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MICHIGAN STATE UNIVERSITY | Global Center for Food Systems Innovation

GENDER STRATEGY

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Center Report Series No. 6

ISBN: 978-0-9903005-4-0

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2015

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Global Center for Food Systems Innovation, Michigan State University

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ISBN: 978-0-9903005-4-0

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Please cite as: Me-Nsope, Nathalie. 2015. Gender Strategy. Center Report Series, No. 6 Global Center for Food Systems Innovation, Michigan State University, East Lansing, Michigan, USA 23 pp.

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ACRONYMS

AET – Agricultural Education and Training

FtF – Feed the Future Initiative

GCFSI – Global Center for Food Systems Innovation

HESN – Higher Education Solutions Network

MSU – Michigan State University

SSA – Sub-Saharan Arica

USAID – United States Agency for International Development

WFD – Workforce Development

INTRODUCTION

About the Global Center for Food Systems Innovation

The Global Center for Food Systems Innovation (GCFSI) at Michigan State University (MSU) aims to improve agricultural productivity, food security and reduce poverty in areas of the world where three megatrends — rapid urbanization, climate change and skill gaps in the food system workforce — are affecting global food systems. These megatrends form the three major thematic areas of GCFSI. If ignored, these trends will thwart efforts around the world to achieve positive development goals. As part of the U.S. Agency for International Development (USAID), Higher Education Solutions Network (HESN), GCFSI works with the USAID field missions to apply science and technology that address these megatrends and help to find solutions to the most critical problems facing the developing world's food systems.

Cognizant of the complexity of food system problems, GCFSI brings together researchers from a wide range of disciplines – agricultural science and technology, education, agricultural economics, climate science, social science and information and communication technology. The Center's approach is to draw from its multidisciplinary expertise to address the need for evidence-based innovations and education to bring clarity to the complex wicked[1] food systems problems. The need for a multidisciplinary perspective in addressing world food problems was emphasized by Dr. M. Jahi Chappell, director of agro ecology and agriculture policy at the Institute of Agriculture and Trade Policy (IATP) in his remarks[2] to the World Food Prize Panel on "Stakeholders & Synergies: Socio-economic dimensions of sustainable agriculture " on October 18, 2013.

> '... *Well, the World Food Prize is well-named, as it is about food for the world, not just agriculture for the world. Scientifically, these are two different things. We know that what is produced is not the same as how much actually goes to become food for people, but too often we forget this. Luckily, this is a place where the toolbox of science can help us, but only if we open it wider to use all of the tools—including social sciences like sociology, anthropology, ecological economics and political ecology. So let's do that. Let's talk science....*"

The objective of this gender strategy is therefore to improve the effectiveness of GCFSI's research and innovation in enhancing productivity, food security and incomes through gender-responsive programming and gender equitable implementation. More specifically, the strategy is intended to strengthen GCFSI's development impact through the integration of gender issues throughout the Center's innovation lifecycle to ensure that women benefit from the Center's contribution to improving agricultural productivity and poverty reduction, enhanced resilience to climate change, improved food security, improved nutritional status, and enhanced workforce development systems. While the term gender cannot be equated to women,

[1] "Wicked problem" -- a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize. Moreover, because of complex interdependencies, the effort to solve one aspect of a wicked problem may reveal or create other problems.

[2] See more at: http://www.iatp.org/blog/201311/remarks-to-the-world-food-prize-panel-on-percentE2percent80percent9Cstakeholders-synergies-socio-economic-dimensio#sthash.rr67rehr.dpuf

GCFSI's gender strategy is written bearing in mind that although women are central to agriculture in most developing countries, they face numerous challenges that hinder their full participation in and benefits from food systems. Therefore, involving them in food system development activities has the potential to improve agricultural production, improve food security, reduce poverty and promote better nutritional outcomes.

Goal and Objectives of GCFSI

GCFSI seeks to create, test and enable the scaling of effective solutions and evidence-based approaches to a defined set of future critical global trends impacting food systems. Those trends, which also constitute the Center's major thematic areas or mega trends are: 1) Population growth, climate change and pressure on the land; 2) Rapid urbanization; and 3) Evolution in skills and workforce development. GCFSI's Strategic Results Framework is illustrated in Figure 2. To achieve its goal, the Center has three core strategic objectives and intermediate results (IR). Objective One "Provide decision support to improve data quality and access, as a way to promote evidence-based decision making in food systems" is met mainly through GCFSI's Decision Support and Informatics (DSI) unit. The DSI combines data from major sources to create comprehensive informatics architecture to be used for research and hypothesis testing. Objective Two "Accelerate the creation, testing and scaling up of transformative innovations, technologies and approaches in food systems" is achieved through 1) GCFSI's major thematic areas; and 2) GCFSI's cross-cutting themes Information and communication technology (ICT4D), Decision support and informatics (DSI) and Gender); 3) with non-GCFSI teams[3]; and 4) through grants of different types and levels of grants (innovation grants, technology evaluation grants, scaling grants)[4] to members of universities, the private sector, foundations and individuals. GCFSI works in multiple geographies (East and West Africa and South East Asia). Objective Three "Create a multidisciplinary network that shares knowledge, promotes learning, and builds mutual capacity in the area of food systems innovation" is achieved mainly through networks, knowledge sharing, student innovation grants, and the Translational Scholar and Study Abroad programs. GCFSI's innovation investment lifecycle shown in Figure 1 depicts the step by step process through which the Center will deliver on Objective Two. Specifically, the lifecycle consist of five stages, namely: i) Needs assessment; ii) Investment portfolio; iii) Seeking innovators; iv) Innovations in action and v) results and impact. GCFSI is committed to ensuring that gender considerations are integrated throughout its innovation lifecycle, thereby ensuring that men and women food systems actors benefit from innovative solutions designed to deal with food systems challenges due to global trends. GCFSI's commitment to gender is primarily because it is the right thing to do, and secondarily because as a USAID funded activity, GCFSI is bound by USAID's Gender Equality and Female Empowerment Policies. The Automate Directives Systems (ADS), Chapter 205: Integrating Gender Equality and Female Empowerment in USAID's Program Cycle, released in 2013 provides guidelines on USAID's internal policies and procedures for integrating gender issues into programs.

