011b

4.2.6.3 Inclusive, participatory consultation and decision making

Inclusion promotes empowerment. Measures to include women and other often excluded groups in community and project committees/groups such as WUAs, road fund boards, utility boards, and other types of oversight committees, give them a voice in natural resource management. Voice can increase women's access to decision making at the community level and resources and promote their

empowerment. Implementing these measures usually requires outreach; steps to raise awareness and gain support among male leaders and spouses; capacity building for women; inclusive membership criteria; and targets for women's membership and access to resources.

Participatory approach improved project outcomes. In Ethiopia, as noted earlier, the RSDP used a participatory approach to develop resettlement action plans. The project also worked at the woreda level to develop woreda integrated development plans (WIPs), which engaged a broad spectrum of the population to integrate their needs and desires into plans for road construction and the restructuring of public space. WIPs integrate transport into broader development goals, proposing both transport and nontransport interventions. WIPs also increase community awareness and ownership (Ethiopia Case Study Background Report, 2011a).

Participation takes time, but improves results. The Ethiopia case study report reveals that DIRDP's first phase consisted largely of participatory design activities. Project managers, recognizing that women participated little in these early planning activities, made a commitment to progressively increase the voices of women and poorer members of the woreda in activity selection and design. This determination paid off, women rose to decision-making positions in committees supported by the project and directed planning activities rather than simply participating in them. MERET devolved significant responsibility in project design and implementation, forming community watershed planning teams elected by the community. The project required representation of all groups on these teams, which had to be 50 percent women, and made considerable efforts to promote women as leaders and beneficiaries.

Community management improves outcomes. The PCDP bases its approach on the premise that pastoral livelihoods can be best improved by strengthening the self-management capacity of community institutions and giving them control of decision making. The project includes a very decentralized and flexible management structure in its design, reflecting a commitment to community-driven development. Much of the project's budget is allocated to grants managed at the regional level. To access these funds, a cross-section of community members prepare a community action plan, based on a process through which they identify, prioritize, and design activities meeting their own needs. They then submit the plan to the woreda project unit for approval and financing.

Participation helps inclusion. The effective use of participatory planning and decision making enabled these Ethiopian projects to tailor their support to the specific needs of the beneficiary population and its subgroups, such as women and the poor. This meaningful engagement built the social capital and capacity of project communities and served as an important step toward local ownership of project activities. It increased the beneficiaries' sense of responsibility for stewardship of resources produced through the project, which in turn increased the likelihood that project environmental and economic investments will be sustained.

Participatory management improves effectiveness. In Ghana, the SGDA emphasizes the importance of women's participation in community organizations that manage natural resources as an efficiency and effectiveness issue, as well as an equity issue. It stresses engagement of communities with active participation of women and gender advocates in public consultation processes (GoG 2010a). The gender, civil society engagement, and public outreach strategies developed under the first phase of the Land Administration Project will be implemented in the second phase, working in collaboration with the Civil Society Coalition on Land (World Bank 2011c).

Transparency improves participation and outcomes. All four good-practice projects in Ghana adopted participatory approaches to ensure that marginalized groups such as women had a voice in the project prioritization, location, and technical design features. Some local implementers were more inclusive and participatory than others, even within the same project. Participants in the ecozone workshops were emphatic about the importance of empowering communities with information and involving community members in planning and delivering services and in decision making. The Transition Zone workshop participants suggested including community representatives on the project implementation team. The Coastal Savannah Zone participants recommended using local radio to inform all community members about projects, including the illiterate and otherwise marginalized (Ghana Case Study Background Report, 2011b).

Effective participation empowers women. LACOSREP2 employed a gender officer to increase participation and empowerment of women in the project. This led to the inclusion of women as leaders in the WUAs and in irrigation management. The project conducted separate consultations and participatory forums for women, men, and other social groups such as widows, elders, and people with disabilities. The project also adopted participatory techniques such as participatory well-being ranking to identify the needs and priorities of different groups of people as well as zone-specific socioeconomic constraints impeding participation. Income-generation activities in animal husbandry empowered women economically as well as socially, facilitating their inclusion in household and community decision-making arenas (Ghana Case Study Background Report, 2011a; Wahaj 2009).

Women's participation in WUAs improves results. WUA membership in LACOSREP2 was not limited to one person per household, as is often the case, but was open to all farmers, livestock owners, and fishermen who would benefit from the project. This increased the opportunity for women to participate, as did slightly reduced membership fees in some WUAs. Women constituted about 38 percent of the overall WUA membership. Disabled and blind farmers were also included. Functional literacy groups, made up largely of women, increased literacy and numeracy and provided an arena for building social solidarity among women. Although women did not become chairpersons, they were commonly selected as executive committee treasurers. Women also formed a women's group to discuss issues and form unified opinions before major decision making in the WUAs. WUAs are responsible for land allocation in the irrigation dam areas, with a requirement that 40 percent be allocated to women (Wahaj 2009; Ghana Case Study Background Report, 2011a).

4.2.6.4. Inclusive, participatory activities to build resilience

Collective action is important for adapting to climate change impacts, it is therefore also important to foster an inclusive and participatory approach in activities to build resilience. Special efforts should be made to include vulnerable groups and help them address their susceptibility to risks. The good-practice projects examined in the case studies fostered positive synergies by emphasizing inclusive and participatory activities to build resilience and increasing food security.

Increased resilience by collective action. In Ethiopia, the PCDP increased community resilience to climatic shocks by introducing microscale irrigation, rangeland management, and investments in rural livelihoods less susceptible to environmental shocks. It also included investments in disaster preparedness such as improved water supply, catchment management, and development of regional preparedness strategies. Central to MERET were actions to improve food security, expand livelihood

opportunities, and reduce vulnerability to shocks. The regeneration of the water table through community management of natural resources was particularly important. Investment in capacity building for community natural resource management built social capital and the ability to act collectively to solve problems (Ethiopia Case Study Background Report, 2011).

Collective actions promote synergy between gender, environment, and poverty. In Ghana, LACOSREP2 reversed the negative spiral of deforestation, declining soil fertility, disappearance of springs, and increasing time spent traveling to collect water and firewood. Construction of small dams to provide year-round access to water for farming and livestock reduced water collection burdens for women. Composting and use of manure to replenish the soil, introduction of drought-resistant crops, and promotion of tree planting to reduce the impact of deforestation and protect water reservoirs all helped build the resilience of communities to climate change impacts. LACOSREP2 also engaged community members in measures to protect irrigation dams from floods and windstorms. People collected stones and placed them on the banks of the dam to stabilize the walls, planted elephant grass to prevent erosion, and made baskets using the grass (Ghana Case Study Background Report, 2011).

Construction of market stalls under the socioeconomic subcomponent of the Konongo-Kumasi Trunk Road Rehabilitation Project empowered many women at both the household and community levels and enhanced their strategies for coping with climate change. Many women engaged in trading and commercial activities and relied little on crop production, which was worst hit by climate change (Ghana Case Study Background Report, 2011).

Collective action improves natural resource management. The natural resource management component of the Community-Based Rural Development Project in Ghana supported the preparation of integrated natural resource management plans at the community, area, and district levels; protection of existing forest and watershed areas and rehabilitation of degraded areas; and sustainable natural resource livelihood opportunities. It placed 160 ha of sacred groves and community-dedicated forest under the protection of communities, and 374 ha of degraded farmlands have been planted with multipurpose tree species (World Bank 2008a). Other project components have increased safe water access by 257 percent and school enrollment by 20 percent (World Bank 2010c).

Increased food security. Increasing food security has also helped reduce vulnerability to climate change impacts in Ghana. Prior to the Multifunctional Platform (MFP) Project, access to food was said to be very difficult during the lean season, especially for poor women and children in the two communities in the Transition Zone. The MFP changed this situation by facilitating easier food processing so that processed food could be stored for household consumption, particularly in the lean season. LACOSREP2 constructed dams that enabled all-year farming activities and improved the availability and quality of food (Ghana Case Study Background Report, 2011a).

4.2.6.5. Institutional capacity building for gender equality and sustainable environmental management

Gender awareness is important. Just as gender bias often constrains the implementation of gender equality policies, so does lack of awareness of gender inequality costs to households and community development and its link with limited access to natural resources. Enlightening community leaders and building the capacity of implementing agencies can help overcome gender stereotypes and increase women's access to resources and their voice in community decision making.

Internalizing gender awareness in institutions is important. In Ethiopia, the RSDP created a unit in the Ethiopian Roads Authority called the Environmental and Social Management Team (ESMT) to ensure continued support for the social and environmental innovations being undertaken for the project. MERET relied on community watershed planning teams to develop and implement watershed plans meeting the needs of the farmers, whose natural resources the project is intended to rejuvenate. DIRDP established a number of committees and associations, the most stable and important of which is the Dalocha Women Water Development Association (DWWDA). The PCDDP reinforces traditional clan-based institutions and creates new institutions such as rural savings and credit cooperatives. Properly constituted local institutions increase the chances that project services will endure, and they also provide a vehicle for empowerment. While men who participate in institutions created by projects typically already enjoy positions of authority in the community, or are beholden to people who do, the presence of women in public leadership positions breaks new ground, giving a voice to those previously excluded (Ethiopia Case Study Background Report, 2011).

Gender training helps project outcomes. In Ghana, LACOSREP2 conducted an assessment to identify training needs and develop appropriate capacity building for the following institutions: the agricultural extension service, the Ministry of Food and Agriculture, district assemblies, commercial and rural banks, and village group animators. Workshops included problem analysis with stakeholders. Capacity-building workshops on gender analysis, group dynamics, and irrigation responsibilities were also conducted during the formation of the WUAs and functional literacy groups (Ghana Case Study Background Report 2011).

Gender strategy and action plan can improve project outcomes. Under the first phase of the Ghana Land Administration Project (LAP1), a gender strategy with an action plan was developed and test piloted. The strategy goal was to mainstream gender-related activities into project implementation and associated processes in participating agencies. The implementation of the gender strategy was continued in the second phase, with US\$0.91 million allocated for subcomponent 4.2, Gender Equality Mainstreaming. Given the significance of the social and gender issues, LAP2 will establish a Gender and Social Development Unit with focal persons at the decentralized level and in the land sector. Hiring of staff for this unit is a condition for LAP2 to go into effect (World Bank 2011c).

4.2.6.6 Gender-responsive monitoring and evaluation

Gender in monitoring and evaluation (M&E) is important. Incorporating gender into M&E can help reveal the differential impacts of projects on women and men and ensure that activities addressing gender issues are not neglected during project implementation. Consideration should be given to indicators such as time spent by women and girls on tasks and the rights of women and men in tenure regimes. Integration of gender-poverty-environment dynamics into the project development objectives and results framework helps ensure accountability and inform project planning and adjustment.

Ethiopia's NAP-GE stresses the importance of M&E as a planning, management, communication, and advocacy tool. The plan states that:

A robust and reliable Monitoring and Evaluation (M&E) system is required to allow an assessment of the progress on the delivery of the NAP-GE. A gender-sensitive monitoring and evaluation system needs to be designed for this NAP-GE. It is recommended that an expertise [sic] be brought in and a programme for the M&E

planned in advance, incorporating the mechanisms, responsible bodies, time frame and other relevant details. (MoWA 2004, 50)

The Gender Pooled Fund of the Donor Assistance Group in Ethiopia is facilitating M&E of existing programs' treatment of gender issues. The programs provide technical support to policy makers and key stakeholders through training, recruitment of technical experts, and partnerships with institutions with gender expertise (DAG 2010).

Participatory M&E is an essential component of the MERET project. Participating communities collectively investigate how the plan is being implemented, whether changes are needed, whether expected results are still realistic, and whether new alternatives have become available. Their findings are integrated into planning for the next cycle (Amede et al. 2007).

Gender-responsive indicators helps project results. The outcome indicators of the RSDP included employment opportunities for local labor, income generation and skill levels, and the follow-on project has extended these to measure the outcomes of access and affordability. The RSDP also incorporated gender-responsive M&E. Use of M&E data is high, especially in setting priorities for resource allocation. In addition, the RSDP uses Transport and Poverty Observatories to assess the impact of the project on poor women and men and on environmental changes. The observatories regularly collect data on travel; access to markets and services; land-use patterns; soil, forest, and water quality; and social benefits of increased mobility and road access. Along one of the road corridors, the share of female-headed households reporting trade as an occupation increased from 37 to 60 percent, and their engagement in agriculture decreased by 17 percent, as they, along with male-headed households, diversified their livelihoods. An ESMT was created to address gender and environment issues. The team supports the environmental and social impact assessment process, integration of social services into RSDP planning, equitable resettlement of project-affected people, and increasing female employment in road construction. The RDSP included social and environment clauses in contracts with road construction companies that require erosion and gully control; spoil disposal on nonproductive, nonsensitive areas; and measures to prevent air, water and soil pollution, and protect water resources, wetlands, and wildlife. The contracts also require companies to recruit local labor, particularly women; prohibit the use of child labor; and call for HIV/AIDS prevention, testing, treatment, and care for workers (Ethiopia Case Study Background Report, Abebe et al. 2011).

Gender-responsive monitoring of strategies. In Ghana, gender-responsive monitoring is a part of the GSGDA. The core indicators for the GSGDA are sex disaggregated for gross school enrollment and enrollment in tertiary institutions. There is also a separate section on women's empowerment, which includes the proportion of the national budget allocated to women's issues; percentage of women in public life; the number of MDAs (ministries, departments, and agencies) and MMDAs (metropolitan, municipal, and district assemblies) implementing gender-responsive budgets; proportion of women with access to funding from microfinance institutions; and number of women with access to agroprocessing machinery (NDPC and UNDP 2010).

Collection of gender data. The second Land Administration Project strategy promotes a coherent and sustained approach to equitable land administration through gender-sensitive data gathering, participatory approaches, and project design and monitoring processes. The Civil Society Coalition on Land (CICOL) will facilitate sensitization and awareness raising and provide support on transparency

and accountability using social accountability tools and participatory mechanisms. One of the project development indicators is the increase in the number of registered land transactions (disaggregated by gender and also scale of operation, that is, small-scale versus large-scale farmers) and associated revenue (World Bank 2011c).

The World Bank Ghana Sustainable Land and Resource Management Project area is conducting a baseline study, disaggregating data by gender, to identify potential gender-specific barriers and needs. This study will inform the design of incentive packages needed to respond to the different needs of women and men farmers. The baseline study will examine access to land, inheritance practices, and ability to engage with extension service providers. Any gender-based barriers identified will be addressed to ensure equal access to project benefits. The project will equip extension service providers with the knowledge and skills needed to mainstream gender-related issues into their activities (World Bank 2010e). The MFP Project collected sex-disaggregated data to identify gender inequality in access to productive resources as well as sociocultural constraints, needs, and priorities (Ghana Case Study Background Report, 2011).

Lack of accountability institutions and inadequate law enforcement degrade the environment

“There are laws regulating forest products, but the authorities responsible for enforcing the laws and regulations are seeing these things going on; they see charcoal trucks every day and even buy charcoal without asking the source or finding out if it is legal. Even if you talk, no one cares, because of corruption.”

—Female FGD participant, Transition Zone

Ghana PRA Background Report, 2011a

4.2.6.7 Gender-inclusive accountability measures

Lack of government accountability reduces impacts. In both Ethiopia and Ghana, government agencies and development programs often have limited accountability to the citizens they serve. Accountability measures make public expenditure information widely available. These measures can also help monitor the performance of services and programs and ensure that they reach intended beneficiaries with quality outcomes. Tools such as gender-responsive budgeting and citizen report cards can increase the transparency of development projects and government services and give communities and organizations a greater voice in the use of public funds.

Gender budgeting can help outcomes. In Ethiopia, the NAP-GE aims to promote gender budgeting and accountability for gender issues in all government institutions by making gender integration one criterion for evaluating performance of organizations, their leaders, and staff. This creates a mechanism whereby sectors are held accountable for considering gender in development plans (MoWA 2004). The British Council conducted a series of workshops for Ethiopian officials on gender budgeting (Evers and Wondimu 2004). The Women's Affairs Department (WAD) of the Federal Civil Service Agency compiled data for a gender audit examining how gender issues are treated in the agency. The audit looked at the planning, design, and implementation of policies and programs, as well as at the M&E system, human resource management, activities with partner organizations, public relation activities, budgeting, and organizational culture (WAD n.d.).

In Ghana, the lack of accountability and transparency in decision making by local assemblies, many CSOs, and traditional leaders and unit committees emerged as an issue in the PRA studies and during the ecozone and national workshops. Lack of transparency undermines trust and can perpetuate gender and other inequalities.

Social accountability helps outcomes. As a part of preparation for the West Africa Regional Fisheries Program in Ghana, a detailed, statistically representative socioeconomic survey of coastal fishing and nonfishing communities was undertaken. The Citizen Report Card provided coastal fishing women and men with an opportunity to voice their opinions collectively, resulting in proposals for fisheries' reform initiatives such as licensing of canoes, community fisheries management, and fishing restrictions in reproduction areas. The Citizen Report Card shows that over 70 percent of fishermen support introduction of these practices. The survey generated new data and information on the wealth, education, and employment status of fishing households and communities, as well as on their investments in the fisheries sector. It also assessed the degree to which coastal households rely on marine resources to sustain their livelihoods and local knowledge of national fisheries laws and regulations on fishing gear, the extent to which fishermen use legal and/or illegal gear, and the factors and incentives that might encourage fishermen to change harmful fishing practices (Background Report, World Bank 2011a).

Gender audits help improve accountability. Reports from ministries at the Ghana national-level workshop indicated that the Ministry of Women and Children's Affairs is collaborating with the Ministry of Finance and Economic Planning to implement gender-responsive budgeting (Ghana Workshop Background Report, 2011). In 2009, the ENERGIA network in Ghana conducted a gender audit of the Ghana Energy Ministry with financial support from ENERGIA. The audit identified gender gaps in energy and poverty policies and in organizational culture. The general purpose of the audit was to strengthen the Ministry of Energy's commitment to gender equality goals and processes. Indicators to measure progress include changes in organizational culture, rules, and behavior; increase in planning and implementation of gender-related activities; gender-sensitive budgets; and increased participation of women in the decision-making process and other aspects of the energy sector (Ghana Network 2009).

4.2.6.8. Targeting the most vulnerable women and men

Targeted approach improves results. The case study projects, especially all four in Ethiopia, identified the most disadvantaged members as a specific subset of their beneficiaries and collaborated with those subpopulations to design activities addressing their needs. The RSDP collaborated with communities to develop resettlement action plans (RAPs) for the people displaced by roads constructed under the project. When female-headed households, elderly people, or disabled people were to be displaced, the project incorporated special provisions for them into its RAPs; municipal authorities helped implement these provisions, which included income restoration support. The provision of assistance to the most excluded populations was a central objective of the MERET project. The project provided food transfers and food-for-work assistance to the most destitute, including poorer female-headed households. Continued support included technical assistance and credit facilities to reduce their dependence on the project. DIRDP also provided unconditional transfers to the poorest women of the community and targeted them with food-for-work activities to build their asset base and human capacity. The PCDP works with a particularly vulnerable segment of the country's population, pastoralists leaving their livelihoods, and consciously tailors specific activities to the women of that community, such as a robust emphasis on rural savings and credit cooperatives.

From relief to development. For many of the beneficiaries of DIRDP and MERET, direct assistance, especially in the early years of the projects, saved them from destitution or starvation. In these cases, providing relief to the most vulnerable constituted a principal goal of the project. Beyond humanitarian goals, developing activities with and for people at the bottom of the social and economic ladder also helped achieve equity in the distribution of project benefits and prevented the projects from bringing further disadvantages to the poor. Identifying the poorest community members for assistance, when successful, strengthens the community as a whole by enabling these members to contribute their energy, creativity, and resources to economic, social, and political life (Ethiopia Case Study Background Report, 2011).

5. The Way Forward

The comparison of gender-poverty-environment dynamics in Ethiopia and Ghana has revealed a variation within each country, as well as between the two countries. These variations underscore the importance of analyzing, with a gender lens, the different environmental, economic, and social-institutional contexts in which policies, strategies, analytical work, or projects will be implemented. The analysis in Ghana and Ethiopia, the literature review, and the online discussions also made clear the importance of examining gender and other power relationships that shape people's access to natural and productive resources, economic opportunities, institutional contact and support, and voice in household and community decision making regarding their livelihood and welfare. These contextual variations and power relationships need to be taken into account to successfully foster synergies between gender equality, poverty reduction, and sustainable environmental practices in policy, strategy, and programs for promoting equitable distribution of benefits and mitigation of potential risks.

5.1 Fostering Positive Dynamics at All Levels

Chapter 3 delineates the relationship between gender, environment, and poverty as perceived and felt by the rural communities in Ethiopia and Ghana, especially in terms of the impacts on their livelihoods and opportunities. The communities perceived that changing rainfall and temperatures, more frequent floods, deforestation, and declining soil fertility had exacerbated poverty, particularly for the already marginalized groups, especially the poor women and men, female heads of households with children, the elderly, and people with disabilities. They also believe that human activities, including logging, house construction, cutting and burning forests for farming, grazing, charcoal production and collection of firewood from forests and mangroves, have contributed to this environmental degradation. People in these communities have experienced both positive and negative impacts of sustainable development projects on the environment and their local and household economy, and they have seen differential impacts on women and men. The marginalized groups have limited access to natural and productive resources, technology, and infrastructure services that limits their opportunities and potential for improving welfare. For poor women, there are even fewer options, because they are overburdened with domestic and reproductive activities and social and cultural norms limit their access to resources, mobility, and opportunities in public and in decision making processes. Communities also stressed that women are better in managing and nurturing natural resources and improving the social and economic status of women, and enabling social mobilization and collective action could help families and communities move out of poverty, while reducing environmental degradation (PRA Background Reports for Ethiopia and Ghana, 2011).

Chapter 4 describes some approaches in Ethiopia and Ghana that were designed using social, gender, environment, and poverty analyses and consultations with potential beneficiaries and other stakeholders, and for identifying links to foster positive gender-environment-poverty interactions. These initiatives were successful in achieving improved outcomes. **The common effective approaches** that were used to foster positive gender-poverty-environment dynamics include:

- (i) Reducing marginalization of poor women, men, and other excluded groups by increasing their endowments, especially access to and control over natural and productive resources, improving their access to protected conservation area and benefit sharing, and establishing fair and transparent dispute resolution systems;
- (ii) Enhancing social and economic opportunities for poor women, men, and other excluded groups;

- (iii) Promoting collective actions in policy and program formulation, especially establishing mechanisms for incorporating voices of poor women for their improved agency/empowerment at the household and community levels; and
- (iv) Promoting accountable and gender-responsive institutions that will support inclusive, participatory, and sustainable development processes.

5.2 Fostering Positive Dynamics in Policy and Program Formulation

The following sections detail actions for improving gender integration in policy and program formulation.

5.2.1 General and process considerations

To foster positive dynamics in either policy, strategy or program formulation, initiating a consultative and inclusive process has to be a first step. Gender-poverty-environment dynamics evolve through interactions between overlapping independent systems, so planning needs to span all relevant sectors. The regeneration of ecosystems progresses not by days or months, but by seasons and years. Livelihood practices and institutions respond slowly to these changes, and in turn modify ecosystems. Policy planning needs to take this long time frame into account.

The study findings suggest a number of broad considerations that can be included in policy development and dialogue (World Bank 2003b).

- **Recognize and analyze subregional social, ecological, and economic differences.** The study findings reveal the importance of policy formulation that considers the diversity of the administrative, social, gender, ethnic, and agroecological zones. Gender-responsive policy and its implementation can enable poor women and men to participate in governance structures and decision making, thus improving their own lives as well as community welfare.
- **Conduct inclusive consultation and plan multisectorally, both horizontally and vertically.** The interconnections between gender, poverty, and environment make it necessary to cross the boundaries that traditionally separate sustainable development sectors. Interpretation by local institutions strongly mediates the application of national policy. Effective policy will require meaningful input both across sectors and among national, regional, and local stakeholders.
- **Include the perspectives of the most excluded groups when framing policy (World Bank 2010a).** The projects reviewed in this case study faced significant challenges in eliciting the voices of the most marginalized groups, including women and the poor. Targeted and diligent efforts were and are necessary to draw out these perspectives.
- **Promote local, inclusive participation in governance.** Measures regarding access to and control of productive natural resources largely take place in the public sphere. When planning projects, there needs to be explicit consideration of power and decision making relationships in policy dialogue, and consideration of ways to give greater weight to the voices of the poor and women in decisions on natural resources.
- **Plan for the long term.** Gender-poverty-environment dynamics evolve over a long period through interactions between overlapping independent systems. Interventions take time to show their effects: the regeneration of ecosystems is measured not in days or months but over multiple

seasons. This must be recognized in policy and project planning. Successful projects take many years, such as MERET, which continued for eight years, and had followed a previous program with similar objectives; DIRDP spanned 16 years.

