

How to green food systems in a gender-smart way

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A matter of insight and smart interventions



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Abstract

The current food systems pose serious problems of sustainability at several levels: environmental, economic, socio-cultural and nutritional public health. A solution is sought in greening of such systems which refers to investments in food systems to improve human well-being and social equity, reduce environmental risks and ecological scarcities. It emphasises the linkage between greening and the Right to Food, one of the human rights. Discussions on how to green food systems generally lack attention to another human right, equality of women and men, thus resulting in less effective and efficient interventions. In this paper the authors unravel the relation between food systems and gender equality building on knowledge and experience in the field of gender equality and agriculture, climate change, food security and value chain. They use a model of gender asymmetries to increase insight into how gender inequality impacts on the way food systems function and benefit community members and the society. They included good practices to addressing gender imbalances for improving the social equity dimension of food systems. Critical for any intervention is that it is grounded in the local culture and social context. That requires institutional capacity of companies, institutes, and organisations involved in greening of the food systems to ensure that needs, priorities, opportunities and constraints of female and male farmers are being considered and that both participate in interventions and development of new practices or chain activities. The paper includes a methodology to identify interventions based on the realities of male and female farmers and linkages between community and national levels that will result in higher income and well-being as well as reduced gender inequalities (GALS - Gender Action Learning System). GALS includes three strategies: 1) Empowerment through community action learning at catalyst workshops, 2) Gender mainstreaming for innovation and institutional change; and 3) Advocacy network for policy improvement at the national level. Various results of the methodology's application for coffee farming households and organisations in terms of gender equality are described. The paper ends with several interventions that promote a sustainable food system with a strong social equity dimension, in other words, gender-smart greening of food systems.

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1. Introduction

Going 'green' has become the panacea to address challenges of sustainable development. Green growth, for instance, is a way to pursue economic growth and development without jeopardizing the environment and biodiversity. Greening of the food chain would contribute to sustainable growth and food security, and pave the way for less pressure on natural resources. Giving another example, green agriculture entails activities that are increasingly low carbon, resource efficient and socially inclusive. In these examples, 'greening' attends to environmental as well as social equity questions. The authors of this paper, both with longstanding experience in promoting gender equality, observed that social equity, more particularly, gender equality is not much elaborated in greening of food systems.¹

Many documents are available about gender equality and agriculture, climate change, food security and value chain, but not much about its relation with greening of food systems. It can be expected though that gender patterns will favour and/or hinder equal opportunities and access while greening food systems. And, that as a condition for such greening structural causes of gender inequality need to be addressed. The importance to look at gender issues are obvious. About 45% of the world's population depends on agriculture, forestry, fishing or hunting for their livelihoods. The world depends on small-scale farmers to produce the bulk of food consumed in developing countries. Female farmers constitute 43% of the agricultural labour force in developing countries and up to 50 per cent in Eastern Asia and sub-Saharan Africa, and women account for an estimated two-thirds of the world's 600 million poor livestock keepers.¹

Convinced about the importance to understand the linkages between greening of food systems and gender justice we reviewed many documents, see the attached list. It resulted in an overview of key issues which we categorised using a model of gender asymmetries. We also found several good practices of 'gender-smart' interventions in food systems. Fed by these practices we adjusted a sustainable food system grid to show what interventions can assure gender-smart greening. We like to share the results of our journey with practitioners who are interested to green food systems in a social-just way, such as companies, services providing institutions and organisations, and so on.

Some boundaries are set for this paper. Its focus is on small-scale farmers in developing countries and their roles in the food system as producers, processors, traders, and entrepreneurs. Small-scale farming households, it is increasingly recognised, play an important role in the creation of sustainable food systems, which holds for both male- and female headed households.^{ii 2}

Chapter 2 of the paper discusses key concepts relevant to gender-smart greening of the food system. Next, a model on gender asymmetries is presented and further elaborated to understand what should be done to promote greening of food systems with a strong social equity dimension, building on ground realities and good practices. Chapter 3 gives a methodology to identify and ensure gender-smart interventions based on the realities of male and female farmers, and linkages between community and national level. The paper concludes with critical conditions and suggestions for gender-smart greening of food systems.

¹ A recent report of CARE and Food Tank states that 'if we are to achieve the new Sustainable Development Goal of ending hunger by 2030, we must address the underlying inequalities in food systems', and 'Small-scale food producers – and especially women – deserve a new strategy to support their agricultural efforts in the face of climate change.' The report elaborates on an approach towards just and sustainable food systems that support small-scale food producers and women. Rawe, Tonya, Karl Deering, William Echols et al. 2015. (citations: p.5, 11). In 2012, the DCED commissioned a scoping study to analyse opportunities and challenges for women's participation in green growth in developing countries. It combines a gender perspective with a focus on the (potential) participation of women, a greening perspective and a private sector development perspective - Von Hagen, Markéta, and Johanna Willems. 2012. BRIDGE published in 2014 Gender and Food Security. Towards Gender-Just Food and Nutrition Security Overview Report, provides a comprehensive gender analysis of food and nutrition insecurity and presents cases how rights, gender justice and environmental sustainability can be practically realised.

² Furthermore, the paper does not discuss the role of other actors in the food chain such as labourers and workers in companies. Also, energy and financial services, evidently crucial to greening of food systems, do not get much attention.

2. Greening of the food system – what are we talking about?

In this section, we elaborate on the key concepts of greening of food systems: the food system, and more particularly, the sustainable food system with its inter-related key elements: sustainable/ organic agriculture; food and nutrition security; and consumption/ sustainable diet, and the concept greening. Box 1 contains a few definitions.

