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**CGIAR Research Program on
Climate Change, Agriculture and Food Security (CAAFS)**

CAAFS GENDER STRATEGY

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1.0 Introduction

CCAFS is a 10-year strategic partnership of the Consultative Group on International Agricultural Research (CGIAR) and the Earth System Science Partnership (ESSP), CCAFS also partners with all 15 CGIAR centers and intersects with the other CGIAR Consortium Research Programs (CRPs). CCAFS brings together researchers in agricultural science, development research, climate science, and Earth System science, to address the need for evidence-based research and communications to bring clarity to the complex trade-offs that exist between food security, development, and climate action.

This Gender Strategy is intended to strengthen CCAFS' development impact through the integration of gender issues into research in keeping with commitments in the CGIAR Strategy and Results Framework to ensure that rural women benefit from its contribution to poverty reduction, enhanced environmental resilience, improved food security, human health and nutrition. CCAFS plans to situate its gender strategy within a broader strategy addressing social inclusion for different social groups while bearing in mind that women are central to agriculture in developing countries. This Strategy was prepared following CGIAR Guidelines for CRP Gender Strategy¹ that focus on showing how the CRP will address issues of gender in its research (as distinct from gender in the workplace which will be handled separately). Accordingly, the document is organized into seven sections that together provide an explanation of how the CRP will address gender issues relevant to its research outputs, activities and outcomes and against which the CRP will report in future, as part of the CGIAR annual monitoring process.

1.1 Justification

The well-known gender equity gap in agriculture means that farm women and men in developing countries have different vulnerabilities and unequal capacities to deal with the impact of climate change on agriculture. The gender gap encompasses differences among men and women in financial capital, in ownership and use rights over resources including land, water, livestock, grazing and fisheries; in capacity to capture beneficial environmental services; in labor use and the returns to labor, in political capital (empowerment) and in their access to technology, training, information and agricultural advisory services in general. Gender inequalities are significant because in most regions of the world one out of five farms is headed by a woman and women comprise about 40 percent of the agricultural labor force in developing countries, according to available census data (FAO, 2011). Insecure property rights, inequitable opportunities for asset accumulation and for income generation place women and in particular female-headed households, among the most vulnerable segments of the rural poor (Deere & Doss, 2006; Quisumbing, Haddad & Pena, 2001; Deere & Leon, 2002).

¹ CGIAR Consortium Office, April 2011. *Guidelines for the development of a gender strategy in each CRP.*

For the most vulnerable, climate change has the potential to worsen poverty and potentially, to reinforce gender inequalities in some of the most important capabilities for coping with additional hardship (World Bank, FAO & IFAD, 2009; BRIDGE, 2008; Demetriades & Espeln, 2010; Denton, 2002; Meinzen-Dick et al., 1997; Moser, 2007; Jones & Thornton, 2008). Case studies show for example, that one of the important effects of environmental stress in farming systems is the intensification of women's workloads (BRIDGE, 2008; Awumbila & Momsen, 1995; Agwu & Okhimamwe, 2009). In addition to their role as producers, farm women are usually responsible for cooking food, so their decisions about fuels can reduce carbon emissions, but their lack of information about energy-efficient alternatives is a handicap (World Bank, FAO & IFAD, 2009a).

Box 1 summarizes this overall picture in relation to important features of the gender gap in agriculture that require consideration in the design and implementation of gender-responsive climate adaptation and mitigation strategies. Based on cases drawn from Asia, Africa and Latin America the World Bank (2010) concludes that gender-sensitive climate change adaptation and mitigation produces measurably better results in terms of risk management protection of natural resources and reduction of greenhouse gases. Even though statistical data are still scarce on which to base inferences about gender-differentiated climate impacts on agriculture, the gender gap provides reasonable grounds for the expectation that poor rural women and men will generally be affected differently by the effects of climate change and will respond to and benefit differently from climate protection and adaptation instruments (Masika, 2002; Mitchell, Tanner, and Lussier, 2007; World Bank, 2010). The implications of gender for adaptation and mitigation are diverse and not all are negative. Even among the poor and vulnerable, farm women are not a homogenous group and will make different trade-offs and capture different levels of benefits depending on other cultural and socio-economic conditions (Doss, McPeak and Barrett, 2006; Peterman et al., 2010; Mitchell, Tanner, and Lussier 2007; Smith et al., 2001). However, little is known about how social and gender disparities actually affect the ways in which poor men and women respond to climate-change impacts on agriculture and there is serious scarcity of gender-disaggregated data analysis with which to address this issue (Lambrou and Piana, 2005).

Box 1. The Gender Gap in Agriculture

	The gender gap	Implications for climate change adaptation and mitigation
Land, water and other agricultural assets	For those developing countries for which data are available, between 10 percent and 20 percent of all land holders are women, although this masks significant differences among countries even within the same region. The developing countries having both the lowest and highest shares of female land holders are in Africa.	Gender-responsive receptivity to mitigation options and adaptive strategies requires closing the gap in access to land, water, forest, fishery and other agricultural assets, reforming laws to guarantee equal rights, empowering women to ensure that they are aware of their rights and able to claim them.
Labour Markets	Farms run by female-headed households have less labour available for farm work because these households are typically smaller and have fewer working-age adult members and because women have heavy and unpaid household duties that take them away from more productive activities.	Adaptive intensification of farming systems freeing farmwomen's time through labour-saving technologies and the provision of public services, raising women's human capital, attention to employment and income implications for women among the semi-landless or landless labouring poor.
Financial Services	Smallholders everywhere face constraints in accessing credit and other financial services, but in most countries the share of female smallholders who can access credit is 5–10 percentage points lower than for male smallholders. Access to credit and insurance are important for accumulating and retaining other assets.	Legal and institutional reforms to ensure risk management and mitigation options are responsive to the needs and constraints of women. Innovative delivery channels making insurance mechanisms and financial services more readily available to rural women.
Human and Social Capital	The gender gap in education and access to information and communications technologies is particularly acute in rural areas, where female household heads sometimes have less than half the years of education of their male counterparts.	Designing climate-related information content and delivery methods appropriate for women. Building women's social capital for collective action through reducing transaction costs, pooling risks, developing skills and building confidence.
Technology	Women are much less likely to use purchased inputs such as fertilizers and improved seeds or to make use of mechanical tools and equipment. In many countries women are only half as likely as men to use fertilizers.	Improving women's access to agricultural technologies for adaptation and mitigation, developing strategies for climate-ready crop and livestock improvement that consider women's land, labor and capital constraints
Source: CCAFS & FAO. 2011. <i>Gender and climate change issues in agriculture and food security research and rural development</i> .		