- **Develop consensus and local ownership around critical policy issues.** The relationships between gender, environment, and poverty are relationships of power. A wide range of stakeholders will need to support, or at least not undermine, policy actions to modify these relationships. The creative negotiation of consensus is a necessary foundation for policy development and implementation.
- **Explicitly address the tension between local ownership and conformity with national and regional policies and laws on gender.** Maintaining a sense of local ownership of natural resources following state-supported interventions always proves difficult. The application of national policy empowering women may be seen as further undermining control over resources by local elites. Elite capture may have a negative impact on poverty reduction and gender equality unless steps are taken to inform those lacking a voice about their rights, dispel elite misconceptions, and highlight the benefits for all.

5.2.2. Specific policy issues

In addition to these considerations on the process and the overall approach, this study has identified a number of specific themes that also deserve particular attention.

- **Address the economic opportunities for women.** To improve the potential of women, it is essential to address the special poverty and vulnerability of poor women. Measures include reducing women's domestic work burden by improving access to infrastructure services, especially water, energy, and transportation; improving access to knowledge and technology through expanded access to education, research, and ICTs; and providing extension services responsive to the challenges of people working in marginal areas. Finally, increased access to financial resources, such as through savings and revolving fund groups or microfinance, can address a fundamental endowment constraint on the livelihoods of most poor women.
- **Recognize the significance of tenure and property relations.** The study indicates that the strengthening of women's rights to land through the certification process in Ethiopia has profoundly affected power relationships within households, as well as women's control over natural resources. Recent research indicates that the certification process may be empowering women within the household in ways that have a positive impact on both the environment and food security resilience. This approach can be expanded to other areas with similar constraints.
- **Promote tenure for local-level organizations.** The potential of tenure reform will not be realized if it focuses exclusively on individual rights and results in the loss of the freely accessed common resources on which women and the poorest depend. Serious consideration needs to be given to tenure arrangements for community-level institutions as well as individuals.
- **Support inclusive approaches to conservation.** Strategies to conserve and regenerate environmental resources should weigh the potential impacts on equity. Poor people and women should participate in management decisions regarding the duration and size of enclosures and the rules governing access to them. Unless such programs are managed in a way that addresses

everyone's needs, they will benefit only those who are wealthy enough to pay for services elsewhere.

- **Include even the least valued natural resources** in the analysis of power relationships over access to and control of natural resources. Resources least valued by society often play a large role in the sustenance of the poorest households. Such analysis may require the development of new approaches or support for new institutions to develop an understanding of overlooked relationships. In Ethiopia, for example, policy analysis appears to have overlooked the impact of area enclosures and land tenure reform on common property.

5.2.3. Generating a positive dynamic over the project cycle

In every phase of the project cycle, there are entry points for addressing the links between gender, poverty, and environment (World Bank 2005a, 2010d). It is important to ensure that the issues are addressed from start to finish and do not “evaporate” in the implementation phase. Including a social development specialist with gender and environment experts on the project task team is important, as is early and continuing engagement of intended beneficiaries and CSOs in the project planning and decision-making process.

Project identification, preparation, and appraisal

- Analyze gender-poverty-environment dynamics and trends in the project zone. The four propositions presented in this study may be used as a framework for such an analysis as a part of environmental, social and poverty assessments, and environment and resettlement plans. It is also important to understand the trends in the livelihoods and coping strategies of the poorest people in the project implementation zone, and the factors that affect these strategies. Analysis should also include gender-sensitive histories of conflict, especially conflict over natural resources, and significant weather events that climate change may intensify or make more frequent. Findings should be incorporated into the project appraisal document, environmental management plan, and resettlement action plan.
- Engage all local stakeholders (including women and other marginalized groups) in design as early and as extensively as possible. While participants should be able to make critical decisions about the design and implementation of specific project activities, their voices are also important in framing the initial issues. Including representatives of typically excluded populations in the process of defining critical problems to be addressed increases the probability that the project will respond to their needs.
- Plan space in the project to negotiate the interaction between national policies and laws on gender and poverty on one hand, and traditional rules and practices on the other. The introduction of national law to project zones is not new, but efforts of local elites to control the process may present challenges to local ownership of project results. Measures for inclusive participation are very important.
- Design the project to build on existing assets and effective strategies. Project planning should identify local knowledge about the environment and economy as well as effective local institutions and adaptive strategies in the project zone and seek to reinforce them. If women have

had success in collective action, whether at the regional, subregional, or community level, building on this local success may increase project ownership and sustainability.

- Conduct a gender-informed stakeholder and institutional analysis of power relationships and competing interests to guide planning and design. Incorporate gender-poverty-environment analysis into the terms of reference for environmental and social impact assessments and/or other assessments or special studies.
- Include relevant gender-poverty-environment issues and appropriate gender-targeted activities in the project concept note, project information document, and project appraisal document. Include sex disaggregation of relevant beneficiary indicators and gender, poverty, and environment indicators in the results framework. Include knowledge of and commitment to gender-poverty-environment issues in criteria for choice of the implementing agency.
- Create resettlement action plans and indigenous peoples development plans that include gender-equitable resettlement compensation and livelihood rehabilitation, taking into account loss of use rights and livelihood as well as titles to land, and considering differential risks by gender. Similarly, develop gender-inclusive plans for environmental management that ensure gender equitable participation and benefits.
- Include gender-aware women in project staff. In addition to addressing equity, their inclusion increases staff awareness of gender issues, helps bridge relationships with women in project communities, and provides leadership role models for women.

Project implementation and monitoring

- Include gender-poverty-environment activities, approaches, and indicators in the project implementation manual, as well as, where relevant, requirements for gender-equitable labor-based works. Provide budget line items for gender-poverty-environment activities and institutional capacity building. Provide capacity building for implementing and involved institutions. Provide training on gender-informed M&E indicators and methods for baseline, monitoring, and evaluation staff.
- Where feasible, incorporate local participatory monitoring of project inputs, outputs, and outcomes. Conduct a baseline survey to collect sex-disaggregated data on key indicators. Provide organizational capacity building for organizations representing women and other excluded groups to increase their voice in decision making for sustainable development.
- Institute a flexible design and management approach and incorporate feedback mechanisms to allow for midcourse corrections based on gender, poverty, and environment monitoring data. While promoting change, respond to change. As with all projects, listening, discussing, learning, and modifying implementation approaches are important throughout the project cycle. Ensure that planning for project implementation considers changing conditions. When it comes to the complicated interactions between environmental and social systems, results are not always foreseeable, and adaptation as situations unfold becomes essential. Set requirements for detailed description of progress on gender indicators in supervision reports, aide-mémoires, and implementation status and results reports.

- Budget sufficient resources for activities aimed at institutional change. Newly decentralized governmental bodies and project-supported local organizations can facilitate the empowerment of women and other marginalized groups. Traditional institutions also continue to evolve. The transformational power of institutional growth is likely to enhance the sustainability of project outcomes and impacts.
- Leverage national policy carefully. Gender-sensitive national policy is of little importance if it is not implemented. Public awareness of laws and their careful application in collaboration with local champions and partners may help reinforce project goals while also profoundly changing the communities of the project zone.
- Take into account the long-term nature of environmental and gender-related social change. As in both policy and project planning, recognition of the slow nature of change is important to sustaining change over the long term. In this study, DIRDP demonstrates the potential gains from an unrelenting, long-term focus on empowering women in local institutions.

Project completion and impact evaluation

- Develop baselines that capture gender dynamics. Natural resource use by the poor and women varies greatly across geographic localities and over time. Clear baselines designed to track these changes should be established for the project implementation area during the project planning phase, using sex-disaggregated and gender indicators of progress toward gender equality in the results framework.
- Create indicators that track critical changes in gender-poverty-environment relationships. This means going beyond the simple sex disaggregation of existing indicators. Potential indicators to baseline and track include female and male time devoted to water and fuel collection; the use of freely accessed natural products more broadly; the rights held in the tenure regimes of both farmland and common property resources; and the participation of women and the poor in local traditional and governmental institutions.
- Include, where feasible, local participatory evaluation of project inputs, outputs and outcomes, and especially engage excluded populations in monitoring activities. Participatory monitoring increases awareness and ownership, enables self-correction of negative trends as events unfold, and reinforces success through heightened understanding.
- Ensure that women's voice and needs are captured in M&E. Women's domestic and reproductive time use, language barriers, lack of literacy, skills, experience beyond the community, and social norms combine to deter women from voicing their opinions in public forums. This makes it difficult to monitor women's practices and perspectives in relation to the project. These constraints should be considered in the design and implementation of monitoring systems, which should include measures such as female researchers, women-only focus group discussions, and interviews scheduled to accommodate women's busy schedules.
- Administer impact evaluation questionnaires addressing all key sex-disaggregated indicators and gender indicators of progress toward empowerment and value added by women's

participation, particularly the intermediate results for environmental and poverty reduction components.

- Ensure transparent analysis and dissemination of evaluation findings, including gender-poverty-environment impacts. Use impact evaluation findings to inform policy and projects to better address gender, poverty, and environment links and achieve equitable long-term results. Incorporate gender-poverty-environment impact data and lessons learned in the implementation completion report.

5.3. Next Steps

A number of sector-specific, good-practice approaches and an outline on sectoral tools for analyzing the gender-environment-poverty nexus were developed for strategy and programs and are included in annex 1. The outline will be developed in partnership with sustainable development departments and regions to foster positive synergy among these issues within the sectors. Beside this synthesis report, separate products will also be published such as the Ethiopia country case study on linking gender, environment and poverty for sustainable development; the Ghana country case study on linking gender, environment and poverty for sustainable development; the summary of the online discussion on linking gender, poverty, and environment for sustainable development; good-practice case summaries; and gender-environment-poverty tools for fostering positive dynamics in sustainable development sector strategies and operations.

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Annex 1:

Outline on Gender-Environment-Poverty Tools for Fostering Positive Dynamics in Sustainable Development Sector Strategies and Operations

Objective: The primary objective of this activity is to provide brief, relevant, and practical tools for World Bank task teams and their country counterparts to facilitate their work in promoting positive interactions among gender, social, environment, and poverty issues in sectoral strategies and operations.

Why Is Gender an Issue in Sustainable Development?

Three key pillars of sustainable development. There is global recognition that gender equality is an important aspect of the three pillars of sustainable development: (i) social inclusion, (ii) environmental sustainability, and (iii) economic growth; and addressing gender disparities is increasingly recognized as being at the core of the Bank's mandate of economic growth and poverty reduction. Gaining a better understanding of the subtle links between gender, poverty, and environment—including women's reproductive and household management roles, time poverty, reallocation of women's time savings, family welfare, and economic development—can help decision makers and teams develop effective sector strategies and operations more likely to have gender-equitable outcomes, reduce poverty, and regenerate the environment at the same time.

Gender-based differences in roles and existing gender disparity. In most developing countries, girls and women have less access to health, education, infrastructure and other services, and lack ownership of asset/resources due to inherent social and structural constraints; these factors result in low levels of literacy and skills, malnutrition, and fewer social and economic opportunities. Women also have primary responsibility for domestic tasks, including fetching water and collecting fuelwood for their families; cooking meals; and caring for children, the sick, and the elderly. Time-use surveys revealed that women are severely time constrained and work longer hours than men. The arduous, time-intensive tasks of collecting fuel and water consume much of women's energy and take their toll on women's health.

Infrastructure facilities and services save women time. Studies indicate that there are direct benefits of time saving to women and children from improved infrastructure services. A recent study on several water operations also found that in countries where substantial gender gaps in schooling exist, both boys' and girls' enrollments improve as a result of a reduction in the time needed to collect water. Also, children's welfare increased with better water quality and women spent more time on child care. Similarly, roads, energy, and ICT services save time and energy, improve school enrollment for boys and girls, and improve welfare of the household.

Involuntary displacement and resettlement. The majority of infrastructure investments require land, and usually households residing in those lands are displaced and their assets are lost. World Bank Operational Policy mandates that the displaced population will receive compensation—land-for-land or cash compensation, relocation and resettlement, skill development and access to finance support, so that their livelihood remains the same, if not better. Existing gender inequalities may result in negative impacts on family well-being during the process of displacement and compensation. Because land titles are mostly held by men, cash compensation for land or other assets is usually given to the male head of household, who may not share it equitably with other family members. Women may not be part of the

consultation process or able to voice their opinion about relocation and resettlement. Women and others with land-use rights may not be compensated for loss of livelihood.

There are unintended outcomes and potential risks from infrastructure:

- **HIV/AIDS and transport:** Globally, more than 50 percent of the 42 million people infected with HIV are male, but women's infection rates continue to spiral upward. Women now constitute 58 percent of the HIV-positive population in sub-Saharan Africa, and 68 percent of HIV-positive youth globally. In sub-Saharan Africa, research indicates that the increase in HIV transmission is associated with road construction, and that the increase has had a more negative impact on women than men, in terms of higher infection rates and the burden of caring for persons affected by HIV/AIDS. In Asia and other regions, improved transport corridors have also accelerated the spread of HIV, which also may have a more negative impact on women. Although the transport sector has been affected by HIV/AIDS more, there are potential risks in other sectors, such as in commercial mining and hydroelectric dams, because these usually have a large amount of migrant male workers.
- **Transport and potential deforestation and loss of biodiversity:** In many countries, increased road networks, especially cutting across forests and sensitive ecosystems, can lead to increased deforestation and loss of biodiversity after project completion. These projects can degrade the environment and diminish livelihood opportunities for forest-dependent women and men. Women are especially vulnerable because they collect not only fuelwood, but also medicinal plants, fruits, leaves, tubers, and other materials from forests for either household consumption or for sale.
- **Malaria and other waterborne diseases from hydroelectric dams and irrigation projects:** Construction of hydroelectric dams and irrigation canals without mitigation activities can lead to a significant increase in waterborne diseases, such as bilharzias, river blindness, malaria and urinary schistosomiasis, among the inhabitants of nearby areas. For example, prior to construction of the Akosombo Dam in Ghana, urinary schistosomiasis affected only about 1 to 5 percent of the population. By 1979, the disease was prevalent in the area, affecting around 75 percent of the lakeside residents⁵. Irrigation and other water projects can also lead to an increase in malaria when preventive measures are not taken. Malaria is one of the leading causes of morbidity and mortality, especially among pregnant women and children under the age of five in sub-Saharan Africa. Malaria adversely affects birth outcomes and can lead to a spontaneous abortion, preterm labor, low birth weight, and still birth.
- **Roads, gas pipelines, and electricity transmission lines can limit access and increase accidents:** Without safety measures, roads, gas pipelines, and electricity lines can reduce community access to important natural resources such as water and fuel, thus increasing the residents' work burden. Furthermore, without safety measures, these can also cause many accidents resulting in death and disability.
- **ICT and pornography:** Digital technology can be used for pornography, trafficking, and to send predatory e-mails to harass and sexually exploit women and girls.⁶

⁵ Alhassan, Henry Shirazu, "Viewpoint: Butterflies vs Hydropower: Reflections on Large Dams in Contemporary Africa," *Water Alternatives* 2(10): 148–60 (2009).

⁶ World Bank, *Making ICT Work for Women and Men: Tools for Task Teams* (Social Development Department, 2010).

Why Use the Gender-Environment-Poverty Link in World Bank Activities?

Poverty, environment, social development, and gender are important cross-cutting themes of World Bank and government investment programs, especially within the sustainable development sectors. Usually these areas are analyzed separately during project preparation. Environment and social assessments are undertaken mostly when safeguard policies are triggered, however, the assessments are conducted separately, and most often gender issues are not included. Furthermore, most of the environmental analytical and operational work, for example, project environmental assessments, environmental management plans, country environmental assessments, and strategic environmental assessments, does not usually include gender, and this is a missed opportunity. If operations are prepared without gender analysis, the gender-based needs, potential risks, and opportunities are usually not identified, and therefore not incorporated into the design. Identification of the links between gender, environment, and poverty could help teams design gender-responsive actions to promote equitable benefits for women and men, and reduce any potential risks. Furthermore, these actions can accelerate positive synergy, promoting better social, gender, environment, and poverty outcomes; otherwise, neglecting this opportunity may lead to unintended negative results. A joint analysis will also reduce cost of project preparation.

A framework/approach for analyzing the gender-environment-poverty links was developed after reviewing good practices that had analyzed the links between the three themes, incorporated actions to address those issues jointly, and achieved good social, gender, environmental, and poverty outcomes. The approach has four organizing principles to capture key dynamics: (i) socioeconomic marginalization and natural resource degradation are mutually reinforcing processes; (ii) protected area conservation and external control of natural resources can disrupt household and community production and social organization; (iii) competing environmental interests shape environmental change; and (iv) collective action and resilience can help mitigate negative impacts. The first two explain common relationships between social institutions and natural resources. The second two characterize responses to the first two—on the one hand, competition for resources, and on the other hand, collective action among local producers, households, and communities as they strive to cope with shifting environmental circumstances.

Value Added by an Integrated Gender-Environment-Poverty Approach: Some Examples

Ethiopia's Dalocha Integrated Rural Development Programme (DIRDP): The project trained women to manage environmental resources, including soil and water conservation and regeneration of vegetation. As a result, communities adopted improved agricultural technologies for horticulture and high-value crops; implemented public works for soil and water conservation; and invested in community infrastructure such as schools, clinics, water structures, and roads. The program resulted in increased resilience to climate shocks and improved education, nutrition, and health. It improved the income and status of women, because they now manage projects and institutions, such as the dairy goat program, grain mills, and the Dalocha Women Water Development Association (DWWDA), which supplies safe drinking water to an estimated 100,000 people.

Ethiopia's Managing Environmental Resources to Enable Transition to More Sustainable Livelihoods (MERET) Project: The inclusive actions were a livelihood approach, local-level participatory planning, results-based management, and an emphasis on women's participation in decision making. The project outcomes included regeneration of vegetation and water tables, increased water availability, and

increased crop yields. The time spent by women and girls collecting firewood and water has been reduced. There has been a positive impact on livelihoods, poverty reduction, and food security. Women have been empowered through their participation in decision making, conservation work, and income generation. There has also been community empowerment, through the expansion of social networks, increased knowledge and technology for natural resources management, increased community awareness of the benefits of managing natural resources, and commitment to sustain project outcomes.

Fostering Positive Dynamics in Sustainable Development Sector Strategies

Common, effective approaches that can be applied to foster positive gender-poverty-environment dynamics are: (i) reducing marginalization of poor women, men, and other excluded groups by increasing their endowment, especially access to and control over natural and productive resources, and improving their access to protected conservation areas and benefit sharing; (ii) enhancing social and economic opportunities for poor women, men, and other excluded groups; (iii) promoting collective actions in policy and program formulation, especially establishing mechanisms for incorporating voice of poor women for their improved agency/empowerment at the household and community levels; and (iv) developing accountable and gender-responsive institutions that will support inclusive and participatory sustainable development processes.

Theme 1: Biodiversity Conservation and Natural Resources Management

*Why is gender a key issue for biodiversity conservation and natural resources management?*⁷

For the past 30 years, development practitioners working on programs and projects in biodiversity conservation and natural resources management have increasingly recognized that gender equality can improve the sustainability of their work. Addressing gender disparities is a core dimension of the World Bank's mandate to promote economic growth and reduce poverty, while protecting environmental quality. To develop more effective sector strategies and operational procedures, decision makers and teams need to better understand the links between gender equality, the access and use of natural resources, and decision making related to the sound management of natural resources and biological diversity. This theme focuses on both "green" issues (that is, land tenure, administration, and management; terrestrial protected area management; forestry, agroforestry, and nontimber forest products; and wildlife and range management), as well as "blue" issues (that is, integrated water resources management at transboundary, river basin, and watershed scales; integrated coastal management, including marine and mangrove areas; and marine protected areas⁸). Potable water, sanitation and hygiene issues will be addressed under theme 2 in this annex (Water and Sanitation).

Gender-based differences in access and control of resources and benefits. The World Bank estimates that roughly a quarter of the world's poor and 90 percent of the poorest depend substantially on forests for their livelihoods⁹. Beyond wood for cooking and building, forests are a source for food and medicinal plants, and are also important for composting for agriculture. Of the 340 million people living in forested regions, there are about 50–60 million indigenous people and they tend to be among the poorest in the world.¹⁰ Women in forest-dependent communities not only collect subsistence and market goods

⁷ Content adapted from OECD/DAC, "Gender Factsheet on Biodiversity" (<http://www.ausaid.gov.au>), and other sources.

⁸ Gender issues for irrigated agriculture, including irrigation water user associations, are covered in-depth by the World Bank's recent *Gender in Agriculture Sourcebook* (2009).

⁹ World Bank, "Recommended Revisions to OP 4.36: Proposals for Discussion," Washington, DC (2001).

¹⁰ Kaimowitz, D., "Forests and the Millennium Development Goals," ETRN News 47/48, CIFOR, Bogor (undated).

from forests, but also derive paid employment. Women are often the primary users and caretakers, particularly in Africa and Asia. Women also face different hurdles than men with respect to accessing forests (for example, sexual harassment by forest guards) and transporting forest products (for example, fewer bikes are owned and ridden by women). Beyond forests, women own less than 2 percent of all property. In many countries, less than 10 percent of women hold title to their land,¹¹ which limits their access to resources and credit, including during times of crisis. Typically, rural women have customary and less secure access to agricultural and rangeland resources via their male relatives. Women's land and resource rights are particularly at risk when there are land-use changes such as industrial infrastructure development, agricultural intensification, disasters, and climate change impacts. When new land is cleared due to declining soil fertility or expansion of cash crop production, women often lose their access to fertile land or forest resources. As a result, women's workloads increase, they have to travel further or pay more for fuel, food, fodder and medicines, and they have less time to pursue economic opportunities. With increased workloads and less household cash, girls are more often expected to interrupt their educations to help their families. When further environmental degradation results from resource scarcity, the poorer households are more likely to engage in harmful environmental practices for their survival. Without secure property rights, men and women are less likely to invest in improvements or change practices.¹² For example, those without secure land rights are less likely to be able to access the credit needed for technology that can directly improve land, water quality, or indoor air quality. Without land as collateral for credit, households are less likely to be able to start or expand off-farm businesses that can take pressure off of natural resources. For poor households, particularly those headed by women, land, credit, and other resources remain elusive and environmental degradation is more likely.

Gender differences in indigenous technical knowledge. Natural resources form a crucial social safety net, particularly for women, who have fewer employment and migration options. Poor households, particularly female-headed households, are often highly dependent upon their knowledge of and access to natural resources for their livelihoods and survival. Women and men often have different and culturally specific knowledge about the use of local forest plants and animals for places where they have lived long periods of time; migrants who settle in new areas often lack this knowledge of sustainable resource management. In general, there has been relatively limited recognition of women's knowledge of environmental management.

Gender division of labor. Men and women are involved in the conservation of biodiversity and the management of natural resources as users, producers, managers, and consumers. Rural women in particular, as well as those in peri-urban areas, often have greater responsibilities for daily household maintenance tasks related to household subsistence. Their tasks include the collection of water, fodder, herbs for medicinal purposes, and wood for fuel, construction, tools, baskets, and other items. On small farms, women typically provide up to 80 percent of agricultural labor and produce 45–90 percent of domestically consumed food, depending on the region.¹³ Men and women often grow different crops; in forests and coastal areas, men and women hunt and collect different plants and animals. Women and men may have different involvement in boat fishing due to cultural traditions; however, women are often very engaged in other types of fishing, collecting, fish processing and trading for wild fisheries,

¹¹ IFAD (International Fund for Agricultural Development), *Rural Poverty Report 2001: The Challenge of Ending Rural Poverty* (Oxford University Press, Oxford, 2001).

¹² Many have made the case for the positive relationship between titling and increased agricultural productivity and access to credit with land collateral. See for example, Deininger, K., *Land Policies for Growth and Poverty Reduction* (World Bank, Washington, DC; and Oxford University Press, Oxford, 2003).

¹³ IFAD, *Rural Poverty Report 2001*.

aquaculture, and agriculture. In many fishing households, women's incomes from gleaning, seaweed farming, and other nonfishery work supplements the erratic and seasonal income that men earn from fishing.

Gender differences in environmental enterprise and employment opportunities. To promote conservation and advance livelihood opportunities related to the sustainable use of natural resources, the main focus has been on expanding men's and women's environmentally related livelihood alternatives. For women, alone or in groups, these options have included enterprises and employment related to new crops and value-added agriculture, growing trees, growing and processing medicinal and edible wild plants, handicrafts, eco- and cultural tourism, and protected area management employment. More recent opportunities have included the production and marketing of environmental technologies and new green jobs, and enterprises for women have included production, sales, and service of energy and water technologies. Environmental enterprise and employment schemes for women need to provide opportunities to escape low-return, traditional gender-assigned skills and take advantage of new and more lucrative, nontraditional, and environmentally friendly businesses and jobs. In so doing, women can improve their social status within their households and communities. If women lack the land or group membership needed to access credit, they have more difficulty than men in starting up and expanding their businesses; this situation is especially true for poorer women and those from minority groups. Women's time commitments at home, exacerbated by poor quality farm-to-market roads, lack of transport and lower literacy levels, are barriers to accessing formal credit and savings institutions in larger market or urban centers. Beyond household and community opposition to their work outside the home, women also often face sexism in their work places, including being assigned to work that exposes them to environmental hazards.

