coffee & climate
enabling effective response

2015

Women, Coffee and Climate Change: Integrating gender into the initiative for coffee & climate

On behalf of the initiative for coffee & climate:

newcourse

Preface

Recognizing the importance of integrating women into its field activities, the Hanns R. Neumann Foundation (HRNS) seeks to gain improved, sustainable outcomes by better addressing gender gaps during the implementation of the initiative for coffee and climate. This report is a first step in building the capacity of HRNS to achieve a more holistic, gender integrated implementation process. Specifically, this report identifies the impacts of climate change on coffee farming communities with a particular focus on how these impacts may vary by gender within a household. The report goes on to explore the ways that gender issues do and should play a role in the implementation of the initiative for coffee & climate, specifically in its pilot project in Tanzania. The report then proposes ideas and actions to better integrate gender considerations into the initiative for coffee and climate (c&c) in Tanzania. In preparing this report, a resiliency assessment framework was developed and a gender lens was applied to examine existing efforts of the c&c approach as well as to make recommendations regarding how HRNS can boost the resilience of coffee households in the face of a changing climate.

Contents

Executive Summary

Men, women and youth often have different roles in coffee producing households and hence are impacted differently by the effects of climate change. By incorporating gender analysis and tools into the design, implementation and monitoring, the c&c initiative can improve coffee farmer households' ability to withstand the impacts of climate change and help them on a path towards more sustainable livelihoods and increased resiliency.

This report identifies the impacts of climate change on coffee farming communities in Tanzania and Uganda, with a particular focus on how these impacts may vary by gender within a household. To accomplish this we analyze the adaptive capacity of men and women in coffee farming households to develop an understanding of the differences in men and women's ability to adopt a resilient pathway in the face of climate change stresses and shocks.The report goes on to explore the ways that gender issues do and should play a role in the implementation of the initiative for coffee & climate, concluding with strategic recommendations to incorporate into the c&c approach and projects.

Previous research, and the preliminary resiliency/vulnerability assessment conducted as part of this analysis, demonstrate that women are typically in a more vulnerable position than men. Women are generally going to be less resilient to climate stresses and shocks because of their constrained access and control of livelihood assets, fewer livelihood strategy opportunities, and limited access to structures and decision making processes. This is due to a variety of factors including time constraints, lower education and cultural norms.

Men, women and youth share some common challenges to securing sustainable livelihoods like poor infrastructure, lack of timely access to financial capital, lack of income opportunities and unpredictable weather and droughts. However, women face additional challenges that either exacerbate the impact of common problems or create additional constraints for women. For instance, women typically have an extraordinarily heavy workload, taking care of family and household daily needs, in addition to typically contributing up to 70% of the labor in coffee production. This 'time poverty' restricts participation in trainings, decision making, participation in community groups, schooling and income generating activities. Because women typically collect firewood, water for cooking and household use, droughts and the reduction of forest cover often put extra burdens on their daily lives and leave them more vulnerable to the impacts of climate change. Lack of women's inclusion in decision making often leads to an underrepresentation of women and family needs (clothes, health, school

fees, etc.) in financial allocation within a household. And because of women's lack of participation in community groups (including coffee producer organizations) women's needs, in terms of resources and training, are often overlooked when decisions are being made about the allocation of scarce resources.

Based on the analysis of challenges and adaptive capacity of men, women and youth in communities in Uganda and Tanzania, several recommendations are made to expand the scope of c&c initiatives to improve resiliency. Farmer household resiliency to climate change stresses and shocks can be better achieved by expanding the c&c scope beyond coffee focused resiliency, to include household income and asset diversification, and intra-household dynamics. Health and food security should also be considered when designing support to coffee farming households, along with more efforts to engage youth. Improving management and reducing degradation of natural resources should also be a priority since many households rely on these resources to support their livelihoods.

In addition to expanding the scope of c&c initiatives, integrating a systematic gendered approach to project design, implementation, and monitoring and evaluation could reinforce c&c efforts to increase resiliency of coffee producing households. Many projects in a variety of sectors have failed because they neglected to account for and incorporate the different roles and responsibilities that men, women, and youth play in the household, including reproductive and productive activities. A gender lens and analysis should always be used during project design and development to better understand the project context, and to enhance the projects ability to achieve the desired outcomes and impact. This can be achieved by building on the HRNS Gender Household Approach and integrating additional components into the c&c approach, focusing on understanding intra-household dynamics, access and control of resources, workloads and the constraints facing women relating to decision making.

Finally, if the target is to increase coffee farmer household resiliency to climate change, beyond a focus on the resiliency of coffee production, then an expanded monitoring and evaluation system that includes indicators and processes beyond coffee production, income, and profits must be developed and implemented. The resiliency framework described in this report can provide a foundation for the development of indicators of individual access and control of livelihood assets, livelihood strategies, structures and processes and the overall adaptive capacity of coffee producing households. Tools such as the Women's Empowerment in Agriculture Index (WEAI) developed by the International Food and Policy

Research Institute (IFPRI), complement the resiliency framework by measuring the roles and extent of women's engagement in the agriculture sector. The WEAI tools can be combined with the current c&c monitoring system that tracks project progress, adoption of coffee production adaptation tools, coffee production and income. By combining these tools HRNS will be able to better measure any project's impact on farmer and household resiliency to climate stresses and shocks.

Coffee production can provide rural households with higher incomes and the potential for more sustainable livelihoods. However climate change stresses and shocks present challenges for the sustainability and resiliency of coffee producing households' livelihoods. Men, women and youth assume different roles and face different challenges in coffee producing households and along the coffee value chain. This necessitates an approach that analyses these roles, constraints and opportunities and is capable of incorporating these aspects into project design, implementation and monitoring. The c&c initiative and its current participatory and inclusive approach provides a strong basis for increasing farmer resiliency. With the integration of a gendered approach into c&c projects, partners will be better able to support and prepare coffee producing families for the challenges of climate change and strengthen their ability to adopt resilient livelihood strategies.

Introduction

While researchers disagree on how to calculate poverty, there is consensus on several critical points. First, the majority of the world's poor are women and children; approximately 70% of the poor and over 65% of the world's illiterate are women.[i],[ii] Second, over half of the world's poor live in rural areas and depend heavily on natural resources, subsistence farming, and commercial crop production for survival.[iii],[iv], [v] In fact, rural poverty accounts for nearly 63% of the poverty worldwide, reaching up to 95% in sub-Saharan Africa. [vi],[vii] Finally, the total number of poor, rural women is expected to increase because of general population trends, an increase in female headed households, and the decreased ability of women to migrate to cities because of lack of money, social roles and responsibilities, and lack of alternative job skills.[viii],[ix] As a result, women in developing countries suffer extreme inequality and are often isolated from both non-farm economic opportunities and access to basic social services. Given these constraints, coffee production provides an important opportunity for women in rural communities to reduce poverty and gain resiliency in the face of increasing volatility resulting from climate change.

Livelihoods that are derived from agriculture work, such as coffee production, are important but the ability of these income generating activities to transform the economic realities of families and communities is limited because of other constraints. Notably, rural women provide much of the food, water and energy security for their families. Regardless of income source and in the absence of suitable infrastructure in rural communities, these tasks are dependent upon access to healthy natural resources. In addition, women in sub-Saharan Africa derive 30-50% of non-farm income from natural resources.[x] As natural resources decline due to poor resource use and climate change, women are forced to spend more time and money acquiring the supplies necessary for basic survival. Resource degradation is an acute problem in rural areas with over 60% of the world's poorest people living in ecologically vulnerable areas.[xi] As natural resources are degraded, food crop and coffee production are jeopardized and poverty rates climb. Trapped in a vicious cycle, the inability to generate adequate revenue further contributes to greater resource loss and increased inequality.[xii]

Targeted programs intended to reduce poverty and improve the health and well-being of women in rural communities have generated some benefits for women. Sustainable coffee production, in particular, has provided a unique opportunity for women to increase income and provides the potential to reduce poverty in rural communities in Uganda and Tanzania. However, an interesting set of challenges have emerged that prevents women

from fully benefiting from access to a commercial cropping, markets and increased incomes[xiii]. Coffee production has generally lead to an increase in household income for farmers in Tanzania and Uganda when compared to commercial food producing counterparts. In fact, women's cash income from coffee production has given coffee-producing households greater economic resources than food producing counterparts to pay for household needs, including for food and health care. However, this increase in income comes at a cost. First, household income is not necessarily shared between individuals in a house. As such, women often do not accrue the benefits at the same rate that men do[xiv]. Second, women in coffee producing households spend significantly more time on farming than food producing households, at the expense of other household activities including subsistence farming. As a result, women and children in coffee producing house-holds can experience higher levels of food stress, as well as poorer diets, forcing them to sell more assets to buy food, which means that their gains in income still cannot meet their household needs

In short, the benefits enjoyed by coffee growers, and women in particular, often come at a cost. Women work more hours in the day compared to men or their food producing counterparts. While women coffee producers may have better access to health care because of their increased income, this does not necessarily translate into healthier wellbeing for themselves or their families and, in fact, women from coffee growing communities report higher levels of chronic illness, worse dietary patterns and greater stress over food security.