Although the implications of gender inequities for the design and implementation of climate-change adaptation and mitigation strategies related to agriculture are not yet well-documented or understood, ample risk of widening gender inequities can be anticipated if the gender gap is not addressed. Risks include:

- Lower rates of adaptive innovation and heightened food insecurity among women food producers compared to men if climate-ready crop varieties, crop, livestock, forest, fishery or water management practices are not compatible with women's preferences and constraints
- Lower incomes for women if they lose control over traditionally female sources of income generation as markets and product niches shift in response to climate change
- Increased drudgery in provisioning household fuel and water as their scarcity intensifies or if male outmigration from farms accelerates in response to hardship
- A widening gap between women and men in capacity to adapt if women's indigenous knowledge loses its viability and as food and medicinal plants and domestic animals important to women are lost
- Increased vulnerability to risk for women if the gender gap persists in access to extension and communication technologies and thus to timely climate-change related information
- Heightened, unequal exposure to the impacts of drought or flooding if risk management mechanisms fail to cater to gender-differences
- Policies and policy frameworks for climate change adaptation and mitigation (e.g. national climate adaptation plans) and mechanisms for emerging markets in environmental services (e.g. mitigation funds) that overlook women's constraints and needs and adversely affect gender equity.

The risk of overlooking or inadvertently contributing to adverse outcomes of this type is why consideration of gender differences needs to be factored into research intended to build capacity of the poor to mitigate and adapt to climate change impacts on agriculture. According to FAO (2011), a concerted effort to tackle gender differences in agriculture could increase agricultural output in the developing world by 2.5–4 percent on average and lift an estimated 100 million people out of poverty, if women farmers had the same access to resources as men. Climate change is likely to make this transformation more difficult. There is therefore, an important need and opportunity for science-based innovation tackling climate-change impacts on agriculture to contribute to closing the gender gap and to realizing the associated impacts on productivity increases and poverty reduction.

2.0 Gender in relation to the goals and objectives of CCAFS

2.1 Goals of CCAFS

The goal of CCAFS is “To promote a food secure world through the provision of science-based efforts that support sustainable agriculture and enhance livelihoods while adapting to climate change and conserving natural resources and environmental services.” Two sub-goals are:

- To identify and test pro-poor adaptation and mitigation practices, technologies and policies for food systems, adaptive capacity and rural livelihoods
- To provide diagnosis and analysis that will ensure the inclusion of agriculture in climate change policies, and the inclusion of climate-change issues in agricultural policies, from the sub-national to the global-level in a way that brings benefits to the rural poor.

The goals of bringing benefits to the rural poor and of improving the supply of pro-poor adaptation and mitigation practices, technologies and policies require gender-responsive research and explicit gender impact. In the CCAFS research program, gender is approached primarily as a cross-cutting theme nested in a broad concern with positive impact on social inclusion for the rural poor. Gender analysis² is applied to deepen the relevance of other research themes.

In addition, in view of the substantial knowledge gap with respect to the implications of gender for climate change adaptation and mitigation in agriculture, each of the four Themes has defined key questions that require gender research to understand the underlying causes of differences in the ways poor men and women manage their assets and livelihoods in response to climate-change. The Program will use this knowledge for formulating adaptation and mitigation strategies, technologies and policies that diminish related gender and social disparities.

Linking knowledge with action is an important aspect of the overall Program strategy. Thus, the gender strategy includes special efforts to actively engage women as well as men in climate-change related processes from local to global levels. This principle encompasses activities ranging from participatory action research in benchmark sites to global policy dialogue.

2.2 CCAFS Objectives

CCAFS works around four Themes, three of which include adaptive research and development activities in benchmark sites representing different climate-stress contexts. Themes 1, 2 and 3 involve the development of knowledge, strategies, methods and tools leading to the identification and testing of technologies, practices, institutional arrangements and policies to support progressive adaptation over the long-term, risk management over a shorter time frame and mitigation for agriculture in the face of climate change. Theme 4 provides the diagnosis for engagement with stakeholders in the policy context via strategies for linking knowledge with action, regional scenario development and vulnerability characterization, building integrative ex ante assessment tools and analyses and strengthening capacity development. Place-based research is located in three target regions with additional target regions to be identified. The three initial focus regions are East Africa, West Africa and South Asia.

CCAFS Themes are designed to add value to technology development in other CRPs through close collaboration in CCAFS target regions and benchmark sites: CRP1 (Integrated systems), CRP2 (Policies, institutions and markets), CRP3 (Sustainable production), CRP 4 (Nutrition and health), CRP5 (Water, land and ecosystems) and CRP6 (Forests and Trees) by adding the climate

² Gender analysis refers to the study of different roles, responsibilities, assets and agency of men and women, including their differential access to, control over and use of natural, financial, social, political and infrastructure-related resources.

change context. Thus gender-responsive objectives of CCAFS are linked to objectives and activities to produce gender-differentiated outputs collaboratively with other CRPs.

The Program's objectives are subdivided by Theme (see Table 2.1). The application of gender analysis and research are integrated into the Milestones for each objective. The gender content of milestones is summarised in Table 2.1 and can be consulted in detail in the Program logframe. Gender analysis is applied in: (a) *ex ante* assessment of the likely implications of social and gender differences for the design of research products; (b) the testing and evaluation for the development of research products; and (c) impact assessment.

The objectives for gender analysis and research are to:

1. Contribute to the design of processes, technologies and related policy and institutional frameworks for the adaptation of farming systems in the face of future climate uncertainties that reduce gender disparities in critical vulnerabilities, reduce female drudgery and improve incomes for resource-poor men and women (Theme 1)
2. Integrate consideration of gender differences in to the development and testing of improved climate information products and services and risk management innovations so that these produce benefits for resource-poor women producers and traders as well as men (Theme 2)
3. Evaluate selected organizational, policy and financial arrangements and farm-level agricultural mitigation practices to deliver benefits from mitigation activities to poor women as well as to men (Theme 3)
4. Improve the gender-relevance of frameworks for policy analysis, databases, methods and *ex ante* impact assessment for planning responses to climate change in agriculture (Theme 4)

CCAFS plans to set gender specific participation targets with partners for investment in improving female leadership, scientific capacity and engagement in CCAFS-related policy dialogue, research of all types and testing of adaptation and mitigation strategies, practices and technologies with local partners.

Table 2.1. Gender in CCAFS Themes and Objectives

Theme 1. Adaptation to progressive Climate Change	Theme 1. Gender content	Theme 3. Pro-Poor Climate Change Mitigation	Theme 3. Gender content
Objective 1.1 Analyze and design processes to support adaptation of farming systems in the face of future uncertainties of climate in space and time	Contribute to the design of processes, technologies and related policy and institutional frameworks for the adaptation of farming systems in the face of future climate uncertainties that reduce gender disparities in critical vulnerabilities, reduce female drudgery and improve incomes for resource-poor men and women	Objective 3.1 Inform decision makers about the impacts of alternative agricultural development pathways	Evaluate selected development pathways, organizational, policy and financial arrangements and farm-level agricultural mitigation practices to deliver benefits to poor women as well as to men
Objective 1.2 Develop breeding strategies for addressing abiotic and biotic stresses induced by future climatic conditions, variability and extremes, including novel climates		Objective 3.2 Identify institutional arrangements and incentives that enable smallholder farmers and common-pool resource users to reduce GHGs and improve livelihoods	
Objective 1.3 Improved adaptation policies from local to international level supporting farming communities, rural institutions and food system actors adapted to future climate conditions in at least 20 countries		Objective 3.3 Test and identify desirable on-farm practices and their landscape-level implications	
Theme 2. Adaptation through Managing Climate Risk	Theme 2. Gender content	Theme 4. Integration for Decision Making	Theme 4. Gender content
Objective 2.1 Identify and test innovations that enable Rural communities to better manage climate-related risk and build more resilient livelihoods	Integrate consideration of gender differences in to the development and testing of improved services and risk climate information products and management innovations so that these produce benefits for resource-poor women producers and traders as well as men	Objective 4.1 Explore and jointly apply approaches and methods that enhance knowledge to action linkages with a wide range of partners at local, regional and global levels	Improve the gender-relevance of stakeholder dialogues, frameworks for policy analysis, databases, methods and ex ante impact assessment for planning responses to climate change in agriculture
Objective 2.2 Identify and test tools and strategies to use advance information to better manage climate risk through food delivery, trade and crisis response		Objective 4.2 Assemble data and tools for analysis and Planning	
Objective 2.3 Support risk management through enhanced prediction of climate impacts on agriculture, and climate information and services		Objective 4.3 Refine frameworks for policy analysis	