Gender differences in group membership. Group membership is often a prerequisite that enables producers and vendors to obtain goods and services, including extension services, inputs, credit, irrigated lands, transport to markets, market information, and more. Women's membership and relative power in mixed-sex producer cooperatives has always been less than men's due to discriminatory traditions, land or farm labor time requirements for membership, gender stereotypes about women's involvement in farming, animal raising and fishing, and/or women's time constraints due to domestic demands. In addition, many cooperatives have also had membership policies that only allow one member per household. For example, in Asia, the percentage of women cooperative members ranges only from 2–7.5 percent, with only a few exceptions, such as Malaysia with about 31 percent.¹⁴ Women's access to improved seeds, fertilizers, and pesticides has been more limited because they have often not been members of the cooperatives that distribute government-subsidized inputs to small farmers, or are not reached directly by extension agents.¹⁵ For fishing, projects have too often been geared toward male boat fishers rather than the fishing value chain. Available figures show that only 5 percent of extension services have been addressed to rural women,¹⁶ and 15 percent or less of the world's extension agents are women.¹⁷ In some cases, training access has been limited because of women's lower literacy levels.¹⁸

¹⁴ Prakash, Daman, "Rural Women, Food Security and Agricultural Cooperatives" (Rural Development Management Centre, New Delhi, 2003).

¹⁵ Quisumbing, A., L. R. Brown, H. Sims Feldstein, L. Haddad, and C. Pena, "Women: The Key to Food Security" (International Food Policy Research Institute, 1995).

¹⁶ Dunn, K., "The Busiest People in the World," *Ceres* 27(4): 48–52 (1995).

¹⁷ Ibid.

¹⁸ Jiggins, J., R. K. Samanta, and J. E. Olawoye, "Improving Women Farmers' Access to Extension Services," in *Improving Agricultural Extension*, ed. B. E. Swanson, R. P. Bentz, and A. J. Sofranko (Rome: FAO, 1998).

Women, with or without external support, have formed women-only cooperatives, including cooperative banks, consumer stores, and vendors for a variety of products. Women's groups have often been the target for small-scale livelihood activities, but less often the target of more ambitious enterprises.

Gender differences in environmental governance opportunities. Donor projects and programs promote improved planning processes for more sustainable management of terrestrial and marine natural resources and protection of valuable biological diversity. Lessons learned suggest that sustainable planning depends upon accurately identifying stakeholders and ensuring meaningful participation by diverse stakeholders. For biodiversity and natural resources, stakeholders can include resource users at the local, national, transboundary, and/or global levels. Within stakeholder groups and as part of stakeholder processes, men and women may differ in their access to, and use of, natural resources, their needs and priorities, and how productive and civic work is divided up (that is, the gender division of labor) in different societies. Beyond the household level, women and men have different roles and opportunities to participate in civic life, including environmental decision making, depending on local customs and national laws. Women's socioeconomic class and other status factors can influence their opportunities for participating in environmental decision making. For example, lack of income or insecure access to land can limit a women's standing to participate in decisions about land management. From a practical standpoint, women's greater workloads may reduce their availability for participatory resource planning meetings. For some women, their lack of self-confidence may affect the quality and extent of their participation. In communities with considerable male outmigration, women may be the most stable members of the community and the ones responsible for sustainable natural resource management. Unless both men and women are consulted and involved in planning and management activities, the plans for conservation or management may conflict with women's needs for fuel, fodder, food or medicines, or income generation. In general, there is considerable under-representation of women in professional natural resources management and conservation jobs and in higher level university programs. Women remain largely absent at all levels of environmental policy formulation and programmatic decision making regarding natural resources, environmental management, conservation, and rehabilitation.

The following bullets provide key entry points for gender analysis and actions;¹⁹ these will be expanded in consultations with Sustainable Development Network (SDN) Anchors and Regions.

Natural resource management:

- Ensure that women's traditional rights to forest use are not diminished.
- Ensure that any increase in the efficiency of forest access and forest product use by women and men is not achieved at the expense of women's access to and control over forest products.
- Include measures to avoid potential conflicts between competing users or uses, and avoid creating negative effects for forest users.
- Ensure the cooperation of both women and men in tree planting and tree care in social/community forestry projects.
- Train women as well as men in nursery techniques, site selection, selection of species, land preparation, planting, weeding, and maintenance to increase their productivity.

¹⁹ For more guidance, see the World Bank Agriculture and Rural Development Department's gender toolkit (<http://go.worldbank.org/LQOIKD53A0>), and the Asian Development Bank Agriculture and Gender checklist (http://www.adb.org/Documents/Manuals/Gender_Checklists/Agriculture/default.asp)

- Train female forestry extension agents; sensitize all forestry extension agents to women's forest-use patterns and particular needs and constraints.
- Help women as well as men understand the value of forests, the costs of destructive forest resource extraction, sustainable use of forest resources, soil erosion prevention, and choice of trees.
- Introduce measures to provide women and men joint titles to community forest land.
- Ensure the right to forest resource use for indigenous women and men.
- Make use of women's traditional knowledge for forest resource management and for choice of trees for social forestry projects and homestead forests.
- If community-level forest resource management committees are formed, ensure that they include women.

Land administration:

- Draft laws that include specific procedures for protecting women's land and property rights in titling.
- Draft laws that allow for significant representation of women in land administration agencies.
- Promote women's participation in land surveying at the regional and local levels.
- Engage with local partners to develop an outreach program that raises awareness of women's rights and access to land.
- Appoint a land registry staff member as a lead gender liaison and ensure that the gender liaison receives appropriate gender training.
- Create a gender unit within the project implementation team and the land administration agencies.
- Create a customer council or board and ensure at least one member represents the interests of women.
- Provide a legal assistance program with a special focus on women's rights.
- Ensure that titles are delivered to both the male and female owners of property simultaneously.
- Verify that titles are correct and all property owners, including women, have been legally titled.
- Confirm that the titling agency and the registry follow the same regulations with regard to identification of legal property owners.

Agriculture:

- Increase women farmers' access to land, natural resources, credit, inputs, and technology.
- Increase technology use and value added for women's crops (for example, processing of oil seeds and cassava) as well as for men's crops in agricultural value chains.
- Facilitate nonfarm livelihoods for women and men to diversify income streams and build resilience.
- Foster formation of women's producer organizations.
- Provide storage and processing facilities at fees affordable to poor women as well as men.
- Construct market facilities and provide access at fees affordable to poor women as well as men.

Fisheries:

- Create mechanisms to control overexploitation of fish in coastal areas and lakes.
- Facilitate aquaculture development by women and men.

- Support construction of cold stores and improved fish-drying technologies to reduce women's loss of time and product.
- Design project activities that will not eliminate traditional fishing rights and income opportunities for women and men in marine or inland fisheries.
- If the project activities include commercial fishing, ensure that commercial fishing will not diminish women's involvement in fish processing and marketing.
- Develop project components that will provide women and men engaged in fisheries with equal access to capital (credit), fishing equipment, and market opportunities.
- Ensure that project activities will not diminish women's access to and control over income from catching, marketing, and processing activities.

Theme 2: Water and Sanitation²⁰

Why is gender a water supply and sanitation issue?

Women's role in water management. Since the 1970s, women's integral role in water management has been recognized as crucial to improving program and product effectiveness, given their traditional roles in managing water and hygiene in the household and community. Across the globe, women devote significant amounts of time to collecting water for drinking, cooking, and washing. Women generally know the locations of existing water sources, their quality and reliability, and any restrictions on their use. However, the pivotal role of women as providers and users of water and guardians of the environment is rarely reflected in institutional arrangements for the development and management of water supply and sanitation and other water resources. Gender inequality in the water supply and sanitation sector means that women and girls' full potential is not being realized, and sustainability is diminished by women's lack of voice to ensure maintenance and repair of water facilities.

Gender-based differences in roles and existing gender disparity. In most developing countries, girls and women have less access to health, education, infrastructure, and other services and lack ownership of assets/resources because of inherent social and structural constraints, which result in low levels of literacy and skills, malnutrition, and fewer social and economic opportunities. Women also have primary responsibility for domestic tasks, and these tasks commonly include fetching water and collecting fuelwood for their families; cooking meals; and caring for children, the sick, and the elderly. Time-use surveys revealed that women are severely time constrained and work longer hours than men. The arduous, time-intensive tasks of collecting fuel and water consume much of women's energy and take their toll on women's health. In Asia and Africa, women often carry 20 kg headloads; carrying such heavy loads can cause chronic fatigue, spinal and pelvic deformities, and sometimes spontaneous abortion.

Women's voice in water and sanitation. Sustainable water supply and sanitation and gender equity are mutually reinforcing. Involving women and men in influential roles in water and sanitation programs at all levels can hasten achievement of sustainability. Integrated water management can contribute significantly to gender equity by providing both women and men access to water and water-related services to meet their needs. Inclusive, effective water and sanitation programs contribute to gender equality by reducing time, health, and caregiving burdens through improved water services. This gives women more time for productive activities, adult education, community activities and leisure, and gives

²⁰ For more guidance, see the World Bank Social Development Department's "[Making Water and Sanitation Work for Women and Men: Tools for Task Team](http://go.worldbank.org/5UW1T2OUW0)," at <http://go.worldbank.org/5UW1T2OUW0>.

girls more time for school. Water and sanitation facilities in or near houses and separate facilities for girls and boys in schools reduce the risk of sexual harassment and assault. Community-based water management can provide women opportunities for leadership and networking with other women. There is strong evidence that a demand-driven, participatory approach to water and sanitation that empowers women leads to greater impacts on health, more efficient and sustainable projects and programs, and enhanced productivity and income for families.

Direct benefits of women's time savings. Studies indicate that women and children directly benefit from time saved as a result of improved infrastructure services. For example, one study showed that improved water access improved women and children's health and security (because they were less exposed to risks), as well as increased school attendance for children, particularly girls. A recent study on several water operations also found that in countries where substantial gender gaps in schooling exist, both boys' and girls' enrollments improved as a result of a reduction in the time needed to collect water. Also, children's welfare increased because water quality is better and women spent more time on child care.²¹ The following bullets provide key entry points for gender analysis and actions; these will be expanded in consultations with SDN Anchors and Regions.

- Ensure inclusive, equitable, participatory water resource management.
- Provide choices for poor women and men regarding water access technology and location.
- Promote participation and voice for women in irrigation, water, and sanitation projects.
- Provide safe, potable water at prices poor women and men can afford and at locations they can access.
- Construct separate male and female sanitation facilities at prices poor women and men can afford and at locations they can access.
- Introduce public education and measures to reduce waterborne diseases and diseases due to poor sanitation (for example, diarrhea).

Theme 3: Energy²²

Why is gender an energy issue

Three key pillars of sustainable development. There is global recognition that gender equality is an important aspect of the three pillars of sustainable development: (i) social inclusion, (ii) environmental sustainability, and (iii) economic growth. Addressing gender disparities is increasingly recognized as being at the core of the World Bank's mandate of economic growth and poverty reduction. Gaining a better understanding of the subtle links between gender, poverty, and energy access—including women's time poverty and reallocation of women's time savings, health, poverty, energy access, family welfare, and economic development—can help decision makers and teams develop effective sector strategies and operations more likely to have gender-equitable outcomes.

Gender-based differences in roles and existing gender disparity. In most developing countries, girls and women have less access to health, education, infrastructure and other services, and lack ownership of assets/resources because of inherent social and structural constraints, which results in low levels of literacy and skills, malnutrition, and fewer social and economic opportunities. Women also have primary responsibility for domestic tasks, and these commonly include fetching water and collecting fuelwood for

²¹ Gender and Water Alliance 2003 Ivens 2008; Kuriakose 2005; Stockholm International Water Institute 2005.

²² For more guidance, visit the ENERGIA Web site at <http://www.energia.org/>.

their families; cooking meals; and caring for children, the sick, and the elderly. Time-use surveys revealed that women are severely time constrained and work longer hours than men. The arduous, time-intensive tasks of collecting fuel and water consume much of women's energy and take their toll on women's health. In Asia and Africa, women often carry 20 kg headloads; carrying such heavy loads can cause chronic fatigue, spinal and pelvic deformities, and sometimes spontaneous abortion.

Indoor air pollution and gender differences in health risks. More than 2.5 billion people in developing countries, including many of the world's poorest people, continue to rely on traditional biomass energy for cooking and are exposed to health risks. The 2009 WHO study²³ reported that indoor cooking smoke from solid fuel use is among the top 10 risk factors for mortality, accounting for 2 million deaths each year, the vast majority of which occur in developing countries. In developing countries, women account for 60 percent of all deaths from chronic obstructive pulmonary disease, lung cancers, and cataracts attributable to solid-fuel use. In adults with exposure to solid fuels, the risk of chronic obstructive pulmonary disease is nearly twice as high for women than for men.

Electricity and technology access. Planners often assume that energy issues are gender neutral and energy programs benefit all equally, ignoring the reality that women and men use energy differently, have different energy needs, and encounter different energy problems. In developing countries, men usually make most of the decisions regarding household purchases of energy commodities, for example, batteries, lamps, appliances, and choice of technologies. The participation of women and men in energy businesses tends to be technology driven and segmented by gender. Men usually have better access to modern energy businesses and technology, such as electricity generation based on diesel, microhydro, biogas and solar power, while women's energy businesses are generally based on biomass (charcoal and dung cakes). Improving women's access to modern energy businesses and technology will enhance their economic opportunities.

Energy services using a gender lens. Modern energy service in the household, especially clean cooking solutions and electricity, has significant potential to reduce gender disparity by freeing up and reallocating women's time and improving their health and that of their children. Providing energy services using a gender lens is important in three key respects. First, increased **access to electricity**, especially to the poorest 1.5 billion who lack access, will benefit even more from more attention to gender equality when developing access solutions focused on the poorest and excluded. As women stay at home more, they will benefit from household access to electricity, especially for using time-saving appliances, household security, children's education, and for other productive activities. Second, energy solutions for the nearly 3 billion people who continue to use **solid fuels for cooking** are needed, and health and welfare costs associated with continued solid fuel use must be addressed; doing so will bring a range of health, environmental, and energy benefits. Third, promoting economic opportunities for women in the energy sector will enhance **social inclusion** and responsiveness. Increasing economic opportunities for women will also help meet corporate commitments for greater integration of gender considerations into Bank-supported infrastructure operations.

²³ WHO (World Health Organization), *Global Health Risks: Mortality and Burden of Disease Attributable to Selected Major Risks* (Geneva: World Health Organization, 2009).

Involuntary displacement and resettlement. Gender inequalities in compensation for displacement and resettlement resulting from energy facility construction may have negative impacts on family well-being. As land titles are mostly held by men, cash compensation for land or other assets is usually given to the male head of household, who may not share it equitably with other family members. Women and others with land-use rights may not be compensated for loss of livelihoods.

Direct benefits of women's time savings. Studies indicate that women and children benefit directly from time saved because of improved infrastructure services. For example, a study showed that increased water access improved women and children's health and security (because they were less exposed to risks), as well as increased school attendance for children, particularly girls. A recent study on several water operations also found that in countries where substantial gender gaps in schooling exist, both boys' and girls' enrollments improve as a result of the reduction in the time needed to collect water. In addition, children's welfare increased because water quality was better and women spent more time on child care. Energy services at home saves enormous amount of time. Energy also can pump water for piped distribution.

Value added by a gender-responsive approach: Some examples

Gender-responsive approach saves women's time and enhances their opportunities to engage in social and economic activities. The Mali Household Energy and Universal Rural Access Project expanded the multifunctional platforms (MFPs). The platform, initiated by UNDP, consists of a diesel engine and various associated tools: grinding mills, huskers, alternators, battery chargers, pumps, welding stations, and carpentry equipment. It can also be used to distribute water and electricity. The results from sub-Saharan Africa indicate that these platforms generally free up 2–6 hours of rural women's working day. It also provides income-generating opportunities, raising owners' annual incomes by US\$40 to US\$100. These platforms also provide electricity to health centers in rural areas, and small public lighting provides security of movement, light for children's education, and enables markets to have longer business hours.²⁴ The Bangladesh Rural Electrification and Renewable Energy Development Project reserved certain jobs for women such as billing, collection and accounting, and partnered with NGOs and a microfinance program to provide electricity to marginalized households and technical training to rural women, thereby enhancing economic opportunities for thousands of women who never worked in the energy sector before. The Lao PDR Rural Electrification Project designed a revolving loan fund that prioritized female-headed households (43 percent of the poorest), enabling 93 percent of the female-headed households to connect to grid lines.²⁵

The following bullets provide key entry points for gender analysis and actions; these will be expanded in consultations with SDN Anchors and Regions.

- Provide tree planting programs to reduce degradation of forests and time women spend collecting wood.

²⁴ Visit <http://www.ptfm.net/mfpwhat.htm> for more information.

²⁵ ESMAP, *Energy, Poverty and Gender Synthesis Report* (World Bank, 2003); ENERGIA, "The African Agenda: Energy and Access" (Energia News 10[1], October 2007); Lallement, D., "Gender and Energy," in *Gender in Agriculture Sourcebook* (World Bank, FAO, and IFAD, 2009); Lallement, D., and E. Cecelski, "Why Gender Matters in Infrastructure," Gender and Energy Horizon Scanning and Planning Workshop (World Bank and OECD DAC, May 21–22, 2004); Pulley, T., and J. Acharya, "Gender and Energy," Regional and Sustainable Development Department (ADB, 2008); Saskia, Ivens, "Does Increased Water Access Empower Women?" *Development* 51: 63–67 (2008); Koolwal, G., and D. van de Walle, "Access to Water, Women's Work, and Child Outcomes," Policy Research Working Paper (World Bank, 2010).

- Develop off-grid renewable and alternative energy projects such as MFPs, battery-operated lighting, and solar power for off-grid communities to reduce time spent on wood gathering and food processing, reduce indoor air pollution, and enhance positive environmental impacts.
- Provide low-interest loans to the poor, including female-headed households, to cover electrical hook-up costs.
- Provide programs to address the negative downstream effects of hydropower on women's and men's livelihoods.
- Share a portion of the proceeds from hydropower generation with communities affected by dam construction.

Theme 4: Extractive Industry²⁶

Why gender is an extractive industry issue

Gendered impact of extractive industry. Women are involved in both large- and small-scale mining, but while their roles in both have been increasing, this does not necessarily reflect greater control over resources. And even if women are not significantly involved in extraction itself, extractive industries have significantly gendered impacts on the communities involved. Women in communities impacted by mining face a wide range of risks, especially (i) loss of ownership or use of fertile land or gardens; (ii) loss of water resources and depletion of fish stocks; (iii) limited control over productive resources and lack of voice and representation in the formal decision-making process; (iv) a rise in gender-based domestic and workplace violence and sexual abuse; (v) increased prostitution and exposure to HIV and other STDs; and (vi) environmental damage such as loss of forests and water sources as well as air and noise pollution.

Lack of voice and participation. Women in mining communities' do not usually participate in extractive industry decision making, and are not able to raise and incorporate their concerns into the policies and actions. Also, extractive industry operations often lead to investments in the community. However, women are often left out of the community consultation process, and have little say in how community resources are allocated.

Gender imbalance in employment. Extractive industries can lead to job creation both directly, in the oil, gas, or mining operations, or indirectly, through various support or spin-off industries. Job opportunities in mines primarily go to men, while women more often find opportunities in informal, spin-off jobs, which are usually less secure, poorly paid, and more dangerous.

Loss of productive resources. Extractive industry projects can lead to land, water, and air pollution. In some projects, compensatory measures give women improved access to clean water, however, in other cases, pollution causes illness, and resulting environmental degradation adversely affects women and girls because of their time spent collecting water, firewood, and food.

Risk of child labor. Children, evenly split between boys and girls, make up 7.7 percent of the workers in the artisanal and small-scale mining (ASM) sector.²⁷ An estimated 13 to 20 million men, women, girls, and boys are engaged in this sector in over 50 developing countries, with over 100 million more people dependent on this sector for their livelihood. Artisanal mining is informal in many countries and the rights of miners are ignored.

HIV/AIDS risk. Particularly in Asia and the Pacific and Africa, the escalation of food prices and reduced access to productive resources lead poor women to engage in commercial sex to support their families. These women are at high risk for contracting HIV, particularly from male migrants working in the extractive industries **Violence.** Rising access to cash from employment opportunities in extractive industries as well as the arrival of male migrant workers often leads to increases in alcoholism, drug

²⁶ For more guidance, see the International Finance Corporation's "[Mainstreaming Gender into Extractive Industries Projects](http://www.ifc.org/ifcext/sustainability.nsf/Content/Publications_Handbook_MainstreamingGenderintoExtractiveIndustries)" at http://www.ifc.org/ifcext/sustainability.nsf/Content/Publications_Handbook_MainstreamingGenderintoExtractiveIndustries.

²⁷ The International Labor Organization classifies children working in small-scale mining as one of the worst forms of child labor. An estimated 1–1.5 million children under the age of 18 work in this sector (World Bank, "Communities and Artisanal Small Scale Mining [CASM]," Issue Brief September [2008]).

abuse, prostitution, and spikes in violence and crime. These factors in turn often lead to a rise in domestic disputes, violence against women, and the spread of HIV and other STDs.

The following bullets provide key entry points for gender analysis and actions; these will be expanded in consultations with SDN Anchors and Regions.

- Regulate and monitor chemical processing wastes.
- Form a cross-sectoral, ministry-level coordinating committee on women and mining.
- Establish livelihood programs for women and men farmers and artisanal miners displaced by mining operations as a part of corporate social responsibility.
- Appoint gender and community development officers in mining companies.
- Provide organizational capacity building and small grant programs for women's organizations as a part of corporate social responsibility.
- Include participation of women's organizations and community-based organizations in development of long-term plans for environmental sustainability of mining areas after mine closure.
- Provide HIV/AIDS prevention programs for miners and affected communities as a part of corporate social responsibility.

*Theme 5: Transport*²⁸

Why is gender a transport issue

Three key pillars of sustainable development. There is global recognition that gender equality is an important aspect of the three pillars of sustainable development: (i) social inclusion, (ii) environmental sustainability, and (iii) economic growth. Addressing gender disparities is increasingly recognized as being at the core of the Bank's mandate of economic growth and poverty reduction. Transport networks and services have many positive impacts on women's and men's lives. They increase access to markets for labor and goods, reduce the time and cost of marketing produce, and expand access to services. Gaining a better understanding of the subtle links between gender, poverty, and transport access—including women's time poverty and reallocation of women's time savings, health, poverty, access to services, family welfare, and economic development—can help decision makers and teams develop effective sectoral strategies and operations more likely to have gender-equitable outcomes.

Gender differences in transport patterns. There are important gender differences in transport needs and access that need to be considered in transport planning to ensure maximum positive distributional impacts. Men and women use transport in different ways based on their socially determined gender roles and responsibilities. Because women in many developing countries, particularly in rural areas, have to travel by foot to fetch water and collect fuel for their household, they usually bear heavy transport burdens.

Rural transport issues. Women's and girls' mobility is often limited by their heavy domestic work load as well as by a wide range of cultural constraints. Limited access to transport infrastructure and services affects education, health, and survival of females due to cultural and time constraints. Studies indicate that there is a strong link between girls' school enrollment and road access. Every year, many women in

²⁸ For more guidance, see the World Bank Social Development Department's "Making Transport Work for Women and Men: Tools for Task Teams," at <http://go.worldbank.org/5UW1T2OUW0>. Also see the SSATP Gender and Transport Resource Guide at www.worldbank.org/afr/ssatp

developing countries die due to complications arising from pregnancy and child birth, and many of these deaths could be prevented by access to roads and transport services to prenatal and emergency medical care. Road safety on highways and in trade corridors (without facilities for pedestrian mobility and protection) going through rural areas is a major issue, especially for women and children.

Urban transport issues. Many urban transport systems in developing countries have not been designed to meet the needs of the poor and other vulnerable groups (for example, people with disabilities). The most common intervention is road and highway construction that mostly serves private car and truck owners. Lack of transport options hampers access to employment and limits social networks, particularly for women, who generally have fewer resources than men. Goods and services are sometimes more expensive in low-income communities due to poor infrastructure and services.

Urban transport service schedules are often based on peak travel times, such as to and from work, generally with radial routing to the city center. Off-peak travel to multiple destinations—combining several tasks (trip chaining)—which characterizes the travel of many women is often poorly served. Most transport pricing makes this type of multiple travel more expensive than travel directly to work in the city center. Such pricing and scheduling constrains women’s access to employment, markets, and social services. Transport fares are often beyond the means of the poor, particularly women. Women are more vulnerable to gender-based violence and crime in dimly lit city streets and access points for public transport. Platforms and bus/train designs rarely consider the safety needs of women carrying children and shopping bags, or the elderly and disabled. Poor air quality from increasing carbon dioxide emissions from vehicles also has greater impacts on pedestrians and nonmotorized transport users, many of whom are women.

Gender disparity in transport sector employment. Globally, transport and transport-related workers are predominantly male—in road construction and maintenance, transport services, and transport agencies. Like other infrastructure sectors, transport planning agencies, boards, and advisory committees at all levels are mostly managed by males.