These are just some of the challenges that must be addressed when designing projects that aim to reduce poverty, improve resiliency and support coffee farmers' ability to achieve their goals and development objectives. This documents explores ways that the initiative for coffee and climate can address these challenges, particularly by integrating gender more fully into its efforts, as it pursues the goal of enabling coffee farmers and their families to respond effectively to climate change, with a focus on farm level adaptation.

Purpose and scope of consultancy

The purpose of the assignment is to identity how to integrate gender into the coffee & climate approach and the role it can play in strengthening the resilience of coffee producing households in the pilot project in Tanzania, as well as to equip HRNS and the initiative for coffee & climate with the information necessary to effectively integrate gender into the c&c framework globally.

Specific objectives

The specific objectives of this assignment are threefold:

- First, to identify the threats posed by climate in coffee farming communities, particularly with regard to gender, so as to determine what opportunities exist to engage women to improve outcomes in the initiative for coffee & climate
- Second, propose ideas as to how gender can be integrated into activities to increase the resilience of coffee households and how corresponding action and impact can be assessed.
- Third, to define a strategy and process for integrating gender activities into the c&c approach.

Moreover, the objectives identified herein serve the purpose of building HRNS' expertise in its other c&c regions and further climate change adaptation projects.

Approach and Methodology

In order to meet the objectives of this assignment a resiliency framework was used to help structure our work and to propose a strategy that more fully integrates gender into c&c activities. The resiliency framework was combined with the process of using a gender lens to assess individual and household adaptive capacities. The first step in the framework process therefore required an understanding of the different roles that men, women and youth play in the household, livelihood activities, networks, groups and institutions. Differences in access to and control of resources (financial, physical, political, human, social and natural) were also surveyed. This data helped build an understanding of the ability of individuals and households to either mitigate the impacts of climate change and/or allow for adaption to climate change.

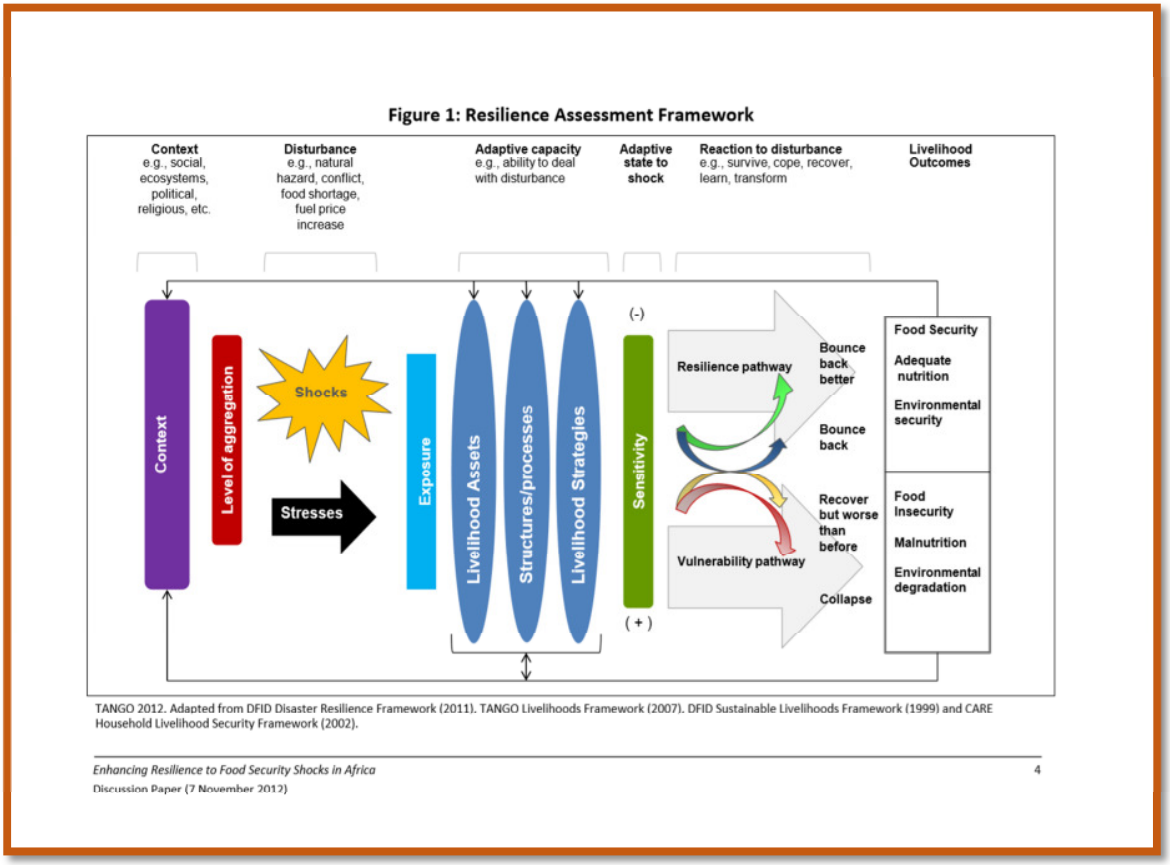
Armed with information about the main challenges facing individuals and households, their access to various forms of capital, networks and livelihood strategies, recommendations are made to improve project design in order to more effectively address the climate change challenges that coffee producing households face.

Information for this analysis was collected from primary and secondary literature along with project documentation provided by HRNS staff. This background analysis was complemented by a two week visit to field sites in Tanzania and Uganda where HRNS has a variety of projects underway including: climate and coffee projects; conservation agriculture project;

gender and coffee projects, and; youth focused coffee projects. Focus group discussions with community members were used along with visits to households to better understand the challenges faced by individuals (men, women and youth) in coffee producing households. Information about community's perception of challenges, the coping mechanisms that they employ, and proposed solutions they have for addressing these challenges were also collected.

Participatory methods and tools were used to collect information including daily activity clocks and seasonal calendars. Whenever possible informants were separated into groups by gender and age to allow each group to express their own, unbiased views. Visits to fields, farmer field school activities, and drama shows also contributed to the information and analysis presented in this report.

Analytical Framework



As noted, a resiliency framework (Figure 1) was used to help structure the analysis and facilitate the development of a strategy to integrate gender into c&c initiatives. This process

entailed identifying the different roles that men, women and youth play in the household, livelihood activities, networks, groups and institutions. The varying access and control of

Adaptive Capacity: In this analysis, adaptive capacity refers to an individual or households ability to deal with a shock or disturbance. This in turn in is determined to a large degree by their access and control over livelihood assets, transforming structures and processes, and livelihood strategies. These three elements shape people's ability to deal with climate change shocks and stresses, and determine their ability to bounce back from shocks or be dragged into a more vulnerable position.

- *Livelihood Assets* – as defined in DFID's Sustainable Livelihoods Framework, are the tangible and intangible assets that allow individuals and households to meet their basic needs and development objectives. Six types of assets are considered here: financial; physical; political; human; social; and natural.

- *Structures and processes* – these are the institutions organizations, policies and legislation that shape livelihoods. They either support or inhibit the resilience of individuals, households and communities. Examples include national, regional, and local governments; civil society; religious institutions; trade associations; resource networks; shared customs and norms; informal/traditional governance structures; policies and laws.

- *Livelihood strategies* – represent the distinct or combined strategies that individuals and households pursue to make a living and cope with shocks. It is critical to note that different livelihood strategies have various risks associated with potential shocks and that certain coping strategies may have negative and permanent consequences with respect to resilience.

These definitions were adapted from Enhancing Resilience to Food Security Shocks in Africa, Discussion Paper (7, November 2012)

resources (financial, physical, political, human, social and natural) influences the capacity of individuals and households to absorb and adapt to the challenges of climate change, and ultimately determines their ability to transform livelihood strategies, assets, structures and processes to help them reach their goals in the face of climate change.

This assessment and analysis will focus on analysing the adaptive capacity of men and women in coffee farming households to develop an understanding of the differences in men

and women's ability to continue on a resilient pathway in the face of climate change stresses and shocks

Coffee and Climate Change

Globally, the production of coffee and the livelihoods of households producing coffee, in almost every major coffee producing country are being threatened by climate change. Changing temperature and weather patterns including increases in the frequency and intensity of droughts, rainfall and flooding, are reducing coffee production, income and livelihoods of families relying on coffee as a significant source of income. Changing climatic conditions have also allowed pests, such as the coffee borer, and diseases like coffee rust to thrive in areas previously unaffected by these threats.