2.3 Research questions

Research questions related to gender in CCAFS address critical knowledge gaps identified as obstacles to progress in the Theme-based research. The principal questions with this purpose are:

1. What are the implications of gender relations for vulnerability to different levels of exposure to climate stress and for adaptation to progressive climate change at the level of individuals, households and communities?
2. What are the characteristics and causes of gender-differentials in access to and use of climate-related information?
3. What are promising institutional arrangements enabling women as well as men to benefit from incentives for delivering environmental services?
4. What gender-differentiated patterns can be identified in the trade-offs poor men and women make between adaptation and mitigation options for dealing with climate change in agriculture?
5. How are risks arising from climate change or variability distributed among men and women with different resource endowments and assets?

Recently, the issue of ‘climate smart’ agriculture has become increasingly discussed and while still controversial, it is appealing in that it does not differentiate between agricultural practices, strategies, policies and institutions being related to adaptation versus mitigation (as indeed farmers themselves don’t do, and many of them accomplish both, for example). Thus an overarching question for CCAFS relating to gender, and one very relevant to many of the other CRP’s is:

- What are the ‘climate smart’ agricultural and NRM practices, strategies, policies and institutional arrangement opportunities we are seeing being adopted (or not) across a wide range of CCAFS and CRP sites, and if and how are they beneficial for men and for women?

As described below, a cross-CRP/CG centre discussion underway is the selection of ‘gender sentinel sites’ where innovative, multi-scale gender research will be designed and implemented to address such a cross-cutting and key question.

3.0 Impact Pathways

Success for CCAFS requires women as well as men to benefit from CCAFS' expected impacts of poverty reduction via more sustainable rural livelihoods, improved food security and fair access to benefits from participation in emerging markets for environmental services, for millions of resource-poor people dependent on rural livelihoods. The Program's rationale (or theory of change) for expecting its research outputs to contribute to these outcomes and impacts is that engagement with a cross-section of key stakeholders for the co-development and use of its key knowledge and capacity building outputs will lead to positive changes in decision-making about policy, technology and institutional innovations for dealing with climate change in agriculture. Key changes in decision-making are targeted with respect to adaptation funding (Theme 1), risk management (Theme 2), mitigation incentives (Theme 3) as well as overall national and regional climate change and agricultural development policies and strategies (Theme 4). The novel adaptation, risk-management and mitigations strategies that result from more informed decision-making will lead to improved opportunities and capacity for the poor in the face of climate change, so that income, nutrition and food security are increased.

3.1 Gender dimensions of impact pathways

The gender dimension of CCAFS impact pathways is summarized in Figure 1. Reading from left to right in Figure 1, the key research outputs from integration of gender analysis into R&D, including research on the underlying causes of gender disparities, will lead to better understanding of what causes unequal vulnerabilities and constraints in agricultural systems undergoing climate change. This knowledge will lead to research outcomes such as improved understanding in diverse agencies and stakeholders of how to overcome gender differences that are critical for successful adaptation, risk management and mitigation. Integration of gender analysis and the use of gender research findings into the main body of CCAFS programming will also depend on linking knowledge effectively to action. Scientists, development partners, policy makers and other actors contributing to the Program's outcomes and impacts will be better equipped to use knowledge of gender differences to design and target interventions that really do reduce vulnerabilities and unequal capacities for adaptation and mitigation.

The principal research outcome of improved knowledge and capacity will be changes in decision-making for the design and implementation of adaptation, risk management and mitigation strategies. CCAFS will engage actively with stakeholders in putting this knowledge into use in the form of innovations that contribute to more equal opportunities for women dealing with climate-change. Use of these strategies is expected to lead to development outcomes: improved gender equity in the distribution of costs and benefits from climate change; leading to the ultimate impacts: reduced poverty, increased income and better food security for women as well as for men.