HIV transmission and trafficking. Globally, more than 50 percent of the 42 million people infected with HIV are male, but women’s infection rates continue to spiral upward, and women now account for 58 percent of the HIV-positive population and 68 percent of all HIV-positive youth in sub-Saharan Africa. In sub-Saharan Africa, research indicates that the increase in HIV transmission is associated with road construction and has had a more negative impact on women than on men, in terms of higher infection rates and the burden of caring for persons affected by HIV/AIDS. In Asia, improved transport corridors have also accelerated the spread of HIV, and like in sub-Saharan Africa, the impacts of increased transmission may have a more negative impact on women. Recognizing these trends, the transport sector has taken action to counter them by requiring contractors to provide HIV prevention education to workers, and, in many instances, affected community members.

Displacement and resettlement. Gender inequalities in compensation for displacement and resettlement resulting from transport construction may have negative impacts on family well-being. Because land titles are mostly held by men, cash compensation for land or other assets is usually given to the male head of household, who may not share it equitably with other family members. Women and others with land-use rights may not be compensated for the loss of their livelihoods.

Value added by gender-responsive transport. Participatory, gender-inclusive assessment of transport needs and transport planning can identify the local needs of women and men, as well as problems and resources that can affect the outcomes of a project. The assessment and planning process can also help identify gender and other differences in potential risks and benefits of a project. This analysis improves distributional impacts, increases efficiency, and reduces unanticipated adverse impacts of the project. It also builds a local sense of ownership of transport infrastructure, and commitment to maintain and repair it, which increases sustainability. Experience has shown that engaging women as well as men in rural and urban transport planning and decision making taps their practical experience and often increases quality control and financial transparency. Increasing women's access to transport and markets can increase their productivity and the overall productivity of the household and community.²⁹

The following bullets provide key entry points for gender analysis and actions; these will be expanded in consultations with SDN Anchors and Regions.

- Analyze access and mobility patterns of males and females in different social groups, including pedestrians as well as drivers of motor vehicles.
- Use gender-informed measures to raise awareness about traffic safety and prevent accidents involving motor vehicles, pedestrians, nonmotorized transport users, livestock, and bush animals.
- Employ women and men in local road maintenance and erosion prevention.
- Provide HIV prevention information to transport construction workers; truckers, sailors, and other long-haul transport workers; and their wives and commercial sex workers.
- Ensure that transport projects include complementary socioeconomic components such as markets, boreholes for potable water, and public toilet facilities.
- Promote reliable, safe, affordable transport services.
- Increase accessibility and affordability of intermediate means of transport (donkeys, bicycles, carts, motorcycles, and three-wheelers).
- Introduce measures to ensure personal security and prevent gender-based violence during travel.

²⁹ Babinard, Julie, and Peter Roberts, "Maternal and Child Mortality Goals, What Can the Private Sector Do?" World Bank Transport Sector Board Paper 12 (2006); Kunieda, Mika, and Aimee Gautier, "Gender and Urban Transport: Smart and Affordable," Module 7, in *Sustainable Transport Sourcebook for Policymakers in Developing Countries* (GTZ, 2007); Lema, Antoine, Stephen Brushett, Negede Lewi, John Riverson, and Silue Siele, "Taking HIV/AIDS on Africa's Roads," Sub-Saharan Africa Policy Program Technical Note 35 (2003).

Annex 2:

Literature Review on Gender, Environment, and Poverty: A Political Ecology Approach

This literature review highlights the multiple ways in which gender, poverty, and environmental degradation are interconnected. With a focus on developing countries, this annex highlights the ways in which nature-society relations are gendered. This acknowledgement opens a space for new approaches for poverty reduction, environmental conservation, and gender equity as a means to inform development policies.

This work on gender, poverty, and environment builds upon the insights of a gendered political ecology (PE). The broader field of PE, a subfield of geography and anthropology, aims to influence technocratic and apolitical development policies and interventions by offering “chains of explanation,” rather than singular root causes, to interrogate the sociopolitical dimensions of natural resource access, control, and distribution. This approach emphasizes decision-making processes and the political, economic, and social conditions that influence environmental policies and development outcomes.

PE scholarship acknowledges gender power relations and their interactions with race, class, caste, and ethnicity in understanding how divisions of labor, environmental rights and responsibilities, environmental politics, collective action, and resilience are gendered that manifest in ideologies, hierarchies, discourses, and practices. The ways in which gender inequality, poverty, and environmental degradation unfold are spatially and temporally contingent. One of the goals of this framework is to assist planners and policy makers in identifying development planning priorities and effective approaches to promote sustainable development policies for the improved well-being of women and men in developing countries. This conceptual framework for the gender-poverty-environment nexus builds upon the World Bank’s three pillars of sustainable development: social inclusion, economic growth, and environmental sustainability. This framework is based on the premise that social, economic, and environmental factors interactively affect the livelihood alternatives and life choices of different people in various ways.

With this in mind, PE offers four propositions useful for capturing key dynamics of the gender, poverty, and environment nexus. It is important to consider these propositions during policy formulation and implementation in order to foster more effective outcomes for the three pillars of sustainable development cited above. These four propositions have fluid boundaries and should be seen as simultaneous processes useful to equitable development policies and these are : i) socioeconomic marginalization and natural resource degradation are mutually reinforcing processes; ii) protected area conservation and external control of natural resources can disrupt household and community production and social organization; iii) competing environmental interests shape environmental change; and iv) collective action and resilience can help mitigate negative impacts. The first two propositions explain common nature-society relationships, and these two typically lead to the next two such as competing environmental interests and/or the burgeoning of collective action among local producers, households, and communities as they undergo a variety of resilience strategies to cope with shifting environmental circumstances.

A focus on gender, poverty, and environment is a strategy to combat gender inequality in development policy and concomitant practices. To illustrate the ways in which development thinking will benefit from a more plural approach to development policies, this review highlights the ways in which unequal power relations infused with patriarchal notions of male dominance and women's subordination are promoted, mitigated, and resisted by poor women and men in the developing world. Other case studies from Honduras, India, Bangladesh and Kenya, among others, help develop a new approach to understanding an uneven access to development benefits in the developing world.

From the case studies, this review makes a few conclusions. These conclusions are meant to spur additional interrogation into the ways, despite gender mainstreaming, ongoing marginalization and challenges for men and women and their communities in the developing world continue to be gendered in such a way that women remain disproportionately excluded from development benefits. To mitigate these realities, case study findings suggest that:

- Development policies focus on gender-responsive projects where women have a space to be empowered and access to decision making.
- Gender-equitable land projects grant female heads of households' titles and ownership to properties or gardens upon which they draw their food. This is to increase food security, which will benefit entire communities and families.
- Control, access, and rights to land are key for women and poverty reduction. Not only will access and control of land grant women space to plant and grow food, but, as seen in mining sectors, women who have control over the space where mining occurs are more likely to hold better and less dangerous positions in the industry.

Annex 3:

Summary of the Online Discussion on Linking Gender, Poverty, and Environment for Sustainable Development

May 2 – June 17, 2011

A focus on the links between gender disparity, poverty, and environmental degradation is increasingly recognized as a key strategy for improving the lives of poor women and men. Acknowledging the ways in which relationships between the environment, society, and the economy are gendered opens space for new approaches to poverty reduction, environmental conservation, and gender equality.

The Social Development Department (SDV) of the World Bank conducted case studies in Ethiopia and Ghana to advance understanding of the dynamics underlying negative spirals of poverty, environmental degradation and gender inequality, and how to foster positive synergy in the sustainable development sectors, for example, energy, agriculture, natural resource management, water, urban development, and transport. The Bank-Netherlands Partnership Program (BNPP) supported this research.

An important component of the study design was an online discussion within and outside the World Bank on findings from the country case studies to “ground truth” the potential for wider application in other countries and to collect and share additional good-practice cases that address gender-environment-poverty links from as broad a range of countries as possible. Another aim was to get input on key elements needed for developing tools that could help government and development practitioners to design policies and projects that would foster positive synergy and improved social, gender, poverty, and environmental outcomes. SDV partnered with World Bank’s Independent Evaluation Group (IEG), who hosted the e-discussion on their Gender and Evaluation Platform.

Summary of the Discussions

The online discussion was organized around four topics to help address questions raised in SDV’s study. The first was “Understanding the Dynamics of the Gender-Poverty-Environment Links,” focused on a critical review of a draft conceptual framework that had evolved throughout the course of the case study research. The aim of the framework was to provide a guide to planners and decision makers on key gender, poverty, and environment factors that need to be considered when designing and implementing policies and programs. The framework was built on the World Bank’s pillars of sustainable development: social inclusion, economic growth, and environmental sustainability. The framework assumes that the pillars constitute the context in which the links interact and the areas of overlap among economic, environmental, and social spheres are where the positive and negative synergies take place. The field research indicated that formal and informal social institutions and power relationships are at the core of these synergies because they channel access to property rights, to resources, services, technology, economic opportunities, information, and voice in decision making needed by all groups for sustainable livelihoods. This access is differentiated by gender and other social characteristics. The research findings suggested that gender-poverty-environment synergies have the greatest impact in various problem scenarios: climatic shocks; chronic food insecurity; weak environmental governance; population pressure or decline; and inadequately compensated displacement. Discussion participants also commented on a summary of one of the eight cases examined in the country studies—Land Conservation and Smallholder Rehabilitation Project (LACOSREP2) in Ghana. Participants suggested that a number of important

elements were inadequately addressed by the framework, including environmental governance, basic education and advocacy, time poverty, and the gendered impacts of large-scale development initiatives (for example, the Inter-Oceanic Highway in Brazil, which has led to deforestation by cattle ranchers and logging and mining companies).

The second and third discussion topics focused on **gender and environment issues** identified in a 2011 gender and environment analytical background paper prepared for the new World Bank environment strategy (World Bank 2010b). “Environmental governance” and “managing multiple environmental risks” issues resonated well with the findings of the Ethiopia and Ghana case studies. The discussion on environmental governance critically examined recommendations from the gender and environment issues paper (World Bank 2010b) regarding what is needed to develop gender-responsive environmental governance: (i) links between women’s and environmental ministries; (ii) capacity building and improved participation of women in environmental governance bodies at all levels; (iii) expanded women’s involvement in demand-side accountability (for example, citizen report cards, gender audits); and (iv) quotas for women’s representation coupled with gender training to ensure men’s support. Additional evidence from the Ghana and Ethiopia case studies confirmed the importance of formal and informal environmental governance institutions to environmental sustainability, gender equality and sustainable growth, but also identified challenges to the development of environmental governance that is gender responsive, equitable, and transparent. Discussion participants pointed out the need to address constraints on women’s voice in environmental decision making, poverty, illiteracy, gender stereotypes, and women’s time constraints. They proposed multiple systems to increase women’s voice, such as quota systems, skills training, advocacy and dialogue with formal and informal institutions, support from civil society organizations and gender audits, all of which require resources.

The discussion of “managing multiple environmental risks” started with the notion that gender-poverty-environment links emerge the strongest in vulnerabilities and resilience to multiple environmental risks, such as those associated with climate change—floods, droughts, sea level rise, coastal and riverine erosion, temperature changes, and more frequent and severe tornadoes, cyclones, and the like. These risks threaten food, assets, and livelihood security as well as health and safety, and may lead to migration and conflict. Gender differences in vulnerabilities and adaption to climate associated risks were evident in both the [Ghana](#) and [Ethiopia](#) case studies. Participants discussed whether or not recommendations proposed in the gender and environment background paper were adequate to address these vulnerabilities through: (i) expanding women’s opportunities and capacity to participate in climate change adaptation and disaster planning and recovery; (ii) expanding availability of property insurance policies and social protection for the poor; (iii) providing gender equitable access to community-based REDD (reducing emissions from deforestation and forest degradation in developing countries) and carbon market incentives and benefits; and (iv) including gender analysis in vulnerability assessments. Participants stressed the importance of monitoring and evaluating women’s participation and the impacts of the interventions. The [Center for International Forestry Research](#) has produced a tool to disaggregate data by sex on tenure rights to land and carbon to inform REDD project preparation, which to date has focused on indigenous people and safeguards, but not the gender dimension. Participants also suggested the need for more specific responses to gender-based vulnerability to disasters, including involving women in disaster risk management, targeting female heads of household for preparedness, and strengthening response and relief activities to improve resilience, preservation of social networks, and access to income/employment.

The final discussion pulled together the threads of the previous discussions to inform the next steps in developing useful tools to foster positive gender-poverty-environment dynamics in sustainable development policy and/or projects. Participants considered the following conditions (for example, climatic variability, deforestation, disasters, financial crises, inequitable access to resources, weak environmental governance, food insecurity, time poverty, appropriation of common property, resettlement, and so forth) under which the risk of a negative spiral (environmental degradation, increasing poverty, greater gender inequality) is highest. They also suggested the most effective approaches to turn a negative situation into a positive spiral. Discussants pointed to population pressure as a critical area, along with human security measures, basic education, food security, environmental governance, and attention to the impacts of financial crises and resettlement.

Themes Emerging in the Discussions

Most of the online discussion focused on specific themes or issues. With some variation, similar themes emerged in each of the discussions even though the discussion topics differed. Every discussion raised the importance of *women's participation and voice and various measures to create space for women at decision-making tables at all levels*. In addition, gender-responsive environmental governance emerged as a key issue in all the discussions. Access to natural and productive resources, particularly land tenure, also emerged across the discussions, as did the opportunity costs of women's time poverty due to domestic and care responsibilities. The greater socioeconomic marginalization of poor women compared to men due to environmental degradation, climate change, and natural disasters emerged in three of the discussions, as did the role of education. Topics that emerged in only one or two discussions included the growing population pressure on natural resources, the importance of gender-responsive monitoring and evaluation, working with traditional leaders or change agents, the potential for REDD+ to start empowering women after ignoring them and their usufruct holdings in terms of the carbon offset market. The strategic use of gender action plans in investment programs was also discussed. The discussion around the major themes is summarized in the following sections of this annex.

In addition to the gender divide, the participants noted rural versus urban discrepancies in sharing development benefits, ethnic differences, and the analytical divide between gender and environment efforts, that is, the lack of attention to environment in women's empowerment activities and lack of attention to gender in environment initiatives. There was also a divide among discussion participants between those who wanted clear-cut cause and effect relationships or single factors to address the issue of gender, poverty and environment, in contrast to those who were comfortable with the complexity and ambiguity of multidimensional and overlapping relationships. For example, one participant viewed population as a primary driver for the negative spiral of environmental degradation, poverty, and gender inequality. For another *"the problem starts with lack of education."* Yet another wanted to divide environment by sector because it was too broad—*"too much of a grab bag."* In contrast, others suggested the need to examine the negative spiral from the perspective of the beneficiaries themselves—women and men in developing countries—to understand why they feel they need many children, how they perceive their environment, and rituals and roles they play in maintaining a balance with the environment. One participant proposed taking a broader "human security" perspective. The researchers conducting the Ghana case study found that local people had a multidimensional perspective of the relationship between gender, poverty and environment, reflecting the nature of their lives, which are not segmented into sectors.

Access to Natural and Production Resources and Land Tenure

One participant reported that giving poor women and men user rights and access to natural and productive resources was one of the conclusions made by participants in national and regional workshops on gender, poverty, and environment in Ghana. Another suggested the need to pay greater attention to access to land and natural resources in the analysis, but not just land tenure. Discussing the lack of attention to gender in REDD, one participant noted that under statutory and customary law, indigenous peoples or forest-dependent communities have access to tropical forests, however, it cannot be assumed that women have equal access to or rights over these resources. Because REDD+ is a performance-based mechanism, tenure and ownership of forests and carbon resources play a critical role in determining the distribution of REDD+ funding. However, women are often excluded from holding a title to land.

Time Poverty

One participant noted that “in Nigeria poverty has a woman’s face.” Gender-based norms ascribe women the responsibility of carrying out tasks related to household management (caring for the young and elderly, cooking, cleaning, and related chores) with no remuneration. Women’s dual load prevents them from pursuing education and economic opportunities or attaining management or decision-making positions at the same pace as their male counterparts in all sectors and spheres. Two participants stressed the need to identify measures to reduce the time constraints that limit or prevent women’s participation in environmental governance. For example, a Lutheran World Relief project in Niger constructed wells and water storage facilities, freeing women’s time and reducing exposure to gender-based violence. A study by the Independent Evaluation Group of the World Bank on the hazards of natural disasters found that women’s limited mobility, because of caregiving responsibilities and cultural restrictions, along with a lack of information on shelter options and disaster warnings, made them more vulnerable to disasters.

Population Pressure

One participant stated that “we will never cut poverty and achieve any kind of environmental sustainability without women being able to control the timing and spacing of their children.” She also stressed the importance of girls’ education. Another noted that as long as there is high infant and child mortality in developing countries, women will continue to have many children, because children are perceived as “old-age security” by the parents. Multiple actions are needed for saving children and women’s lives, including access to education; quality health, sanitation, and water services; and access to and ownership of productive resources by poor women. One participant suggested that it is not just about family planning and birth spacing, but also about understanding why men and women feel that they need to have many children.

Women’s Participation and Voice in Environmental Governance

One participant proposed the need for explicit frameworks addressing gender-responsive decentralization and participation at the macro-, meso-, and microlevels of decision making. To do this, multiple approaches are needed, including capacity building and skills training for women and women’s groups, quotas for women’s representation in decision making at all levels, sustained grassroots advocacy with support from CSOs, application of laws and international conventions on women’s rights, and dialogue with formal and informal institutions to achieve gender equality. Another described the approach used by ENERGIA at the national level providing training, networking, and resources for studies and projects on gender and energy. Gender audits of the energy sectors in Kenya, Nigeria, Ghana,

and India used consultative processes in the formulation of gender action plans by local energy and gender experts. The plans have influenced national energy policies, electrification master plans, and the representation of women and gender issues in national governance discussions for the energy sector. The gender action plans were also incorporated into the project cycle and planning documents through monitoring and evaluation frameworks and operational plans.

Indigenous Environmental Intermediaries

Two participants suggested the value of working with and through local indigenous leaders and drawing on local environmental knowledge to promote positive gender-poverty-environment links. Among them, one described the role of women in the Balinese *Subak* institution for water and agricultural management. Women play an important role in Subak rituals for balancing the relationship between God, humans, and the environment to keep all aspects of life harmonious. She suggested women in charge of these rituals could also play significant roles in food security and biodiversity protection. Another suggested identifying local change makers or visionary religious leaders, youth and female leaders and working with them in thinking about how to link individuals, schools, families, and community values to a vision for improving lives. She stressed that *“the interaction between social-environment-economic dimensions of one’s living environment must be defined by the beneficiaries themselves.”*

Case Examples

One participant described a striking positive change in the gender composition of community forest user groups in Nepal over 14 years. The Maoist civil war helped elevate the lower castes and women in the community forest user groups. Quota requirements from the government also helped equalize women’s participation in leadership positions. High male outmigration in some areas also facilitated female leadership. While there has been some debate over whether or not women are mere tokens and men still run the forest groups behind the scenes, women are now often the majority in group membership, and over time they have gained leadership skills. Men have also adjusted to these changes and gender roles are evolving.

A participant described the negative impact of environmental degradation, disasters, and fuel crises on women in Sri Lanka. Nearly 80 percent of the population in Sri Lanka lives in rural areas, pursuing agricultural livelihoods. The decline in forest cover and lack of soil fertility are jeopardizing the subsistence livelihoods of the poor, reducing their income, and pushing them further into poverty. Rural women are most affected by financial crises, environmental degradation, and disasters. Twenty percent of the households are headed by women who lack the contacts and opportunities enjoyed by male heads of household. Rural women depend on forests, mangroves, and river banks for their economic activities, including crafts sold for income. Deforestation, cutting of mangroves for shrimp tanks, and sand mining have undermined women’s livelihood. *When kerosene prices increase, fuelwood prices also rise, making it difficult for poor families to cook.*

Transformation of the Conceptual Framework

The online discussion made a major contribution to the rethinking of the conceptual framework for the analysis of the case studies. Based on the feedback from the participants, the analysis was refined using a PE framework that encompassed the issues raised. The four key assumptions guiding the case analysis include:

- i. Socioeconomic marginalization and natural resource degradation are mutually reinforcing processes that are gendered in their impacts on time use, food security, health, and vulnerability to climate change impacts.
- ii. The appropriation of land for the “public good”—for conservation areas, concessions to mining and lumber, or construction of large-scale infrastructure such as hydropower dams—disrupts affected household and community livelihoods, production, and social organization.
- iii. Competing environmental interests shape environmental change, and the outcomes of socioeconomic marginalization and natural resource degradation, as well as appropriation of natural resources for the public good, intensify competing interests along lines of gender, class, and ethnic differences.
- iv. As women and men confront changing circumstances brought about by marginalization, resource degradation, limited access to natural resources and conflict over resources, a common response is collective action and fostering of resilience strategies to address the negative impacts.

Next Steps

There appears to be continued interest in the discussion topic; people continued to sign on to the discussion group after the end of discussion date. It would be useful to explore potential platforms to continue the dialogue.

ANNEX 4:

Summary of Ethiopia Participatory Rural Appraisal Report

This report was produced by MEGEN Power Ltd (MGP) as part of the World Bank case study of the links between gender, poverty, and environment in Ethiopia. The report contains the outputs of Task-III, namely the “Participatory Rural Appraisal (PRA) of Local Perceptions of Linkages of Gender, Poverty and Environment” conducted in Ethiopia. The purpose of the PRA exercise was to better understand the way in which women and men at the local level perceive the links between gender, poverty, and environment to inform planning and implementation of infrastructure and other sustainable development operations.

The PRA was conducted in three rural communities in different parts of the country. Although the three communities are not fully representative of the whole country, efforts were made to include communities from the major agroecological zones, livelihood systems, and sociocultural backgrounds. The three PRA communities include a highland mixed farming community in the Tigray Region, a lowland farming community in the Southern Nations, Nationalities, and Peoples’ Region (SNNPR), and a pastoralist community in the Somali Region of Ethiopia. The main characteristics of the communities are summarized in table A4.1.

Table A4.1: Main Characteristics of the Communities in Study Sites

	Region		
	Tigray (northern Ethiopia)	SNNP (southwestern Ethiopia)	Somali (southeastern Ethiopia)
Woreda	Kilte-Awlalo	Dalocha	Shinile
Kebele	Mahabere-Weyni Abraha-Atsbaha	Dile-Datie Burka-Dilapa	Harre Baraak
Agroecological zone	Highland farming	Lowland farming	Pastoralist
Livelihood system	Mixed livestock/farming	Cereal farming	Pastoralism
Ethnic group	Tigray	Silti	Somali
Dominant religion	Orthodox Christian	Muslim	Muslim

Focus group discussion and key informant interviews are the two main methods used in the PRA. Two focus group discussions (one with women and the other with men) were conducted in each of the three PRA communities. In addition to gender, attempts were made to include participants from different backgrounds including wealth status, education, and age.

The main findings of the PRA are summarized on the basis of key thematic areas of the study, which include perceptions of poverty and vulnerability, gender relations and dynamics, and the links between gender, poverty, and environment.

Local Perspectives on Poverty and Vulnerability

Local people in all the three study areas perceive poverty as a multidimensional phenomenon. However, assets are used as the main criteria for wealth ranking, with some variations in the mix and order of

importance: oxen followed by land (in the case of highland farming community), quality and size of land and oxen in the case of lowland farming community, and livestock in general in the case of the pastoralist community. Women in the lowland farming community also stressed the importance of prudent management of assets, especially financial assets. The main manifestations of poverty identified by informants include: inability to provide for basic needs (especially food, but also health care, housing, children's education) and lack of cash reserve for emergency.

Three main wealth groups were identified in the PRA sites: rich (better off), middle, and poor. A fourth category of what may be called the "destitute" (the poorest of the poor) was also mentioned in the highland farming community. The category of destitute tends to overlap with the term "vulnerable groups" because it includes people with disabilities, the chronically ill, orphans, and households headed by the elderly and women. However, informants also noted that all individuals and households with these characteristics are not necessarily destitute and vulnerable: for example, it was frequently noted during the FGDs that there are female-headed households and other women who are better off compared to some men.

The two farming communities in the Tigray and SNNP regions felt that overall poverty and vulnerability were declining, while the pastoralist Somali community indicated that they were increasing. The positive perceptions of poverty reduction trends in the two farming communities are related to development project interventions including: an improved safety net that stabilized basic consumption, improved access to basic services, and increased agricultural production and marketing. In contrast, in the pastoralist case study site, the overall perception was one of a downward spiral into poverty and destitution caused by severe and recurrent drought episodes in recent years, environmental degradation, and declining access to natural resources aggravated by market shocks.

Local Perceptions of Gender Relations and Dynamics

The PRA of local perceptions of gender relations included a number of themes such as gender-based access, ownership, and control over assets; access to social services and well-being; power and political participation; and gender-based violence and harmful traditional practices.

In all three case study communities, the gender division of labor is characterized by the limited participation of men in domestic activities and the participation of women in all agricultural activities except ox-plowing (in the farming communities) and substantial participation of women in livestock-rearing activities in the pastoralist community. As far as gender roles are concerned, one main similarity across the study sites is the tendency to undervalue women's work by magnifying and attaching greater importance to certain male-oriented tasks such as ox-plowing (in the case of the two farming communities), the herding of larger livestock, and the role of men in seasonal migration (in the pastoralist community). However, in all case study communities, it was acknowledged by both groups that women shoulder multiple responsibilities and work longer hours than men.