A *food system* includes all processes and infrastructure involved in feeding a population: growing, harvesting, processing, packaging, transporting, marketing, consumption, and disposal of food and food-related items; as well as the inputs needed and outputs generated at each of these steps. It operates within and is influenced by social, political, economic and environmental contexts.ⁱⁱⁱ Wide-ranging scientific findings show with growing certainty that the current food system poses serious problems of sustainability at several levels: environmental, economic, socio-cultural and nutritional public health.³ *Greening of food systems* refers to investments in food systems to improve human well-being and social equity, reduce environmental risks and ecological scarcities.

A *sustainable food system* addresses both the need for food and nutrition security as well as the need for sustainable agriculture and consumption. The sustainable food system grid in table 1 below shows the criteria of the food system to be sustainable referring to the four problematic levels of sustainability.^{iv} Box 1 gives definitions of the concepts in the grid. The criteria under the component *sustainable agriculture* are closely related to the four principles of organic agriculture as laid out in Box 1. About the component *consumption* its criteria are well illustrated by the concept *sustainable diets*. The concept sustainable diets imply low environmental impacts, a boost to food and nutrition security and healthy living for present and future generations.

The sustainable food system grid below illustrates the complexity of greening of food systems: investments in several areas are needed to improve human well-being and social equity with due attention to the environment and ecosystem.⁴ Social equity is about gender justice which will be the focus of the next section.

BOX 1: Definitions of key concepts

Food and nutrition security is a condition where adequate food (in terms of quantity, quality, safety, socio-cultural acceptability) is available and accessible for and satisfactorily utilized by all individuals at all times to live a healthy and happy life. The key elements of food and nutrition security are,

- Food availability - depends on food production, productive assets, trade, natural resources productivity and sustainability
- Food accessibility - relates to purchasing power, access to markets, market integration
- Food stability - has to do with variability in weather, price fluctuations, climate change, socio-economic pressure on natural resources and other type of risks
- Food consumption, i.e. nutrient and energy intake. Food intake is influenced by cultural eating habits and intra-household distribution traditions, care practices and, also, by a person's health status, which in turn is impacted by food safety and quality and water quality.

Sources: Weingärtner, L., 2010. *The Concept of Food and Nutrition Security*, in K. Klennert (ed.), 2010; FAO. 2008; CRS. 2012; Gross, R. e.a. 2000.

Sustainable diets optimize the use of natural and human resources and are:

- protective and respectful of biodiversity and ecosystems
- culturally acceptable
- accessible
- economically fair and affordable
- nutritionally adequate and safe and healthy.

³ It made Prof. Olivier de Schutter, former United Nations Special Rapporteur on the Right to Food, to declare "Food systems must be reshaped with a view to ensuring social equity and the reduction of rural poverty, protecting our resource base and delivering better health outcomes. Multidisciplinary research is urgently needed to promote adequate solutions at policy and global levels. And it must include an analysis of consumer behaviour, to encourage sustainable consumption as an integral part of food systems reform." News release from the Daniel et Nina Carasso Foundation at the establishment of an International Panel of Experts on Sustainable Food Systems (IPES-Food), 2014. <http://www.prnewswire.co.uk/news-releases/eat-stockholm-food-forum-2014-the-daniel-and-nina-carasso-foundation-announces-the-establishment-of-an-international-panel-of-experts-on-sustainable-food-systems---ip-es-food-260747581.html>

⁴ FAO GEA Rio+20. 2012.

Table 1: Interventions to promote a sustainable food system⁵

	Environment	Nutrition	Economic	Socio-cultural
Sustainable agriculture	<ul style="list-style-type: none"> - Follow sustainable agricultural practices - Enhance resilience of production systems - Deploy and maintain diversity 	<ul style="list-style-type: none"> - Promote diverse food - Produce nutritionally dense product 	<ul style="list-style-type: none"> - Deploy affordable cultivation practices - Promote self-reliance through local produce 	<ul style="list-style-type: none"> - Maintain traditional agriculture practices and promote local varieties
Food/nutrition security	<ul style="list-style-type: none"> - Reduce impact of production, processing, commercialisation 	<ul style="list-style-type: none"> - Preserve nutrients through the food chain 	<ul style="list-style-type: none"> - Strengthen local food systems - Produce affordable food 	<ul style="list-style-type: none"> - Produce culturally acceptable food
Consumption/sustainable diet	<ul style="list-style-type: none"> - Reduce the environmental impact of feeding practices 	<ul style="list-style-type: none"> - Promote dietary diversity, food balance and seasonality 	<ul style="list-style-type: none"> - Promote access to dietary diversity 	<ul style="list-style-type: none"> - Safeguard food traditions and culture - Meet local preference and taste

BOX 1: Definitions of key concepts (continued)

Organic agriculture refers to agriculture that builds on four principles:

- *The principle of health:* organic agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible;
- *The principle of ecology:* organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them;
- *The principle of fairness:* organic agriculture should build on relationships that ensure fairness with regards to the common environments and life opportunities; and,
- *The principle of care:* organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

Source:

http://www.ifoam.org/sites/default/files/ifoam_poa.pdf

Gender justice refers to equal opportunities, benefits, treatment and freedom from discrimination being a human right of women and men as enshrined in the Declaration of Human Rights and the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW).

⁵ Adapted from: Padilla, Martine, Roberto Capone and Giulia Palma *Sustainability of The Food Chain from Field to Plate: The Case of the Mediterranean Diet* in: FAO. 2012. Sustainable diets and biodiversity. p. 232



3. Greening of food systems – how can we ensure gender justice?

Greening of food systems cannot take place without gender justice: both involve human rights issues (see definition in Box 1).⁶ Gender inequality is not only a question of justice, it is a key cause of poverty for women, children and men. In this section, we discuss what should be done to promote greening of food systems with a strong social equity dimension using a model on gender asymmetries. We discuss the main issues of asymmetry and show some good practices on how to reduce them.