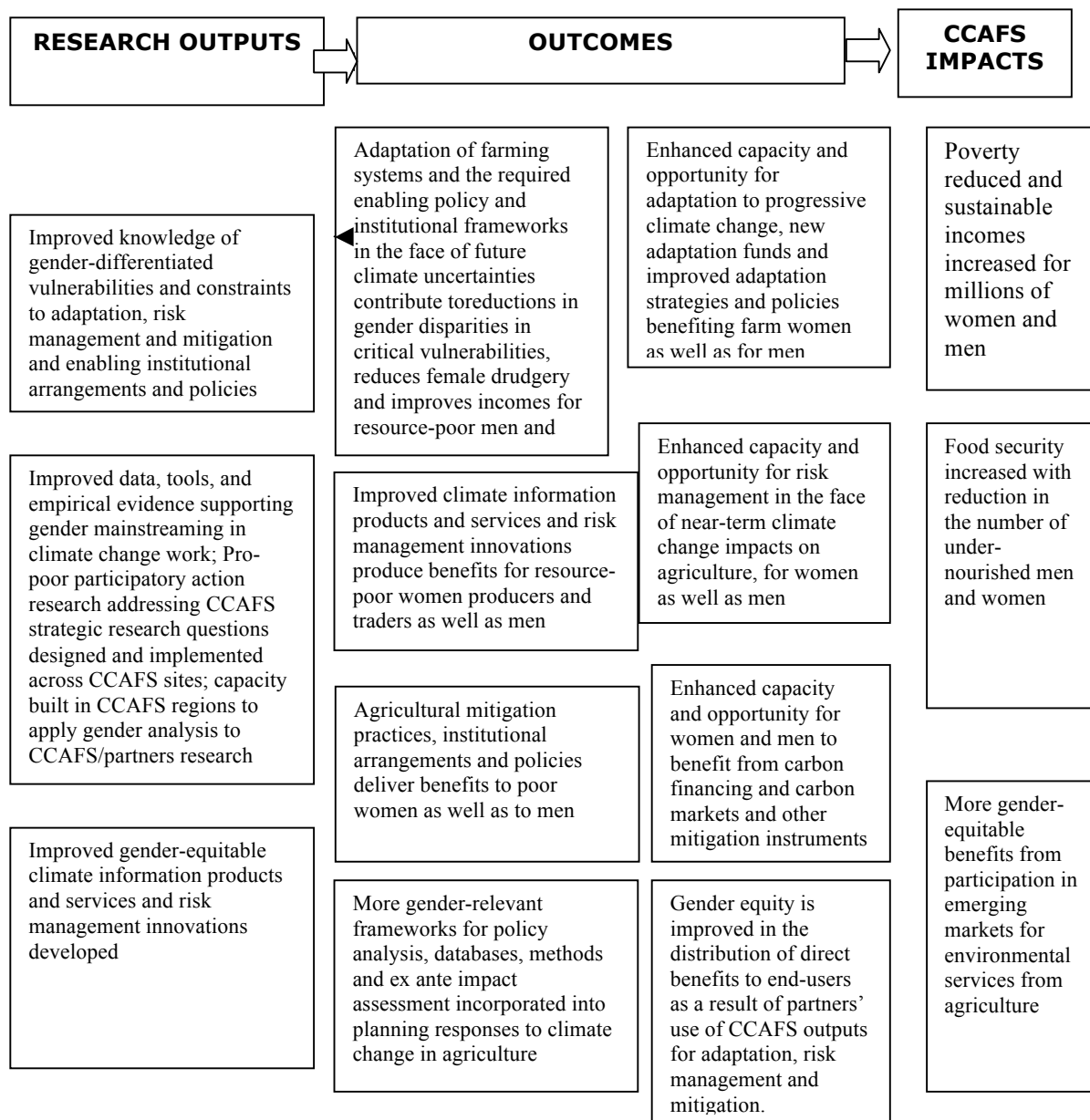


Figure 1. Generic impact pathway (based on the impact pathway in Figure 3 in CCAFS (2011)).

3.2 Partnerships for achieving outputs, outcomes and impacts

The CCAFS' partnership strategy works at global, regional and local scales. Global partnerships are focused on four major processes linked to its outcomes and impacts: (a) Science assessments (b) Adaptation funds (c) Mitigation mechanisms (c) Global food security. Collective communication with partners of CCAFS research products is a central aspect of the strategy for engaging with key actors in the science, development and policy domains. Partnering with civil society women's organizations with global reach will be key to integrating gender in outcomes and impacts at global and regional levels (these organizations include the Gender and Climate Change network (Gender CC), the Women for Climate Change Justice Network and the Women's Environment and Development Organization). CCAFS plans to develop a strategic partnership with at least one of these organizations. Currently CCAFS has a strategic partnership with FAO which has a goal of embedding gender issues into national agricultural and climate change policies; and with the University of Oxford, UK for community-based adaptation planning including gender analysis.

These partners will leverage the use of CCAFS gender-relevant research outputs at global and regional scales alongside other CCAFS partners such as science and meteorology organizations, sponsors and managers of adaptation and mitigation funds, global development and food security agencies, farmers' organizations and platforms, industry platforms and standards agencies, carbon market players and regulators, development and environment NGOs and multi-stakeholder policy networks and initiatives.

For the mainstreaming of gender analysis into research, CCAFS will also partner with other CRPs to make sure gender issues are addressed throughout the research cycle. The CCAFS partnership with FAO will address mainstreaming gender into CCAFS action research with regional and local partners. Formal training in gender analysis will be conducted with partners to facilitate and improve the use of gender analysis and gender-sensitive participatory methods so that women participate to the same extent as men. This partnership will work on the development of:

- (a) Tools for gender mainstreaming in climate change work;
- (b) Building capacity in the CCAFS priority regions (West Africa, East Africa and South Asia) to apply gender analysis to CCAFS' and partners' research product development; and
- (c) Participatory action research addressing the strategic research questions identified in this document to inform and improve research product targeting, design, testing and evaluation.

CCAFS will also develop a strategic partnership with at least one organization or team that is a globally-recognised source of expertise (within CG centres, a University or think-tank) in other research approaches to addressing its strategic gender research questions. This will complement the FAO partnership's focus on place-based, participatory action research by catalyzing gender research in partners with a strong disciplinary foundation for addressing some key knowledge gaps that represent important risks or obstacles for achieving CCAFS outcomes and impacts.

A Competitive Small Grants Program will be conducted by CCAFS to catalyze and support collaborative research on topics relevant to the research questions identified in the gender

strategy. Initially the Grants program will prioritize working with female PhD scientists and students enrolled in a PhD program based in CCAFS priority geographic areas currently in East Africa, West Africa, and South Asia, and researchers who are citizens of Ethiopia, Kenya, Tanzania, Uganda, Burkina Faso, Ghana, Mali, Niger, Senegal, Bangladesh, India, or Nepal.

4.0 Activities

This section explains the activities to integrate consideration of gender issues through the research cycle and the methods to be used. How requirements for gender expertise will be met is discussed and related capacity building activities are outlined. A general principle is the use of strategies and approaches that enhance women's active participation in CCAFS-related research, capacity building opportunities, and policy engagement activities and events at local, national, regional and international levels.

4.1 Approach and methods

4.1.1 Gender analysis

Empirical gender analysis integrated into CCAFS Theme-based research will use a range of methods and tools. CCAFS will collect these tools and make them available through its web-based knowledge platform. When necessary, CCAFS will ensure appropriate training in their use is conducted for women and men researchers and field staff so that reliable data is obtained from women informants as well as from men.

- Panel studies of climate-change adaptation and mitigation processes using baseline and follow up studies will collect gender-disaggregated data at individual (intra-household), household and community scales. Baseline studies characterize current conditions and contribute to problem diagnosis, ex-ante impact analysis and targeting; follow-up studies will contribute to monitoring, evaluation and ex-post impact assessment. Baselines are being established in selected benchmark sites using a combination of survey methods and qualitative participatory research methods. Wherever possible, these are designed to complement similar panel studies already in existence in other sites.
- Ex-ante analysis and ex-post impact assessment incorporating gender analysis will use a range of modelling and scenario- building tools
- Comparative case studies integrating gender analysis will be conducted across benchmark sites.
- Field testing of proposed innovations of all types uses participatory, gender-sensitive methods to conduct evaluations with representative, gender-disaggregated social groups of prospective end-users.
- Tools being developed for the use of climate analogues to study farmers' reactions to progressive climate change and proposed adaptive strategies will incorporate gender analysis

4.1.2 Gender research

Gender research addresses specific questions where CCAFS has identified a need to deepen understanding of how gender disparities affect vulnerabilities and capacities for adaptation or mitigation). These questions are addressed primarily through participatory action research (PAR) conducted in benchmark sites in tandem with the survey research described above. The focus of PAR activities, which cross-cut Themes 1-3, is on climate-change risk, adaptation and mitigation strategies that impact agriculture and food security of communities, households and individual male and female household members who are facing climate change [CCAFS & FAO, 2011].

One objective is context analysis, designed to characterize the social, economic, environmental and institutional constraints and resources available to communities, households and individual men and women for dealing with climate change as well as their capacities, ongoing strategies, risk perceptions and willingness to act. A second objective is livelihood analysis, to differentiate how well-being, food security and income generation of men and women with different levels of resource endowments and assets are affected by climate change. A third objective is to develop and pilot, with development partners, a gender-responsive and socially sensitive approach to engage intended beneficiaries as stakeholders in implementing adaptation and mitigation interventions expected to utilize CCAFS research outputs. This includes understanding how service providers are delivering services that involve use of CCAFS outputs, such as climate information, extension advice on adaptation or payments for carbon designed to benefit poor men and women farmers.