Table 1: Direct and indirect effects of extreme or unusual weather events on Coffee Arabica

Climate hazard	Direct impact on the tree	Indirect impact
High temperature	▶ Above 23°C: Fruit ripening accelerates, leading to progressive quality loss ▶ Above 25°C: Photosynthetic rate is reduced ▶ Above 30°C: Tree growth is depressed ▶ High temperatures can cause leaf, stem and flower abnormalities and abortion	▶ Pests and diseases may increase
Heavy rain, hail, strong winds	▶ Tree damage, increased fruit fall, especially near harvest	▶ Soil erosion, landslides, subsidence, wash-away of agrochemical applications ▶ Damage to roads and other infrastructure increases costs
Intermittent and unseasonal rain	▶ Greater flowering frequency	▶ Possible increase of some diseases ▶ Post-harvest drying difficulties
Prolonged rain	▶ May reduce flowering, affect fruit set, lower photosynthesis because of continual cloudiness	▶ Increased humidity may favor some fungal diseases; may increase mortality of some insect pests such as Coffee Berry Borer (CBB)
Prolonged drought	▶ Weaker trees, wilting, increased mortality of young trees	▶ Stressed trees more susceptible to some pests

Source: Climate Change Adaptation in Coffee Production A step-by-step guide to supporting coffee farmers in adapting to climate change. Produced by the initiative for coffee & climate www.coffeeandclimate.org. Version January 2015

The specific impacts of climate change are summarized in the in the c&c sourcebook 'Climate Change Adaptation in Coffee Production'[13]. In general higher temperatures shift the areas

[13] http://www.coffeeandclimate.org/training.html

suitable for growing coffee, change planting periods and growing time leading to smaller yields, increase the incidents of pest and prolonged drought can lead to soil erosion. Increased flooding can result in erosion and soil loss along with destruction of already poor road networks. Unpredictable rain patterns can lead to lower yields due to uncertainty about the right times to fertilize, apply pesticides etc. Lack of rains can cause reduction in bean quality and quantity, husks that stick to beans hindering the processing and quality of beans, and increase the beans susceptibility to disease. Rain during harvesting seasons can also hinder dry processing of beans.

Gender roles in coffee

In 2008 the International Trade Centre (ITC) conducted a survey on the role of women in the coffee sector. In highly mechanized systems like Brazil women played a very small role in field and harvest work, whereas in mainly manual systems, like in most of Africa, women can do up to 90% of the field and harvest work. Women generally also play a small role in coffee trading, such as in Uganda where only 15% of women are coffee traders and only 6% at the higher end of the value chain. In some cases women are involved in setting up coffee seedling businesses providing seedlings to farmers[xv] .

The ITC survey indicated a 'typical' role for women in the coffee industry globally showing women doing the majority of field work, harvesting and sorting and very little participation in trading in country and export business (Table 2) It also indicates that while there is a wide variation by country, women typically own around 15 % of coffee producing lands, harvested goods and companies in coffee producing countries (Table 3).

Table 2: Women's employment in the coffee sector

Women in the workforce in % of total	Variations Low – high	"Typical"
Field work	10 – 90	70
Harvest	20 – 80	70
Trading in-country	5 – 50	10
Sorting	20 – 95	75
Export	0 – 40	10
Others (certifications, laboratories, etc.)	5 – 35	20

Table 3: Women's ownership in the coffee sector

Women's ownership in % of total (including co-ownership)	Variations Low – high	"Typical"
Land used for coffee production (- including user rights)	5 - 70	20
Coffee – when harvested	2 – 70	15
Coffee – when traded domestically	1 - 70	10
Companies in the coffee sector (exporters, laboratories, certifiers, transportation…)	1 - 30	10

Tables adapted from the Coffee Guide http://www.thecoffeeguide.org/coffee-guide/niche-markets-environment-and-social-aspects/Sustainability-and-gender/

The potential of gender issues to impact the coffee value chain are substantial and are summarized in the table below. It identifies the factors and constraints along the value chain that can influence women's' participation along the value chain and where gender can impact the success of a project. It illustrates some of the issues that have gender dimensions that can influence smallholder farmer decisions and ultimately the success of a coffee and climate initiative.

TABLE 4: Gender and the Coffee Value Chain

Gender Dimension	Coffee Production	Processing	Marketing and Sales
Access and control of assets and resources	Ownership of or access to: • Land • Natural resources • Farming inputs • Information technologies (radios, cell phones) • Credit	Ownership of or access to: • Land • Natural resources •Information and processing technologies (equipment) • Credit	Ownership or access to • Markets (and market information technologies) • Transport • Credit
Decision making	Intra-household communication, negotiation and decision-making about: • Production roles • Purchase/use of inputs • Obtaining or use of credit • Land allocations/use • What to grow • Expenditures and savings	Intra-household communication, negotiation and decision-making about: • Processing roles • Obtaining or use of credit • Land allocations/use • Expenditures and savings	Intra-household communication, negotiation and decision-making about: • Marketing roles • What/when/how much to sell • What markets or sellers to access • Price setting and negotiations • Expenditures and

			savings Communications and negotiations with market agents
Access to training and information	Access to information and skill building opportunities (via mass media, trainings, etc.) Competing demands for time/resources: • Different agriculture priorities (e.g., food vs. cash crops) • Different gender roles/responsibilities within family/ community • Different 'incentives' (or threshold of benefits) needed to warrant participation Time constraints and cultural norms	Access to information and skill-building opportunities (via mass media, trainings, etc.) Competing demands for time/resources: • Different agriculture priorities (e.g., food vs. cash crops) • Different gender roles/responsibilities within family/ community • Different 'incentives' (or threshold of benefits) needed to warrant participation	Access to information and skill building opportunities (via mass media, trainings, etc.) Access to market information Mobility: • Norms restricting travel to markets • Lack of finances for transport • Safety concerns Competing demands for time/resources: • Different agriculture priorities (e.g., food vs. cash crops) • Different gender roles/responsibilities within family/ community • Different 'incentives' (or threshold of benefits) needed to warrant participation
Access and control of income	Control or share of income earned Competing agricultural priorities and gendered responsibilities for expenditures (education, health.	Control or share of income earned Competing agricultural priorities and gendered responsibilities for expenditures (education, health.)	Control or share of income earned Competing agricultural priorities and gendered responsibilities for expenditures (education, health.)

* Adapted from 'CAPTURING THE GENDER EFFECT: Guidance for Gender Measurement in Agriculture Programs'[xvi]

Needs Assessment: Using a gender lens to examine the resiliency of coffee producing households in Tanzania and Uganda

Coffee growing communities, households and individuals in Tanzania and Uganda represent a diverse set of ethnic groups, cultures and socioeconomic classes. They produce both Arabica and Robusta coffee, employ varying forms of production and processing techniques, and are faced with different coffee trading and marketing systems. However there are some common challenges that many of these communities face. By reviewing primary and secondary literature and conducting a field needs assessment of coffee producing

households and individuals in Tanzania and Uganda, some key challenges were identified and common themes emerging about the adaptive capacity of coffee producing households, men, women and youth.

The rest of this section uses the resiliency framework presented above to structure and analyse the adaptive capacity of coffee producing households in Tanzania and Uganda, highlighting the particular challenges and constraints to strengthening women's resiliency.

Access to Human Capital: Education, Training and Health

Human capital comprises elements of education, skills, and health that allow a person to be productive and pursue a variety of livelihood strategies to meet their goals and objectives. A common theme throughout household's interviewed for this assessment is that there was a historic lack of focus on girl's education in previous generations. Most of the older women were illiterate. For the older generations, when they were growing up land was plentiful, agriculture or livestock was the main source of income and wealth, and there was not a strong focus on education. Families were large and perhaps 1 or 2 of the children attended school and these were primarily boys. Communities cited the scarcity of land now as a reason for families' greater focus on education for their children. Despite this greater focus, girls still trail behind boys in education outcomes. Several of the groups of young women interviewed indicated that if they were having problems at school (academic or socially) their fathers were quick to take them out of school and not give them a second chance. In general, school fees (especially for high school and higher education) continue to be a barrier, along with distance and other costs of attending school, especially for girls.

Informal training courses on subjects such as sustainable agriculture, income generation, and financial management are usually open for women to attend; however, there are often barriers for women that prevent them from accessing these opportunities. For example, women's large workload and household responsibilities result in a phenomena known as "time poverty" and prevent women from attending trainings. Further, if only one person from a household can participate, it tends to be the men who attend (as long as the training is not related to reproductive activities). Some trainings require that the participant be a member of a specific group to attend (including coffee producers group) and despite the 'household' being a member of the group, the man is often the signatory to the membership, and whether by miscommunication or the perceived rules, women often feel they cannot attend.

Access and Control of Productive Assets

Productive Assets in this assessment include assets such as roads, electricity, access to markets, water infrastructure. In all the areas studied, one of the primary constraints and challenges identified by both men and women was the lack of passable roads and transport systems to get products to market, to reduce transport costs and facilitate greater access to larger markets. Groups also identified lack of electricity as a constraint to processing and storing agricultural products, diminished safety because of poor lighting conditions, and decreased household productivity including poor school performance for children because of poor and dangerous lighting conditions in the household. While there were some rudimentary irrigation infrastructure in some villages (trenches), groups expressed the increasing needs for irrigation. In some communities visited HRNS training has facilitated the use of micro-irrigation on some farms and also a series of trenches and mulching on coffee farms to increase water retention for coffee production.