There are five main areas in food systems where gender inequality is still prominent. Gender-smart greening of food systems means that efforts are made to remove these five gender asymmetries. Figure 1 below presents the inter-linkages of the five areas.⁶

- The first asymmetry is in *assets*: access to and control over both *material and social resources* (such *natural, economic, human resources, financial and social capital*) are required to green food systems with equitable benefits. Gender differences in access to and control over assets dictate power asymmetries and negotiating power between men and women within the household and community.
- The second asymmetry is connected to *agricultural markets*, which include *product, input, labour (in agriculture and agribusiness), financial, land and water markets*. Men and women have different opportunities to participate in these markets, which prevents food systems from functioning well. When value is added to products, the risks as well as benefits are also distributed unequally between women and men.
- The third area is *technology including 'soft' technology* such as knowledge. We see here asymmetries related to market information, information on risks and legal rights, provision of services and skill development, and so on. Access to technology affects access to assets and markets as well as risk and vulnerability and, thus, may reinforce or intensify gender asymmetries in those areas.
- *Resilience and risks* is the fourth area that shows gender asymmetries. Women and men experience vulnerabilities to risks - which may range from natural to economic risks - in different ways due to socio-economic and cultural factors. They have different opportunities and priorities in addressing problems and coping with risks.

⁶ The model is adjusted from Figure O.1 in The World Bank, FAO, IFAD. 2009. p.5, which builds on the Sustainable Livelihood Approach.

- The last area is overarching: it concerns *decision making from the intra-household to international level* which is highly asymmetric along gender lines. Re-balancing this implies rebalancing power relations, connected with space for women, participation and representation in decision making processes at all the levels, opportunities to participate in informal and formal organisations, to assume leadership and make their voices heard in institutions and political platforms, and, finally, to empowerment to make it happen.

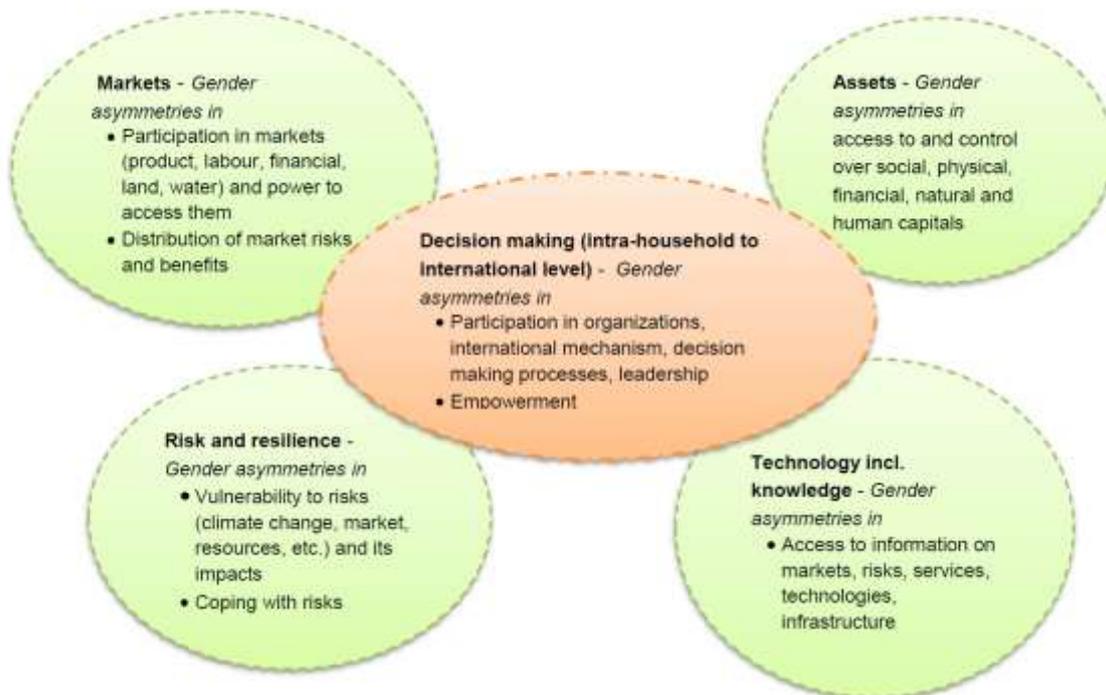
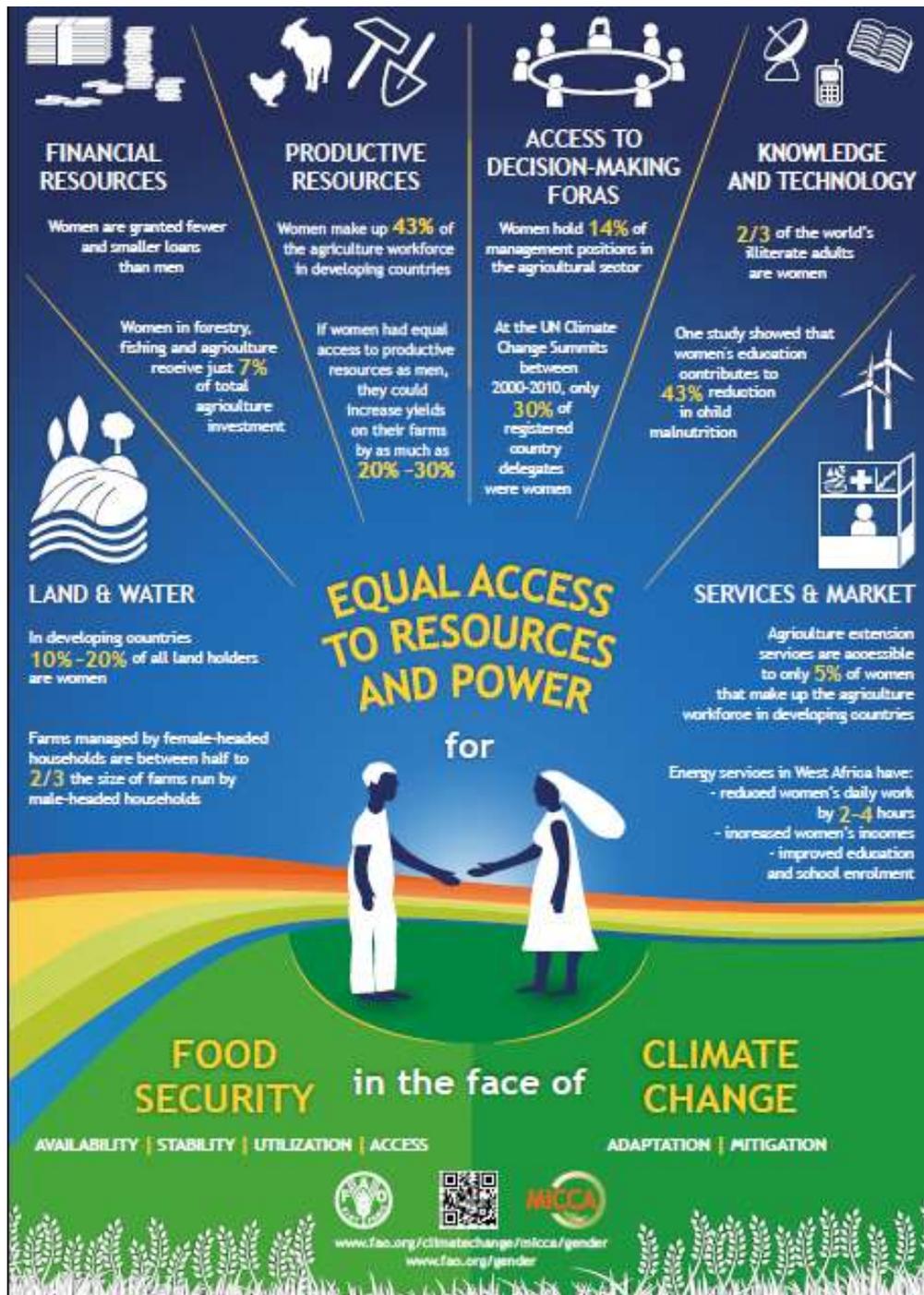