The use of a participatory approach is based in the goal of building local ownership of positive outcomes and a foundation for self-reliance among men and women participants in adapting to climate-change impacts on agriculture. Different kinds of stakeholders will be engaged in the conduct of the work to enable gender representation. Participatory approaches are used to ensure that poor men and women have a voice in the action research. The approach differentiates between practical gender needs that are a response to an immediate, perceived necessity in women's daily lives and strategic gender needs related to women's subordinate role in society — notably those related to access, ownership or control of natural, financial, social and political assets — crucial for dealing successfully with climate change.

4.2 Gender in the research cycle

4.2.1 Targeting and priority setting stage of the research cycle

Targeting will use foresight studies involving scenario development at different scales, vulnerability assessments and ex ante impact assessment analysis to diagnose vulnerabilities and earmark areas of intervention where specific adaptation and mitigation options may be feasible, taking into account gender disparities. Improving the availability and quality of gender-disaggregated data at different scales for these studies is a priority: thus, existing and new baseline studies are being co-ordinated in a global network of benchmark sites.

4.2.2 Research product discovery and development stages

Gender analysis is integrated into research product discovery and development in each of the four themes via: (a) field testing and assessment of options with respect to their potential to benefit or adversely affect different social groups, including women; (b) prioritization that considers potential gender-differentiated impact as a criterion for selection; (c) when applicable, testing and evaluation of options with representative socially and gender-differentiated groups of users using participatory, gender-sensitive methods; and (d) publication of tools, strategies, models, case studies and guidelines that include reference to gender implications. More detailed information on integration of gender analysis is available in the logframe milestones.

4.2.3 Monitoring, evaluation stage of the research cycle

Consideration of gender differences in program outcomes and impacts is built into this stage of the research cycle principally via reporting progress against the CCAFS log-frame and its milestones and through the Program's procedures for learning based in action. For example, for 2012, the CCAFS logframe has 43 milestones, of which 23 refer to activities concerned with gender. The process of M&E in relation to gender is discussed in detail in Section 5.

4.3 Theme-based research activities integrating gender

4.3.1 Theme 1 – Adaptation to progressive climate change

Outcome 1.1 Agricultural and food strategies that are adapted towards predicted conditions of climate change

Novel applications of participatory, gender-sensitive methods will be tested for grounding climate-change model results to community-level decision-making processes that address food security issues. Video testimonials will be produced on gender-specific farmer adaptation and mitigation strategies (including indigenous knowledge, coping mechanisms and perceptions of future challenges) in three sites in each of the three CCAFS initial target regions. The innovative Analogue Methodology is being developed using participatory tools and approaches to elicit and interpret gender-differentiated responses of farmers to climate stress conditions that represent a likely future for their current farming system. A web-based "Adaptation and Mitigation Knowledge Network" platform is being established to share and exchange knowledge with the objective of linking gender-differentiated farmer's realities and experiences on the ground with use of CCAFS research outputs.

Outcome 1.2 Crop breeding strategies for addressing abiotic and biotic stresses induced by future climate change

This work focuses on specific issues related to breeding for climate-proofing crops and complements work conducted by comprehensive crop-breeding CRPs which will deal with gender issues for a given crop on a broad front. Here, gender differences will be considered in the development of breeding strategies only in terms of whether crops can be characterized as

“women’s” or “men’s “crops. Policy briefs will guide investment in climate-proofed breeding investments that show promise for pro-poor and gender-responsive impact

Outcome 1.3 Improved adaptation policies from local to international level supporting farming communities, rural institutions and food system actors adapted to future climate conditions in at least 20 countries.

Research will identify gender differences in the way current institutional arrangements, policies and other mechanisms improve adaptive capacity and how gender influences the roles played by different social groups in supportive interventions. Gender-differentiated outcomes, including the distribution of costs and benefits of a variety of novel adaptation options will be assessed. Policy options will be evaluated for potential positive or adverse effects on different stakeholders differentiated by gender. Findings will be shared with key policy makers in the form of recommendations on how to target adaptation strategies to enable equitable access to alternative strategies.

4.3.2 Theme 2 — Adaptation through managing climate risk

Outcome 2.1 Systematic technical and policy support by development agencies for farm-to-community level agricultural risk management strategies and actions

Research at the community, household and individual level uses gender analysis to identify and evaluate the differential impact of practices, technologies and production systems selected for demonstration on different social groups, particularly women and men, and communicate gender implications of alternate strategies through technical and policy support activities. Guidelines will be developed for ensuring equitable participation of women and other socially disadvantaged groups in participatory action research on climate-related risk management. A summary report will be prepared and disseminated on gender-differentiation of risk management strategies and differential access to climate-related information and services at benchmark locations in two countries in each of the CCAFS initial target regions. An assessment framework will be developed to understand gender differences in climate-risk perception, aversion and their influence on risk management.

Outcome 2.2 Better climate informed management by key international, regional and national agencies

Research will evaluate the differential impact of production, prices, incomes, consumption, trade and humanitarian assistance for climate risk management on different social groups, particularly men and women. A review paper will be produced with policy advice on how to enable equitable access for gender-differentiated groups with different resource levels.

Outcome 2.3 Enhanced uptake and use of improved climate information products and services and of information about agricultural production and biological threats, by resource-poor farmers particularly vulnerable groups and women

Research will use gender analysis to identify and evaluate the differential impact of climate information services on women and men. A report and policy advice will be prepared on the gender and social equity of climate information sources and services and delivery mechanisms. At two benchmark locations, a demonstration will be conducted of prototype gender-and socially equitable information service delivery. A curriculum will be designed and disseminated for service intermediaries on how to overcome gender and other social inequities in communicating climate information.

4.3.3 Theme 3 — Pro-poor climate mitigation

Outcome 3.1 Enhanced knowledge about agricultural development pathways that lead to better decisions for climate mitigation, poverty alleviation, food security and environmental health used by national agencies in at least 20 countries

Research will use ensembles of models for *ex ante* analysis to elucidate the gender and social implications of alternative development pathways and the trade-offs these involve. To inform decision-makers of the findings, a global expert workshop will be conducted on the impacts of alternative mitigation scenarios on men and women and marginalized farmers, and a synthesis report will be produced and communicated for use in global forums, capacity building events and websites.

Outcome 3.2 Improved knowledge about institutional incentives and arrangements for mitigation practices by resource-poor farmers, project developers and policy makers in at least 20 countries

Gender analysis will be used to improve the design and increase uptake of novel incentive mechanisms and institutional arrangements intended to deliver benefits to poor farmers and women. Publications, stories and films will be produced showcasing barriers to entry to the carbon market for women and other social groups, and the range of better alternatives to better inform decision makers in target regions about gender-responsive and pro-poor options and policy choices. CCAFS will conduct training for decision-makers on designing payments for carbon to benefit women farmers.

Outcome 3.3 Key agencies in at least ten countries that deal with climate mitigation promote technically and economically feasible agricultural mitigation practices that have co-benefits for poor farmers, particularly vulnerable groups and women

Research involves the use of *ex ante* and *ex post* analysis of gender-disaggregated impacts of climate-change adapted farm and landscape level practices. Methods for quantification of agricultural greenhouse gases that address different needs of men and women farmers will be sought.