While all members of households are affected by the lack of these productive assets. The lack of water infrastructure puts extra productivity and health burdens on women. They are typically the ones who collect water for the household using a large part of the time available to them weekly. Increased contact with contaminated water increases disease and health concerns. Women are also responsible for generating the income to buy paraffin and lamps in the absence of electricity. The use of paraffin also increases health concerns (burns, eye infections and respiratory problems) for families, especially women and young children.

Ownership of assets including land, were largely by men in the household. Traditional marriage, inheritance laws and customs give ownership of land to men and women have difficulty generating enough income to buy land on the market. Large livestock assets (cows, pigs, etc.) are owned and controlled by men in the household. Any large assets used in agriculture (e.g. ploughs) are owned and controlled by the men.

Access and Control of Financial Resources

While coffee production in a household is generally considered a man's business, women play a large part in the production process providing much of the labour associated with planting, weeding and maintenance, harvesting, drying and processing. However women are rarely involved with the sale of the main harvest and often do not benefit from any of the proceeds. Women tend to rely on other sources of income to buy food, pay school fees, and buy firewood and paraffin to meet their household and children's needs. The lack of transparency and sharing of coffee proceeds can, and often does, lead to conflict within the

household. In order to get income to take care of household needs, many women interviewed for this assessment resorted to taking some of the harvest and selling it on the side without their husband's knowledge. Women also complained of men taking the proceeds and using much of it for entertainment (drinking and in some cases taking other women). In short, women tend to have very little access or control over income from coffee production with serious consequences for household vulnerability.

Both women and men identified access to financial services and loans as a key challenge in all of the communities we visited. Many of the households who were members of coffee producers groups had access to loans for coffee production. However, they identified problems with the timing of the loans because of long processing times by banks. Timing of loans is a critical issue because of the need to access inputs for coffee production (such as fertilizer and pesticides) during specific times during the growing cycle. Because of these delays, farmers often resort to taking short term loans with very high interest rates from local lenders which severely hampered the profitability of coffee production. In Tanzania, the local term for these types of loans is 'Katikitchwa' which literally means "to chop off your head". Lack of timely access to loans also has led to farmers buying smaller quantities of inputs from middle men who often provide 'fake' or diluted inputs. This in turn leads to lower production and quality of coffee beans produced.

Another challenge that emerged was the diversion of funds once a loan was received. Households often used some of their loans to cover immediate needs as opposed to productive inputs, again making it harder to pay back the loans.

Women's access to loans is severely hampered by a lack of access and control of physical resources like land and other assets generally used as collateral. This lack of access is further compounded by a high incidence of illiteracy that makes the application process much more difficult. However, many of the women interviewed for this assessment were part of local community women's savings and loans groups. The women contribute to the groups monthly and are able to provide small microloans to their members for a variety of purposes (small business, family emergency, etc.).

Access and Control of Social Capital

In the context of this assessment, social capital comprises all of the social resources that people use and rely on to meet their livelihood objectives. This includes social networks that people can rely on for support, membership in groups and networks, access to social services etc.

In the coffee producing households in Uganda that were interviewed for this assessment most men and women are members of producer organizations. There are also a variety of community committees such as development committees, water or forest management committees, etc. that men and women can be involved in. In the majority of cases, decision making bodies in these groups are dominated by men. If women are in decision making committees they tend to be in the roles of secretary or treasurer. There are, however, exceptions to this norm in both Uganda and Tanzania where the Chair of some producer organizations and depot committees are women. This finding demonstrates that cultural leadership norms are not fixed and there is potential for increasing the capacity of women as leaders within communities.

Some of the most prominent and valuable forms of social assets for women are women's savings and loans groups. Almost all the women interviewed were a member of a group. Women cited both household duties, time constraints and cultural aspects that limited their membership and participation in more groups and networks. Men and women cited lack of education and skills as a main reason why women did not generally play prominent roles in decision making bodies.

Access and Control of Natural Assets

For rural populations that derive most of their livelihoods from agriculture and/or natural resources in and surrounding their communities, access to and control of natural resources plays a key part in their ability to achieve livelihood outcomes. Governance systems for water allocation and management, land allocation and use systems, forest management, and fisheries management systems can either facilitate or restrain people's livelihood options.

It has long been recognized that women are the primary users and potential stewards of many natural resources that provide the means for basic survival [xvii]. In Africa, for example, women are charged with 80% of the food security[xviii]and 90% of the water security in rural communities[xix]. Women collect fuelwood for energy, plants and herbs for medicine, and utilize natural resources to support the economic stability of families and communities. Because the majority of the rural poor are women and because their social roles and responsibilities require them to rely heavily on the goods and services that are provided by the natural world, women are disproportionately impacted by the loss of natural resources. The loss of natural resources not only undermines food, health, energy and water security[xx]it also increases the vulnerability and decreases the resiliency of rural women and their families

to external forces such as climate change, rapid demographic shifts, rapid economic growth, and war and conflict[xxi].

In the communities visited during this assessment, women noted that they face significant challenges due to loss of forest cover and the unreliability of water supply (quantity and quality). This degradation of natural resources results in women spending many hours during the week collecting firewood and water for cooking, general household use, and agricultural needs. Awareness of water use was low and there were few if any water management associations. Further, women were generally not involved in water and forest use and management decision making.

Access and Control of Political Assets

Access to formal/informal governance mechanisms, voice in decision-making and advocating for resources or change, can impact the resilience of individuals and households to a variety of shocks and stresses including those caused by climate change. While the field assessment did not specifically examine women's access to political processes, it did examine women's participation in local decision making committees and groups. And as mentioned above, women's participation in decision making bodies is far behind the participation of men and hence their ability to advocate and impact decision making is severely hampered. This is of particular concern in both the management of water and forest resources which directly impact women's daily lives, time allocation and household well-being.

Access and Control of Livelihood Strategies

The opportunity for women to explore and pursue livelihood strategies is very limited. Constraints are imposed on women by culture. For example, young women complained that opportunities to pursue employment as taxi and bus drivers, and 'bodabodas' (motorcycle taxis) were frowned upon for girls. Opportunities for women are also often constrained by their household and reproductive responsibilities and women are often limited to income generating activities that can be done in conjunction with their other domestic duties. Because of these time constraints and cultural barriers, women often are not able to take advantage of training opportunities that would prepare them for various forms of 'productive' work or employment. This is compounded by generally lower levels of literacy for older women. Husbands are often not comfortable with their wives taking work outside of the household and often do not allow their wives to work. Women also cite the fact that even when they do get paid employment they generally get paid less than men.

Access to Structures and Processes

The structures and processes that enable or constrain the resilience of people are embodied in formal and informal institutions. These include:

- governance structures at the local, regional and national levels
- Non-governmental organizations
- Legal and legislative institutions
- Social safety nets
- Community organizations and
- Trade associations

As with access and control to social and political capital women tend to have less access and are able to derive fewer benefits from these structures and processes because of cultural norms and biases, time constraints and literacy issues also create barriers to access the services offered by these institutions.

Summary of adaptive capacity analysis

Shared Challenges: Men, women and youth shared many of the same challenges including:

- Access to timely financial capital and inputs for coffee, agricultural production and other business opportunities
- Access to markets due to poor road infrastructure
- Lack of electricity
- Lack of alternative income opportunities
- Lack of available land
- Low prices and fluctuation of prices for coffee and agricultural produce
- Unpredictable weather (rainy season), droughts leading to low yields
- High school fees and education costs

Women Specific Challenges: Some of the main challenges that are more pronounced for women and that increase women's vulnerability compared to men include:

- Time poverty- due to their combination of household and 'productive' workload
- Lack of sharing of income from coffee
- Conflict in the household ('misunderstandings' and domestic violence)
- Lack of input in decision making for the use of income
- Lack of family planning

- Less access to education and training
- Low pay and lack of income generating opportunities
- Higher levels of illiteracy
- Degradation of forests and water scarcity
- Health and economic constraints stemming from lack of clean energy
- Nutritional security
- Land tenure and inheritance systems

Based on the preliminary field needs assessment and literature reviews the vulnerability and resiliency of women, men and youth in Tanzania is characterized in the table below. While the objective quantification of the level of vulnerability was not possible in this exercise, the table does illustrate the more vulnerable position of women (young and old) and young men, compared with men. In the table below the level of access and control over assets, livelihood strategies, structures and processes is represented with one to three stars (* poor access, ** fair access, *** good access).

Table 5: Preliminary assessment of vulnerability and potential resiliency of men and women to climate change.