Figure 1 – Five key areas of gender justice with the asymmetries related to the food system

These five key areas can be considered a model for greening of food systems, each of which areas will be further elaborated in the following sections. The infographic on the next page gives some key figures on existing gender asymmetries.^{vi} It should be stressed that a gender lens in greening of food systems does not mean a women’s focus but a focus on both women’s and men’s constraints, vulnerabilities, opportunities and new perspectives. It is about social justice and wider intra-community inequalities. Men, for example, may be more negatively impacted by climate change because they own land, or because women can invoke cultural norms that make men responsible for household food security.^{vii}



Key figures on gender asymmetries
 Source: <http://www.fao.org/gender/infographic/en/>



3.1 Gender asymmetries in assets ⁷

A first key issue to address to ensure a green food system is the gender asymmetry in assets: access to and control over material and social resources. A good example to demonstrate the importance of such resources is the gender gap in crop yields of small scale farmers. The productivity level of female farmers' fields is many a time lower than that of male farmers growing similar crops. This is partly since farms managed by female-headed households are half to 2/3 the size of farms in male-headed ones. Also, the quality of the fields that women cultivate is often more inferior than that of male farmers.

Moreover, men have generally greater access than women to productive resources, such as finance, land, labour, agricultural inputs, equipment, and so on. In most countries, there is a 5%-10% disparity in the percentage of female-headed households which access financial services compared to male-headed households. The extent to which farmers have control over land is very influential in decision making regarding investments in farming. Women own or rent less land than men do because they usually have weaker rights to the land they farm. Formal and often customary laws and regulations concerning property and inheritance determine access to land. Additionally, where laws exist to ensure equal rights to land women and men most concerned are not always well informed of their existence or supported in claiming their rights. As for labour, female farmers have less control over money for hiring labour, in addition to having their multiple roles to fulfil as producers, water and fuel collectors, cooks and primary care givers. They suffer time poverty since their many agricultural tasks are very labour intensive. Take weeding for instance: 75 % of Sub-Saharan small holders farms are weeded by hand, 90% of this by women, which consumes 50-70% of their total labour time.

Lower productivity levels of women's fields also result from their lower access to information compared to men, an issue we deal with in section 3.4. Research and extension tend to focus on cash crops and needs of men farmers rather than on food crops which are often cultivated by women. Statistics reveal that female farmers receive only 5% of all agriculture extension services from 97 countries. This exclusion has much to do with the low visibility and/or valuation of women's agricultural work.

⁷ Statistics in this section are taken from <http://www.fao.org/gender/infographic/en/>; other sources of this section: Stern, Michelle, Lindsey Jones-Renaud, and Marya Hillesland. 2016; Croppenstedt, Andre, Goldstein, Markus, Rosas, Nina. 2013; Dutch Sustainable Unit. 2014; FAO. March 2010; Landesa, 2012.

Lower productivity affects food security at household level and beyond. It is of even greater concern because of the high level of post-harvest food loss. This loss takes place during different phases of crop handling, on-field/ harvest site, in transit to home, during processing, storage, and in transit to the market site. Investments to boost productivity are possible when farmers have access to productive resources. If such access would be equal, female farmers could increase yields on their farms by as much as 20%- 30%. For developing countries, bridging the gender gap would mean an increase of 2.5 - 4% of the total agricultural output and, worldwide, a 12-17% reduction of undernourished people.^{viii} Additionally, it will create opportunities for women to increasing their income and marketing their produce. A research focusing on the measurement of the economic costs of the gender gap in agricultural productivity showed that closing the gender gap in agricultural productivity could not only increase production but also potentially lift as many as 238,000 people out of poverty in Malawi, 80,000 people in Tanzania, and 119,000 people in Uganda.^{ix}