4.3.4 Theme 4 — Integration for decision-making

Outcome 4.1 Appropriate outcome and mitigation strategies mainstreamed into national policies in at least 20 countries, in the development of plans of at least five economic areas covering each of the target regions and in the global processes related to food security and climate change

Overall, Theme 4 provides a diagnostic and analytical framework for the whole of CCAFS to assess likely impacts of climate change on agriculture and likely impacts of policies and program interventions on adaptation and mitigation. Evidence of the benefits of gender-responsive and pro-poor adaptation and mitigation policies and strategies will be fed into ongoing Theme 4.1-led regional and national scenarios and other ‘linking to policy’ engagement and communication efforts. Regional partner dialogues are planned on gender and climate change issues to raise awareness and share evidence across CCAFS regions. A global conference will be organized on gender and climate change that brings together work from Themes 1, 2 and 3. This will be organised in collaboration with some of the strategic partners for gender and climate change, including CAPRi (the CG-wide collective action and property rights program) and CRP2.

Socially and gender-differentiated decision aids and information products will be targeted to different types of stakeholders. For the development of these products, gender analysis will be used, together with visualization techniques in pilot studies to capture the perceptions of different stakeholders on climate change impacts and in other studies of effective engagement strategies for utilizing climate information for decision-making. Different mitigation and adaptation options and national policies will be assessed using gender analysis to promote equitable access to the technical and institutional assistance required.

Outcome 4.2 Improved frameworks, databases and methods for planning responses to climate change used by national agencies in at least 20 countries and by at least 10 key international and regional agencies

Activities include identification of knowledge and information gaps for gender-disaggregated analyses and sources of gender-disaggregated data that can be used for *ex ante* and *ex post* impact assessment. Regional site characterization will generate gender-disaggregated baseline data at individual, household and village scales.

Outcome 4.3 New knowledge on how alternate policy and program options impact agriculture and food security under climate change incorporated into strategy development by national agencies in at least 20 countries and by at least 10 key international and regional agencies.

The objective is to refine frameworks and modeling tools for policy analysis and to ensure that these factor in gender differences and facilitate identification of different outcomes for men and women.

4.4 Capacity for conducting gender analysis and gender research

4.4.1 Management, staffing and resources for the gender strategy

CCAFS approach is to address gender disparities as one aspect of the broad issues of social inequality and poverty reduction. Thus while the Theme 4 leader has overall responsibility for the gender strategy, implementation is broadly distributed among Theme and Regional leaders. Theme 4 coordinates the strategic partnership with FAO, methodology and capacity development for gender analysis and research on specific questions related to gender (principally participatory action research). Theme and Regional leaders have major responsibility for ensuring that gender and social analysis are integrated into Theme and Centre-activity plans and for ensuring plans are implemented. Each Theme leader ensures availability of the expertise in gender and social analysis required, whether through other CRPs, partnerships, consultancies or recruitment. For example, Theme 1 obtains gender expertise for African and South Asian target regions through partnerships with the University of Oxford and the University of Greenwich, UK, which supply part-time or full-time faculty, and is also appointing a post-doctoral fellow who will conduct comparative research across sites in three target regions, with mentoring from the University of Florida, Gainesville, USA. Regional leaders coordinate initiatives related to gender with development partners: for example, in South Asia, a leadership training for women community leaders is preparing them to make use of climate-change information.

While mechanisms for obtaining gender expertise will vary substantially from Theme to Theme, the Program expects to utilise gender expertise, that on the average, amounts to the equivalent of one senior scientist and a post-doctoral fellow (plus their operational costs) per each of three target regions, on an annual basis. In addition, the Program Director, Theme and Regional leaders all devote a percentage of their time to planning, coordination, monitoring and evaluation to ensure integration of gender analysis through the research cycle. The Program is currently developing a strategic partnership with a ‘gender technical advisory group’ in collaboration with a range of CG centres and other CRP’s in 2012 to strengthen the capacity of the Theme 4 leader to provide overall guidance and coordination for gender analysis and research across target regions and Themes.

4.4.2 Capacity building for integration of gender across the research program

Capacity building activities will be undertaken to foster integration of gender analysis across the Program and to support the use of gender analysis as follows:

- Develop, collect, and disseminate appropriate methods for addressing gender issues related to CCAFS research priorities.
- Maintain a page on the CCAFS website and facilitate a community of practice for knowledge-sharing and collaboration in climate-change related gender research
- Employ strategies and approaches that enhance women’s active participation in CCAFS-related research, capacity building opportunities, policy engagement activities and events at local, national, regional and international levels.
- Train partners in gender-sensitive research approaches across CCAFS Themes, including training of trainers by partners and sponsoring their participation in CCAFS-related

global and regional events; assess and monitor needs for training in these approaches and maintain a roster of suppliers of appropriate training in CCAFS target regions.

- Develop jointly with gender specialists, training courses and materials focused on gender and climate change issues in agriculture and food security research and rural development. One use of these materials will be to inform local leaders (with some initiatives targeting women leaders in particular) about CCAFS-related issues and knowledge.
- Contribute to the recruitment and leadership development of women scientists working on CCAFS Theme research questions and sponsor their participation in important CCAFS-related events.

5.0 Monitoring, evaluation, and impact assessment

5.1 Monitoring and evaluation of progress towards gender-responsive outcomes

Monitoring and evaluation of progress towards outcomes and of the integration of gender analysis into the work are incorporated in the milestones and performance indicators of the CCAFS logframe.

The logframe and milestones are subjected to full participatory review on an annual basis. Annual workplans developed with partners will be reviewed by Theme leaders with input from gender experts for the appropriate integration of gender analysis.

Reviews and stakeholder consultations designed to keep the program responsive to arising issues and needs in the spheres of climate change, agriculture and food security at global, regional and national levels will integrate gender issues. An internally commissioned review of progress on mainstreaming gender analysis into the research program is proposed for Year 3 (2013).

5.2 Feedback and learning from gender analysis

Given the Program's goal to integrate gender fully into its research and development, progress on mainstreaming gender analysis into research will be part of the agenda of the CCAFS Independent Scientific Panel which meets twice yearly. The Program Management Committee will monitor progress on the objectives of the Gender Strategy via annual assessment of performance indicators similar to those outlined in Box 2 below. A recommendation for the formation of a CCAFS gender research working group is under consideration by CCAFS management. The primary function of this group, which would include the Theme leaders, would be to: (a) review across Themes, the results of assessment of performance indicators; (b) facilitate any adjustments needed in annual workplans or reports (c) assist CCAFS management, scientists and partners to hold each other accountable for timely sharing of gender-disaggregated information and analyses at different stages in the research cycle; and (d) ensure research

planning and implementation benefits from appropriate collaboration with gender expertise in other CRPs and partners working on CCAFS-related outputs.