Women's participation in economic activities is perceived to have increased over time, and both groups agreed that women carry a greater work burden. In the pastoralist community in particular, increased poverty and vulnerability in recent years have obliged women to engage more in alternative income-generating activities such as petty trade and services, because men's earning role has declined due to massive loss of livestock caused by recurrent and severe droughts.

In the two farming communities, perceptions related to the overall trend of women's property rights are positive and optimistic; both women and men believe that women's property rights have improved over time. This is especially so at the Tigray PRA site, where both customary laws as well as the political commitment of the Tigray People Liberation Front (TPLF) are favorable toward women's property rights. Women in the two farming communities noted that improved and more secure property rights have contributed to greater voice and participation of women in household decision making: *"men now think twice before making decisions and taking actions unilaterally because they know that the likelihood of women taking half of the property in case of conflict and separation is higher now than in the past"* (Mahebere-Weyni, Tigray Region). There is also greater willingness among women and men to cooperate and work harder for the benefit of their households, because women now know that they will not be *"chased away empty handed"* (Dile-Datie, Dalocha, SNNPR). This implies that the link between property rights and access to resources is positive and enhances women's agency and decision-making role, at least at the household level, which in turn contributes to greater mutual trust, women's sense of security, asset building, and poverty alleviation.

In the pastoralist community, women have very limited property rights—a condition reinforced by strong, traditional patriarchal institutions and values. Although women have access to assets, especially livestock for subsistence purposes, they are not allowed to sell livestock without the permission of men. Traditionally, wealth status and polygamy were interrelated, and with increasing livestock wealth, men marry additional wives, and, regardless of women's wishes, this process entails the splitting of livestock for bride-wealth payment and for maintenance of new wives and their children. This tradition can be a major risk, resulting in gendered vulnerabilities because the management and allocation of resources and the provision of basic needs to complex, extended polygamous family units becomes very difficult in times of shocks, such as the recurrent and severe droughts of recent years.

According to perceptions of local people (both women and men), overall access to social services has improved significantly in recent years, but with some variations by site and types of services. For example, all three PRA communities have at least one primary school. Although there were more literate men than women, the trend in recent years has been a rapid expansion in primary school enrollment. Currently, the primary school enrollment ratio of boys and girls is almost equal in the two farming communities. Starting from a very low base, the enrollment ratio for girls is still lower in the pastoralist community, but growing steadily in recent years.

Similarly, all three PRA communities have health posts (the lowest tier of the public health system), and perceptions of both women and men are that access to health services, including maternal and child health care, has improved. One important point spontaneously raised during discussions in the two farming communities was improvement in access to family planning and the use of contraceptives.

With regard to the potable water supply, there are significant differences among the three sites: the highland farming community (Mahebere-Weyni) is a beneficiary of a new and large drinking water supply financed by a bilateral donor. In contrast, the lowland farming community (Dile-Datie) has no clean drinking water supply, despite being located within Dalocha Woreda, where an extensive drinking water supply system was installed by an international NGO as part of its Dalocha Integrated Rural Development Program (DIRDP). Hence the population in this kebele relies mainly on streams, and women have to travel long distances to fetch water. An additional problem is the pollution of the water sources by municipal waste from nearby towns, which is disposed of near the streams. In the case of

pastoralist community, two boreholes (each with a hand pump) exist, but are little used, because people did not like the taste of the water from these sources and prefer their own hand-dug shallow wells located in dry river beds.

Local perceptions on the participation of women in local governance and decision-making processes and institutions show significant variations between the two agricultural communities and the pastoralist community. Local men and women in the two farming communities believe that the participation of women in local political and public decision-making forums, including participation in formal elections and representation in local decision-making institutions and development activities, has improved in recent times: *“in old times women were not allowed to participate in public meetings at all”* is the common point made by women. In the two farming communities, women are also better organized (in local women’s associations), and there is also more positive discourse and more efforts to increase public awareness of gender issues and women’s rights than in the pastoralist community. However, even in these agricultural communities, the representation of women in key organs of local government, namely the kebele administration, remains very low.

The pattern of local government in the pastoralist community differs significantly from the agricultural communities because informal or traditional institutions of governance (especially the clan system and the council of clan elders and chiefs) are still relatively powerful and play a greater role in local governance. Although they coexist with formal local governance, informal institutions tend to command greater respect and legitimacy among the local population and have many positive attributes. However, informal institutions such as councils of clan elders are exclusively male dominated and women are not allowed to participate in the deliberations and decision-making processes. The formal institutions of local government tend to be more inclusive of women, youth, and the poor than informal institutions.

According to the perceptions of both men and women informants in the two agricultural communities, gender-based violence and harmful traditional practices have decreased considerably in recent years. In the highland farming community in the north, the prevalence of wife beating has now become rare; early marriage (under 18 years of age) is prohibited and strictly enforced. Polygamy is not practiced in the predominantly Christian north; and female genital mutilation is also rare in this area. In the lowland farming community in the south, polygamy and female genital cutting were highly prevalent in the past, but both have decreased significantly in recent times. In the pastoralist community, polygamy, female genital mutilation, and wife inheritance are reported to be the main harmful traditional practices, and they are still practiced. However, according to both women and men informants, polygamy has declined in recent years, not due to any significant change in the attitudes and values of men, but due to increasing poverty and destitution and the heavy loss of livestock due to recurrent and severe droughts.

Local Perceptions of Gender-Poverty-Environment Links

Three key issue areas are examined under local perceptions of links between gender, poverty and environment. These are: (i) access to natural resources for well-being; (ii) shocks, climate change, vulnerability, and resilience; and (iii) environmental governance and natural resource management.

Access to Natural Resources, Gender, and Poverty

Land and soil degradation are severe problems in the two farming communities, especially in the highland farming community in the Tigray Region, where remarkable efforts were being made to reverse

land degradation through various soil and water conservation activities. In both farming communities, the problem of small, fragmented, and declining holdings constitute formidable challenges to food security and poverty alleviation.

With regard to the gender aspects of access to farmland, women's property rights in general and that of land rights in particular have improved in recent decades. However, significant constraints persist, including the relatively small holdings of female heads of households and the various constraints they face in effectively controlling and managing land and agricultural production. One of the most serious constraints faced by women regarding effective control over land is the traditional taboo against women engaging in plowing; because of this, many female heads of households are forced to rent out their land and derive only a fraction of the agricultural produce. It should also be noted that the taboo that prevented women from engaging in plowing (women are engaged in almost every aspect of farming except plowing) for ages is being challenged, mainly by women in the lowland farming community, but also by those in the highland farming community to some extent.

In the smallholder mixed farming system characteristic of the two agricultural sites, livestock constitute very critical assets and integration of the two (crop and livestock) is vital for production and food security. However, competition for limited land resources between crop production and livestock grazing is a major issue due to the dual pressures of conversion of grazing land into farmland and area closures (as a conservation measure); village grazing commons are disappearing or play very small role as source of livestock feed. There is land officially designated as "grazing land," but it is of limited value as source of livestock feed due to its barren and degraded nature. On the positive side, however, farming households have access to grass—cut and carry—from closed conservation areas.

The poverty implication of the declining access to village grazing commons is that increasingly households have to rely on their own resources (private grazing land, crop residue) and hence the pressure is more intense on resource-poor households. The gender dimension of the above process and pressures is that increasingly livestock have to be confined in the homestead area (tethered grazing/zero grazing), which in turn increases the role and burden of women in livestock production.

The situation in the pastoralist case study area is significantly different from the two agricultural communities. In the pastoralist community, the main principles and practices governing access to rangeland is communal ownership and management of grazing land and rights of access based on both kinship (clan system) and territory. In the pastoralist community, exclusion or restriction of access to grazing land of any group within the community was not a problem, and alienation or enclosure of common grazing land as private farm or for individual pasture production is still nonexistent. The problems affecting grazing land include recurrent and severe drought; the degradation of rangeland due to increasing pressure to convert to farmland; and invasion by alien plant species.

The findings from the PRA study are complex and mixed related to access and management of water resources, and can be summarized in terms of three points. Firstly, the highland farming community owns a large and reliable clean drinking water supply system, while there is little improvement or even worsening conditions in the other two study sites. Although, the number of sites is too few to make generalizations, the findings reflect trends at the national level; significant progress has been made in recent years in improving access to drinking water supply, but there are still significant variations at local levels and a substantial proportion of the rural population is still without access to clean water. Secondly,

the study findings revealed a divergent process characterized by increasing coverage of improved water supply, and deterioration in the conditions of natural water sources (rivers, springs, lakes) caused by environmental degradation, rising pressure from growing human and livestock population, pollution, and other factors. Third, there is also growing demand and competition over access to water resources within communities for different uses (domestic, livestock, small-scale irrigation) and across communities (down and upstream users) as well as a lack of integrated management of water resources to ensure equity and sustainability. These problems can be taken as symptomatic of the main and probably common challenges facing the sustainable utilization of water resources and underline the urgent need for integrated water resources management in which gender, poverty, and environmental sustainability are all top priorities.

The overall conditions and trends related to household energy and access to fuelwood can be characterized as negative and deteriorating in all the sites, although the severity of the problem varies by site to some extent. In the two agricultural communities, access to fuelwood is subject to the same pressures as access to grazing land (deforestation and conversion of woodland into farmland and area closure) and as a result, village commons are no longer sources of fuel. In addition, at present, collecting fuelwood from closed conservation areas is not allowed. However, the problem of access to fuel varies: it is more severe in the highland farming community where cow dung is the main cooking fuel, and dung work, perceived as “dirty work,” is almost exclusively the work of women and girls. In the case of lowland farming community, the problem is not that severe, and woody biomass is the main cooking fuel. The poverty dimensions of these trends is that the decline of village commons and increasing reliance on own resources puts more pressure on poor households with limited land and livestock resources and agricultural production, especially women and girls, who are responsible for fuel collection.

In the pastoralist community, the main source of fuel for cooking is woody biomass collected from communal woodland. The type of woody biomass collected by women and used for domestic purposes is mainly branches, leaves, and twigs supplemented by dead wood. Although, shortage of fuel has not reached a critical stage yet, women informants noted that distances to sources have increased over time due to the clearing of woodland near the permanent camps and villages.

Finally, from a policy and operational perspective, the findings from the study areas indicate that the issue of household energy and access to fuelwood is given the lowest priority at all levels of government, and there have been very few efforts to systematically analyze and integrate the gender and poverty dimensions of household energy into development interventions, including environmental conservation and natural resource management projects and activities.

Shocks, Vulnerability, and Resilience

Shocks, vulnerability, and resilience constitute the second key issue area examined in local perceptions of linkages between gender, poverty, and environment. Drought and rainfall variability are identified as the two most important types of shock affecting livelihoods in all the three study sites. Local informants believe that the frequency and severity of drought episodes and climatic variability have increased in recent years.

Even compared to smallholder agricultural livelihoods, pastoralist livelihoods tend to be more vulnerable in a number of ways. First, for pastoralists, the loss of livestock means the loss of both the asset or capital

basis of their livelihood as well as their direct source of subsistence and income. It takes longer time to restock livestock than, for example, to return to cultivation by farmers, and the most important point is that recurrent and severe drought episodes in recent times have severely disrupted the traditional processes and mechanisms of livestock restocking. Another vulnerability facing pastoralists is the convergence of climate-related shocks and market shocks, in which the prices of livestock decline sharply while the price of food grains increase. Lack of basic services and infrastructure make the delivery of relief assistance, rehabilitation, and development interventions much more difficult and expensive in the pastoralist communities.

There is clear recognition of links between shocks, gender, and poverty in local perceptions in all the study sites. Participants of both women's and men's focus discussion groups indicated that women, especially pregnant and lactating women, small children, the elderly and the disabled, are most vulnerable to shocks. In all the three study communities, both women and men participants identified gender roles and responsibilities as the main factors for differences in vulnerability to shocks: for example, it was frequently noted that shocks as well as environmental degradation are associated with the shortage and scarcity of food and natural resources (water, fuelwood, fodder); because women are responsible for management of household food resources and provision of basic needs, they bear the brunt of the pressures, strains, and stresses.

In the two farming communities, both women and men participants asserted that there is no discrimination or male bias in the allocation of food (except fresh milk in the case of lowland farming community), either in normal times or in times of shocks and shortages. In the pastoralist community, male bias in intrahousehold allocation of resources, especially food, which exists even in normal times, tends to be intensified in periods of drought and shortage. The PRA findings also indicated that women's ability, resilience, and sacrifice is very important for survival and recovery from shocks. In the pastoralist community, for example, women have proved to be more flexible and resilient than men in engaging in alternative income-generating activities and in coping with the drought-induced process of poverty and destitution.

The poverty dimensions of shocks and environmental degradation and their differential impacts are attributed to assets and livelihood strategies of the poor and the rich. While major drought and famine episodes affect almost all households, the poor are more vulnerable to the negative impacts of shocks and environmental degradation than richer households, because the poor have very limited resources and options to cope with shocks in the first place.

Local people in the study communities use various coping mechanisms, some of which are common to all sites, while others are site or livelihood specific. Reducing consumption, asset disposal, and greater reliance on informal transfers are the common coping mechanisms practiced in all sites. Migration is also a common practice, but long-distance migration with livestock in search of pasture and water is specific to pastoralist livelihoods. Although not typically a famine crop, greater reliance on cactus (known locally as *Beles*) was mentioned in the highland community. A related and interesting coping mechanism is reliance on *Enset*, mentioned in the lowland farming community. This strategy combines the use of a drought-resistance food crop and reliance on a social network across the farming system: households in the lowland cereal farming community received or borrowed *Enset* from relatives in other neighboring districts with *Enset* farming systems.

Due to the traditional gendered division of labor, the responsibility for managing the dwindling food and other basic resources in times of crises and the associated strains and burdens is mainly shouldered by women. For the same reason, long-distance migration in search of employment or in search pasture and water for livestock is not an option for women in male-headed households. Reliance on environmental resources (sale of fuelwood and charcoal) is perceived as a coping mechanism of the poor and women. However, it is no longer a coping mechanism in the two agricultural communities due to deforestation and environmental degradation, while in the pastoralist site, increasing poverty and vulnerability is forcing more people (including formerly better-off households) to rely on the sale of firewood and charcoal. This scenario implies links between shocks, environmental degradation and poverty, that is, shocks increase pressure on natural resources (resulting in accelerated deforestation and environmental degradation), and the latter in turn contribute to increased vulnerability to shocks and poverty.

Another important finding from local perceptions is that local coping mechanisms are not static and do change and adapt to changing political, policy, economic, and sociocultural conditions: for example, according to informants, the role of social networks as an informal safety net has changed over time, and the trend has been the narrowing of the circle toward close relatives and neighbors. More importantly, it is believed that the capacity and willingness to provide social support is undermined by a generalized process of impoverishment due to recurrent and severe droughts. This perception is strong, especially in the pastoralist case study site. This indicates that although there is no doubt that local coping mechanisms and informal social safety nets are very important, the key question at present is the viability and effectiveness of indigenous coping mechanisms and social safety nets when faced with formidable challenges, from both the frequency and intensity of shocks as well as risk factors and vulnerabilities arising from other sources and processes of change. Hence, a realistic and evidence-based assessment of local coping mechanisms and informal safety nets is indispensable for a full understanding of the nature and problems of shocks, vulnerability and resilience, and to help devise more effective and sustainable disaster risk reduction policies and interventions, while considering the links between gender, poverty, and environment.

Environmental Governance and Natural Resource Management

In the two agricultural sites, formal local government institutions (the kebele administration and related committees) play a dominant role in environmental governance and natural resource management at the local level. There are no traditional or informal institutions specialized in natural resource management, and existing informal institutions are not involved. The gender and poverty dimensions of natural resource management should be viewed in terms of the extent to which women and the poor are represented in the formal institutions and related committees. The findings indicate that efforts have been made to make such institutions as diverse as possible through inclusion of women, the poor, and youth.

The conditions in the pastoralist site differ significantly from those of the agricultural sites: both formal and informal institutions coexist and have roles in natural resource management. However, informal institutions play greater role and command greater respect and legitimacy. These informal institutions mainly consist of councils of clans. While they have many positive features, informal institutions of natural resource management in the pastoralist community are composed exclusively of males.

Annex 5:

Summary of Ghana Participatory Rural Appraisal Report

One task of this study of the positive and negative links among gender, poverty, environment, and infrastructure is to, in conjunction with documentation of the good-practice projects at the community level, conduct a participatory rural appraisal (PRA) in selected communities in the good-practice project areas. The purpose is to better understand the ways in which women and men at the local level view the relationship between gender, poverty and environment, and their interactions with infrastructure and other sustainable development programs and the strategies and approaches that they consider most beneficial and sustainable. This report also sets out to explore the positive and negative impacts of projects on local communities and study the level of community engagement throughout the project life cycle.

To carry out this task, the PRA was conducted in four agroecological zones, namely Guinea Savannah, Transition, Coastal Savannah, and Forest. Two communities were selected from each zone (see table A5.1). The field teams held separate focus group discussions with men, women, children, and youth on issues such as poverty and vulnerability, gender relations, environmental sustainability, shocks and adaptability measures, and the impact of development projects on the poverty-gender-environment nexus.

Across the eight communities studied, infrastructure programs have been shown to make a major contribution toward:

- Providing alternate and enhanced livelihood activities to the community
- Improving access to key services such as health, education, and potable water
- Empowering beneficiaries—especially the extreme poor and women—to move out of poverty.

The study shows that communities have a high level of awareness of both the links between poverty, gender and the environment, and the positive and negative impacts that infrastructure and sustainable development projects can make on these. It is understood, for example, that improving the economic status of women has the potential to lift a family out of poverty and/or transform the gender dynamics within both the household and the broader community.

Communities are also acutely aware, however, of infrastructure and development project shortcomings. Negative impacts were most notably cited in the context of long-term environmental sustainability. Not only do some infrastructure projects fail to address environmental, gender, and poverty concerns, some exacerbate environmental degradation through deforestation and poorly managed project implementation, plunging many people further into poverty.

All communities see enhanced community engagement as fundamental to the success of future infrastructure and development projects. Success in this area to date has been mixed, however, there is a clear sense that greater community participation in the conception, design, implementation, and monitoring will help ensure that future projects are well targeted and sustainable.

Key Indications and Key Policy Issues for Consideration

There are serious infrastructure gaps remaining to be filled across the four ecozones, ranging from inadequate provision of electricity and water, to the need for well-equipped health and medical centers, and the need for new schools to attract teachers. Community members have high hopes for infrastructure and development projects, they expect projects will:

- Address existing infrastructure shortcomings
- Create employment
- Improve access to land
- Increase productivity
- Empower the poor and vulnerable
- Raise community living standards.

Across the communities, the most effective infrastructure projects for poverty reduction are seen to be those that directly enhance economic activities—for example, a road that facilitates the transport and sale of goods to market, or a dam that improves agricultural productivity. The responsiveness of individuals to exploiting opportunities that an infrastructural project brings, and conversely, the ability of the poor and vulnerable to resist or recover from the negative effects of a project as well as a changing environment, is largely seen to depend on the assets at their disposal.

The gender-poverty dimension is most directly incorporated at the point where infrastructure delivers a time surplus, allowing people, usually women, to minimize time wastage, and redirect their energies toward income-generating activities. Improved access to water is the most obvious example; time saved fetching water can be redirected toward more commercial activities.

The independence of women is clearly tied to their economic independence. Throughout the course of this study, it was repeatedly noted that women who contribute financially to the household and to community development possess an elevated status in terms of respect and recognition, which they are able to use to their economic and social advantage. *This is seen clearly in the way in which an increase in women's economic status affects education participation rates and the use of health care services.* While many women are already involved in economic activities such as petty trading, shea butter processing and so forth, these are often directed toward supporting basic living expenses. However, additional income generated by women through increased economic activity or savings made as a result of the provision of an infrastructural project may be directed toward education and health care, thus providing long-term benefits to their families. Infrastructure and development projects are seen as key mechanisms for delivering the increased financial stability to allow such choices.

The most unpopular infrastructure projects are those that either fail to deliver or that break down due to poor planning and management. Particularly in the coastal regions, respondents repeatedly expressed their frustration at projects that were not properly completed or did not function as intended. Similarly, projects that come with a high, ongoing user fee price tags are also resented.

Environmental degradation is the most commonly cited negative impact of infrastructure projects. It threatens to not only undermine economic gains, but also erodes gains made in relation to poverty and gender. Widespread deforestation, including land clearing for project development, is destroying local economies and changing ecosystems. Declining soil fertility is further impacting harvest yields and

constraining economic activity. These two factors alone are making communities even more vulnerable in the face of the changing climate.

Enhanced community engagement and participation are fundamental mechanisms for addressing issues within the gender, poverty, and environment framework. Communities were adamant that improved consultative mechanisms would have helped to address many of the issues that have plagued these infrastructure projects. Most importantly, consultation must involve all members of the community regardless of age, gender, or socioeconomic status—from the traditional authority down to the poor and vulnerable.

To ensure that future projects are designed and implemented in a way that ensures maximum impact on the three core goals of gender equality, poverty reduction and environmental sustainability, the study findings recommend:

- To reduce poverty, projects must be designed so that they have direct impact on economic activities through improved production, processing, storage, and marketing.
- For projects to have maximum impact on gender, they need to directly result in a reduction in time and effort spent by women in carrying out productive and reproductive responsibilities and at the same time increase their income, because these factors are clearly tied to their level of independence.
- More effective consultation with the target communities is important. All project stages should involve the community, from design through implementation and monitoring and evaluation. Effective consultation not only ensures community ownership of the project, but also ensures that the project is needed and tailored to meet those needs.
- To ensure effective management of the environmental impact that projects have on communities, it was recommended that projects incorporate environmental risk assessment processes into their project design and implementation. They should also address ongoing environmental hazards and shocks faced by communities.
- For sustainability purposes, projects should be designed to incorporate the training of different stakeholders, including beneficiaries, to manage projects.

Table A5.1. Study Site Characteristics

Agroecological zone	Community	Socioeconomic and environmental characteristics
Coastal Savannah Zone	Anyaman	Rural community, population approximately 4,700. Fishing and farming are the main livelihoods. Both men and women involved in farming; only men fish in the sea; women process fish (by smoking, salting) and sell them. High perceived poverty levels. Access to basic infrastructure and services including electricity, piped water, modern public toilet and bath house, health center, a primary and a junior high school, cold store, fish-smoking center, mat-weaving center, and vacuum salt company. High rates of outmigration to urban center (Sege) about 20 km away. High incidence of sea erosion. Patrilineal inheritance. Main ethnic group is Ga-Adangbe.
	Goi	Rural community, population approximately 4,000. Fishing and farming are the main livelihoods. Fishing and farming are mainly male activities; women farm cassava independently and help husbands with their farms. Women fish in the lagoon, but do not go to sea; women process and sell fish and vegetables. Relatively limited access to basic infrastructure including two schools, electricity, a clinic, a library, a women's center, and a salt-processing factory. High incidence of sea erosion. Patrilineal inheritance. Main ethnic group is Ga-Adangbe.
High Forest Zone	Nobewam	Rural community, population approximately 4,000. Fishing and farming are the main livelihoods. Fishing and farming are mainly male activities; women farm cassava independently and help husbands with their farms. Women fish in the lagoon, but do not go to sea; women process and sell fish and vegetables. Relatively limited access to basic infrastructure including two schools, electricity, a clinic, a library, a women's center, and a salt-processing factory. High incidence of sea erosion. Patrilineal inheritance. Main ethnic group is Ga-Adangbe.

Agroecological zone	Community	Socioeconomic and environmental characteristics
	Duampompo	Population about 1,200. Located along the Accra-Kumasi highway, which links the two largest cities in Ghana. The town lies about 20 km from the municipal capital, Ejisu, and about 50 km from the regional capital, Kumasi. It has many urban characteristics despite a rural location. The Accra-Kumasi highway splits the township into two parts, with the main township inhabited largely by the original inhabitants, on the western side. Migrants from the three northern regions live on the eastern side. Almost all the key socioeconomic facilities and services such as water, schools, and toilet are located in the main township. They include a primary and a junior high school, two markets, five boreholes, one toilet facility, and five corn mills. A majority of the women buy and sell foodstuffs in the town and along the main road. Other livelihoods include civil service, mechanics, and tailoring. Key natural resources include the forest, with a variety of timber products and game; fertile swampy land for agricultural purposes; and 11 rivers and streams providing water for both agricultural and domestic purposes. Women born in the community can inherit and own land, but migrant women cannot own land. Matrilineal inheritance; son inherits land from mother's brother. Dominant ethnic group is Akan. High food crop and cash crop production area, including cocoa.
Transition Zone	Seneso	Small rural migrant-receiving community, population approximately 300. Located about 31 km from the district capital, Atebubu. Vegetation is mostly grass, which is used in roofing mud houses. Farming of cereals and groundnuts is main livelihood. Other activities include petty trading in provisions and cooked food, brewing <i>pito</i> (local drink made from sorghum), and burning charcoal (done mostly by the Sisala). Inmigrants do not have permanent use of land. High incidence of poverty and illiteracy. Village lacks basic infrastructure such as health facilities and paved roads. Inhabitants include people of northern descent drawn from different ethnic groups, including Dagarti, Bono, Konkomba, Wala, Kusaasi, Mossi, and Fulani. The Dagarti are the largest ethnic group; the Bono, among the original inhabitants, are the smallest.