Good practices

Several good practices show how constraints to increasing productivity levels of female farmers' fields have been addressed. Micro finance schemes, for instance, helped many women to access capital with men having easier access to formal credit. Box 1 gives interesting practices to promoting access to financial services and land. Concerning the land factor, it has been demonstrated in Rwanda that when land rights are strengthened for both men and women, higher investments follow. Investments in soil and water conservation (which are critical given the intensive use of land in Rwanda) increased by approximately 9% in male-headed households, while for female-headed households these investments increased by 18%.^x As for labour, women themselves have their specific ways of overcoming time constraints, such as providing mutual support to each other on their fields to cope with labour peaks. Some women's groups pool labour and resources to improve land productivity. Various studies have showed that women and men generate different, but mutually supported ideas for addressing agricultural problems, which improves social relations in communities and advances gender equality.^{xi}

Box 1 - Inexpensive and practical changes to promote women's access to land and financial services

- Issue birth certificates to help identify landholders and reduce cheating.
- Use photographs on land titles to help reduce property disputes.
- Allow land titles to include more than one space for ownership, to allow women and men to have both their names on a deed.
- Work with community leaders, and use local and national media to increase recognition of the importance of women's ownership of land.
- Improve women's legal literacy and provide women with better access to legal aid.
- Build women's agency and leadership, and work with both men and women in the community to galvanize support for women's enterprises.
- Expand the notion of collateral to allow women to use assets other than private property to secure credit. Allow women to use their jewellery, livestock, and equipment as collateral; allow for cash flow-based lending using assets, debentures, or bills of sale. (Access Bank in Nigeria, in collaboration with IFC, was successful in this effort to support women entrepreneurs and received several awards for their efforts.)
- Financial institutions could pay better attention to the opportunities in emerging agricultural and food markets and develop specific financial products (credit, savings, insurance), tailored to the specific needs of rural women.
- Financial institutions that operate in rural areas could use affirmative action strategies to target clients based on gender.

Source: El-Fattal, Lamia. 2013?



3.2 Gender asymmetries in markets

The second area of gender asymmetry concerns agricultural markets, which closely relates to value chain opportunities. Women are highly involved in crop and small livestock production, processing, and selling produce at the local market. However, compared to men they have less opportunities to move to higher levels in value chains and to profit from agricultural enterprises.⁸ This gender gap is due to differences in access to resources, services and information, while women may face some challenges men do not face: lack of visibility and access to support networks, lack of cultural acceptance and lack of role models. For example, despite evidence that women-led companies may deliver higher and more consistent returns, they have trouble in accessing investment capital.^{xii} Estimates say that women who are launching and expanding ventures around the world have an estimated collective credit gap of \$320 billion, i.e. the difference between the capital they are seeking and the credit to which they have access.^{xiii}

The limitations mentioned reduce women's effectiveness as actors in value chains, overall chain efficiency, and their ability to increase their incomes. Since these incomes are largely spent on family necessities, increased income usually improves the family's quality of life and health, and the children's education. It has been estimated that an increase of \$10 to a women's income leads to the same improvements in children's nutrition and health than a \$110 increase in a man's income does.^{xiv} Addressing gender issues in value chains is thus an indispensable component of greening food systems. This is true for all stakeholders in the food system, including the business sector and policy makers. And it will have a much broader effect if we include the many women who earn income as labourers in the food chain.^{xv}

Good practices

Food chains contain opportunities for female farmers as shown in Box 2. Changing consumption patterns stimulate such opportunities: the market for green and sustainable products is growing.^{xvi}

Women's participation in farmer organisations and cooperatives can help women to achieve economies of scale and access markets. There are more and more examples of well-functioning agribusiness where women^{xvii} or women's groups build on activities they traditionally control. This seems to work particularly well in situations where changes in women's roles and positions meet

⁸ Main sources of this section: Gender and agricultural markets. Module 5 in: Worldbank. 2008, p. 173 – 183.; KIT, Agri-ProFocus and IIRR. 2012; Stern, Michelle, Lindsey Jones-Renaud, and Marya Hillesland. 2016.

local resistance. In such situations, men are less likely to enter and take over such activities if they become lucrative, or to demand that their wives hand over the income gained. Such activities are professionalized and/or undertaken with the use of new techniques and technologies, depending on the priorities of women and/or on the available market. Women may, for instance, opt for farming activities that are less costly, less risky, require less access to financial services, and minimize workload. They may prefer to practice a low-external-input type of agriculture not oriented towards profit.^{xviii} Apart from generating income, participation in groups, as well as farmers' organisations and cooperatives, also reduces isolation, and builds confidence and leadership.

Interventions especially geared to address female entrepreneurs' constraints show that not only the performance of their enterprises improves but also that it can lead to additional employment. An example is the Tanzanian Women Entrepreneurship Development (WED) program which provides support services to female micro- and small-scale entrepreneurs. Among others, WED facilitates trainees and other entrepreneurs in the sector to start, develop, and sustain their food-processing businesses and it provides credit to trained entrepreneurs.⁹

A last good practice concerns support to entrepreneurs that belong to the 'missing middle of finance' - businesses that are too big for microfinance but are unable to get credit from banks. One non-profit agricultural lender has started a women-focused initiative, identifying businesses for support in traditionally male-dominated industries that have a high impact on women, for instance, a Nicaraguan collective of female coffee farmers that launched the "Las Hermanas" brand, and female-dominated but sometimes neglected industries such as shea butter production.¹⁰

Box 2 - Opportunities for female farmers in green food chains

Women perform specific tasks along a food chain and, thus have gender-specific knowledge related to that chain, such as knowledge of elements of a crop's life cycle and its requirements at that stage. If female farmers use traditional production systems, they may find it relatively simple to meet some certification requirements, for example those for organic production. Many high-value crops require labour-intensive production techniques, such as pruning, which cannot be mechanized and in which women often specialize. There is increasing demand for high-value products, for instance vegetables and local crops, in expanding urban markets. The challenge is to ensure that women retain control over their production, processing, and marketing, while product quality and reliability must be enhanced.