	Women and Young women	Young men	Men
Livelihood Assets			
Human Capital			
education	* limited access to formal education	**	**
health and nutritional status	**	**	*** Men traditionally get fed first and get higher quality food
skills	* Limited access to trainings	**	**
ability to engage in cash economy	* Time poverty Limited skills Cultural norms	**	**
Productive Assets	Generally poor infrastructure impacts everyone in the community (however impact of lack of water and electricity impacts women more due to their responsibilities collecting firewood and water)		
roads	*	*	*
markets	*	*	*
water systems	*	*	*
electricity	*	*	*

Financial Assets			
cash	* Decision making about the majority of income tends to be in the hands of men	**	**
savings	*	*	**
credit	* Access hampered by lack of assets and illiteracy	* Access hampered by lack of assets	**
remittance and others	-	-	-
Social Capital			
formal/informal networks,	* Constrained by time poverty and culture	* Constrained by culture	**
family/extended family structures	**	**	**
group membership	* Constrained by time poverty	* Constrained by culture and opportunities	**
labor-sharing systems	*	**	**
social relations	**	* Youth generally hampered by lack of respect in community	**
access to wider institutions in society	* Constrained by cultural norms and illiteracy	* Constrained by cultural norms	**
Political Assets			
formal/informal governance mechanisms	* Constrained by illiteracy and cultural norms	* Constrained by cultural norms	**
voice in decision-making and advocating for resources or change	*	*	** Men usually are in decision making positions
Natural Assets	Generally degradation of natural resources impacts everyone in the community (however impact of lack of water and degradation of forests impacts women more due to their responsibilities collecting firewood and water)		
land	* Women's land tenure and inheritance rights are weak and lack of access to capital	* Scarcity of land and lack of access to capital	** Traditional land tenure and inheritance systems favors men
water	*	*	*
forest resources	*	*	*
biodiversity	*	*	*
Livelihood Strategies			

agricultural production, off-farm employment, informal sector employment) and strategic investment (e.g., land, animals, tools, training	* Time poverty, lack of training and education and access to capital limits most livelihood strategies for women	**	**
off farm employment	*	**	**
informal sector	*	**	**
land	*	* Scarcity of land	***
animals	*	* Lack of access to capital	***
tools	*	* Lack of access to capital	**
training	*	**	**
Structures and Processes			
governance structures	* Time poverty, illiteracy, cultural norms constrain access	*	**
social safety nets	*	*	*
NGO's	*	*	**
community organizations	*	*	**
trade associations	*	**	**
religious organizations	***	***	***

* represents poor access and control
** represents fair access and control
*** good access and control
- no information available

It is clear from previous research, and the preliminary resiliency/vulnerability assessment done here that women are in a more vulnerable position and are generally going to be less resilient to climate impacts because of the their constrained access and control of livelihood assets, fewer livelihood strategy opportunities, and less access to structures and decision making due to time constraints, lower education and cultural norms.

Anecdotal evidence shows that including women in decision making and coffee production can lead to increased quality and productivity of coffee farms, better farm management and more resilient households. With women generally performing 70% of labour in non-mechanized coffee farming, strengthening the ability of women to effectively grow, maintain,

harvest and process coffee is likely to increase productivity and quality of coffee producing households. What follows are recommendations of a variety of actions and methods to better integrate gender considerations into the initiative for coffee and climate (c&c) in Tanzania.

Coping Strategies

During the group discussions and individual interviews men and women discussed the various coping mechanisms that they employ to deal with stresses and shocks including climate change, seasonal availability of income, food and employment. Some of these coping mechanisms were positive while others further depleted their scarce resources.

In Tanzania January through May were identified as the hardest months because of periods of high expenses (school fees, agricultural inputs, Christmas) and low income (in between harvests). Ugandan respondents identified dry seasons

Some coping mechanisms identified include:

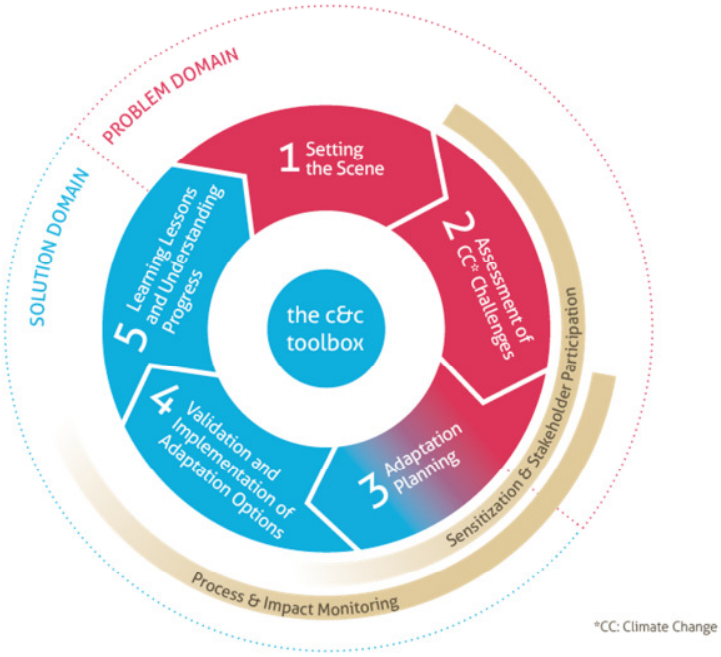
Common Coping strategies	Climate Change related coping strategies
○ Taking short term high interest loans ○ Selling assets and land ○ Forgoing meat in meals ○ Men travelling long distances for pasture for livestock ○ Storing maize stocks to get through tough times ○ Women Selling tomatoes ○ Women taking on odd jobs and piece work labor (carrying things, weeding) ○ From piece work they buy food, they give priority to piece work before field work ○ Selling firewood ○ Women sell dry maize and hide it from their husbands ○ Buy smaller quantities of fertilizer and other products like food and cooking oil ○ Women take advantage of village savings and loans groups	○ Digging trenches for water retention ○ Planting trees for shade ○ Mulching ○ Hand irrigation ○ Using manure to fertilize whenever possible ○ Water harvesting ○ Rural Enterprise development Service taught how to plant to conserve water (digging deep holes to conserve water ○ Not burning husks for maize but use for mulching ○ Planting small pieces of land and concentrating fertilizer and water ○ Planting fast growing annual crops ○ Taking advantage of government programs to get grants for a store and milling machine (Uganda)

The c&c initiative

The initiative for coffee and climate (c&c) is a global development partnership with the aim to enable coffee farmers and their families to respond effectively to climate change – with a focus on farm level adaptation. To put this aim into practice c&c introduced a five-step process to enable coffee farmers to effectively respond to changing climatic conditions.

The c&c approach is a five-step process aiming to enable coffee farmers to effectively respond to changing climatic conditions.

The c&c approach



Source: The coffee and climate approach to climate change adaptation: An Introduction January 2014. Produced for the initiative for coffee and climate. www.coffeeandclimate.org

Step 1: *Setting The Scene* serves as a quick orientation to what extent climate change is important to consider in a given working context.

Step 2: *Assessment of Climate Change Challenges* to understand the impacts of climate change on coffee production and producers' livelihoods and to identify suitable adaptation options in response.

Step 3: *Adaptation Planning* defines and structures work packages to bring suitable adaptation options into practice.

Step 4: *Validation and Implementation of Adaptation Options* offers different approaches on how to facilitate implementation work. Before disseminating adaptation practices it is necessary to confirm their suitability on a small-scale first.

Step 5: *Learning Lessons and Understanding Progress* serves to reflect on the implemented process, systematize the experience and gather useful inputs to refine approaches by repeating this cyclical process. The climate is changing continuously, thus adaptation efforts need to be revised and further developed.

The c&c approach provides the tools to stimulate climate change adaptation at producer level in a systematic and participatory manner. So far, the c&c approach has been implemented in Brazil, Tanzania, Vietnam and Trifinio (El Salvador, Honduras, Guatemala) with various coffee producing groups and involving relevant stakeholders.

Strategic Recommendations

The initiative for coffee and climate was established to develop a strategic approach that responds effectively to climate change and its effects on coffee production. It also has the overall objective 'to support coffee farmers in building their resilience to climate change'. Sister projects are also being piloted by HRNS to better engage youth in coffee production, diversify crop production and promote conservation agriculture.

I) Expand the c&c scope to include additional aspects of farmer household resiliency

Expand beyond coffee focused resiliency: Most of the tools in the c&c toolbox address the challenges of climate change to coffee production specifically. However, the challenges facing coffee farming communities are substantial and additional opportunities to bolster resiliency in coffee growing households are available. Importantly, the decision to continue growing coffee is influenced by a wide range of issues. This decision is generally made by male heads of households regardless of whether benefits are derived by other members of the family. This scenario poses risks for coffee production because in many cases the success of coffee crops is premised on work largely conducted by women. Because women's farm work often goes unpaid, in order to build household resiliency, it is necessary to ensure that some type of benefits are derived by female household members. In order to do this either non-income benefits must be realized by women or incentives must be created to move income into women's hands.