This gender strategy describes GCFSI's commitment to ensuring that a gender-responsive approach is adopted to achieving its goal and objectives. The strategy provides a

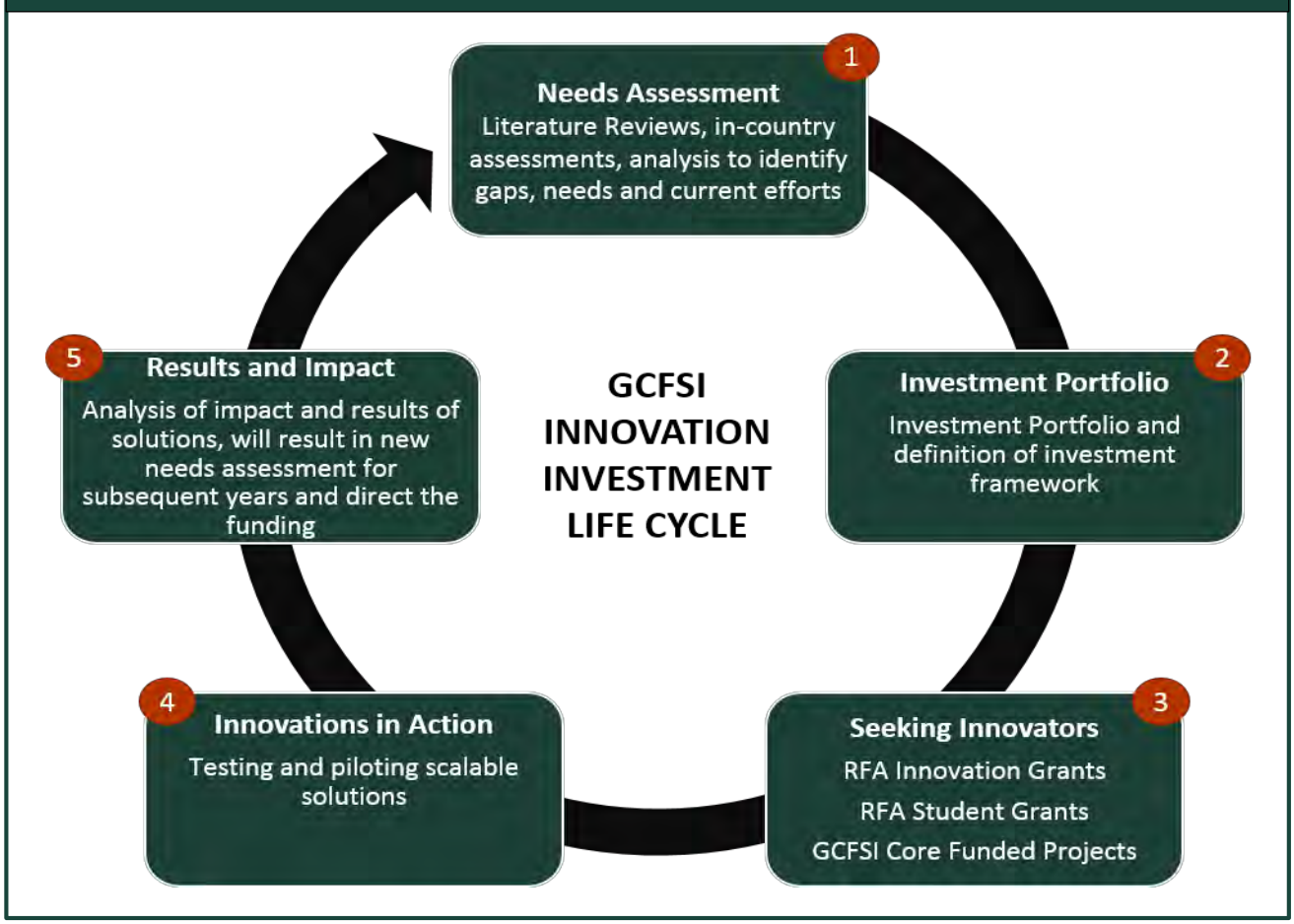
[3] Michigan State University teams; Partner teams, hub teams, and foundations and private sector.

[4] For a detail description of each of these grants, please see our website: *gcfsi.isp.msu.edu*

rationale for addressing gender issues in identifying and designing innovations to food systems challenges, briefly highlights gender issues pertinent to each of the Center's thematic focus areas, and outlines the specific approach that the Center will use to systematically inculcate gender considerations in all phases of the process geared towards achieving its goal and objectives. Overall, the gender strategy implies that GCFSI will work to identify innovative solutions to food system problems with largest impact on its overall objectives and also with the strongest potential to reduce gender disparities and empower women.

This document is useful, first to GCFSI faculty in the sense that it sheds light on the relevance of gender in GCFSI's core thematic areas, highlights specific activities/steps that GCFSI's gender team will undertake to support research and other activities conducted under the different thematic areas, as well as the roles and responsibilities of GCFSI faculty and management team to ensure that gender is an important consideration in the Center's programming effort. Second, the document would serve as an information resource for both current and prospective innovation grant recipients, by highlighting GCFSI's commitment to gender integration, and also by defining the Center's expectations with respect to gender integration into GCFSI funded projects; and also describing the responsibilities of GCFSI's gender unit vis-à-vis the grantees

Figure 1: GCFSI Innovation Investment Lifecycle



and vice versa to ensure gender integration as appropriate. GCFSI's consortium[5] partners and other types of potential partners would also benefit from knowledge of GCFSI's commitment to addressing gender issues in its work, and how it is accomplished. Overall, the strategy is intended to enable gender responsive food system outcomes and innovations.

RATIONALE FOR A GENDER STRATEGY

Food Systems and Gender

The definition of food systems put forward by Ericksen (2008) includes:

- The interactions between and within the biophysical and human environment, which determines a set of activities
- Activities related to the production, processing and packaging food, distribution and retailing food, preparation and consumption of food
- The outcomes of these activities contribute to food security[6], environmental security and social welfare.

Food systems are embedded in environments which differ according to a variety of factors such as agro-ecology, climate, social aspects, economics, health and policy (Combs, et al., 1996). The different environments interact to influence both the activities and the outcomes of food systems.

Gender describes the relationship between men and women in a specific social context. Gender is a social construct, a product of the social environment in which food systems are embedded. Social identities, laws, customs and cultural practices create differential patterns of access to productive assets on the basis of gender. Assets are critical determinant of livelihood strategy, and different types of assets enable different livelihoods (Meinzen-Dick et al., 2011). Different types of assets may also have different implications for bargaining power or well-being within the household (Meinzen-Dick et al., 2011).