Source: Worldbank. 2008. p. 173 – 183.

⁹ WED started in 2001 and is now part of the Small Industries Development Organization. More in Mchomvu, Happiness. November 2011. See also the Intervention Guide for The Women's Empowerment in Agriculture Index (WEAI) (Stern, Michelle, Lindsey Jones-Renaud, and Marya Hillesland. 2016) which suggests interventions based on a gender-responsive, inclusive market systems development approach.

¹⁰ Root Capital, a non-profit agricultural lender focused on increasing rural prosperity in Latin America and Africa, launched this Women in Agriculture Initiative based on the belief that gender-inclusive businesses—rated by a potential client's percentage of women leaders, women managers, women employees, and women suppliers, as well as inclusive programs and culture—can create greater financial and social impact. <http://www.rootcapital.org/> referred to in: Kaplan, Sarah & Jackie VanderBrug 2014



3.3 Gender asymmetries in risk and resilience

A third area critical in greening of food systems is vulnerability to risks.¹¹ Female farmers are differently affected by economic and ecological crises and trends than their male counterparts primarily because they are the main responsible for feeding the family. One example is the food price crises, magnified by financial and economic crisis that emerged in 2008/2009, which affected food accessibility, consumption and health. The higher food prices increased women's burden to feed the family. Moreover, in cultures where women by tradition eat what is left after men and boys have eaten, women's and girls' health may be affected.

In many contexts, women are more vulnerable to the effects of climate change than men—mainly as they constitute most the world's poor and are more dependent for their livelihood on natural resources that are threatened by climate change. Those charged with the responsibility to secure water, food and fuel for cooking and heating face the greatest challenges. When coupled with unequal access to resources and to decision-making processes, limited mobility places women in rural areas in a position where they are disproportionately affected by climate change. Limited access to tools and technology makes women who, as we have discussed above, often cultivate plots of poor quality even more vulnerable to climate change. Yet, women may have similar or better adaptive capacity than men. For example, research in nine African countries showed that women, more than men, are dependent on internal village groups as opposed to organisations operating at regional level and beyond. It allowed women to tap into a vibrant, varied and nimble network of mutual insurance, risk-sharing village organisations.^{xix}

Due to their gender roles, rural women habitually have a wealth of knowledge and experience about natural resources, the environment and management of these resources, including the cultivation of drought- and flood-resistant crop varieties. They are therefore capable to adapt to climate change and to redress loss of biodiversity. Women often use freely available and renewable resources, such as non-timber forest products or medicinal plants, whereas men tend to dominate the resources with higher monetary value, such as timber. Women are particularly active breeders of plants and conservers of traditional varieties.

They are stewards of natural resources with specific knowledge of food and medicinal plants and their preparation. The importance of their role cannot be overestimated: about 80% of the world's population, depends on traditional medicine to meet basic health needs. Despite their contribution,

¹¹ This section builds on various sources: Pionetti, Carine. 2016; Rawe, Tonya, Karl Deering, William Echols et al. 2015; ADB. 2013; Dutch Sustainable Unit. 2014; UN WomenWatch. 2010; www. gendercc.net/fields/biodiversity. El-Fattal, Lamia. 2012; Romero Gonzales, e.a. 2011.

women are hardly represented in policy-making and in institutions that address natural resources management, although research shows that women's participation in decision-making bodies can improve things in this field— more about decision making under 3.5.^{xx}

Good practices

There are good examples on how to redress gender asymmetry in risk and resilience at programme level, such as, women's inclusion within forest management through a range of - mostly - community or institutional level interventions, or diversifying livelihood options as a means of increasing income and long-term food security. They show that both the environment and women's empowerment benefit.^{xxi}

Other good practices include programmes and policies addressing risk management at various levels.^{xxii}

Critical are efforts to understand the gender dynamics of vulnerability and undertake a gender-sensitive risk assessment.^{xxiii}

Box 3 gives two examples on how risks have effectively been addressed with due attention to gender asymmetries in risk. They also show the close inter-relation between such asymmetries in risk and decision making.

Box 3 – Addressing risks using a gender perspective

In Bheerapani, a small, remote village in the Nainital district in the central Himalayas, the Community Awareness Centre (CAC) promotes environmentally sustainable livelihoods through processes such as forest protection and organic farming. Its participatory approach engages local people in developing effective, locally-owned solutions to climate change, fostering their initiatives rather than setting rigid project goals. As part of these processes, CAC encourages discussion of gender inequalities and empowers women by raising awareness of their rights over resources and knowledge systems. The tiny NGO, which is run by only four people on a shoestring budget, has facilitated amazing transformations against the backdrop of climate change in India. It has inspired women to become local leaders in climate-related issues and advocates of more sustainable organic farming. It has also helped to shift perceptions of gender roles. CAC's success is partly attributed to its efforts to create real participation and ownership by the villagers it works with, and ensure that women play a key role in decision-making. Their experience shows that, in local contexts, communities are usually best placed to define issues and explore solutions, and that women's knowledge is an extremely important part of this process.

Source Georgina Aboud Transformative, participatory approaches to gender, climate change and sustainable livelihoods in India in: BRIDGE INBRIEF 22 • November 2011

In South Odisha state, India, the landscape and livelihood of family farmers are threatened by large dams, changing rainfall patterns and government indifference. Farmers in one district pointed out the need to address their problems with an organised and multi-pronged approach to counter these threats and preserve their cropping pattern and produce enough food. Their first plan aimed to improve agricultural practices and soil fertility. They agreed on governance rules and started collective efforts to rejuvenate the commons. The latter was proposed by women who felt that it was not enough to protect just the family lands because this would not provide them with enough firewood and fodder. Women organised collectives and took the initiative to protect the communal area from grazing by fencing; they decided what trees to plant so these could provide them income, and initiated some annual intercropping.