Agroecological zone	Community	Socioeconomic and environmental characteristics
	Old Konkrompe	Rural community, population approximately 1,200. Only 7 km from district capital, Atebubu, but isolated by poor condition of main access road. Main livelihood is farming of yam, maize, cassava, garden eggs (eggplant), groundnuts, chili peppers, and rice. These are cultivated on a subsistence basis, with a small proportion of individual farm outputs sold to middlemen and traders from major urban centers. Infrastructure and services include a school (kindergarten through primary 6), three boreholes, the Multifunctional Energy Platform, credit (both formal and informal), and tractor services. Nearest health service is about 2 km away in Mim. Three boreholes are the main source of water for the community. Two guinea worm–infested rivers in the catchment area of the community were the drinking source until boreholes were dug. Matrilineal inheritance; son inherits land from mother’s brother. Main ethnic group is Bono, the original inhabitants.
Northern Savannah Zone	Dorongo	Rural community, population approximately 500. Located 10 minutes’ drive from the regional capital, Bolgatanga, in the Upper East Region. Primary livelihoods are agriculture, animal rearing, charcoal burning and firewood collection, as well as shea nut processing, petty trading, and <i>galamsey</i> (illegal gold mining). Primary crops include groundnuts, maize, millet, guinea corn, rice, and vegetables. High incidence of poverty and illiteracy. Infrastructure and services include a school, three churches, a mosque, a community social center, a borehole, hand-dug wells, and irrigation dams. There is no health facility. Women cannot own property independently due to local customs. Patrilineal inheritance. Main ethnic group is Frafra.

Agroecological zone	Community	Socioeconomic and environmental characteristics
	Datuku	Rural community, population approximately 3,400. High incidence of poverty and illiteracy. Although located an hour's drive from the regional capital, Bolgatanga, it is considered a remote area due to poor, rocky roads; access is even more difficult when it rains. Motorbikes and bicycles are the main means of transport for both private and commercial purposes. There is bus service on market days. Women cannot use bicycles and motorbikes without the consent of men. Infrastructure and services include a health clinic, a community library, four primary and two junior high schools, four day nurseries, eight churches, a mosque, and seven boreholes. Patrilineal inheritance; women are denied right to inheritance. Main ethnic group is Frafra, the original inhabitants.

Annex 6: Good-Practice Case Summaries

Ethiopia Road Sector Development Program

Project Overview

- Phase III, 2007–10, follow-on to phase I (1997–2002) and phase II (2002–7)
- **Project development objective:** Restore and expand Ethiopia's road network to reduce poverty and increase employment by promoting growth and mobility in a socially and environmentally sustainable manner.
- **Geographical focus:** National
- **Components:**
 - Development of regional and federal roads
 - Rehabilitation and upgrading of roads
 - Institutional strengthening of Ethiopian Road Authority (ERA)
 - Design feasibility studies
- **Budget:** US\$4.25 billion from 1997 to 2009
- **Implementing agency:** ERA
- **Outcomes and impacts:**
 - Construction or rehabilitation of more than 75,000 km of road
 - A doubling of rural communities' access to all-weather roads
 - Smaller transport tariffs and less travel time
 - Improved environmental protections
 - An increase in income opportunities for men and women
 - Opportunities for alternative income and for agricultural diversification

RSDP Innovations to Measure and Address Impacts on Gender and the Environment

In collaboration with government partners and affected communities, the RSDP has worked to better integrate transportation interventions into the larger sustainable development context. A critical element of this effort has been to better understand the dynamics of gender and environment at the community level and incorporate this knowledge into program planning and implementation.

The RSDP has strengthened integration with other sectors through proactive collaboration with various ministries, such as the Ministry of Health and the National HIV/AIDS Coordination Office. As a result, increased consideration has been given to the location of health, church, school, and administrative services in planning. The Ethiopian HIV/AIDS Prevention Control Office and the World Bank's Ethiopia Multi-Country AIDS Program have identified the RSDP's HIV prevention strategy as a good practice based on its achievements in raising awareness, changing attitudes, increased availability of condoms, and improved contract documents.

A number of specific studies have improved understanding of community transportation needs. The most extensive studies, Transportation Poverty Observatories (TPOs), follow key socioeconomic progress indicators of selected households in selected communities along the planned roadways, starting from a baseline established prior to construction, through road construction and beyond. Lessons learned through the TPOs will serve as inputs to further the inclusion of social dimensions into policy, overall road planning, and the design and implementation of work contracts.

Collaboration with communities has improved through the development of woreda-level integrated development plans (WIDPs) that integrate transport into broader development goals, and propose both transport and nontransport interventions. Developed through an open process, WIDPs raise community awareness, integrate local needs and concerns into planning, and increase community ownership.

The RSDP now also prepares a thorough resettlement action plan (RAP) for populations impacted by larger road projects. RAPs are informed by public consultations, including the direct and indirect representation of female heads of households and vulnerable populations. In urban areas, municipalities are asked to identify land for the relocation of affected people, provide income restoration support, and give special consideration to female heads of households and the disabled, sick, and elderly. As a rule, women are represented in RAP implementation committees of road projects.

To institutionalize capacity to address gender and the environment, the ERA has created a specific unit, the Environmental and Social Management Team (ESMT), and tasked it with strengthening the environmental and social impact assessment process and the development of mitigation and prevention plans. The team supports the integration of social services in RSDP planning, the equitable resettlement of project-affected people, and increasing female employment in labor-based construction.

Value Added by a Gender-, Environment-, and Poverty-Responsive Approach

Access to roads has increased the percentage of total produce that farmers are able to sell. It has also supported diversification and trading. According to the TPO, along one corridor, the percentage of female-headed households reporting trade as an occupation increased from 37 to 60 percent, while the percentage engaged in agriculture decreased by 17 percent.

Also according to the TPO, the percentage of households that traveled outside the village on a weekly basis along four corridors doubled from 2004 to 2008. On average, since 2004, women reported a decrease both in distance and in time for domestic transport purposes.

Distance to educational facilities has also decreased. Six percent of families in 2008, compared to zero in 2004, reported using motorized transport to access educational facilities.

According to the TPO, between 2004 and 2008, the number of health care facilities along the four assessed corridors increased by over 300 percent. The health sector has seen increased community access to obstetric services and HIV/AIDS and malaria education, testing, and treatment services as well as increased peer education trainings, both for men and women.

Challenges

Significant gaps continue to exist between policy provisions and social and environmental contractual clauses on the one hand, and actual implementation of those provisions on the ground on the other.

The program continues to refine the development, implementation, and monitoring of resettlement plans. Closer examination of records during the study conducted for this report revealed that consultation data were not disaggregated by gender and there was no clear process for determining whether land titles had been allocated in the name of male heads of households, or jointly to couples. Compensation payments also appear to routinely be given to the male heads of households.

Road construction projects continue to employ men by an overwhelming majority.

Opportunities

The RSDP has shown that benefits to local communities can be strengthened through improved data collection and participatory planning. Successful methods used by the program include TPOs, participatory resettlement plans, and district-level integrated plans.

Collaboration with governmental agencies and other partners in sectors outside transportation can successfully broaden the objectives addressed through transportation.

The social and environmental impact of transportation programs can be improved over the long term through the creation of a relatively small unit within governmental transportation agencies dedicated to the social and environmental dimensions of transport.

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Ethiopia Pastoral Community Development Program

Project Overview

Phase I 2003–2008, phase II 2008–2013

- **Project development objective:** To increase the resilience of Ethiopian pastoralists to external shocks and to improve the livelihoods of beneficiary communities.
- **Geographical focus:** 57 woredas of the Afar, Somali, Southern, and Oromiya regions
- **Components:**
 - **Sustainable livelihoods:** Community investment fund to strengthen decentralized and participatory planning procedures at the kebele and woreda levels; and implement a rural livelihoods program to provide access to savings and cooperative support systems and grants.
 - **Risk management:** Improve the Pastoral Early Warning System, establish an early response fund, and support strategic disaster preparedness and mitigation.
 - **Participatory learning and knowledge management:** Strengthen demand-driven participatory learning, knowledge generation, and research at the community level, and information exchange and networking systems at the federal and regional levels.
- **Budget:** Phase I, US\$60 million; phase II US\$133.2 million
- **Implementing agency:** Ministry of Federal Affairs Federal Project Coordination Unit and regional project coordination units
- **Outcomes and impacts:** (Phase I)

- 1,804 community-driven microprojects implemented
- Women accounted for 47 percent of the beneficiaries of the sustainable livelihood component
- Educational facilities located near pastoralists settlements were built
- Increased access to water, grain mills, health post, and health centers
- Water supply points benefitting 200,000 people
- Income-generating activities such as petty trading and microenterprises

Challenges Inherent in the PCDP Community-Driven Development Approach

The PCDP faces a challenge in increasing the capacity of beneficiary communities to equitably and sustainably manage their own development. The community-driven and highly participatory nature of the program has made it particularly effective in local capacity building and community empowerment, both of which have been instrumental in creating a sense of ownership of subprojects among the beneficiary communities. Taking a lesson from the lack of success in earlier top-down approaches, the PCDP asserts that pastoral livelihoods will best be improved by strengthening the self-management capacities of the institutions found within beneficiary communities, and by giving them control of decisions and resources throughout the project cycle.

While the PCDP seeks to strengthen local institutions, it also recognizes that women hold a subordinate social status in the project area. Men typically still control factors of production for livestock and crop farming, and dominate decision making. The PCDP incorporates three basic approaches to strengthen male-dominated institutions, while not simultaneously increasing existing gender inequity; these approaches are: (i) involving women in the planning and development of projects so that their needs are addressed; (ii) continuing income-generation activities that in phase I proved most beneficial to women; and (iii) training the project team and partners in gender awareness.

Resilience Strategies

A number of the specific activities supported under the PCDP will improve community resilience to climate shock. These include microscale irrigation and rangeland management activities, investments in rural livelihood activities less susceptible to environmental shocks, strategic natural resource investments for disaster preparedness such as improved water supply, catchment management and range improvement, and the development of regional preparedness strategies for natural disasters.

Application of the PCDP Approach in the Case Study Community

The PCDP added the community visited for this study only in phase II, and thus it is too early to adequately assess the interventions undertaken thus far. The outline of the approach is nevertheless visible. A cross-section of community members identified, prioritized, and designed activities meeting their own needs, and prepared a community action plan (CAP) submitted to the woreda RPCU for approval and financing. Women identified potable water; grain mills; renovation and expansion of existing irrigation scheme; microfinance; expansion of schools and community and access roads, as well as small-scale financial services, each of which, except for mills and the roads, were approved for support by the RPCU. Thirty-five women now participate in a rural savings and credit cooperative of 60 members. According to community members, the PCDP is also supporting the participatory and democratic renovation of an existing irrigation scheme.

Challenges to Phase I

Evaluations of previous pastoral development projects in Ethiopia characterized them as top-down, authoritarian, and coercive; uninformed regarding the social, cultural, and economic settings of pastoralist societies; and focused on large-scale commercial farming or foreign exchange earnings, not the development of communities and smallholders. The challenges identified in the implementation of phase I reflect those observations:

- Instilling ownership of regional governments
- Implementing meaningful participatory approaches
- Providing timely social and technical support services to a dispersed set of communities
- Ensuring communities' and local government official compliance with project rules and procedures
- Conducting effective M&E

Opportunities

The successful introduction of this community-driven process demonstrated the communities' receptiveness and commitment, and encouraged the communities to assume responsibility and become key stakeholders in their pastoral development. Communities report that phase I of the PCDP improved their livelihoods through education, water supply, and social infrastructure programs. Phase II is designed to refine the implementation of the approach to build on this success.

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Ethiopia Managing Environmental Resources to Enable Transition to More Sustainable Livelihoods (MERET) Project

Project Overview

MERET (2003–6) and MERET PLUS (2007–11), follow-up to Project Ethiopia 2388: Rehabilitation of Forest, Grazing, and Agricultural Land

- **Project development objective:** To improve livelihood and food security opportunities for the most vulnerable, particularly female-headed households, through the sustained use of the natural resource base.

- **Geographical focus:** Tigray, Amhara, Oromiya, and Southern Nation's, Nationalities and People's regions (large agricultural regions with communities with very low food security)
- **Components:**
 - Food (grain and oil) for conservation work (provided for up to three months per year)
 - Physical conservation (local construction of cultivation terraces, check dams, ponds)
 - Biological conservation (area closure and management of degraded lands to enable natural regeneration of vegetation)
 - Livelihoods (beekeeping, horticulture, forage, and nursery development)
 - Capacity building (training on community management and business, demonstration sites)
- **Budget:** 2003–6, US\$60 million; 2007–11 US\$104.5 million, funded by the World Food Program through food commodities and finances for operational expenses and capacity building
- **Implementing agency:** Natural Resource Department Extension System
- **Outcomes and impacts:**
 - Regeneration of vegetation and water table; increased water availability and crop yields
 - Reduced time spent by women and girls collecting firewood and water
 - Positive impact on livelihoods, poverty reduction, and food security
 - Women's empowerment: participation in decision making, conservation work, and income generation
 - Community empowerment: expansion of social networks and natural resource management (NRM) knowledge and technology
 - Increased community awareness of benefits of NRM and commitment to sustain MERET outcomes
 - Reduced vulnerability to shocks and strengthened local resilience

Gender Equitable Access to Resources

Environmental recovery and regeneration of natural resources and groundwater in a severely degraded environment has increased access to resources for humans and their livestock. This was achieved by closure of degraded areas to allow for regeneration, development of local conservation technologies and food for conservation work done by both women and men. Locally developed physical technologies, such as sediment storage dams, eyebrow basins and percolation pits, are all variations on basic conservation structures that have been adapted to the highlands' steep terrain and intense rain bursts. As a result of these measures, the time spent by women daily for collection of firewood and water decreased by 2.2 hours and 2 hours, respectively (Ndessa and Wickrama 2010).

Inclusive Environmental Resources Governance

The Local Level Participatory Planning Approach (LLPA) was developed under Project Ethiopia 2488: Rehabilitation of Forest, Grazing, and Agricultural Land in 1992, in response to the negative outcomes of the reforestation and soil conservation initiatives of the 1980s. The top-down, technocratic, "one-size fits all" approach ignored significant differences in ecological and farming systems and resulted in a lack of ownership of common assets by community members and unsustainable outcomes. The follow-on MERET project added a livelihood approach, results-based management, and an emphasis on women's participation. The approach included the formation of community watershed planning teams elected by the community; teams are required to include all population groups, and 50 percent of team members must be women. The teams develop and implement community watershed development plans using a

participatory process. Working with natural resource development agents and kebele³⁰ administrators, they mobilize and raise awareness of community members, facilitate priority setting and selection of activities, mobilize resources, and help select project participants. Completed plans are reviewed and approved by the woreda³¹ agriculture offices and development committees.

Resilience Strategies

Improving food security, expanding livelihood opportunities, and reducing vulnerability to shocks are central to the MERET project. Particularly important was the regeneration of the water table through conservation measures. Investment in community NRM capacity building, essential for sustainable disaster risk management interventions, also builds social capital and the ability to act collectively to solve community problems, which are important to community resilience. World Food Program Executive Director, Josette Sheenan, said, “Ethiopia has rewritten the book on successful climate change adaptation,” during a panel on MERET at the Copenhagen Climate Change Conference in 2009. She described the approach as “home-grown, proven, sustainable solutions.”

Food for Conservation Work Graduation

In highly food-insecure communities, where markets do not function reliably, food is often preferred rather than cash, especially when development projects require households to reduce income levels in the short term by eliminating unsustainable livelihood activities. The WFP and the Natural Resource Department implemented a graduation strategy for food assistance that moved from food for work to technical support and financial support, including small revolving loans, for income-generating activities.

Value Added by a Gender-, Environment-, and Poverty-Responsive Approach

Participation of the entire community was an important factor in the success of this program. Both men and women set priorities, planned activities, and carried out conservation work. A men’s focus group discussion noted that “women are better than men in environmental protection and conservation work; the care with which they handle and plant trees is a good example.” The natural resources development agent in one kebele said, “the success of the conservation work emanates from the strength of the women.” Women’s cooperative efforts in beekeeping have increased incomes and contributed to pollination of vegetation.

Challenges

- Despite efforts to increase investment in development, Ethiopia and its partners have been frustrated by the scale of food insecurity and its drag on development.
- More effort is needed to enable women’s organizations to manage assets created by the project, such as closures and woodlots, and access the income generated by them.
- Activities benefiting women directly, such as small-scale water harvesting and homestead productivity intensification, need to be scaled up. Women constituted 40 percent of the participants and beneficiaries in initiatives supported by the project, missing the project target of 60 percent.
- There are still gaps and potential to improve the participatory community-based approach to expand the opportunities for leadership to more people.

³⁰ The kebele is the smallest administrative unit in Ethiopia, equivalent to a ward or neighborhood.

³¹ Woreda is equivalent to district level administration.

Opportunities

- The World Food Program, the World Bank, and GTZ collaborated with the government to produce a national Community-Based Participatory Watershed Management (CBPWM) Guide and promoted the formation of a government-led Sustainable Watershed Forum, which coordinates watershed rehabilitation efforts and information sharing.
- Technologies and activities developed and tested in MERET have been scaled up and applied in other government programs such as the Productive Safety Net Program and the Sustainable Land Management Program. Given that donors are already spending more in Ethiopia than elsewhere, taking MERET to scale is seen as a way of leveraging development results while addressing humanitarian needs.
- The community-based participatory approach has become the preferred approach for sustainable land management and natural resources development by the government, donors, and NGOs in Ethiopia.
- The MERET participatory model builds on lessons learned from nearly 30 years of experience addressing environmental degradation, food security, poverty, and, more recently, addressing gender disparities in highly degraded, shock prone, and food-insecure areas; its participatory approach could be adapted to other areas facing similar constraints.
- MERET was selected by the government of Ethiopia as a model project for climate change adaptation and presented at a side event during the Copenhagen Climate Change Summit in 2009.

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Dalocha Integrated Rural Development Programme (DIRDP)

Project Overview

Phase I 1989–93; phase II 1994–98; phase III 1999–2003

- **Project development objective:** Reducing poverty and improving the quality of life in the intervention area, and enabling the poor have control over their own lives.
- **Geographical focus:** Dalocha Woreda, in Southern Nation's, Nationalities, and People's Region
- **Components:**
 - Food security
 - Health
 - Potable water supply
 - Education
- **Budget:** US\$4 million, across three phases
- **Implementing agency:** ActionAid Ethiopia (AAE)
- **Outcomes and impacts:**
 - Adoption of agricultural technologies, especially horticulture and high-value crops
 - Soil and water conservation public works
 - New and renewed infrastructure: schools, clinics, water structures, and roads
 - Community schools
 - Increased resilience to climate shocks
 - Improved nutritional status and health
 - Improved educational status and appreciation of schooling

DIRDP Measures That Improved Gender Equity and Environmental Status

Gender equitable access to resources. DIRDP treated more than 13,700 ha of highly degraded land with biological and physical soil conservation measures that decreased erosion and increased yields. The project treated a total of 37 percent of the woreda area, and reduced the soil erosion rate in treated and protected areas by more than 70 percent. As a result, 6,600 households raised their production by about 10 percent. The local government has continued to support the environmental conservation practices initiated by DIRDP on a large scale. These practices are widely believed by the public to have improved groundwater recharge, which is currently serving as major source of clean water supply for almost the entire population of Dalocha.

Inclusive environmental resources governance. Postprogram evaluations indicate that DIRDP's interventions clearly improved the status of women in Dalocha. In a patriarchal and predominantly Muslim area, where women are expected to have only a passive role even within the family, Dalocha women are now able to participate in meetings and training, speak freely, and express their views publicly. Moreover, women now manage and exclusively control a number of projects and institutions, such as the dairy goat program, grain mills, and the Dalocha Women Water Development Association (DWWDA). DWWDA, an autonomous community-based organization, currently successfully manages a relatively large and complex water supply system that provides safe drinking water to an estimated

100,000 people. The success of DWWDA has attracted the attention of development planners and practitioners intending to replicate it elsewhere.

Resilience strategies. DIRDP enabled about 2,000 poor households to acquire assets, such as livestock and houses, education and leadership skills, and engage in savings and credit schemes. About 5,100 households have benefited from the livelihood promotion activities as well as the crop diversification, grain store, and dairy goat activities implemented with the newly acquired skills and knowledge on agriculture and good soil management practices. Project activities reduced food insecurity at the household level by more than half (food deficit months dropped from 3.5 to 1.5). Total annual income grew by 57 percent.

Value Added by a Gender-, Environment-, and Poverty-Responsive Approach

- By focusing on the needs of women and the poorest members of the community, and the health of the natural resources upon which their livelihoods depend, DIRDP produced communitywide benefits. People from all social groups now drink clean water, farm more healthy soil, attend schools, and use health facilities because DIRDP strengthened the common resources upon which the most vulnerable depend.
- By building the capacity of the most disfavored people—through literacy, improved nutrition, agricultural skills, and income generation—and engaging them in public life, DIRDP brought a vital new resource to Dalocha’s struggle for social and economic development—committed people with new perspectives.
- By working with the larger community on the integration of women into local governance institutions, DIRDP improved local resilience by building up the social capital, institutions, and networks that people rely on during a crisis.
- By focusing on empowerment of the least powerful and strengthening their control over and management of natural resources through soil conservation, tree planting, and water supply, DIRDP refined its approach to creating community ownership of its investments.

Challenges

DIRDP did not develop a successful approach to integrating the provision of services into local government structures. DIRDP supported the establishment of a number of grain milling cooperatives that failed after the Cooperatives Promotion Office took over their supervision. Local government structures have attempted to take over management of DWWDA. So far, the association and its supporters have successfully resisted, but the responsibility for the provision of this public service remains unclear.

Following a practice introduced by DIRDP, enclosures now surround all community land in Dalocha, effectively diminishing the coping strategies of the community’s poorest members. Firewood and other natural products can no longer be collected from these spaces, and grass must be purchased. Focus groups conducted for this study suggest that at least for some members of the community, other benefits provided through DIRDP and other projects more than compensate for this loss. For example, agroforestry has provided sufficient firewood.

Opportunities

DIRDP has demonstrated that, although it may take an activity many years, projects can help women of a very conservative community rise and succeed in high profile leadership positions and have a broad impact on their status. Men consulted in Dalocha reported that they not only recognize and appreciate the role women play in specific institutions supported by the project, but now have a greater appreciation of women's capacity more generally. In particular, the Dalocha Women Water Development Association (DWWDA) serves as a model for other communities.

DIRDP has shown that a cross-sectoral approach combined with meaningful broad-based participation can provide the flexibility to address the integrated social, economic, and environmental needs of communities. The initial appraisals DIRDP conducted found an impoverished population, battered by drought, laboring the exhausted soils of an arid, devegetated landscape. Eight years after the project's completion, this case study identified evidence of the DIRDP's success—in women and men cultivating fruit trees, conserving their soils, drawing water from improved sources, receiving health services, and managing multiple community-owned institutions.

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Ghana Land Conservation and Smallholder Rehabilitation Project 2000–2006

Project Overview

The International Fund for Agricultural Development (IFAD) launched the Land Conservation and Smallholder Rehabilitation Project (LACOSREP) in the 1990s in the Upper East Region of Ghana, the second poorest region of the country. The aim was to reduce poverty and improve livelihoods. The design of the second phase (LACOSREP2) addressed shortcomings of the first phase, incorporating capacity building for WUAs and increasing women's access to land and water and role in project planning (Wahaj 2009).

- **Project development objective:** (i) Further develop irrigation; (ii) increase farm productivity through training and demonstrations on new technologies; (iii) build capacity of the government institutions that provide technical and social services at the subdistrict level; (iv) construct rural infrastructure to reduce women's labor burden; and (v) take measures to mitigate possible risks of health and negative environmental impacts.
- **Target group:** At risk poor rural smallholders, landless farmers and women, particularly female-headed households.