Existing literature provides evidence that that within households, assets are not always pooled, but rather can be held individually by men, women, and children (Haddad et al. 1997). Meinzen-Dick et al. (2011) identifies the following categories of asset holdings – natural, physical, financial, human, social and political; and they note that who within a household has access to which resources and for what purposes is conditioned both by the broader sociocultural context as well as by intra-household allocation rules. Assets are also unequally distributed between men and women (Rubin et al. 2009).

Assets influence both the decision to participate and the level of participation in food systems activities. The socio-cultural context also defines roles and responsibilities that are appropriate for men and women, thereby having important implications for time, an important asset required for participation in food system activities and to reap the benefits from participation. As observed by Meinzen-Dick et al (2011) the distribution of assets within the household is critical to household and individual well-being, as measured by outcomes such as food security, nutrition, and education. Ownership of assets also determines vulnerability to food systems shocks caused by global trends.

[5] Wagenignen University and Research Center, Netherlands; The Energy Resource Institute, India; Lincoln University, Pennsylvania

[6] Food availability, with elements related to production, distribution and exchange; food access, with elements related to affordability, allocation and preference; and food use, with elements related to nutritional value, social value and food safety.

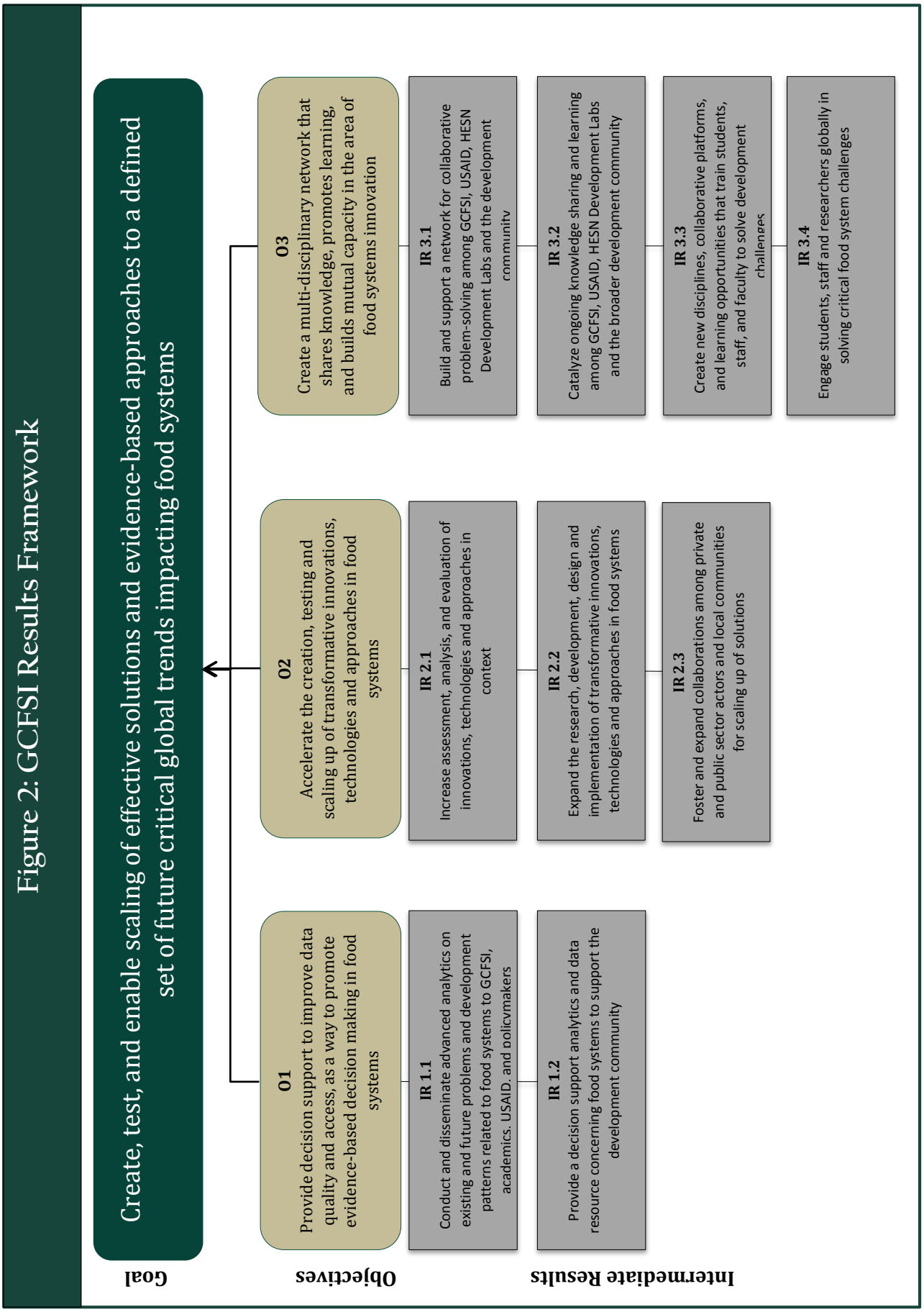


Figure 2: GCFSI Results Framework
Goal
Create, test, and enable scaling of effective solutions and evidence-based approaches to a defined set of future critical global trends impacting food systems
Objectives
O1
Provide decision support to improve data quality and access, as a way to promote evidence-based decision making in food systems
O2
Accelerate the creation, testing and scaling up of transformative innovations, technologies and approaches in food systems
O3
Create a multi-disciplinary network that shares knowledge, promotes learning, and builds mutual capacity in the area of food systems innovation
Intermediate Results
IR 1.1
Conduct and disseminate advanced analytics on existing and future problems and development patterns related to food systems to GCFSI, academics, USAID, and policymakers
IR 1.2
Provide a decision support analytics and data resource concerning food systems to support the development community
IR 2.1
Increase assessment, analysis, and evaluation of innovations, technologies and approaches in context
IR 2.2
Expand the research, development, design and implementation of transformative innovations, technologies and approaches in food systems
IR 2.3
Foster and expand collaborations among private and public sector actors and local communities for scaling up of solutions
IR 3.1
Build and support a network for collaborative problem-solving among GCFSI, USAID, HESN Development Labs and the development community
IR 3.2
Catalyze ongoing knowledge sharing and learning among GCFSI, USAID, HESN Development Labs and the broader development community
IR 3.3
Create new disciplines, collaborative platforms, and learning opportunities that train students, staff, and faculty to solve development challenges
IR 3.4
Engage students, staff and researchers globally in solving critical food system challenges

Gender is not the only socially relevant category. However research has shown that gender is a major factor in shaping social relationships and outcomes, as well as an analytical category that enables the analysis of social differentials. Gender interacts with other social categories, thereby influencing participation and benefits accrual and efficacy from development activities, and also producing different experiences for different groups. For example, age interacts with gender to produce very different experiences for young and old women; or marital status interacts with gender to produce different experiences for married versus single/female headed households.