Box 2. Proposed performance indicators for M&E

A. Integration of gender in research outputs

- Achievement of gender-related milestones in the logframe
- Individual and institutional annual workplans include and deliver on relevant gender-related research activities
- Investment of human and financial resources is appropriate for deploying the required quality and quantity of expertise in gender analysis (whether in-house or outsourced)

B. Integration of gender in the research cycle

- Targeting, vulnerability assessments and baseline studies address gender-differentiation at appropriate scales
- Priority-setting for planning the research explicitly includes gender-related criteria and *ex ante* analysis (qualitative or quantitative) addresses gender-differentiated outcomes
- Gender analysis used in the prioritization and design of adaptive and mitigation strategies, farming systems, technologies and institutions and the designation of “flagship” technologies
- Testing, validation and scaling out of research products with partners includes gender analysis, evaluations use relevant gender-differentiated criteria and where appropriate, inclusion of women as at least 40 percent of active participants
- *Ex post* impact assessment includes examination of changes in the distribution of benefits among women and men
- Gender participation targets in CCAFS partnerships, research, training, grant-making activities and recruitment are established and met

The CCAFS program has a number of mechanisms for regular monitoring, review and change under the rubric of “smart learning loops” whereby researchers keep returning to stakeholders to jointly develop means of adapting, learning and responding to feedback. Built into the engagement and communications strategy are several types of low-cost continual monitoring (e.g. of the needs and experiences of website visitors) to provide rapid feedback on the utility of science and policy outputs. These practices will be applied to assess the relevance and utility of the gender content of research outputs in published reports, guidelines, policy frameworks, strategies, models and methodologies.

An important feature of CCAFS is that it will provide space for evidence-based dialogue on climate change in agriculture across interest groups. Recognizing that many of the most effective managers of agricultural systems under climate change, particularly women, may be excluded from formal public-sector policy and program processes CCAFS’ policy is to involve these different users of knowledge right from the problem definition stage. Partnerships with civil society women’s organizations will foster a co-learning approach to monitoring the integration of gender evidence into dialogue between CCAFS and decision-makers.

5.3 Impact assessment

A central feature of the CCAFS Program’s strategy is *ex ante* analysis of the likely impacts of climate change for agriculture under different future scenarios and in relation to “flagship” policy, institutional and technology options identified by CCAFS research. Theme 4 coordinates the synthesis and communication with decision-makers of this work.

CCAFS is compiling a globally common set of baseline indicators on agricultural productivity, rural livelihoods and biogeophysical attributes at selected study sites which include socially and gender-disaggregated indicators such as statistics related to women’s roles in agriculture and related organizations and networks. These indicators are intended to complement more comprehensive monitoring and *ex post* impact assessment studies of gender-differentiated impacts to be conducted mainly by CCAFS’ implementing partners with CCAFS scientific support, including partnering CGIAR Centers and in collaboration with other CRPs. CCAFS will work with partners to ensure that their baseline and impact studies germane to collaborative work on climate change address the gender impact pathways for CCAFS research outputs synthesized in Figure 1. CCAFS will also explore possibilities for establishing ‘gender sentinel sites’ in collaboration with other CRPs where more intensive intra-household and other gender-focused research (e.g. how various ‘climate-smart’ interventions impact women) will be jointly designed and implemented as this is difficult and relatively expensive research to undertake.

For impact assessment, the minimum set of gender-responsive indicators will include the following or similar ones:

- The level of gender disparities in access to, ownership of or usufruct rights to assets (land, water, forest, fishery, livestock, germplasm) that are critical for the implementation of adaptive strategies or mitigation options
- Gender roles and responsibilities in farm and rural, non-farm activities impacted by adaptive strategies or mitigation practices resulting from CCAFS research
- Changes in control by men and women over food, forage, fuel or income benefits obtained from a given crop, livestock, agro-forestry or aquaculture system when adaptation or mitigation is implemented
- Gender disparities in access to, effective use of and benefits from climate-related information, weather insurance or other risk management options resulting from CCAFS research
- Change in benefit streams captured by men and women via engagement in markets for environmental services that incorporate CCAFS recommendations
- Changes in institutional rules, procedures or policies for mitigation or adaptation in agriculture making them more or less favourable to redressing gender inequities
- Increased inclusion of gender-disaggregated evidence in climate change policy dialogue informed by CCAFS, at regional and global scales
- Gender-disaggregated, multidimensional poverty, livelihood and nutrition indicators

6.0 Budget for gender activities

Table 6.1 presents the proposed investment for the period 2012-2015 in gender expertise and capacity development that will be fully dedicated to implementing gender analysis and/or gender-related research activities. The total amounts to USD 3.24 million in 2012 rising to USD 6.96 million by 2015. This is a portion of a larger amount of Program resources invested in other types of social analysis that may also include gender as a variable.

Personnel costs refer approximately to the equivalent of one senior scientist and one postdoctoral fellow for each of the three target regions in 2012, and gradually increasing each year as additional gender capacity within partner organizations and the CCAFS team itself can also be included. Collaboration costs refer to investments in non-CGIAR organizations that provide inputs other than personnel with gender expertise. A substantial portion of the gender expertise involved is expected to come from partners, including CRPs and Centers.

Table 6.1 Gender staffing budget (US Million)	2012	2013	2014	2015	TOTAL
<i>Personnel Costs</i>	0.69	0.95	1.49	1.53	4.66
<i>Travel</i>	0.11	0.14	0.23	0.23	0.71
<i>Operating Expenses</i>	0.29	0.39	0.61	0.63	1.93
<i>Training & Workshop</i>	0.15	0.21	0.32	0.33	1.01
<i>Collaborators/Partnership Costs</i>	1.35	1.86	2.91	3.00	9.12
<i>Capital and other equipment</i>	0.11	0.05	0.09	0.03	0.27
<i>Contingency</i>	0.13	0.18	0.28	0.29	0.89
Subtotal	2.82	3.79	5.94	6.05	18.59
<i>Institutional Overhead</i>	0.42	0.57	0.89	0.91	2.79
TOTAL GENDER BUDGET	3.24	4.35	6.83	6.96	21.38
W1 & W2 budget*	40.6	42.6	44.8	47.0	175.0
% over total budget	8%	10%	15%	15%	12%

* The W1&W2 budget assumptions have been changed from what is in the Program Plan, by assuming only a 5% increase each year

It is still early to determine the exact percentage of each centre's budget that is going towards gender-targeted activities, so we are assuming it is 7% and will be working with each centre (and developing cross-centre and cross-site gender activities), so anticipate this increasing over time. Based upon this initial assumption, Table 6.2 shows distribution of the 2012 total for gender activities of USD 3.24 million among main partners contributing to CCAFS, illustrating that among the Centers, ICRAF, CIAT, and Bioversity will be key players in implementing gender activities relating to climate change (and a review of 2011 gender-related activities confirms this). It should be noted that centres such as IFPRI, ILRI, CIFOR and IWMI have been leading the way in terms of innovate gender-agricultural R4D research, but this is reported under other CRP's, so cross-centre collaboration on cutting edge methods and implementing research jointly with other CRP's in 'gender sentinel sites' (i.e. where several CRP's are undertaking gender-focused research jointly) is a critical strategy that CCAFS is pursuing, and these expenditures will be reported across CRP's and not just here. There will also be other partners outside of the

CG that are key, particularly FAO, WOCAN and other women’s networks and University partners with relevant gender expertise and experience in CCAFS regions.