Diversify household assets: Studies have shown that perennial mono-crops are the most vulnerable form of agriculture to climate change in Africa[xxii]. While diverse annual crops provide opportunities to rapidly respond to changing climactic conditions due to their short growth cycle. In many cases substitutions can be made with a minimum of cost and farmers

therefore have the capacity to make changes that will likely outstrip the speed of climate change[xxiii]. These crops can benefit women by providing additional income or by providing sustenance crops. It is important to note that when women begin producing high value cash crops, there is a tendency for these activities to be co-opted by men, and strategies must be deployed to prevent crop transference. The strengthening of livestock capital has also been shown to build households resiliency to shocks and stresses by providing other sources of income and as a means of increasing savings. Enabling women to own livestock that is held in collectives is another strategy for ensuring women have access to financial resources.

Reduce health care burdens: A key concern for women involved in coffee growing is that coffee production takes considerable harvest and non-harvest maintenance - much more so than sustenance crops. So while coffee production tends to increase income, the ability to grow sustenance crops can be decreased or eliminated which diminishes nutritional security and the overall health of the household. Additionally, health burdens grow because health care is time intensive for both women and their children[xxiv]. Improving food security and reducing health care burdens are important opportunities in building resiliency.

Scale up existing youth and conservation agriculture projects: Two HRNS sister projects to the initiative for coffee and climate are focusing on promoting conservation agriculture practices in the production of beans and maize and promoting youth engagement in coffee production side by side with diversification of household income through the promotion of alternative incomes such as livestock raising and processing of agricultural products. HRNS is facilitating relationships between producer organizations (PO's), Depot Committees (DC's) and financial institutions to facilitate farmer access to loans for coffee farming inputs. HRNS is also using farmer field school models to provide incentives and disseminate good farming practices in both coffee and other crops that can mitigate the effects of climate change. These projects support additional means of improving resiliency for men and women and should be incorporated into the portfolio of c&c interventions.

Whether within the direct scope of the initiative for coffee and climate change or through the development of sister projects and the partnership with other organizations, an expansion beyond the focus of coffee production is required to decrease the coffee farmer's vulnerability and resiliency to climate change stresses and shocks.

Build Natural Resource Management Opportunities: Importantly, long term coffee production and other agricultural activity will depend on watershed and ecosystem services. These resources often require management at the community, landscape or watershed scale.

Equipping men and women to better understand, engage and represent their interests at these levels will decrease the vulnerability of coffee production and other on-farm sources of income. Trainings and awareness raising in the importance of natural resource management, policy and institutional frameworks, leadership, communication and decision making could all complement c&c projects and activities.

Some potential ideas and recommendations to strengthen the ability of the initiative to better support farmer resiliency include:

- *Increase focus on income generating activities. Examples include water purification and distribution, micro-energy leasing schemes such as cell phone charging stations, green energy entrepreneurs such as through solar light sales, seed banking and coffee plant nurseries.*
- *Improving food security through trainings that enable income generating opportunities to allow households to better adapt to changing weather patterns. Examples might include adoption of fast growing annual crops, access to new seeds, promoting nurseries for high-nutrient plants*
- *Broaden trainings to include business and financial management*
- *Include trainings on the growing problem of corruptive practices such as diluted inputs, fake seeds/seedlings etc.*
- *Expand the conservation agriculture component of the initiative*
- *Incorporate and expand the HRNS coffee youth project to better engage youth in coffee farming and complement c&c activities*
- *Partner with other organizations to increase the scope of trainings to facilitate more community collaboration and management of common resources (such as water and forests), including trainings and awareness raising in the importance of natural resource management, policy and institutional frameworks, leadership, communication and decision making*

II) Expand and Modify the HRNS Gender Household Approach

HRNS has piloted a gender program in Uganda and is seeking to improve and expand the program to strengthen coffee producing households resiliency to shocks and stresses including those related to climate change. Many projects in a variety of sectors have failed because they neglected to account for and incorporate the different roles and responsibilities that men, women, and children play in the household, including reproductive and productive activities. A gender lens and analysis should always be used during project design and

development to better understand the project context, and to enhance the projects ability to achieve the desired outcomes and impact.

Strengthen and incorporate the Gender Household Approach into the initiative for coffee and climate

The Gender Household Approach has a strong base that has focused on encouraging and promoting joint decision making within households, with a particular emphasis on fostering transparency in income and joint decision making on the expenditure of household income. Impact is multiplied by the identification and development of 'change agents' who serve as examples and role models for the rest of the community, demonstrating the benefits of transparency, collaboration and joint decision making between husband and wife. Awareness of gender issues and benefits are complemented by local drama productions, posters, community dialogues and support to change agents.

HRNS GENDER HOUSEHOLD APPROACH

HRNS has developed a gender household approach to promote agricultural production as a family business where all members can benefit equally from the proceeds. Besides actively including women in agronomy and marketing trainings, HRNS employs an inclusive household approach, which targets married couples, female-headed households, and youth in the communities.

The Key Elements:

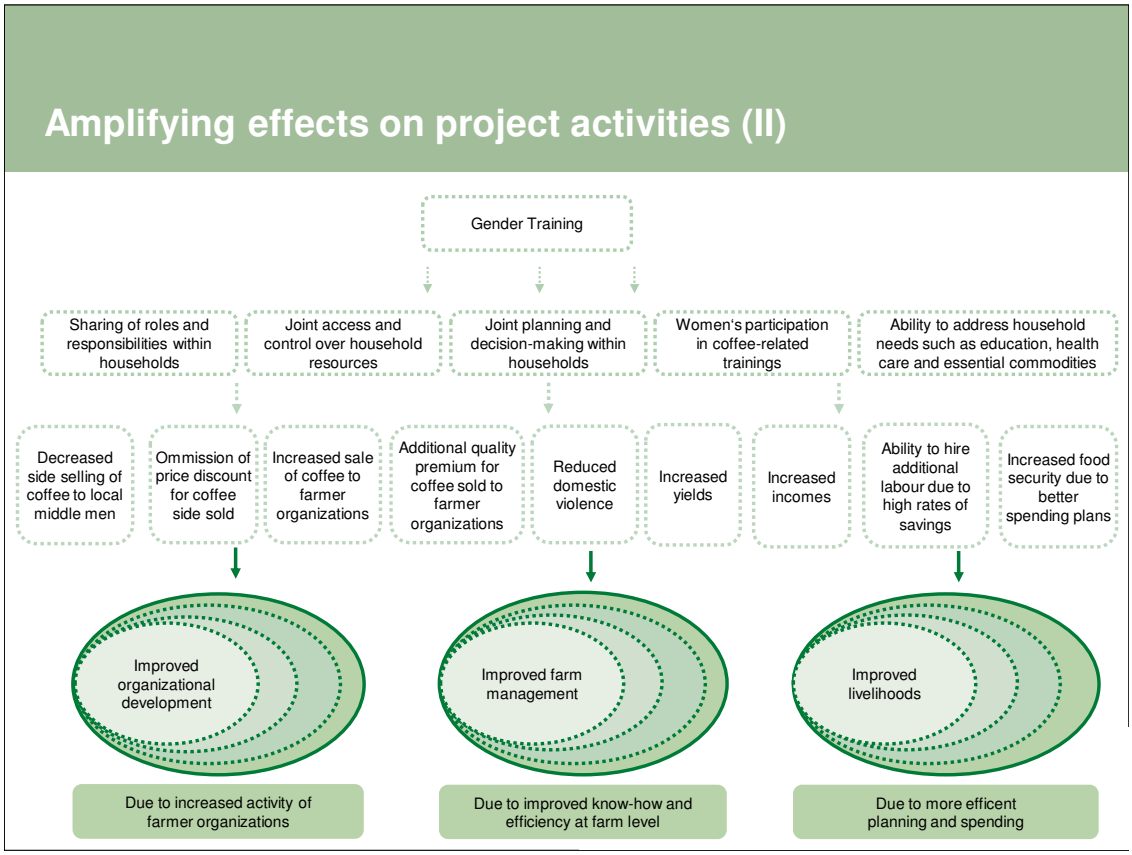
I) Interactive couple seminars - Couple seminars form the building block of the approach and actively involve both women and men within the communities. Participants are able to discover and define existing inequalities by creating activity profiles and control matrices. They then jointly decide on potential actions of addressing these inequalities together.

II) Change agents - Following the seminars, couples willing to adhere to gender equity actions voluntarily sign up as Change Agents. Change Agents receive support through individual household visits and further training and coaching to assume a strong role in sensitizing fellow community members by sharing their own experiences. Change Agents also become active in promoting the principles of gender equality through drama shows and community dialogues .

III) Additional elements

- Further elements employed within HRNS' gender household approach include:
- Specific coaching for women on aspects of active participation, decision-making and entrepreneurship

- Carrying out participatory review meetings to monitor and assess progress
- Training of farmer group leaders to create awareness and clarify their role to promote gender equality and women participation at all levels of farmer groups
- Dissemination of promotional materials, such as posters, t-shirts, and banners



To strengthen this approach we would suggest the addition of a number of aspects:

As demonstrated by the vulnerability assessment above and as supported by a variety of primary research[xxv] intra-household dynamics and individuals' access and control of resources within a household can determine their vulnerability and resiliency to stresses and shocks from a variety of sources, including climate change. While an overall household approach is useful and necessary, to change intra-household dynamics and design effective projects, individual vulnerability must also be understood, measured and incorporated into interventions whose objective is to improve resiliency.