Major food systems issues in developing countries that are intensified or amplified in the gender context include: limited access to or lack of secured land rights, lower levels of education, relatively lower farm and non-farm wages, and limited access to credit, technology, training, information and agricultural advisory services (Quisumbing et al., 1995). Gender biases in institutions also often reproduce assumptions that it is men who are the farmers (Gurung et al 2006). These gender inequalities imply that women and men farmers in developing countries have different vulnerabilities and unequal capacities to: 1) respond to threats (e.g. food insecurity) to the food system posed by megatrends, such as, population growth, climate change, growth in urban population; and 2) capture opportunities emerging in the food system as a result of these megatrends.

Consistent and compelling evidence exists that gender inequalities have implications for household food security, nutrition and poverty. Some examples include:

- Agricultural productivity increases dramatically when women get the same amount of inputs men get (Quisumbing et al., 1996).
- A person's gender affects their property rights–women's ability to own or cultivate land over the long term affects the management of natural resources (Quisumbing et al., 1999).
- Insecure property rights, inequitable opportunities for asset accumulation and for income generation place women, particularly those in female headed households, amongst the most vulnerable segments of the rural poor (Quisumbing, et al., 2001).
- Insecure land tenure in Ghana was associated with greatly reduced investment in land fertility (Goldstein & Udry, 2008).
- Inequalities in resources result in different levels of participation, methods of production and modes of marketing for men and women (Hill & Vigneri, 2011).
- Women had less access to agricultural extension than men, and even after controlling for other variables, gender was a significant determinant of extension access (Ragassa et al., 2012).
- Increasing the number of adult females that have completed primary school in each household by 1 leads to a 23.2percent decrease in the proportion of the population living below the poverty line (Datt et al., 1999).
- Increasing women's assets raises investments in education and girl's health (Quisumbing & Maluccio 2000).
- Women's education and status within the household contribute more than 50percent to the reduction of child malnutrition (Smith et al., 2000).
- The International Food Policy Research Institution (IFPRI) (2000) also found that women are at a disadvantage when food and nutrients are distributed within a household– adult women's

consumption of animal and fish products roughly equals the amount preschool boys consumed and men did not face the same disadvantage in distribution that women faced.

According to the World Census of Agriculture (FAO, 2011), 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. Further, based on women's prominent role in agriculture and the persistent economic vulnerabilities women face, the USAID's Feed the Future (FtF) initiative recognizes that reducing gender inequality and empowering women in agriculture is critical to reducing poverty and hunger[7]. The FtF initiative has been developed around the hypothesis that including the poorer and more economically vulnerable populations in agricultural economic growth strategies will have a transformative effect on regional economies – restructuring local production, distribution, and consumption patterns for long-term, sustainable development[8]. Gender equity and food system development are therefore mutually supportive goals.

Gender in Issues in GCFSI's Thematic Areas

This section includes a brief discussion of the focus of each thematic area and builds on existing empirical evidence to justify why attention to gender is required in the research and innovation activities under the major thematic areas.

Thematic Area One: Population, Climate Change and Land Pressure

The task of teams working on the issues of this thematic area is to develop innovations that increase food availability and food system resilience in the face of global climate change. The rationale is that in many parts of the world climate change is putting agricultural systems under stress from higher temperatures and increased rainfall variability, with the anticipated result being increased uncertainty and insecurity in food production (Messina, et al, 2013). Additionally, many farm households are facing diminishing land holding sizes with little room to expand farms to meet the growing demand for locally grown food (Messina, et al, 2013). These trends–increasing populations, changing climate patterns and increasing pressure on land – have detrimental effects on agricultural productivity, biodiversity and ecosystem services, thereby threatening global food security. As noted by Messina, et al. (2013), these observed changes imply that intensive agriculture will require confronting the challenge of increasing production while maintaining or reducing the land, energy and water "footprint".

Smallholder farming accounts for an important share of agricultural production in most developing countries. In Eastern and Southern Africa for example, Funk et al. (2008) observes that smallholder farming systems are crucial to food security, and are particularly at risk to climatic variability such as poorly timed dry spells, extended drought and excess rainfall. Keane et al. (2009) also notes that the rural poor in developing countries, many of whom are already food insecure, are likely to experience the most severe effects, and are therefore in greatest need of adaptation strategies and

[7] Source: Feed the Future M&E Guidance Series, volume 6

[8] Source: Feed the Future M&E Guidance Series, volume 6

development assistance to cope with changing weather patterns.

The high risk to climate variability as well as the high levels of vulnerability to the effects of climate change amongst smallholders can be explained by low levels of assets (including, information/skills and time). As noted by many, not only do the poor and marginalized segments of the society that are especially vulnerable to the adverse effects of climate change have limited resources which limits their capacity to adapt, their livelihoods also tend to be highly dependent on natural resources that are sensitive to climate vulnerability (Brody, et al., 2008; Nelson and Chaudhury 2012; FAO, 2011; Dankelman 2010).

The importance of assets in climate change related risk, vulnerability and adaption implies that gender differences in access to and control over productive assets are likely to produce gender differentiated responses, vulnerability and impacts of climate change. Furthermore, as observed by Skinner & Brody (2011) in many developing countries, economic constraints and cultural norms that restrict women's access to paid employment mean that women's livelihoods are particularly dependent on climate-sensitive sectors, such as agriculture, or water collection (Skinner & Brody, 2011). What this implies is that the impact of climate change on agriculture are more likely to be felt by women.

Understanding the biophysical, social, economic and cultural contexts in which food systems are embedded is fundamental for the design of successful innovations to deal with food security and poverty in the face of trends such as climate change, growing population and increasing pressure on land. As observed by Messina et al (2013), a challenge in such a complex environment is to target innovations to socio-economic and biophysical environments where they are well suited, test performance over time and space with communities, and support local adaptation. A comprehensive diagnosis of the effects of these observed trends on food security necessitates an understanding of the effect of the trends on gender relations and roles[9], and the corresponding effect on food security and poverty on one hand, and on the other hand, what existing gender roles and gender relations (the distribution of assets) imply about the nature of the risk or vulnerability associated with these trends, as well as strategies for adaptation or mitigation.