<i>Table 6.2 2012 budget distribution (US Million)</i>	TOTAL
ICRAF	0.69
CIAT	0.57
Bioversity	0.51
ILRI	0.27
CIMMYT	0.25
ICRISAT	0.22
IWMI	0.20
CIP	0.10
ICARDA	0.09
IITA	0.05
Others	0.16
Subtotal	3.10
Coordination	0.14
Total	3.24

* **Notes:** Total includes partner-led activities as well as CCAFS-led activities.

7.0 Synthesis

CCAFS approaches gender primarily as a cross-cutting theme within the context of its broader objective of achieving positive impact on social inclusion for the rural poor. Gender analysis is therefore applied broadly to deepen the relevance of other research themes, while research on gender is undertaken selectively to address a few questions that represent important risks or opportunities for the Program. CCAFS employs strategies and approaches that enhance women's active participation in CCAFS-related research, capacity building opportunities, policy engagement activities and events at local, national, regional and international levels.

Gender is integrated throughout the research cycle. Gender objectives are expressed in the CCAFS log-frame and in milestones used to monitor progress of its activities. Milestones are regularly assessed and updated as a part of regular planning and review by Program Management. Consideration of gender is included in diagnostic and baseline studies being conducted in a network of benchmark sites. Ways to include gender in *ex ante* analysis using qualitative as well as quantitative methodologies are being sought with partners. Gender is included in pilot testing of CCAFS-related innovations using participatory methodologies and the active participation of women. Monitoring, evaluation and impact assessment with partners will use gender-responsive indicators.

Responsibility for gender is distributed throughout the Program. The Theme 4 leader is responsible for overall coordination of the Program's diagnostic and analytic framework including the cross-program integration of gender analysis, gender research and capacity building. The leader of each of Themes 1, 2 and 3 is responsible for planning, implementation and monitoring integration of gender analysis within a given Theme and its related Centre-activities. Regional leaders ensure coordination of gender-related work within each of CCAFS target regions (currently, East and West Africa and the South Asia with a fourth region soon to be added). Expertise in gender analysis and research is obtained by CCAFS through a strategic partnership with FAO for capacity development and participatory action research in benchmark sites (Theme 4), a Competitive Fellowship program (Theme 4) and partnership with the Universities of Oxford and Greenwich, UK (Theme 1). CCAFS will expand its partnerships with: (a) international civil society women's organizations to facilitate policy dialogue on gender issues related to climate change adaptation and mitigation; (b) A team of gender experts from CG centers and University department(s) that can strengthen gender research and use of its results; and (c) other CRPs and Centres with established capacity for tackling gender in agriculture. Specifically for gender analysis and gender research, CCAFS plans to invest USD 3.24 million in 2012, rising to USD 9.66 million by 2015. This is a portion of a much larger amount of Program resources invested in other types of social analysis that may also include gender as a variable.

8.0 References

- Awumbila, M. & J. Momsen. 1995. "Women's time use as a measure of environmental change." *Global Environmental Change*, 5, 4: 337-346.
- Agwu, J. & A. Okhimamwe. 2009. *Gender and Climate Change in Nigeria*. Lagos, Nigeria: Heinrich Böll Stiftung (HBS)
- BRIDGE. 2008. Gender and climate change: A Scoping Study on Knowledge and Gaps. <http://www.bridge.ids.ac.uk/go/home&id=54441&type=Document&langID=1>
- CCAFS & FAO. 2011. *Gender and climate change research in agriculture and food security for rural development: Training Manual*. Climate Change, Agriculture and Food Security Consortium Research Program (CCAFS) and Food and Agriculture Organization (FAO), Rome, Italy. Available at: www.ccafs.cgiar.org
- Deere, Carmen Diana and Magdalena Leon. 2001. *Empowering Women: Land and Property Rights in Latin America*. Pittsburgh: University of Pittsburgh Press.
- Deere, C.D. & C. R. Doss. 2006. "The Gender Asset Gap: What do we know and why does it matter?" *Feminist Economics* 12, 1 – 2: 1 – 50
- Demetriades & Esplen. 2010. "The gender dimensions of poverty and climate change adaptation", in Mearns, R. & E. Norton, Eds. 2010. *Social Dimensions of Climate Change*. Washington, DC: The World Bank
- Denton, F. 2002. "Climate change vulnerability, impacts, and adaptation: why does gender matter?", *Gender and Development*, 10, 2:
- Doss, C. R., J. McPeak & C. Barrett. 2006. "Interpersonal, Intertemporal and Spatial Variation in Risk Perceptions: Evidence from East Africa" Center Discussion Paper no. 948, Economic Growth Center, Yale University
- FAO. 2011. *The State of Food and Agriculture. Women in Agriculture: Closing the Gender Gap for Development*. Rome: FAO.
- Lambrou, Y. & G. Piana. 2005. *Gender: the missing component in the response to climate change*. FAO, Rome
- Luseno, W.K., McPeak, J.G., Barrett, C. B., Gebru, G. and Little, P.D. 2003. The value of climate forecast information for pastoralists: Evidence from Southern Ethiopia and Northern Kenya." *World Development*, 31,9: 1477-1494.
- Masika, R. 2002. "Gender and climate change", *Gender and development*, 10, 2-20.
- Mearns, R. & E. Norton, Eds. 2010. *Social Dimensions of Climate Change*. Washington, DC: The World Bank.
- Meinzen-Dick, R. S., L. R. Brown, H. S. Feldstein, and A. Quisumbing. 1997. "Gender, Property Rights, and Natural Resources." *World Development* 25(8): 1303 – 15.
- Moser, Annalise. 2007. "Gender and Indicators Overview Report." BRIDGE– Institute of Development Studies, University of Sussex, Brighton, U.K. <http://www.fao.org/docrep/013/i2050e/i2050e.pdf>
- Peterman, A, A, Quisumbing, J. Behrman, E.Nkonya. 2010. "Understanding gender differences in agricultural productivity in Uganda and Nigeria." IFPRI Discussion Paper 01003, Washington, DC: IFPRI.
- Quisumbing, Agnes R., Lawrence Haddad, and Christine Pena. 2001. "Are Women Overrepresented Among the Poor? An Analysis of Poverty in Ten Developing Countries." *Journal of Development Economics* 66(1): 225 – 69.

- Smith, K., Barrett, C., and Box, P. (2001). Not necessarily in the same boat: Heterogeneous risk assessment among East African pastoralists. *Journal of Development Studies*, 27(5): 1-30.
- Tanner, T. M., Mitchell, T. and Lusier. 2008. "Entrenchment or Enhancement: Could Climate Change Adaptation Help Reduce Chronic Poverty?" Working Paper 106, Chronic Poverty Research Centre, Manchester, U.K.
- World Bank, FAO & IFAD. 2009a. "Gender Dimensions of Climate Change" in *Gender in Agriculture Sourcebook*. Washington, DC: The World Bank. pp. 438-
<http://siteresources.worldbank.org/INTGENAGRLIVSOUBOOK/Resources/CompleteBook.pdf> [Accessed September 19, 2011]
- World Bank, FAO & IFAD. 2009. "Labor" in *Gender in Agriculture Sourcebook*. Washington, DC: The World Bank. pp. 315-350.
- World Bank. 2010. *Development and Climate Change*. World Development Report 2010. Washington, DC: The World Bank.