In selecting activities and projects to reduce the vulnerability of individuals and households to climate change, it is important to analyse the impact of workloads on individuals within a household. With women performing the majority of labour related to coffee production and having already overloaded workloads, the labour implications of proposed approaches and activities can have significant opportunity costs for women and the household in general. For example, in a study of Ugandan coffee producing households[xxvi] an organic coffee project caused the households to increase their efforts in a range of management practices for which women provide most of the labour. Men's workloads were not significantly affected. Women increased the total amount of time spent in coffee farming at the expense of off–farm work, domestic chores, and/or leisure. In fact, the study suggests that women's increase in efforts in coffee production has come at the expense of their access to personal income. In some cases switching to cash crops can even lead to reduction in food security within a household.

As revealed in the literature and by the needs and challenges assessment, women often are subject to severe time constraints and time poverty. The Gender Household Approach recognizes this and includes participatory development of daily activity clocks in the discussion of gender roles and joint planning when engaging with community members. To strengthen the approach, practical time saving technologies, activities and approaches to reduce the time constraints of women should be included in climate change initiatives and support to change agents. These could include:

- Promotion of cleaner and more efficient cook stoves to reduce time spent collecting firewood (which also reduces the health care burden on the community by decreasing eye infections and respiratory disorders found predominately in women and children)
- Promotion of solar lamps which save money spent on paraffin and are safer for children and family members (women sometimes sell firewood to pay for paraffin)
- Support to water management and infrastructure projects to reduce the amount of time women spend collecting water and improve the quality of available water.
- Include commitments by couples about sharing household duties in household action plans and monitor the progress over time
- Include standards, quotas or other incentives to maximize women's participation in the leadership of producer organizations or Depot Committees.
- Explore direct from women coffee sales opportunities

Importantly, while joint planning and sharing information about revenue increases transparency and can lead to more efficient use of financial resources and labour within a

household; the existence of a plan does not guarantee its implementation. A system to follow up with change agents on progress is essential and is an integral part of the HRNS Gender Household Approach. Follow up and monitoring should be carried out separately for men and women within a household, to ensure that power relations between men and women do not distort the information provided.

Building women's skills and participation in trainings is important for both coffee production and resiliency. However women's participation in training is often limited by time constraints, social norms, reproductive and household duties, and institutional and membership requirements. Some simple steps can be taken to level the playing field for women's access to training efforts. These include:

- Timing of trainings to take into account daily and seasonal workload of women
- Organization of crèches or babysitting during trainings
- Ensure that women have access to female extension workers
- Training should be hands on and experiential, with training materials presented orally, videos, drama and pictures to minimize the disadvantages of lower levels of literacy
- Provide literacy training
- Ensure membership explicitly includes women and does not present barriers to women's entry, such as requirements for members to be head of households or landowners.

Begin to build standards for the creation of equal opportunities for women including such mechanism as establishing a written declaration for equal engagement between men and women, a written complaint procedure, rewards for communities that achieve gender parity on their cooperative boards, farm work contracts.

Summary of recommendations:

- *Integrate household joint planning into the c&c initiative and monitor at the individual level*
- *Incorporate needs assessments and an analysis of gender roles, challenges, access and controls of resources during coffee and climate project design and development.*
- *Expand the approach to add a focus on reducing the time constraints/time poverty facing women*

- *Promote technologies and systems that save time especially regarding access to clean water, fuel, and food security*
    - *Promotion of cleaner and more efficient cook stoves to reduce time spent collecting firewood (which also reduces the health care burden on the community by decreasing eye infections and respiratory disorders found predominately in women and children)*
    - *Promotion of solar lamps which save money spent on paraffin and are safer for children and family members (women sometimes sell firewood to pay for paraffin)*
    - *Support to water management and infrastructure projects to reduce the amount of time women spend collecting water and improve the quality of available water.*
- *Include commitments by couples about sharing household duties in household action plans and monitor the progress over time*
- *Include standards, quotas or other incentives to maximize women's participation in the leadership of producer organizations or Depot Committees.*
- *Explore direct from women coffee sales opportunities*
- *When considering climate change adaptation approaches, examine the implied workload, who will do the work and the cost and benefits for other household or productive activities*
- *Strengthen women's participation in trainings and producer organizations by ensuring that women are able and aware that they can be members; foster women as leaders in the organizations*
- *Follow up with men and women separately about progress and status updates of joint planning and decision making to ensure unbiased feedback*
- *When considering the staffing of a gender component to existing programs or projects, awareness of key project staff of the importance of gender issues is important, however we would recommend having gender expert staff to carry out gender related activities to maximize impact*
- *Begin to establish gender equity procedures and policies within producer organizations and depot committees*
- *Ensure that the provision of trainings in coffee production are designed and organized so as to facilitate the participation of women*
    - *Timing of trainings to take into account daily and seasonal workload of women*

- *Organization of crèches or babysitting during trainings*
- *Ensure that women have access to female extension workers*
- *Training should be hands on and experiential, with training materials presented orally, videos, drama and pictures to minimize the disadvantages of lower levels of literacy*
- *Provide literacy training*
- *Ensure membership explicitly includes women and does not present barriers to women's entry, such as requirements for members to be head of households or landowners.*

Develop monitoring and evaluation practices that measure individual and household resiliency to the stresses and shocks of climate change

The current monitoring and evaluation systems being used in HRNS and coffee and climate projects track progress related to a number of factors, including:

- Trainings and participation in trainings by individuals (gender disaggregated)
- Membership and changes in leadership
- Farmer field books can track adoption of farming adaptation techniques and practices
- Coffee production and to some degree income and gross margins for farmers

The system correlates well with the goal of the initiative related to improving resiliency of coffee production. As the scope of a project increases so can the complexity of indicators that are required to measure its progress and impact. The current M&E system does a good job of balancing the need of measuring progress and impact with time and financial constraints. If a more comprehensive approach to supporting resiliency of coffee farmers to climate change is to be pursued, the scope of the monitoring system should also be expanded.

To ensure that the initiative for coffee and climate is increasing the resiliency of coffee farmers and their households to climate change pressures and shocks, measures beyond coffee production, income, and profits must be directly acquired. Qualitative and quantitative measures of impact can be employed to get a good idea of the projects impact on adaptive capacity and resiliency. The resiliency framework described above can provide the basis for the development of indicators, including indicators of access and control of livelihood assets, livelihood strategies and structures and processes.

Adaptive Capacity		
Livelihood Assets o human capital o productive assets o financial capital o social capital o political assets o natural assets	**Livelihood Strategies** o agricultural production o off farm employment o informal sector o land o animals o tools o training	**Structures and processes** o governance structures o social safety nets o NGO's o community organizations o trade associations o religious organizations

The International Food and Policy Research Institute (IFPRI) recently developed the Women's Empowerment in Agriculture Index[xxvii] that measures the roles and extent of women's engagement in the agriculture sector in five domains:

(1) Decisions about agricultural production,
(2) Access to and decision making power over productive resources,
(3) Control over use of income,
(4) Leadership in the community, and
(5) Time use.

It also measures women's empowerment relative to men within their households.

The information and indicators used in this approach encompass many of the access and control issues and constraints identified by the vulnerability analysis. Information about daily time use can be collected over extended periods to determine patterns in the amount of time spent on each daily activity and the degree of time poverty that individuals within a household face. It also includes measures of access and control over a variety of productive resources, including land, credit and income. Measures of participation in decision making over agriculture production complement the Gender Household Approach. Data on participation in community groups and other committees is also collected along with participation in decision making bodies. Further, measures of involvement and access to trainings are also included along with livelihood strategies employed and income sources.

Household surveys also gather information regarding food security and consumption patterns.

The tools included in the WEAI provide a strong basis for measuring resiliency and tracking progress of women's empowerment and are able to be adapted to the particular context of any given country. Detailed guidance and manuals to implement data collection have already been developed to ensure consistency and the accuracy of data collected. The tools are focused and relatively short for the scope of impact they are intended to measure.

The WEAI tools can be combined with the current c&c monitoring system that tracks project progress, adoption of coffee production adaptation tools, coffee production and income. By combining these tools HRNS will be able to get a better idea of any projects impact on farmer and household resiliency to climate stresses and shocks.

Summary of M&E Recommendations:

- Adopt the WEIA approach and tools in conjunction with existing c&c monitoring systems and adapt to the local context to monitor resiliency of men, women and youth in coffee producing households.
- Do an initial baseline with the household and individual questionnaires at the beginning of c&c projects to facilitate the measurement of impact and progress towards resiliency.
- Use the questionnaires to do bi-annual or annual monitoring of progress.