Some questions related to gender in Thematic Area One should address critical knowledge gaps identified as obstacles to progress in achieving food security and reducing poverty in the context of climate change, population growth and land pressure. Some of these gaps include:

- How do gender differentials in access to and control over productive resources influence men's and women's vulnerabilities to climate change, adaptive capacities and receptivity to mitigation options, and what are the implications for the design of innovative solutions to address climate change or its effects?
- What is known about gendered-social roles and social status, how they create gendered priorities for dealing with climate change, and how they create differing vulnerabilities and responses to the effects of climate change on agriculture? How can we draw on the existing body of knowledge on gender and climate change to inform interventions?
- How do gender roles and responsibilities influence access to climate-related

[9] For instance, how is migration induced by climate change affecting gender roles and relations and what are the implications for food security.

information and participation in climate change mitigation activities? What innovations would promote gender equitable access to climate-related information and participation in climate change mitigation efforts?

- How does climate change reinforce existing gender inequalities and what are the implications for food security and livelihood strategies?
- How does the growing pressure on land affect women farmers who have been shown to suffer discrimination with respect to secured land rights in many developing countries, and what are the implications for the design and adoption of innovations to promote food security and reduce poverty in the context of these trends?
- How is migration induced by climate change affecting existing gender roles and relations and what are the implications for food security and poverty? What are some innovative ways to reduce food security risk associated with migration for migrant households?

Overall, answers to these questions should inform the process of designing and implementing innovations targeting food security, poverty and nutrition in the context of changing climate patterns, increasing urban population and increasing pressure on land. Failure to consider gender issues in the process would severely curtail efforts to achieve these (GCFSI's) objectives.

Thematic Area Two: Rapid urbanization and the transformations in the food system

Thematic Area Two focuses on the transformations in the food systems due to urbanization and the implications for food availability and nutrition for both city and rural dwellers. Growth in urban population could be from natural (births) or as a result of rural to urban migration. Sometimes this growth is accompanied by increases in per capita incomes.

As observed by Tschirley et al. (2014), urban population and per capita income growth rates have varied across continents and over time. According to the United Nations (2008) urbanization rates will increase by 70 percent in 2050; with Africa and Asia being projected as the regions that will experience the largest growth in urban population. It is anticipated that such growths will have important consequences for food systems. However, in a given context, the rate of food systems transformations would depend on the rate of growth in urban population, the growth in income and particularly the middle income class population. Other factors that may influence the rate of food systems transformations include, but not limited to policy environment and availability of infrastructure. Evidence on the resultant transformations in the food system remains uneven across regions. For instance, unlike in Asia where there exist a significant amount of empirical evidence on the transformation of the food systems, very little empirical evidence exists on the transformation of the food system in Sub-Saharan Africa.

Existing literature highlights some important effects of urbanization on food systems. According to Pingali (2010), the growth in the urban population results in changes in food demand, particularly in developing countries. Matuschke (2009) also notes that urbanization, may lead to the development of slums, high rates of poverty, and pose a considerable threat to all dimensions of food security[10], because the majority of urban dwellers are net food buyers and spend a large

[10] i) Food availability– refers to the general availability of sufficient amounts of food; ii) Food stability– requires that food can be accessed at all times; iii) Food safety– linked to the quality of food;

part of their disposable income on food. Further, according to Jackson (2012), urbanization, caused by city expansion, may also result in changes in land use, thereby posing a significant challenge in satisfying the increasing demand for food. This expansion of cities due to urbanization is also argued to put additional pressure on rural infrastructures, transport technologies and food distribution outlets (already insufficient in developing countries), since more and more food has to be transported to and distributed within the cities (Matuschke, 2009). The Food and Agricultural Organization (2008), also notes that in the context of urbanization, already weak tenure agreements may be challenged; and agricultural production may shift to less productive areas, which could, ceteris paribus, result in yield losses. Concerns about food safety have also been noted to increase with urbanization since in urban areas food is increasingly consumed outside of the house (Matuschke, 2009). For example, in Tanzania, it is estimated that 70percent of the caloric requirements of low and middle income groups are met by street foods (FAO, 2004). Urbanization also increases dependence on the market (therefore cash income) for food, thereby making urban dwellers particularly vulnerable to food insecurity (Matuschke, 2009).

While there have been some discussions on the effects of rapid urbanization on the food systems and the implications for food security, empirical evidence pointing to the gender dimensions of food systems transformation due to urbanization and the implications for food security, poverty, gender equity and women's empowerment remain not only scanty but also variable across geographic regions.

Rural-Urban Migration, Gender and Food Systems

Migration, as a way through which urbanization occurs is a gendered process. In Latin America, for instance, Chant (1992) found that the scale and nature of migration into urban areas is much influenced by decisions in rural households about who should migrate and for what reason, by constraints placed on women's work outside the home by households, and by the demand for female labor in urban areas. Rural to urban migration involves considerable changes in farming and in lifestyle for the migrants (UN, 1995). Rural-to-urban migration also impacts on gender roles and relations in the farm household through adjustments in productive resources: labor, capital and land, which may in turn have implications for household food production and consumption within the household (UN, 1995). Migration also affects land markets thereby interfaces with gender and land tenure (UN, 1995). In West Africa for example, rural-urban migration resulted in new settlement schemes, thus modifying traditional land tenure arrangements, which had previously often favored men in terms of land access, land benefits. Remittances from migrants have also been argued to have potential food security effects in the households of origin[11]. However, just as the effects of migration on land markets and the corresponding implications for food security, the conditions under which remittances occur and the implications for food security are highly context specific.

Growing Demand for Food and Gender

Producing sufficient amounts of food to feed the growing urban population requires addressing

and iv) Food access – associated with the resources that an individual or household possesses to obtain food required for a healthy diet, Food and Agricultural Organization (1996)

[11] See path-breaking work in Western Kenya by John Hoddinott (1994) on the decision to migrate, and remittance behavior, And also Black et al (2004) Migration and Pro-Poor Policy in East Africa

the gender differences in access to productive resources. As observed by Doss (2001), in most developing countries, women make essential contributions to agriculture and the rural economy through their roles as farmers, laborers and entrepreneurs. In Sub-Sahara Africa for example, the important role women play in food production and in ensuring household food security has been well documented. However, gender disparities in assets and in roles and responsibilities continue to present significant challenges to women smallholders. A considerable amount of effort have been invested by research institutions such as the International Food Policy Research Institution (IFPRI) to measure the significance of these disparities for food production, distribution and consumption, and the corresponding implications for food systems outcomes such as food and income security. Innovations to expand food production in a rapidly urbanizing environment must tap into such pertinent evidence where it exists, or make provisions to understand these issues ex-ante design and implementation.