Source: Vidhya Das (NGO Agragamee, Kashipur, Odisha, India) Tribal farmers reclaiming denuded landscapes in: ILEIA, Farming Matters. Sept 2014, p.6-8.



3.4 Gender asymmetries in technology

In greening of food systems both new and ‘traditional’ knowledge is relevant. Technology is used here in the broadest sense, i.e. including knowledge, processes, activities, and socio-cultural context. It thus reflects the bases of everyday life and touches most aspects of both women’s and men’s lives.^{xxiv} While women are active users of technology, they are often under-represented in the formal creation and use of new technologies. This has to do with social and cultural factors, inadequate technological infrastructure in rural areas, women’s lower education levels (especially in science and technology) and their (assumed) fear or lack of interest in technology, and, last but not least, women’s lack of disposable income to purchase technology services.^{xxv} A study on entrepreneurs and innovation^{xxvi} showed that women’s entrepreneurial motivations, stem from a desire to fulfil a dream, realize a passion or seek greater independence than men’s motivations do. Men are more often driven by the desire to bring a new good or service to the market or significantly improve upon an existing product or service. Women innovate to address a social need in their communities more often than men do. The study also exposed barriers to innovation for female entrepreneurs such as limited access to internet. The latter results in the creation of far fewer web pages and use of social media networks which hinders growth of customers.

Good practices

Technology use has shown to be a creative entry point for rebalancing gender inequalities. Research on how (technological, economic or social) innovations have improved women’s well-being, have empowered women and advanced gender equality, identified seven common approaches, or levers.^{xxvii} The first and second levers are ‘*break boundaries and engage in broad-based partnerships*’ and ‘*promote engagement of women in design and diffusion of innovation*’. The third lever is about ‘*involving dynamic and influential champions - powerful men as well as highly committed and strong women - in launching or facilitating innovations that empower women to provide critical support, influence the initial agenda, and shape the direction of innovation processes*’. The fourth lever points at the importance of communication channels: ‘*deliberately pursue strategies that mobilize communication channels such as media, influential adopters and social networks to demonstrate the power of an innovation and spread messages about it to potential users and stakeholders, thus contributing to mass impact*’. The next two levers are ‘*build on favourable conditions and optimal timing that capitalize on multiple trajectories of social and economic transformation already underway*’, and ‘*consider early on how strategic diffusion efforts can reach and benefit the most disadvantaged women*’. The last and seventh lever is ‘*combine both international or national top-down investments with bottom-up efforts*’. An illustration of this last lever is given in box 4.

Box 5 holds an example of an ICT programme adjusted to benefit both female and male farmers. It points at key issues to address such as women's mobility in terms of kilometres and the distance perceived by women, and workload. It also shows the importance of building women's capacities while including men in a culturally acceptable way and capitalizing on the talents and contributions of women and men. The study, furthermore, learnt that for achieving equitable participation and benefits it is critical that programming and organisational systems and structures respond to the needs and interests of people of different gender and age.

Box 4 – Combine both international top-down investments with bottom-up efforts

Several UN mechanisms and frameworks include attention for climate change and technology, such as the Clean Development Mechanism or Benefiting Sharing Mechanism. Although these mechanisms could offer good opportunities to recognize and build on the small-scale technologies that women are already using (in household energy, agricultural and food processing, forest management, water pumping, etc.) gender differentiated impacts have been given minimal attention. WOCAN developed the W+™ Standard to counteract this and advocate for women's groups participating in the projects under such mechanisms to receive carbon revenues. The Standard includes measures to promote, integrate and measure women's empowerment and participation in carbon mitigation projects. Using the W+™ Standard, projects generate monetized W+ Units, which can be sold to compensate project developers and return financial benefits to women in project communities. Rigorous methods and processes ensure buyers that W+ certified units will be protected from false or inflated claims, and can confidently measure the beneficial impacts of their investments. The system requires that community women receive 50% of the net revenues from the unit sales. Project or program intervention results in increase in income and/or assets. The Standard provides measurable, verifiable benefits to women within six domains of their empowerment: Time, Income & Assets, Health, Leadership, Education & Knowledge and Food Security.

Source: Wamuknoja and Skrutch, 2001 referred to in Aguilar, L. e.a. 2009, p. 181; WOCAN, 2014; <http://www.wplus.org/>

Box 5 - Technology use and redressing gender asymmetries

Two Kenyan organisations, ADS Western and ADS North Rift, work towards improving the efficiency and effectiveness along the value chains and strengthening the capacity of farmer-led producer and marketing organisations which in turn would improve access to markets. They use different ICT-enabled information services and tools, such as farmer ICT centres, video-based instruction, market price information service (M-farm), mobile-based messaging and radio. The organisations recognised that in most of the communities where they worked, women disproportionately lacked access to information, organisations, and resources important for them to enhance their farming work. Therefore, they developed strategies to ensure that female farmers could participate and benefit equally to male farmers, based on an analysis of existing gender gaps. For example, they moved farmer ICT centres closer to farms so that women could easily access them and they scheduled suitable timetables and activities to promote women's participation. The farmer's ICT centres provide free ICT skills training to farmer group members and help them to use the tools to search for information, create and keep records related to their farming enterprises, and communicate with input suppliers and potential buyers. The mobile video-based training was adjusted to involve farmers of both sexes in the shooting and in the training. In these trainings discussions are held on how the roles and responsibilities in farming and household could be distributed to ease everyone's burden, maximise collaboration, and equitably share profits. The sessions are combined with learning on how to use the Kenyan market price information service M-Farm. Through being better informed and having access to various information channels, women are now better able to generate income, pay school fees, and improve food security in the household. The introduction of sms-messaging, a more generic messaging platform, is especially valued by female farmers: messages with critical information are sent directly to their phones as opposed to having to go to the ICT centres for it.