Summary of Recommended Strategy and Process to integrate gender into the c&c approach

Strengthening the resilience of coffee producing households can indeed be achieved by integrating gender into the Coffee and Climate Approach. This can be accomplished by:

1. Expanding the scope of the c&c initiative to include more factors related to farmer household resiliency to climate change stresses and shocks.
2. Expanding and modifying the HRNS Gender Household Approach to integrate into c&c projects
3. Expanding the c&c monitoring and evaluation practices to measure individual and household resiliency to the stresses and shocks of climate change

Specific recommendations:

I) Expand the c&c scope to include further aspects of farmer household resiliency

- Increase focus on income generating activities. Examples include water purification and distribution, micro-energy leasing schemes such as cell phone charging stations, green energy entrepreneurs such as through solar light sales, seed banking and coffee plant nurseries.
- Improving food security through trainings that enable income generating opportunities to allow households to better adapt to changing weather patterns. Examples might include adoption of fast growing annual crops, access to new seeds, promoting nurseries for high-nutrient plants
- Broaden trainings to include business and financial management
- Include trainings on the growing problem of corruptive practices such as diluted inputs, fake seeds/seedlings etc.
- Expand the conservation agriculture component of the initiative
- Incorporate and expand the HRNS coffee youth project to better engage youth in coffee farming and complement c&c activities
- Partner with other organizations to increase the scope of trainings to facilitate more community collaboration and management of common resources (such as water and forests), including trainings and awareness raising in the importance of natural resource management, policy and institutional frameworks, leadership, communication and decision making

II) Integrate, Expand and Modify the Gender Household Approach

- Integrate household joint planning into the c&c initiative and monitor at the individual level
- Incorporate needs assessments and an analysis of gender roles, challenges, access and control of resources during coffee and climate project design and development.
- Expand the approach to add a focus on reducing the time constraints/time poverty facing women
- Promote technologies and systems that save time especially regarding access to clean water, fuel, and food security
    - Promotion of cleaner and more efficient cook stoves to reduce time spent collecting firewood (which also reduces the health care burden on the community by decreasing eye infections and respiratory disorders found predominately in women and children)
    - Promotion of solar lamps which save money spent on paraffin and are safer for children and family members (women sometimes sell firewood to pay for paraffin)

        - Support to water management and infrastructure projects to reduce the amount of time women spend collecting water and improve the quality of available water.
    - Include commitments by couples about sharing household duties in household action plans and monitor the progress over time
    - Include standards, quotas or other incentives to maximize women's participation in the leadership of producer organizations or Depot Committees.
    - Explore direct from women coffee sales opportunities
    - When considering climate change adaptation approaches, examine the implied workload, who will do the work and the cost and benefits for other household or productive activities
    - Strengthen women's participation in trainings and producer organizations by ensuring that women are able and aware that they can be members; foster women as leaders in the organizations
    - Follow up with men and women separately about progress and status updates of joint planning and decision making to ensure unbiased feedback
    - When considering the staffing of a gender component to existing programs or projects, awareness of key project staff of the importance of gender issues is important, however we would recommend having gender expert staff to carry out gender related activities to maximize impact
    - Begin to establish gender equity procedures and policies within producer organizations and depot committees
    - Ensure that the provision of trainings in coffee production are designed and organized so as to facilitate the participation of women
        - Timing of trainings should take into account daily and seasonal workload of women
        - Organization of crèches or babysitting during trainings
        - Ensure that women have access to female extension workers
        - Training should be hands on and experiential, with training materials presented orally, videos, drama and pictures to minimize the disadvantages of lower levels of literacy
        - Provide literacy training
        - Ensure membership explicitly includes women and does not present barriers to women's entry, such as requirements for members to be head of households or landowners.

III) Expand the Monitoring and evaluation practices to measure individual and household resiliency to the stresses and shocks of climate change

- Adopt the WEIA approach and tools in conjunction with existing c&c monitoring systems and adapt to the local context to monitor resiliency of men, women and youth in coffee producing households.
- Do an initial baseline with the household and individual questionnaires at the beginning of c&c projects to facilitate the measurement of impact and progress towards resiliency.
- Use the questionnaires to do bi-annual or annual monitoring of progress.

End Notes

[i] Lim, Lin Lean. More and better jobs for women: An action guide. Geneva, International Labour Office, 1996
[ii] International Fund for Agriculture Development (IFAD). 2001. Rural poverty report - The challenge of ending rural poverty. Rome
[iii] OECD. 2001. Poverty-environment-gender linkages. 2(4).
[iv] OECD. 2001. Poverty-environment-gender linkages. 2(4).
[v] UNDP. 2006. Human Development Report.
United Nations Conference on Environment and Development. (1992). Convention on Biolgoical Diversity. Rio De Janeiro.
[vi] Kahn, M. 2001. Rural poverty in developing countries, implications for public policy. International Monetary Fund. Economic Issues: 26.
[vii] Byers, B. 2000. "Miambo Ecoregion Reconnaissance Synthesis" Report Draft Review, Harare: WWF, SAPRO
[viii] Drimie Scott, 2002 The Impact of HIV/AIDS on Land: Case studies from Kenya, Lesotho and South Africa, A Synthesis Report prepared for the Southern African Regional Office of the Food and Agricultural Organization of the United Nations (FAO) August 2002
[ix] Tacoli, C. 2009. Crisis or Adaptation? Migration and Climate Change in a Context of High Mobility. In JM Guzman, G Martine, G McGranahan, D Schensul and C Tacoli, eds., Population Dynamics and Climate Change. New York: UNFPA; London: IIED.
[x] Ellis. 1999. Rural Livelihood Diversity in Developing Countries: Evidence and Policy Implications. London
[xi] Angelsen, A. 1997. The Poverty-environment thesis: Was Brundtland Wrong?
[xii] Blackden, C. 2006. Gender, time use and poverty in Sub Saharan Africa. Washington D.C.World Bank
[xiii] Kanyamurwa JM, Wamala S, Baryamutuma R, Kabwama E, Loewenson R. Differential returns from globalization to women smallholder coffee and food producers in rural Uganda. African Health Sciences 2013; 13(3): 829 - 84
[xiv] Dwyer, Daisy and Judith Bruce. 'A Home Divided: Women and Income in the Third World' Stanford University Press, 1988. Friedmann, J. 1992: Empowerment. The politics of an alternative development. Oxford: Basil Blackwell
[xv] UsAID 2013. Rediscovering coffee in Yemen: The coffee value chain and a marketing strategyto reposition Yemen in the international coffee markets.
[xvi] Kanesathasan, A, K Jacobs, M Young, A Shetty. 2013. Capturing the Gender Effect: Guidance for Gender Measurement in Agriculture Programs. Technical Brief. Washington, D.C.: International Center for Research on Women
[xvii] Rio Declaration, 1992; UNCED, 1992; CBD, 1993; Declaration on World Food Security, 1996
[xviii] Madonsela, W. 2002. Trade liberalization in the agricultural sector on African women: Links with food security and sustainable livelihood. Network Women in Development, Europe (WIDE).
[xix] Gender and Water Alliance, Resource Guide: Mainstreaming Gender in Water Management. Version 2.1 November 2006
[xx] Food and Agriculture Organization. 2001. Gender and Food Security. Rome
UNDP. 2006. Human Development Report. United Nations Conference on Environment and Development. (1992). Convention on Biolgoical Diversity. Rio De Janeiro
[xxi] Lambrou, Y., and R. Laub, 2000. Gender Perspectives on the Conventions on Biodiversity,
[xxii] Osbahr HC, Twyman C, Adger WN, Thomas DSG (2008) Effective livelihood adaptation to climate change disturbance: scale dimensions of practice in Mozambique. Geoforum 39:1951–1964
[xxiii] Laderach, Peter. Predicted impact of climate change on coffee supply Chains. March 2008.
[xxiv] Miller 2010. Cyclicality, Mortality, and the Value of Time: The Case of Coffee Price Fluctuations and Child Survival in Colombia. J Polit Econ. 2010 February ; 118(1): 113–155
[xxv] Bolwig S 2012 Poverty and gender effects of smallholder organic contract farming in Uganda Uganda Strategy Support Program (USSP) Working Paper 8 (Washington, DC: International Food Policy Research Institute),
FAO, 2011. The State of Food and Agriculture 2010-2011, "Women in agriculture: closing the gender gap in development" w, Meinzen-Dick, R., N. Johnson, A. Quisumbing, J. Njuki, J. Behrman, D. Rubin, A. Peterman, and E. Waitanji. Gender, Assets, and Agricultural Development Programs: A Conceptual Framework. CAPRi Working Paper No. 99. International Food Policy Research Institute: Washington, DC.)
[xxvi] Bolwig, 2012, ibid.
[xxvii] International Food Policy Research Institute. 2012.Women's Empowerment Agriculture Index Retrieved on 20 April, 2015 from: http://www.ifpri.org/publication/womens-empowerment-agriculture-index