Retail Transformation and Gender

Occurring with urbanization is growth in the modern retail sector (retail transformation)[12], characterized by the establishment of large supermarket chains and an inflow of foreign investments and advertising from global corporations (Pingali, 2006). The rise in the modern retail sector is argued to have created new supply channels for farmers (Louw et. al. 2008). However, this process is argued to favor medium to large-scale farmers over small scale farmers (Louw et. al. 2008; Reardon & Berdegue; 2002; and Reardon & Timmer 2006). Smallholder farmers, especially women are limited in their participation in such chains (or high value markets) because they often own few assets, have limited access to services, including effective extension and rural credit, which are important preconditions for upgrading production systems (Reardon, Barrett, Berdegue & Swinnen, 2009; Udry, 1996; Quisumbing & Pandolfelli, 2010, Dolan, 2001; Fisher and Qaim, 2012).

In most developing countries, women also dominate the traditional/informal food marketing sector where they work as retailers, local food processors, and street food vendors for their livelihoods. The predominance of women in the traditional marketing sector is often explained by the combined effects of unequal gender relations and gender inequalities in roles and responsibilities. Doss (2001) for example observe that women's responsibility for most of the household and child-rearing activities, requires them to stay near the home, thereby limiting their options to work for a wage. In SSA, the informal food distribution sector remains a major source of food for most households. Tschirley et al. (2014), for instance, note that in the context of East Africa, the traditional marketing sector will continue to hold an important share of the urban food market. The growth in modern supply chains with urbanization is argued to have negative implications on informal sectors, the main supply channels used by smallholder farmers in SSA (Louw et al., 2008), and particularly on women as those who depend on informal food trading for their livelihoods and quite often have limited alternatives (for example, Reardon, et al., 2006). However, not much has been done to understand how the growth in the modern retail sector is affecting economic opportunities for women in the traditional marketing sector, and the corresponding implications for food security.

[12] Occurring at different rates across regions.

Labor Market Effects of Retail Transformation and Gender

Also accompanying rapid urbanization and retail transformation are higher rates of female participation in the workforce (Popkin, 1999; Regmi & Dyck, 2001; Pingali, 2007). Maertens & Swinnen (2009) observed that the way households benefit from modern supply chains[13], and the way women are employed[14] , has major implications for intra-household control over the income derived from these activities[15]. When accompanied with increases in wages[16], increased employment out of home could result in an increase in the demand for processed food with shorter preparation times since the opportunity of cost of time spent in preparing food at home increases (Regmi & Dyck, 2001; Kennedy and Reardon, 1994). Such foods have been argued to be unhealthy (high sugar, salt and fat content) with negative consequences for children and adult nutrition (double burden of malnutrition and obesity).

Access to food is more than just affordability which depends mostly on incomes and food pricing. According to AFSUN (2012), the need to work long hours to make ends meet also results in an inability to get to cheaper markets. Social restrictions on women's mobility may also limit access to healthy food. Given women's central role in household food procurement, restrictions on women's mobility also hinder household food security (AFSUN, 2012).

These findings imply that measuring the effects of urbanization on food security and livelihoods requires weighing the benefits of increased access to processed food against the quality of the food that is consumed. Further, improving access to quality food in the context of urbanization must consider these challenges, understand how gender roles and relations shape access to food, and in particular identify ways of strengthening local and perhaps modern food distribution networks to deliver healthy foods to time poor urban consumers. There is also a need to understand urban food insecurity and forms of poverty other than income.

Overall, strategies or innovations to promote food security in the context of urbanization must also carefully understand existing as well as shifting gender roles and relations as a result of urbanization, the implications for food production, distribution and consumption, and for food security and nutrition as food systems outcomes. Some gender questions in the context of Thematic AreaTwo include:

- How are gender roles and relations and access to productive assets (such as land) changing as a result of rural-urban migration and what are the consequences on food security, poverty and livelihood strategies for the rural poor? What are the implications for innovative solutions designed to promote food security and reduce poverty by increasing agricultural productivity in rural spaces?
- How is gender influencing (positively and negatively) exposure to the risk/vulnerability of increased food

[13] Through product-market channels or labor market channels

[14] family farm-workers or as hired agro-industrial employees

[15] Quisumbing, & Mc Clafferty (2006) show that income controlled by women has a superior development impact because such income is more likely to be associated with improved child nutrition, and increased spending on children's education, health care, amongst others.

[16] Positive employment effects for women may be undermined by a gender bias in terms of wage discrimination or unfair labor practices and working conditions (Barrientos et al., 2003; Cacgatay, 2001; Dolan & Sorby, 2003); and quantitative increases in female labor market participation are not always matched by a qualitative improvement in women's lives (Dolan & Sorby, 2003).

insecurity associated with urbanization and what can be done to promote gender equitable access to food in urban and rural areas? In a specific context, how are the risks/vulnerabilities of increased food insecurity due to urbanization mediated by gender and what are the implications for the design of innovative solutions that enhance access to food in urban and rural areas?

- Has the increased employment of women outside the home resulting from urbanization resulted to higher earnings for women employees? And how are gender roles and relations changing as a result of these changes, and what are the implications for strategies to promote food security, gender equity and women's empowerment?
- How is the changing employment pattern due to urbanization affecting the demand for different food groups/forms, and how do intra-household gender relations interact with other factors (education, age, income, etc.) to influence these changing food demand patterns and what are the implications for the food security and nutrition targeting and outcomes for urban households? To what extent are the health impacts of food systems transformation gender specific?
- In any specific context, what gender specific factors inhibit the participation and benefit accrual from emerging food markets or informal food distribution channels? What innovations or investments in infrastructures are required to promote gender equitable participation in emerging food markets as well as support women's role in informal food distribution in a rapidly urbanizing environment? How can these innovations to improve smallholder access to and participation in food markets take into account intra-household gender power relations that determine who controls revenue from market participation?
- In the context of changing demand patterns as a result of urbanization, what opportunities exist to promote value addition for women in specific value chains and what gender based constraints or opportunities exist along the value chain? How are existing gender relations and roles influencing men's and women's food systems actors' ability to take advantage of some of the opportunities presented by a growing urban population and the shifting food demand patterns?