- **Geographic focus:** Upper East Region, characterized by high population density (104/km²), 88 percent poverty rate, unreliable rainfall, susceptibility to drought and floods, poorly maintained feeder roads, lack of transport services, and high rates of environmental degradation, deforestation, and soil cover.
- **Components:**
 - Water resources, development, and rural infrastructure (rehabilitation and construction of dams, environmental and human health protection)
 - Agricultural development (applied research, extension, livestock development)
 - Rural infrastructure (road improvement, dug wells, and latrines)
 - Income generation (rural credit)
 - Project management and capacity building (project management for MOFA, district assemblies, financial institutions, and rural animators as well as training for WUAs and others on environmental conservation, irrigation management, and so forth)
- **Budget (LACOSREP2):** US\$13.9 million (IFAD provided US\$11.5 million)
- **Implementing agency:** Ministry of Food and Agriculture (MOFA)
- **Outcomes and impacts:**
 - Improvement in income sources, assets (storage and processing facilities, labor-saving devices), and food security
 - Agriculture diversified with livestock rearing
 - Erosion and flood damage minimized through catchment protection
 - Increased soil productivity and community awareness of social conservation
 - Women's workload reduced, allowing time for productive activities
 - Women's participation in community and household decision making increased

Gender-, Poverty-, and Environment-Responsive Approaches

Gender equitable access to resources. When access to land, forest resources, water, fish, and other resources is impeded by gender inequalities in their allocation, it slows down progress toward environmental management, poverty reduction, and social inclusion (World Bank 2010). To address these inequalities, LACOSREP2 introduced quotas for access to land, trained women as well as men in improved farming and livestock management, provided economic incentives to women and men for participation in environmental conservation works in their communities, and provided access to credit for income-generation initiatives.

- *Access to irrigated land:* LACOSREP2 set a quota of 40 percent for allocation of irrigated land to women. Requirements also included provision of equal areas of land to women and men. This enabled women to access water for irrigation and grow crops during the dry season (Wahaj 2009). The project negotiated with chiefs, *tindanas* (earth or land priests), husbands, and male community leaders to allocate land to women because customary inheritance practices excluded them. Women's access to irrigated land, though increased, remained at one-fourth that of men. Sale of crops from their irrigated land enabled women to invest in farming and trading, as well as education and improved household nutrition.
- *Access to credit:* The livestock component enabled women to invest in goats, chickens, and guinea fowl. Access to loans and means of transport facilitated women's marketing activities. Their role in household decision making improved as well.
- *Time savings:* Dams and wells increased the availability of water, reducing the burden of water collection and the risk of waterborne diseases for women and girls. The household water

component reducing the amount of time spent by women in fetching water enabled them to participate in irrigated agriculture and income-generation activities.

Inclusive environmental resources governance. Without participation and influence on environmental priority setting, women are less likely to have a sense of ownership for decisions that negatively impact environmental policy implementation. The failure to include women and analyze gender issues for environmental decision making also increases the likelihood of negative impacts on women (World Bank 2010).

Distribution of incremental irrigated land at rehabilitated dams was the responsibility of the WUAs established in LACOSREP1, as well as newly formed WUAs. WUAs allocated the new lands to the poorest, excluding chiefs, large landowners, those with another plot in the scheme, and wage earners (IFAD 2006). WUA membership was open to all water users—livestock owners and fishermen, as well as farmers. Membership was not limited to one member per household, thus opening up opportunities for women to participate. In some WUAs, women paid lower membership fees than men as an incentive to participate. Women accounted for on average 38 percent of WUA members, falling short of the 40 percent target. However, in some dam sites their participation was much higher—up to 80 percent. It was common for the executive committee treasurer to be a woman. In some sites, women also formed a women’s group to discuss major decisions and achieve consensus on a topic being discussed in the WUA. Including multiple types of water users in the WUAs facilitated WUA development, watershed protection measures, and prevention of conflict over water use (Wahaj 2009). The project exit strategy included a plan to establish a WUA council at the district level, also including female representation, to sustain and better coordinate the management of resources.

Resilience strategies. Climate change both exacerbates existing vulnerabilities and creates new ones. Resilience strategies building skills and resources to cope with environmental risks are particularly critical for the poorest communities and households, including female-headed households and the landless (World Bank 2010).

- **Participatory environmental conservation:** Women and men were involved in catchment protection activities for reforestation to make water available throughout the year and provide wind breaks to shelter the reservoirs from windstorms. They planted *vetiver* grass to stabilize dam walls and defend the bunds providing protection in the catchment area. As an added incentive for its growth and preservation, vetiver grass was used by women as an alternative material for basket weaving.
- **Farmer training demonstrations:** Demonstrations, based on community needs assessment and planning exercises, included composting and vegetable growing. The emphasis on gender equity in LACOSREP2 resulted in 40 percent representation of women in the training activities. Out of 6,266 participants, 2,546 were women (IFAD 2006; Wahaj 2009).
- **Functional literacy groups:** The introduction of functional literacy groups to teach beneficiaries (mostly women) numeracy and literacy in indigenous languages also aimed to develop solidarity for collective work and microfinance. These groups helped galvanize the WUAs. They also provided women opportunities to organize collective income-generating activities as alternative income streams (IFAD 2006). Ok. The WUAs and functional literacy groups enhanced social capital and cooperation (Wahaj 2009).

Environmental awareness and management improved. Soil fertility increased. All these measures contribute to greater resilience to environmental and other shocks. Women's participation enhanced the practical knowledge on environmental trends and coping strategies (PDA 2010).

Gender officer. LACOSREP2 hired a gender officer to raise awareness and monitor gender issues in the project to ensure that the gender-related objectives were implemented effectively, including women's participation in the WUAs, their access to irrigated land, the functional literacy groups, women's participation in training, and access to credit for livestock. The interim evaluation concluded that the gender officer effectively ensured the implementation of these components (IFAD 2006).

Value Added by a Gender-Environment-Poverty Approach

As a result of attention given to the links between gender, poverty and environment, starting with the project objectives, there was improvement in income sources, assets, and food security for males and females, in part due to the provision of irrigated land to women as well as men and women's involvement in the WUAs and income generation from livestock. Capacity building and gender sensitization for implementing agency staff were also key. Erosion and floods were minimized through catchment protection methods carried out by local people. Access to potable water reduced the workload of women, freeing time for productive activities, and reduced waterborne diseases.

Challenges

A greater emphasis on consultation with communities as development partners, rather than recipients of aid, is needed in future projects. In at least some of the project communities, the consultations with communities were very limited and did not benefit from women's and men's knowledge of the local environment. Furthermore, project officials did not fully use the suggestions provided.

The WUAs have limited means to raise finances for significant maintenance costs. This needs to be taken into account by government and donors budgeting for maintenance.

The government cost recovery program for animal vaccinations reduced the impact of the livestock development component, severely limiting the ability of poor women and men to afford these vaccinations. As a result, they are not vaccinating animals, placing them at risk for serious losses in livestock.

Limited progress was made in the area of human health. The risk of waterborne diseases, such as schistosomiasis and malaria was flagged in the project evaluation. More action is needed.

Opportunities

The raising of guinea fowl, composting, and the formation of literacy groups were not widespread in the Upper East Region before LACOSREP2, but are now being increasingly adopted. These innovations have all been replicated by women farmers sharing them with other farmers with little or no external assistance, and they have even extended outside the project area.

Functional literacy groups, originally not included in the project design, have increased numeracy and literacy and established solidarity among women for other purposes such as collective work and microfinance.

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Multifunctional Platform Pilot Project (2005–8)

Project Overview

The Ghana Multifunctional Platform (MFP) was a pilot project that sought to reduce poverty and environmental degradation through the provision of vital energy services to the energy have-nots in rural areas to support productive and income-generating applications. The multifunctional platform (MFP) is a 10hp diesel engine, mounted on a steel chassis that powers a variety of enduse equipment such as grinding mills, dehuskers, battery chargers, and water pumps. The engine can also generate electricity for lighting, refrigeration, and water pumping. The three-year pilot project, which was completed in March 2008, was supported by the United Nations Development Programme (UNDP) and implemented by the Kumasi Institute of Technology, Energy, and Environment

- **Objectives:** The overall goal of the Ghana MFP Project was to provide rural communities access to modern energy services through the promotion and use of the MFP as a standalone, integrated energy system and poverty reduction tool, including:
 - Providing modern energy for rural communities using the MFP as a decentralized energy source
 - Facilitating increased income generation and social service activities through enterprise development support and active promotion of productive use applications
 - Working toward mainstreaming the MFP at the macro- and microlevels as a poverty reduction tool.
- **Target group:** Rural communities in target area were selected according to the following criteria: a minimum population threshold of 300; located at least 7 km from the national electricity grid; lack of competition from existing mills.
- **Geographic focus:** Northern Savannah and Transition zones
- **Components:**

- Construction of platforms and installation of engine and other equipment
- Training in running the MFP and in income generation
- Policy dialogue on mainstreaming MFP
- **Donor and budget:** UNDP US\$743,000 (from the Japanese Government Human Security Trust Fund [HSTF])
- **Implementing agency:** Kumasi Institute of Technology, Energy, and Environment
- **Outcomes and impacts:** Transforming socioeconomic activities in the communities; increasing household incomes; ensuring food security during the dry season; empowering women to make decisions regarding the management of the MFPs; improving interhousehold relationships; and keeping girls in school longer.

Gender-Responsive Approaches

The project implementing agency adopted a sex-disaggregated data collection method to sample the views of all key stakeholders to be incorporated into the project. It also employed PRA methods that effectively facilitated and solicited the views and participation of key stakeholders. The implementation team consulted women and women's groups to identify ways in which the program could be designed to be more beneficial and ensure ownership. Women also identified economic activities where the project could reduce their time women spent on arduous work by transferring the appropriate technology.

The project emphasized participation and inclusion of women and other marginalized groups throughout the entire project. It was reported that for the first time in the communities, women are represented on the unit committee, the water management committee, and the management committee for the platforms. The inclusion of women on management committees increased their morale and self-esteem. They received training to enable them to manage the platforms for profitability and sustainability.

The MFPs enduse equipment focused on the tools needed to reduce women's time poverty. Some women saved as many as 12 hours each time they milled their grains. Besides walking for long hours, women could spend as long as 12 hours waiting for the electricity or for repairs before they could process their grains. On the average, women saved about four hours a day, which they invested in business activities. The MFP also enabled women to spend more time on education, health, and childcare. Energy generated by the platform was also used in powering water pumps to pump water from boreholes. This has reduced women's use of unclean sources of water to avoid spending long periods waiting in line for water at the community water site.

Women's groups formed, which helped women support themselves with small credit facilities from contributions they make to the groups.

Women engaged in income-generating ventures by using the MFPs to process cassava into gari (roasted grated cassava) and cassava flour and maize into flour. These are consumed at home and also sold to earn income, as well as Weanimix, groundnut oil, shea butter and rice, as well as brewing of pito. The MFP has opened other business opportunities, such as preparation of "koko" (maize or millet porridge), "tubani" (cooked bean cake), "koose" (fried bean cake), "kulikuli" (fried groundnut paste after the oil has been taken out of it), and others, as a result of the ease with which the ingredients for these foods can be processed. The income earned has helped improve the status of women in the two communities.

The leftover maize and rice husks are sold to people to feed to livestock and the proceeds (though little) added to the income generated from the platforms.

Value Added by a Gender-Environment-Poverty Approach

Income diversification at both the household and community levels. Communities with no or unreliable agro-processing facilities available to them now use the MFP to process their grains for sale and for consumption. People traveling from other areas to use MFP to process their grains have led to an increase in income from economic activities in the MFP communities. Women are engaged in additional and/or diversified economic activities such as selling of cooked food, drinks, and other household items to those who come to process their grains in the MFP communities.

Increased food security. Women can now process gari and dried cassava on the MFP for household consumption and to store for the lean season. Even if households do not have money to purchase food—as is often the case, especially for poor households—they now have food in storage for household consumption during the lean season. For some very poor women who work on other people's farms in return for food, processing the little they get into flour makes it easier to store and ensure food availability.

Increased school attendance. Households now have income to pay for uniforms, books, pens, and pencils for their children. Girls no longer have to take care of household chores while their mothers travel long distances to grinding mills or spend hours processing food.

Increased access to land and credit. Women are investing their gari production earnings in land to grow more cassava. In some instances, husbands are helping women acquire land. Women's gari production profits are also enabling them to access loans provided by the Association of Progressive Entrepreneurs and Development (APED), a microfinance wing of World Vision International, which supports women entrepreneurs to expand their businesses and farms.

Improved status of women. Both men and women stated that the status of women has increased as a result of their ability to earn more money and contribute to community development.

Reduced deforestation. The introduction of the MFP has had a positive impact on the forest resources, because some people who were involved in charcoal production are now employed in other income-generating activities such as food processing.

Increased use of telecommunications. Mobile phone use has increased because community members are able to charge their phones using the MFP.

Challenges

- The escalating price of diesel fuel is impacting operations and profitability.
- Partnerships with microfinance agencies, rural banks, and NGOs were little developed due to time and budget constraints on the implementing agency.
- Not all communities achieved the full potential of the MFP due to inadequate training on income generation for value added. Some of the participating community-based organizations (CBOs) deviated from the MFP specification and procedures.

- The selection criteria excluded small communities with large agroprocessing potential, and overestimated reliability and accessibility of existing electricity grid as well as competition from other mills.

Opportunities

- Scaling up the MFP with less restrictive criteria has the potential to significantly increase access to agroprocessing and other benefits, particularly for women.
- Increasing the role of CBOs in planning, managing, monitoring, and contracting could increase efficiency and sustainability. CBOs are also in a better position to forge partnerships and gain support from NGOs operating in their areas.
- Increasing income-generation training can increase the value added and increase incomes for MFP communities.
- Adding enhanced equipment such as cassava graters, shea nut crushers, rice millers, and battery chargers to the MFPs lacking them can also improve the income diversification of the community.

Sources

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Konongo-Kumasi Trunk Road Rehabilitation Project 2004–8

Project Overview

Donor support to Ghana, including that of DANIDA, is focused on the achievement of Ghana's Poverty Reduction Strategy goal—to ensure sustainable equitable growth, accelerated poverty reduction and the protection of the vulnerable and excluded within a decentralized, democratic environment. In line with this, DANIDA's Transport Sector Programme Support Phase II sought to encourage economic and social development through reducing transport costs and increasing accessibility to economically productive and socially important areas. The Konongo-Kumasi Trunk Road had the highest number of reported accidents in Ghana in the late 1990s and early 2000, and a high rate of HIV/AIDS infection.

- **Objectives:** Support the economic development program in Ghana through reducing transport costs and improving accessibility to economically productive and socially important areas, while reducing user costs and improving road safety.
- **Target group:** Communities along the Konongo-Kumasi Trunk Road
- **Geographic focus:** Forest Zone (Ashanti Region)
- **Components:**

- Rehabilitation of a 46 km section (Konongo-Kumasi) of the Accra-Kumasi Trunk Road situated in the Ashanti Region of Ghana, connecting the northern part of the country to the southern part of the country. This included construction works: bridges, cross culverts, access culverts and junctions, borrow pits, and edge beam hand railings.
- Socioeconomic subcomponent added complementary infrastructure to the project such as market stalls; fencing of schools along the road; boreholes for potable water; public toilets; drains and walkways; HIV/ AIDS education; road safety awareness campaigns in schools; and capacity-building programs.
- The feeder roads component included two subcomponents. The first subcomponent involved support to the Department of Feeder Roads (DFR) to improve upon feeder roads in selected districts. The second subcomponent involved support to selected district assemblies to use local level structures to improve upon some feeder roads in these districts.
- General institutional support in the development of vehicular emissions standards and legislation for use by the Environmental Protection Agency.
- **Donor and budget:** DANIDA (10.8 million DKK); government of Ghana (150,000 Ghana cedis)
- **Implementing agency:** Ministry of Transport, Ghana Highway Authority
- **Outcomes and impacts:**
 - Increased incomes from women's market sales
 - Increased access to schools and social services
 - Reduced pedestrian-vehicular accidents

Gender-, Poverty-, and Environment-Responsive Approaches

- **Socioeconomic Development Fund promotion of gender and social equality** by recruiting a gender aware and proactive social fund administrator; ensuring that women's and men's needs are met through equitable procedures for solicitation, screening, and selection of proposals; ensuring the representation of women and men on the fund board; training of GHA staff in facilitation skills to ensure all voices in the preliminary subdistrict workshops are heard, or recruit an NGO or consultancy company with facilitation skills to provide the community liaison service during the administration of the fund; and promote HIV/AIDS awareness and behavior change for women and men.
- **Participatory process for the projects under the socioeconomic component.** The needs of various stakeholders were taken into account – women, men, children, migrants, and so forth.
- **Gender consultant** engaged to manage gender and public participation plan, implemented by contractor to train and involve women in the road construction.
- **Construction of market stalls along the road** to facilitate year round trade, previously interrupted during rainy season.
- **Formation of women's groups** to facilitate access to credit. Market women with strong financial standing can borrow from the groups' monthly contribution to restock their goods when their goods perish as a result of poor sales.
- **Quotas for women's participation.** Implement quotas for the number of women laborers and supervisors recruited; the number of women on tender boards and in road prioritization and decision-making forums; and the number of women in planning, implementing, monitoring, and evaluating subdistrict projects.
- The road safety awareness campaign involved the preparation of posters, safety folders, and other materials for a series of road safety awareness campaigns. Soon after the contractor started work on a segment of road, the National Road Safety Commission (NRSC) Regional Office, along

with GHA and local authorities, supported by consultants, launched road safety awareness campaigns targeting the local population and focusing on pedestrians and other vulnerable groups in connection with construction activities. The campaigns also included safety activities in schools.

- **HIV/AIDS prevention campaigns** targeted construction workers and the communities along the road. Professional HIV/AIDS NGOS identified and trained two local residents (one woman and one man) from each town/village along the road to conduct awareness campaigns.
- **Vertebrae grass was planted** on slopes to reduce erosion on 85 ha.
- **Environmental restoration** of 800 ha of arable land, 67 ha of forestland, and 164 ha grassland.
- **Overseas study program in France on environmental management of highway** to strengthen the local environmental assessment capacity for eight staff, financed by the African Development Bank.

Value Added by a Gender-Environment-Poverty Approach

Market women financing men farmers. With increased income for women through roadside trading activities, farmers, especially men, have confirmed that the women traders are able to give them credit to cultivate their farm, and in return the farmers sell produce to the women traders. The farmers confirmed that this arrangement provides them with a ready market for the produce.

Women's status improved in the community and in the household. Husbands now appreciate their financial contributions and accord them respect. Women no longer depend on their husbands financially. Women's potential to contribute to community development is also recognized by community leaders and their voices are included in major decisions.

Education access has increased due to the improved road and increased income. Some children at the senior high school level commute to school outside the community every day. A few are attending university.

Toilet and potable water facilities constructed behind the market stalls have contributed to improved sales; some commercial drivers stop to let their passengers to use the toilets (since there are no other rest stops along the route), allowing passengers to also purchase produce.

Challenges

In the view of the PRA participants, the road has opened up the area, resulting in more pressure on the forest and farmlands that are being acquired by people moving into the area for housing and other purposes. This is affecting food security and increasing the pressure on the remaining community forestland. "Infrastructure provision alone can do little to reduce poverty unless it is accompanied with other complementary activities to empower poor people to harness the potential " (point made in a focus group discussion during the study). Too often the rich benefit the most, and the majority of the people, especially the extreme poor, do not.

While project staff felt the project was very participatory, and the evaluation of the socioeconomic component described the process as participatory, focus group participants in the PRA study communities indicated the project "community meetings were brief and simply introduced the project but did not to seek local opinions." Women felt that they were only minimally and indirectly engaged in the project.

Little ownership was shown by the local District Assembly because the project was centrally managed (Ghana Highway Authority 2008).

Sustainability of the increase in knowledge, attitudes, and practices related to HIV/AIDS is uncertain because health authorities are not involved. The HIV/AIDS commission allocates responsibilities to NGOs (Ghana Highway Authority 2008).

Opportunities

Focus group participants suggested that the distribution of benefits can be maximized using complementary activities such as access to credit for women to engage in trading and for farmers to increase production. Farming could also be made attractive to youth through training in modern farming techniques and availability of credits to purchase necessary agricultural inputs.

Local women and men should be engaged in road, market, borehole, and other facility maintenance and management to ensure ongoing benefits from the investments.

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Community-Based Rural Development Project 2004–11

Project Overview

The Community-Based Rural Development Project (CBRDP) is the second phase of implementing a community-driven development program in Ghana financed by the World Bank. The Village Infrastructure Project (VIP), which was the first phase of the project, was introduced in Ghana in 1998 and ended in 2004, with the district assemblies as the implementing agencies. The VIP aimed to enhance the quality of life of Ghana's rural poor through increased transfer of technical and financial resources for the development of basic village-level infrastructure that can be sustained by beneficiaries. To consolidate the gains of the VIP, the government of Ghana developed and implemented the CBRDP to further reduce rural poverty through increased productivity and incomes and by creating employment opportunities.

- **Objectives:**
 - To build the capacity of local administration and communities to deliver rural infrastructure through increased transfer of technical and financial resources for the development of village infrastructure that can be sustained by the beneficiaries.

- To consolidate empowerment of local communities and district assemblies to identify, plan, access, implement, and maintain village-level infrastructure investments that will promote economic well-being and natural resource management and contribute to growth.
- To support the decentralization policy of the government by designing the framework for the harmonized and coordinated delivery of rural infrastructure and strengthen institutional capacity of regional, district, and subdistrict assembly structures for improved delivery of rural infrastructure services to the poor.
- **Target Group:** Rural poor
- **Geographic focus:** Nationwide
- **Components:**
 - Institutional strengthening and capacity building to develop social capital among beneficiaries by empowering and bringing people together to participate in decision making through a learning-by-doing process.
 - Infrastructure for agricultural development to develop infrastructure and institutions (including the provision of credit) that would enhance farm and nonfarm economic activity of the rural population.
 - Development of rural enterprises and learning centers to strengthen community economies through the establishment of local community businesses, owned and managed collectively by the community or groups. This included onfarm development and strengthening cooperatives' business activities, research, business links and joint venture agreements, and microenterprise development.
 - Infrastructure for social and human development to enhance the quality of life of the rural population through the provision of potable water and health and educational facilities. This component was to link up and complement facilities provided under existing or proposed World Bank support for community water and sanitation, education, and health.
 - Community-based natural resource management to build the capacity of communities and district assemblies to enhance environmental governance and integrated management of land and water resources to ensure improvement in the quality of life of beneficiaries.
- **Donor and budget:** World Bank IDA (US\$82 million), government of Ghana provided additional 10 percent
- **Implementing agency:** Ministry of Local Government, Rural Development, and Environment
- **Outcomes and impacts:** Facilities completed include five dams, one dugout, 188 feeder roads with a total length 1,125.30 km, 20 market structures, 12 slaughterhouses, and other facilities spread across the country. The construction of market centers has drastically improved the gains of farmers. Most importantly, the centers have provided improved shelter and larger space for the vendors. It also grants them increased security for their goods. The construction of slaughterhouses and cold storage has also provided a hygienic and sanitary environment for handling and storing meat, thus promoting healthy conditions for the people. The construction of roads has increased rural people's access to social and economic facilities and services. It has not only facilitated the transportation of agricultural inputs to farms, but it has also made it easier for the transportation of farm produce to home and storage facilities. A total of 1,606 trainees have acquired various valuable vocational skills from the learning centers found in various parts of the country. Out of these trainees, 1,209 have been given funds to start their own businesses. Nine hundred and fifty-seven have been set up.

Gender-, Poverty-, and Environment-Responsive Approaches

The project recognized that it is important to address gender as a cross-cutting issue, in addition to the well-being of the poor and environmental sustainability.

- There were gender considerations in the subproject resettlement action plan (RAP). The microproject (project subcomponent) requires identification of project affected persons/project affected families (PAPs/PAFs) on individual and household levels, with special attention to women, children, and vulnerable groups.
- CBRDPs Strategic Environmental Assessment identified potential environmental risks likely to be caused by some project activities and provided an Environmental and Social Management Framework that will be used to avoid, manage, or mitigate all potential environmental and social impacts associated with the subprojects.
- Public consultations were conducted to identify key issues and determine how the concerns of all parties will be addressed. Project guidelines required the participation of vulnerable groups within the community, specifically the poorest of the poor, elderly, widows and widowers, and women. Using a bottom-up approach, with full participation from all groups, local priorities were implemented. Project implementers, along with communities, were trained and empowered to ensure a smooth implementation process.
- Rural/community banks were accredited to provide microcredit facilities. The government of Ghana and additional supportive agencies provide funding for credit facilities.

Value Added by a Gender-Environment-Poverty Approach

The PRA findings from the Goi community members indicate that the rehabilitation of the school has enhanced enrollment levels in the community. Children are able to attend school regularly and are not perturbed by bad weather conditions that previously were affecting academic performance. The children are now able to stay longer hours in school.

The few women in Anyaman who use the cold store constructed under the project facility no longer incur losses in businesses and also do not have to spend longer hours in preserving their fish through smoking or drying, which was also negatively affecting their health.

Challenges

The PRA focus group discussions revealed a lack of transparency and accountability by the District Assembly; officials are not sufficiently responsive to local constituents.

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Annex 7: Field Survey Tool Package

A growing consensus in development policy circles endorses the three fundamental core goals of environmental sustainability, gender equity and poverty reduction, and recognizes them as indispensable and inseparable aspects of sustainable development. Influential global conferences have agreed that development programs must tackle all three goals, and tackle them together, to achieve a just and sustainable impact. Each of these global conferences approached the environment-gender-poverty nexus and issued calls to focus new integrated efforts on sustainability and participation.

While the links between gender, environment, and poverty have been demonstrated at multiple levels, the interface between infrastructure (particularly water, energy and mining, and transport) and the gender-environment-poverty nexus has received less attention. To develop practical, operational tools, a more in-depth understanding of the positive and negative links between gender, environment, poverty, and infrastructure in specific settings is needed. Also needed is the documentation of good practices in fostering positive links between gender, poverty reduction, and environment through infrastructure and other sustainable development sectors.

Objectives of the Study

Specifically, the study will focus on the following:

- To map the relationship between gender, poverty, and environmental degradation in Ghana, and the interface with infrastructure and other sustainable development programs, using existing survey and other data to identify key entry points to break the negative cycle.
- To document good practices in infrastructure and other sustainable development projects (including World Bank and other development organizations) in Ghana that have effectively addressed the gender-poverty-environment nexus
- To increase the knowledgebase of local women's and men's perceptions of the gender-poverty-environment nexus and its interface with infrastructure and other sustainable development programs as well as their views and practices regarding the best ways to turn the negative linkages into positive ones.

Methodology

The field work for both the good-practice case studies and the rapid appraisal of local perceptions of the gender-poverty-environment nexus will use a combination of tools termed Participatory Rural Appraisal (PRA) methods (appendix 1). This methodology draws upon a range of data collection tools including community/civil society focus group discussions, ranking/scoring, seasonal diagram, well-being categorization, as well as key informant interviews with key community leaders and vulnerable households, particularly those headed by single mothers.

Table A5.1 provides the outline of the fieldwork guide, including key questions, issues, social groups, and methods from the good-practice case studies. These guiding questions are not intended to be prescriptive or exhaustive. These key issues/questions are meant to:

- Provide a framework for planning community-level interviews on good-practice infrastructural or sustainable development project case studies
- Guide analysis of information gathered using participatory tools
- Help identify gaps in information needed to develop sustainable projects that address the poverty, gender, and environment nexus.

Table A5.1 Fieldwork Guide: Key Questions, Issues, Social Groups, and Methods—Good-Practice Case Studies

Key research issues/questions	Individuals/groups to interview	Suggested exercises/methods
1. What is the impact of infrastructural or development projects implemented in your community/area in the past 5–10 years? - What infrastructural or development projects have been implemented in your community/area in the past 5–10 years? (<i>Note: if they do not mention the good-practice candidate project, ask them about it specifically</i>) - Which of these projects has had the most significant impact on your lives? - In what ways has it impacted your lives? - Which organization executed the project? - In what ways did community members participate in decisions regarding the project? - Who in the community participated in the decision making—women, men, girls, boys? - When was the project started and completed?	Discuss same issues/questions with: - A focus group of community leadership (chief and elders, magazia/women leaders, unit committee members, assembly person), 8–15 persons - A focus group of 8–15 women - A focus group of 8–15 men	Key tool: Ranking and scoring, and the 10-stone method
2. How did the project impact on females and males, and on gender relations in the community? - What role did women, men, girls, and boys play in the implementation of the project? - What were the direct and indirect benefits of the project to women, girls, men, and boys when it was being implemented? - Which of them benefited the most and which the least? - How did the project affect the relationships between men and women and girls and boys in the community? Between the young and the old? - What has been the impact of the project on women, men, girls, and boys since its completion, or what is the impact expected to be upon completion - What impact did the project make on customary control over land, inheritance rights, and widows rights?	Discuss same issues/questions with: - A focus group of 8–15 older women - A focus group of 8–15 older men - A focus group of 8–15 young women - A focus group of 8–15 young men	Key tools: Ranking and scoring, 10-stone method

Key research issues/questions	Individuals/groups to interview	Suggested exercises/methods
3. What are the main issues of poverty in the community and to what extent did the project address these? - How is poverty defined/understood in the community? - Into how many wealth/well-being categories would you put people in this community? - Which of these categories benefitted most/least from this project? - What are the key services available to the community (for transport, health, markets, education, and others)? - Who has access, who does not have access to these? Why? - How did the project enhance access to these by those who don't usually have access? - What are the key productive resources/assets in this community (for example, land, irrigation, labor, farm inputs, farm equipment or implements, such as tractors, donkey carts, bullock plows) - Who has access, who does not have access to these? Why? - How did the project enhance access to these by those who usually don't have access? - Which people have a say in decision making in this community and which people don't? Why? - How did the project enhance the voice of those usually left out of the decision-making process?	Discuss same issues/questions with: - A focus group of 8–15 women - A focus group of 8–15 men - A focus group of 8–12 male-headed poor households (migrants, persons with disabilities, widows, and others) - A focus group of 8–12 female-headed poor households (migrants, persons with disabilities, widows, and others)	Key tools: Wealth and well-being categorization, and institutional mapping and resource mapping
4. What are the main environmental issues in the community and to what extent did the project address them? - What resources are most at risk of environmental degradation? - What livelihoods are most at risk from environmental degradation? - Which people in the community are most at risk from environmental degradation? - How did the project protect/enhance the resources, livelihoods, and people most at risk from environmental degradation?	Discuss same issues/questions with: - A focus group of 8–15 women - A focus group of 8–15 men - A focus group of 8–12 male-headed poor households - A focus group of 8–12 female-headed poor households	Key tools: Natural resource and social mapping

Key research issues/questions	Individuals/groups to interview	Suggested exercises/methods
5. How can the priorities and knowledge of poor women, men, girls, and boys in poor communities be incorporated into policy, project planning and design, and project implementation?		
• Which institutions respond to the priorities of poor people? • What can be done to give poor people more voice in the decisions that affect their lives? Specifically: • What information do people need to have more voice? • How can institutions listen more and understand the local realities?	Discuss same issues/questions with: • A focus group of 8–15 women • A focus group of 8–15 men • A focus group of 8–12 male-headed poor households • A focus group of 8–12 female-headed poor households	Key tool: Institutional analysis
6. Case studies of specific project beneficiaries		
Any stories, anecdotes, or case studies should also be recorded because these provide supporting information to the analysis carried out in groups.		

Note: Field teams to take digital photographs to illustrate the impact of infrastructure or sustainable development projects on gender relations, poverty reduction, and environment sustainability.

Table A5.2. Fieldwork Guide: Key Questions, Issues, Social Groups, and Methods—Rapid Appraisal of Local Perceptions of the Gender-Poverty-Environment Nexus

Key research issues/questions	Individuals/groups to interview	Suggested exercises/methods
1. Which populations, within the community, are perceived as poor/vulnerable, and which are not? - How are poverty/wealth/well-being defined/understood in the community? - What are the local words used for different types of poverty/wealth/well-being? - How many wealth/well-being categories would you put people into in this community? - What are the approximate proportions of people/households in each poverty/wealth/well-being category? How has this changed over the past 15 years and why? - What are the key services available to the community (for transport, health, markets, education, and so forth)? How has this changed over the past 15 years and why? - Who has access, who does not have access to these? Why? - What are the key productive resources/assets in this community (for example, land, irrigation, labor, farm inputs, or farm equipment or implements such as tractors, donkey carts, or bullock plows) - Who has access and who does not have access to these? Why? How has this changed over the past 15 years and why? - Which people have a say in decision making in this community and which don't? Why? How has this changed over the past 15 years and why? - What impact have projects like (the name of an infrastructural or a development project) made on the lives of the poor and vulnerable in the community (in terms of access to key services, productive assets, and participation in decision making)? - In the future, how must projects like this be implemented to improve the lives of the poor and vulnerable in the community (in terms of access to key services, productive assets, and participation in decision making)?	Discuss same issues/questions with: - A focus group of community leadership (chief and elders, magazia/women leader, unit committee members, assembly person), 8–15 persons - A focus group of 8–15 women - A focus group of 8–15 men	Key tools: (i) Well-being/wealth categorization, (ii) community social map, and (iii) guided walk

Key research issues/questions	Individuals/groups to interview	Suggested exercises/methods
2. What is the status of men and women, or girls and boys, in the community and how do they relate to each other? - Men and women, boy and girls—who does what in this community? How has this changed over the past 15 years and why? - Men and women, boys and girls—who has power and how do they use it? How has this changed over the past 15 years and why? - How are women/men, young women/young men, and girls/boys affected by power? - Decision making—household level: who makes the decisions and on what issues? (Probe for the role of older women/older men; younger women/younger men; girls/boys in decision making.) How has this changed over the past 15 years and why? - Decision making—community level: who makes the decisions and on what issues? (Probe for the role of older women/older men; younger women/younger men; and girls/boys in decision making.) How has this changed over the past 15 years and why? - Men and women, boys, and girls—who has access to and control of productive resources at household and community levels? How has this changed over the past 15 years and why? - Men, women, boys, and girls—who benefits from these resources? How has this changed over the past 15 years and why? - What impact have projects like (the name of an infrastructural or a development project) made on the status of women, men, boys and girls, and how they relate to each other (in terms of roles, power, participation in decision making, access to key services, productive assets, and so forth)? - In the future, how must projects like this be implemented to improve the status/position of women and girls and the relationship between men and women and girls and boys?	Discuss same issues/questions with: - A focus group of 8–15 older women - A focus group of 8–15 older men - A focus group of 8–15 young women - A focus group of 8–15 young men - A focus group of 8–15 boys - A focus group of 8–15 girls	Key tools: Gender analysis tools such as (i) activity profile (ii) access and control profile (iii) sociopolitical profile, and (iv) income and expenditure profile

Key research issues/questions	Individuals/groups to interview	Suggested exercises/methods
3. How are various groups of people in the community affected differently by environmental change? - How has the environment changed over the past 25 years (in terms of vegetation, surface and groundwater, rainfall, soil, biodiversity, and so forth)? - What is the impact of the environmental change on livelihoods, economic and social services, energy (for example, fuelwood), or other factors? - How have the different people (for example, landless persons, migrants, ethnic minorities, the poor, women, men, youth, and other vulnerable groups) in the community been affected by the environmental change? - How are those most affected coping? - What impact have projects like (the name of an infrastructural or a development project) had on the environment? - How have projects like (the name of an infrastructural or a development project) enabled people in the community to better cope or deal with the environmental change? - In the future, how must projects like this be implemented to improve the environment and enable people to better cope with the environmental change?	Discuss same issues/questions with: - A focus group of 8–15 older women - A focus group of 8–15 older men - A focus group of 8–15 young women - A focus group of 8–15 young men - A focus group of 8–15 boys - A focus group of 8–15 girls	Key tools: (i) Natural resource map and (ii) guided walk
4. How can the priorities and knowledge of poor women, men, girls and boys in poor communities be incorporated into policy, project planning and design, and project implementation? - Which institutions respond to the priorities of poor people and women and girls? How has this changed over the past 15 years and why? - What can be done to give poor people and women and girls more voice in the decisions that affect their lives? Specifically: - What information do poor people and women and girls need to have more voice? - How can institutions listen more and understand the local realities?	Discuss same issues/questions with: - A focus group of 8–15 women - A focus group of 8–15 men - A focus group of 8–12 male-headed poor households - A focus group of 8–12 female-headed poor households	Key tool: Institutional analysis

Key research issues/questions	Individuals/groups to interview	Suggested exercises/methods
5. Case studies of specific project beneficiaries Any stories, anecdotes, or case studies should also be recorded because these provide supporting information to the analysis carried out in groups.		

Participatory Rural Appraisal (PRA) – Field Preparation, Tools, and Processes]

1. What Is PRA?

The methodology for gathering information from these communities includes a mix of methods and techniques known under the consolidated label “Participatory Rural Appraisal.” The methods involve a high degree of participation from the community being assessed. The philosophy behind this methodology puts a high demand on the appraiser’s ability to listen and be receptive toward community members’ views. Data collectors often have to go through a process where they **empty themselves**—learn to unlearn. A good way to remember how to approach community members, to create rapport and participation are included in the two words **REAL** and **LEARN**.

R - Respect of the people
E - Encourage people to share ideas
A - Ask questions
L - Listen carefully

L - Listen
E - Encourage
A - Ask and analyze together
R - Review
N - Note

One overruling principle for PRA work is: *Use your own best judgment at all times.*

PRA methods require invention and flexibility. PRA "offers a wide range of techniques which facilitate involvement of the community in all aspects of project design, implementation, monitoring and evaluation. This ensures that the community members are empowered and take a stronger interest and larger role in their development activities."³² They are therefore methods for creating dialogue. Which technique to apply depends on the situation—the context. The paradox is that if PRA is conducted rigidly according to fixed, sequenced time schedules and formulas, the whole idea of the exercise is jeopardized. The following information on the different techniques and the listed content are therefore guidelines and not rules. It will sometimes be noted that this or that technique fruitfully can be used before another, especially when starting in a new community. If so, conduct research to find out if it also applies to your specific situation. The main issue for you at this stage is to be able to answer the question: "Which kind of information do we want by the use of this PRA tool?" To answer this question, appraisers need to **constantly** refer to the objectives above.

Appraisers may feel, and rightly so, that they know much of the information being sought, but try to remain **empty** of these perceptions and listen to what the people themselves are saying. **Remember, appraisers are not in the field to teach, but to be taught and to learn.**

Some of the issues are difficult to question directly and to get a direct answer on. It is here that the appraiser’s knowledge (or that of the PRA facilitator) of the local way of life is so important. This

³² Theis, J., and J. M. Grady, *Participatory Rapid Appraisal for Community Development: A Training Manual Based on Experiences in the Middle East and North Africa* (International Institute for Environment and Development, 1991).

knowledge will make it possible for the appraiser to use the appropriate technique for the opportunity to clarify specific issues.

2. PRA Methods and Techniques

Some of the methods that could be used for this study—although some techniques, such as focus groups and semistructured and conversational interviews are common to most methodologies for qualitative research—include:

- Semistructured interviewing
- Focus group interviews
- Key informant interviews
- Community/social mapping
- Resource mapping
- Causal flow diagram
- Ranking and scoring (problem/preference/priority, pairwise, matrix)
- Historical/time line, trend analysis.

Semistructured interviews

Objective: To gain information on an issue from an individual or small group.

Description: Semistructured interviews are guided conversations where broad questions that do not constrain the conversation are asked, and new questions are allowed to arise as a result of the discussion. This is different from questionnaires and surveys where there are very structured questions that are not deviated from. A semistructured interview is therefore a relatively informal, relaxed discussion based around a predetermined topic. It is usually best to conduct such interviews in pairs with one person conducting the interview and one taking detailed notes. The process of a semistructured interview involves the interviewer presenting the context of the study and its objectives to the interviewee or interview group (such as a family or household). The set of questions are prepared but open, allowing the interviewees to express opinions through discussion. Questions are generally simple, with a logical sequence to help the discussion flow. Interview questions should be tested prior to interviews.

Semistructured interviews can easily be used in combination with another method. For example, you might take a guided walk with a group of youth while conducting a semistructured interview. Many of the visual group methods work best if conducted as a semistructured interview. Semistructured interviews can be a relaxed way to obtain insights not possible from structured questionnaires. Interesting, unforeseen topics may also emerge in this manner. However, such information may not be sufficiently precise to allow for statistical analysis, for which questionnaire data would be necessary.

Open-ended information is also more difficult and time consuming to synthesize well enough to obtain clear results. It can be difficult to keep interviews focused, making different interviews difficult to compare properly. Accurate note taking is particularly important to make interpretation possible.

Focus group discussions (FGDs)

Purpose: To use group discussion to collect general information, clarify details, or gather opinions about an issue from a small group of selected people who represent different viewpoints. FGDs can also be used to build consensus.

Steps: Determine the participants, 8–10 people is ideal. Depending on purpose, you can work with a homogenous or heterogeneous group. Alternatively, use a number of FGDs, each one fairly homogeneous, but the groups being different from each other. This enables interesting comparisons.

Present the group with a broad question to start with (for example, "How are different people in the community are affected by flood or drought?"). Discuss this question for the time period agreed upon beforehand, one or two hours maximum. There should be minimal intervention by the facilitator other than to make sure that everybody has a say. Perhaps the facilitator might need to repeat the question using different words from time to time or to probe if something is not clear.

Take detailed notes of the discussion. Focus groups are best if facilitated in pairs – one person to facilitate the discussion and the other taking notes. The discussion can also be recorded, but this will have the usual problems of time-consuming transcription and inhibiting the group.

One way to ensure that the information collected is reliable is to keep conducting different focus group sessions until the data become repetitious.

Tips/comments: If facilitated well, this method can bring out detailed information. It generally stimulates rich responses and also provides a valuable opportunity to observe discussions and to gain insights into behaviors, attitudes, language, and feelings. However, facilitation of a focus group requires considerable skill – both in moderating the group and in adequately recording the responses. Group dynamics, due to individuals being too shy, dominating, disruptive and so forth, can hamper the discussion.

This method can be used to obtain a consensus view. However, a small group of people cannot represent all the views held by, for example, an organization or community. On the other hand, if the group is not homogeneous enough, there can be great disagreement. So think carefully about group composition.

This method can generate focused insights faster and generally and less expensively than a series of key informant interviews or formal social surveys.

Community resource maps

Description: Resource mapping helps the appraisers know the community better and get a sense of the general layout of the community and what the key resources are. This tool also enables community members to look at their resource base. The map facilitates community members in identifying what resources and people are most vulnerable. Mapping is an activity that can be done while waiting for other members of the group to arrive.

Objectives:

- To identify the vulnerable members of the community
- To identify areas and resources at risk from climate hazards
- To identify available resources that could be used by community members to improve productivity

How to facilitate: Explain to participants that you would like them to build a map of their community. Choose a suitable place (ground, floor, paper) and medium (sticks, stones, seeds, pencils, chalk) for the

map. If the map is made on the ground or floor, the note taker will then have to copy the map on his/her notes.

Start with the community map. Note that the facilitator should explain the kind of map required for the research and help participants get started, but let them draw the map by themselves. For instance, the facilitator can ask them to draw the boundaries of the community, the location of settled areas, and critical facilities and resources in the community. This should include houses (the map doesn't need to show every house, but the general area where houses are located), facilities such as churches/mosques, health clinics, schools, and resources such as forested areas and water bodies. To start, ask community members to identify a landmark in the community and then someone among them puts a mark or a stone to stand for the landmark, and then they can continue from there.

When the community members agree that the map is representative of their community, begin the second step: identifying hazards. Ask the community members to identify:

- Resources, areas, and people most at risk from natural disasters and conflict
- Areas prone to health crises such as malaria
- Most important livelihood resources
- Poor and most vulnerable households

Seasonal calendars

Description: A seasonal calendar gives information on planting season/harvest, seasonal employment, migration, festivals, timing of disasters, and illnesses. Information can be used in identifying vulnerable times of the year, and in planning project activities.

Objectives: To identify periods of stress, hazards, diseases, hunger, debt, vulnerability, and more; to identify what people do during these periods, how they diversify their livelihoods, their time for community activities, and their coping strategies.

How to facilitate:

1. Explain to the participants that you would like to develop a calendar to show key livelihood activities that occur during the year.
2. Create the calendar on the ground or on large sheets of paper. Ask the community members to mark off the seasons of the year on the horizontal axis.
3. Ask people to list livelihood, events, conditions, and other items and arrange these along the vertical axis. The list should include:
 - Holidays and festivals
 - Planting and harvest seasons
 - Periods of food scarcity
 - Times of migration
 - Timing of hazards/disasters such as droughts and floods
4. When key events have been listed, ask the community members to plot the timing of them in the table. The note taker should record any events for which the group has difficulty deciding on timing.

Guided walks

Description: Guided walks provide the research team opportunity for direct observation within the community and to seek explanations from members of the community.

Objectives: To creating rapport between the team and the community members; give the team a cross-sectional view of the community; and observe, discuss, and register the social and economic conditions in the community.

How to facilitate: Explain to the opinion leaders or community members present that the team would like to be taken on a walk of the community by a diverse group of five to eight community members (women, men, girls, and boys). Determine the area to be walked; this is best decided by reviewing the participatory community/resource map, if one has been prepared, and then choose the area of maximum diversity.

Let the community members guiding the team lead the walk. Ask for explanations to things that come to your notice, even when you think you already know it. Stop to question members of the community whom you come across on the walk. Take notes from observations and information collected during the walk.

Institutional analysis using matrix scoring [[C head]]

Description: Institutional analysis to understand the role that different institutions play in different aspects of people's lives.

Objectives: To analyze services, institutions (modern and traditional), organizations, and powerful individuals in and outside the community; to analyze the links and relationships between institutions; to get community's perceptions of institutions and services and their impacts on community life.

How to facilitate: This analysis type is not easily translatable in local languages, and as a result people interpret it differently. Therefore, following questions can be asked to facilitate this discussion.

- Which institution supports you when you are in crisis or have problems?
- Which institutions do you go to when you need help?
- Which institutions ensure your personal or community security?
- Which institutions are important to you when it comes to your livelihood activities?
- Which institutions support or hinder your economic activities?
- Which institutions are important to you but are not effective?

Later, some negative questions can also be used, for example, which institutions should provide support to the people, but don't? Which institutions do you fear? Which institutions have a negative impact on the community?

Scoring can also be used to carry out institutional analysis. In fact, scoring enables the institutional analysis to be carried out on the basis of multiple indicators. In this case too, the analysis first starts with the listing of different institutions in the community. Once seven to eight institutions have been listed, place them along the first column of a matrix. The matrix can be prepared on the ground using chalk or twigs, or on paper using pens.

Next ask the group to discuss the basis on which they differentiate among these institutions. Allow the group to generate their own criteria. Once they have done so, check whether the following criteria have been included:

- Which of these institutions are considered important by them
- People's trust in these institutions
- Their effectiveness
- Provide help when needed
- People have a say in their decision-making process

If these have not been included, ask the group to consider them as well, and if they are willing, include them on the visual. These indicators are crucial for this study, and may have to be prompted by the facilitator. Make a note of criteria decided by the group and criteria introduced by the facilitators.

Ask the group to give scores for all the institutions on the list against each of the selected criteria. The institutions can also be ranked at the end.

Trend analysis

Description: To a great extent, this analysis covers the current circumstances faced by the community in terms of poverty and vulnerability that may have seen some changes overtime. Trend analysis helps discuss changes that have occurred or whether some of these conditions have been there for long or not.

How to facilitate: Once the issue for discussion has been identified, it is easier to start by asking about the present day conditions and then asking the group to reflect whether these were different earlier, say 20 years ago. Follow up by asking why these changes have taken place. Also ask the group whether they foresee any changes in these conditions in the next 10 years, what to do to address them in future, and what are their hopes and fears for the future.

Wealth/well-being ranking/categorization (abridged) [[C head]]

Description: It is not always necessary or possible to carry out a complete wealth/well-being ranking exercise in the study communities. The process of ranking all the individuals or households in a community is a lengthy one, and, in the Ghanaian cultural context, requires sensitive facilitation.

Objectives: Depending on the purpose and context –

- Identify different socioeconomic categories within a community
- Elicit people's criteria for differentiating between the socioeconomic categories
- Obtain proportions of people or households in each category
- Provide a basis for purposeful sampling to interview people from the various socioeconomic categories, especially the poor and vulnerable households.

How to facilitate: This exercise can be facilitated in different ways. First, start with a discussion on the differences among the people in the community, including the criteria to determine which individuals or households are placed into different groups. Once the criteria are established, ask the group to identify how many categories they can divide the community into. Having identified the categories, the group can be asked to use scoring to indicate the proportion of households (or individuals) in each category.

You could also start by asking the group to first identify the different categories they can divide the community into. Once the categories have been worked out, the group can be asked the basis on which they evaluate the differences (the criteria), and then the group can calculate the proportions of households (individuals) in each category.

Either way, the final analysis should provide the categories, the criteria, and the proportions of people in each category. The results from this analysis should be presentable in a table, like the following hypothetical example:

Table A5.3 Gender Analysis Tools Using Scoring

Activity Profile		
A. Productive activities Agriculture: activity 1 activity 2 (and so forth) Income generating: activity 1 activity 2 Employment: activity 1 activity 2 Other:	Women/girls	Men/boys
B. Reproductive activities Water related: activity 1 activity 2 Fuel related: Food related: Childcare: Health related: Cleaning and repair: Marketing related: Other:		
C. Community management/politics		

Access and Control Profile				
	Access		Control	
	Male	Female	Male	Female
Resources				
Land				
Capital/credit				
Labor				
Equipment				
Education				
Knowledge and skills				
Employment opportunities				
Health and fertility				
Nutrition and food security				
Other				
Benefits				
Outside income				
Asset ownership				
Income in cash				
Income in kind				
Asset ownership				
Basic needs (food, clothing, shelter)				
Education				
Political power, prestige				
Other				

Sociopolitical Profile			
Women's sociopolitical status in society	Lower (worse)	About equal	Higher (better)
Women's participation in decision making in the household at community level in public sector institutions society at large			
Self (image) Self-image of women image of women in society			
Organizational capacity			
Other			

Source: Based on the Harvard Analytical Framework, in *A Case Book: Gender Roles in Development Projects*, edited by Catherine Overholt, Mary B. Anderson, Kathleen Cloud, James E. Austin (Kumariyan Press, 1985).

Income and Expenditure Profile
Who earns what—male and female?
Sources of income—male and female?
How are these earnings spent?
What are the implications of these expenditure patterns for planning?



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