Thematic Area Three: Evolution in skills required by food system transformation

Thematic area three focuses on the human skill implications of ongoing food system transformations and threats to global food security, the best approaches to producing those skills, and the institutional innovations that are needed if these skills are to be developed in an ongoing, sustainable fashion. Addressing the demands and threats to the food systems will require new and innovative approaches that reflect both an evolution of new knowledge and expertise and the methods used to prepare workers for the evolving food system. These tasks fall within the workforce development (WFD) systems within each region and country and, specifically, agricultural education and training (AET). This thematic area recognizes that transformative change within the AET system is required to address the needs of a rapidly transforming food system. This change will require a multi-sector collaborative process, grounded in a systems perspective that engages the key issues facing the AET system and creates an innovative space to effectively address these issues.

Existing literature focusing on developing countries, point to several areas of gender disparities in education and in labor market

participation, all of which are likely to have implications for thematic area three's effort to transform the AET and WFD systems in developing countries to meet the skills need emerging from the transformations in the food system. For example, Mangheni, et al. (2010) discuss gender biases in the delivery of curriculum in agricultural higher education, in terms of course content and overall learning experience, which results in gender-specific attrition and retention; gender differences in AET enrollments and gender inequities in the training and development of faculty and teachers. Amine & Staub (2009) note gender specific barriers in entrepreneurship in SSA. According to Vossenberg (2013) the major determinants of gender gaps in entrepreneurship include: access to financial resources, inadequate training and access to information, work-family interface, women's safety and gender based violence, lack of societal support, and legal barriers and procedures. Notwithstanding, women are increasing their presence as business owners in some countries (e.g. Ethiopia, Tanzania, and Zambia).

Efforts geared at promoting system change must understand the gendered environment in which it will take place. Proposed solutions must proactively strive to reduce the gender gap in access by bringing the other half of the talent available to bear on food systems problems. Further, any multi-sector collaborative process development and proposed training and education program design must specifically address the differential needs of men and women students or entrepreneurs. A WFD that reaches only half of the population can never be 100percent effective.

GCFSI'S GENDER STRATEGY

To support gender integration into the innovation process, GCFSI'S promotes two approaches to gender:

1. **Integrating Gender in the Innovation Pipeline**. Evidence of gender issues identified through gender analysis[17] is systematically fed into the innovation lifecycle, where it provides critical input for the design of food systems innovations. The goal is to ensure that designed innovations are responsive to the priority needs of men and women food system actors. As a tool, gender analysis helps the identification of existing areas of gender inequalities, why they exist and their implications for planned activities. It involves asking questions such as who does what and why? Who has access to and/or control over what resources and why? Who is able to participate in which development activities and why? Who makes what types of decisions and why? What are the implications for innovations?
2. **Strategic Gender Research.** GCFSI will conduct diagnostic gender specific research using gender analysis methodology or other gender analytical frameworks as appropriate to orient food systems innovations and development activities. The findings from such research will enable GCFSI to: deepen the relevance of its research; realize innovations that incorporate gender issues in food systems; as well as

[17] Gender analysis is a socio-economic methodology that describes existing gender relations in a particular context, ranging from households to firms, community groups to policy making institutions, to make clear how gender roles and relations create opportunities or obstacles for achieving development objectives, and identify ways to address disparities between men and women (Manfre & Rubin, 2012). Gender analysis begins with the collection and analysis of sex disaggregated data. The data of course can be collected using quantitative and qualitative methods, and could be primary or secondary data.

improve on the applicability of innovative solutions to the complex food system problems. The findings will be disseminated to the larger development community to enhance attention to gender issues in food systems. Possible outputs here include, GCFSI reports, webinars and peer reviewed publications.

GENDER STRATEGY IMPLEMENTATION

Specific points of entry or activities undertaken by GCFSI's gender team to guide the implementation of GCFSI's gender approach include:

i. **With Thematic Area Faculty**:

a. Work with them in the need assessment or identification stages of the innovation lifecycle to identify appropriate sex-disaggregated data (qualitative or quantitative) that will support an accurate framing of the food system challenge or topic that is being investigated. Where such data does not already exist, the gender team will provide input in the design of data collection instruments to ensure that sex-disaggregated data is collected where appropriate.

b. Work with them to establish the relevance of gender to the specific food system problem that is being investigated.

- Is gender relevant to the problem/topic? If NO, why? If YES, how and based on what existing gender evidence? If NOT SURE, what can we learn from existing gender specific evidence in the context or other closely related context? How is the problem felt by men or women? How do men and women contribute to the problem? See flowchart in Appendix
- How can we incorporate this gender specific evidence in the problem definition, the conceptual and analytical framework for the problem?
- How does attention to gender bring value to defining the solution space for the problem, ensure adoption of the proposed innovation as well as respond to GCFSI's objectives?

c. The process would result in research outputs that set the stage for innovation grant proposals (RFAs) that are likely to generate solutions that are gender sensitive.

d. On strategic gender research, work with thematic area faculty in the identification and prioritization of areas that will bring an important contribution to future thematic area research and innovation activities.

ii. **With Innovation Grants**

- Review innovation grant proposals to ensure: i) the problem identification and the design and testing of proposed solution, where appropriate, addresses potential gender issues; and ii) the indicators identified for monitoring any gender specific impacts of the innovation are appropriate
- Where appropriate, ensure that the innovation grant implementation teams have sufficient capacity for gender integration
- Build innovation grant recipients' capacity for gender integration as

appropriate, through training webinars

- Monitor the implementation of the grants to ensure gender sensitivity, i.e. ensure that implementation decisions are based on existing evidence of gender issues in the context
- Serve as a gender resource link for the innovation grantees
- Support the analysis of any gender specific impacts of innovations to ensure that tested innovations do not exacerbate another facet of a "wicked problem", for instance, by widening existing gender inequalities in the food system. According to USAID's requirement for gender integration, two key questions must be addressed by projects (USAID, 2010). Adapted to GCFSI's context, these include: i) How is the innovation affecting the relative status of men and women; ii) How are existing gender relations impacted by innovation
- Work with grantees to develop gender success stories from their projects, thereby populating existing evidence on gender sensitive innovations in food systems.

iii. Others

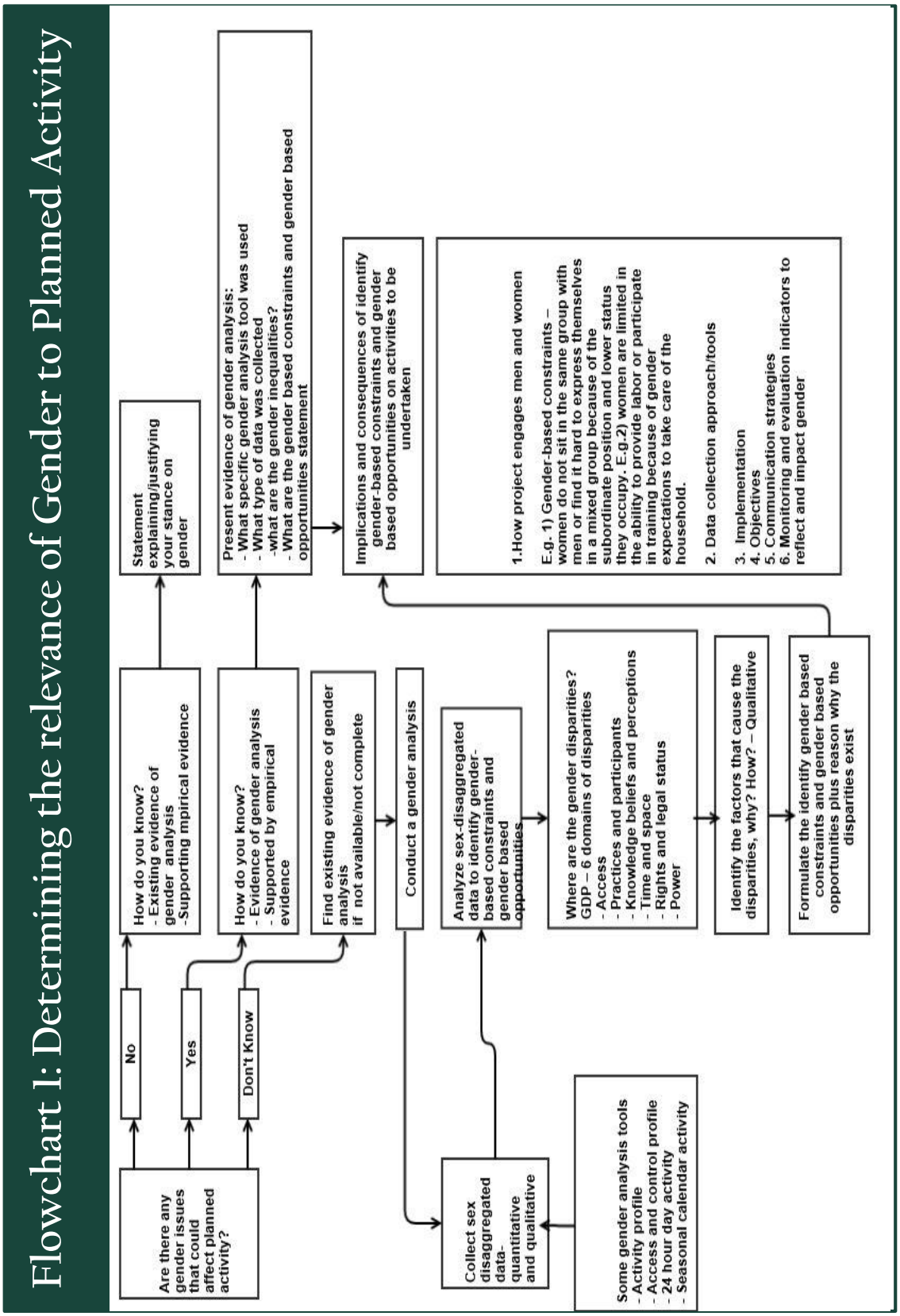
- Build networks and partnerships that will support gender integration in GCFSI's programming.
- Build partners' capacity for gender integration where appropriate.

iv. GCFSI Management Team

- Work with management team to develop indicators for measuring gender integration into grantees activities.
- Overall, success in the implementation of this strategy relies on support from GCFSI management team.

Overall, food systems development and gender equity are mutually supportive goals. GCFSI recognizes the potential role of gender as an accelerator or inhibitor of food systems innovations. This gender strategy ensures a systematic incorporation of gender considerations throughout the food systems innovation cycle to ensure that both men and women food systems actors benefit from food systems development interventions. By this strategy, GCFSI commits to proactively pursue, as appropriate, innovations with strong potentials to transform unequal gender relations, and empower women food system actors for food security, poverty reduction and better nutritional outcomes.

APPENDIX


Flowchart 1: Determining the relevance of Gender to Planned Activity
Are there any gender issues that could affect planned activity?
No
Yes
Don't Know
How do you know?
- Existing evidence of gender analysis
-Supporting mpirical evidence
Statement explaining/justifying your stance on gender
How do you know?
- Evidence of gender analysis
- Supported by empirical evidence
Present evidence of gender analysis:
- What specific gender analysis tool was used
- What type of data was collected
-What are the gender inequalities?
- What are the gender based constraints and gender based opportunities statement
Find existing evidence of gender analysis
if not available/not complete
Implications and consequences of identify gender-based constraints and gender based opportunities on activities to be undertaken
Conduct a gender analysis
1.How project engages men and women
E.g. 1) Gender-based constraints – women do not sit in the same group with men or find it hard to express themselves in a mixed group because of the subordinate position and lower status they occupy. E.g.2) women are limited in the ability to provide labor or participate in training because of gender expectations to take care of the household.
2. Data collection approach/tools
3. Implementation
4. Objectives
5. Communication strategies
6. Monitoring and evaluation indicators to reflect and impact gender
Analyze sex-disaggregated data to identify gender-based constraints and gender based opportunities
Where are the gender disparities?
GDP – 6 domains of disparities
- Access
- Practices and participants
- Knowledge beliefs and perceptions
- Time and space
- Rights and legal status
- Power
Identify the factors that cause the disparities, why? How? – Qualitative
Formulate the identify gender based constraints and gender based opportunities plus reason why the disparities exist
Collect sex disaggregated data- quantitative and qualitative
Some gender analysis tools
- Activity profile
- Access and control profile
- 24 hour day activity
- Seasonal calendar activity

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