Source: Groverman, Verona & Saskia Harmsen (IICD) (2015) Promoting Equal Chances for Women and Men to Use and Benefit from ICT-enabled Solutions. Case study 1. <http://iicd.org/documents/promoting-equal-chances-for-women-and-men-to-use-and-benefit-from-ict-enabled-solutions/>

3.5 Gender asymmetries in decision making

In the previous sections, we have identified different ways in which women as producers, collectors, preservers, processors and cooks of food, consumers, entrepreneurs, traders, and primary care givers are affected by constraints and crises – differently from men where they carry out the same roles. These differences are connected to power relations between men and women, from household to international level, which determine women’s and men’s access to and control over assets, markets, technology (including knowledge) and their ability to deal with risks and vulnerability. In balanced power relations men and women have sufficient agency, or the ability to make decisions about their lives and act on them, to achieve a desired outcome, free of violence, retribution or fear. Women, like men, are active agents of change exploiting and creating opportunities, using their specific knowledge related to their diverse tasks. Unfortunately, women are not everywhere recognized as key agents of change, for example by the private sector, multinational organisations, and higher level decision making bodies. Women need power to make their voices heard and space to amplify their voices, from the household level to the international level. The above sections provided examples of how women’s confidence can be developed (which we can call ‘power within’), as well as leadership (or ‘power to’ enable change) and women’s groups (or ‘power with’).

Good practices

Oxfam’s GROW campaign is an example of how to make women’s voices heard at different levels. Launched to tackle food injustice and build a better food system, this campaign operated at national, regional and international levels, involving four thematic areas (land, investment in small-scale agriculture, climate change and food price volatility). One of its approaches was to promote Southern female ‘voices’ through the Female Food Heroes (FFH) projects, which focussed on women who grow and/or produce food. In Tanzania, for example, FFH became a national TV show and in Burkina Faso FFHs succeeded in getting access to government ministers.^{xxviii}

Women’s collective efforts to achieve a certain goal, appears a strong instrument to address gender issues. Many female farmers form groups to pool resources, access services and technologies, try out (innovative) ideas and practices for addressing agricultural problems. The way women organise themselves, cooperate, manage conflicts, and share knowledge and experience are likely to be different from those of men, due to the gendered division of labour, use of resources, valuation of their work, consumption, engagement with their agricultural environment and building social relations.^{xxix} Through mixed or gender-only groups male and female members can see how similar and different their challenges are in terms of tenure rights, access to business opportunities or financial services, and so on. Various studies have shown that women and men generate different but mutually supported ideas for addressing agricultural problems. These ideas improve social relations in communities advancing gender equality.^{xxx}

Women’s groups and organisations are thus important vehicles for building leadership and influencing decision makers.^{xxxi} The efforts of gender advocates such as the global network GenderCC influencing the United Nations Framework Convention on Climate Change (UNFCCC), or gender groups advocating the inclusion of gender issues in the Green Climate Fund and the Voluntary Guideline on Land Tenure, are clear examples. At higher levels, gender is slowly appearing on the climate change agenda. The UNFCCC pays more and more attention to gender equality due to persisting lobbying by gender and climate change advocates. A landmark decision was made at the 18th Conference of Parties to the UNFCCC (COP18), where gender equality was elevated to the formal agenda of the ongoing negotiations. Gender issues have been integrated into the governing principles of several climate funding mechanisms.^{xxxii} The Commission on the Status of Women is also increasingly highlighting the role of gender-equitable climate finance.^{xxxiii} Governments, institutions and agencies are increasingly considering ways in which women and gender considerations can be

better integrated into climate action planning. The Paris Climate Change Agreement and the UN's Sustainable Development Goals agreed in 2015 are accelerating this positive trend.^{xxxiv}

Box 6 gives illustrations of how the three forms of power mentioned above come together facilitated by interventions to address climate change.

Box 6 - Empowered women – searching for climate change solutions

In Northern Ghana, women have increasingly become involved in agriculture and other activities such as petty trade, collecting shea nuts, producing shea butter and selling charcoal. Some men are taking up new roles such as childcare and food preparation, but women's workloads have still been growing rapidly. Through a programme women are supported to actively become involved in community leadership and to play a key role in promoting adaptation initiatives fitting the tradition of women's participation and leadership. Programme activities encourage discussion about how gender affects family decision-making and livelihoods and women's empowerment. Training and capacity building in advocacy, and lobbying skills for male and female gender champions, also promote gender equality as part of a vision for a climate resilient future.

Source: http://www.careclimatechange.org/files/adaptation/ALP_Ghana_Saamini_Nov2011.pdf

In the rural Santander region of Colombia, climate change forms part of – and exacerbates – a set of broader issues affecting its inhabitants. Mono-cropping of coffee and pineapple, deforestation, poor road infrastructure, water pollution, corruption, mining and the threat of national water privatisation all compound the effects of the increasingly unpredictable weather patterns, including changes in levels and frequency of rainfall. The responses to these challenges draw on the Columbian tradition of forming associations and networks, in ways that promote gender equality. Women's associations have forged powerful alliances with other networks and organisations (...). Their aims are to share adaptive and resilient approaches to climate change and other related issues, challenge government policy and promote alternative ways of living. Above all, these community networks give local people, and especially women, a great sense of belonging, self-determination and dignity to overcome challenges in these difficult times. The networks have also inspired women to demonstrate and promote alternative, sustainable practices in climate change adaptation and mitigation. (...) By providing practical support, building women's leadership and facilitating the exchange of women's experiences and knowledge, the networks have contributed to locally-relevant climate change responses that empower women and challenge gender norms.

Source: Georgina Aboud *The power of local networks for gender aware climate responses in Colombia in: BRIDGE INBRIEF 22 • November 2011.*

To conclude, the above sections make clear that for greening of food systems interventions are needed that redress gender asymmetries. Important is to well understand the local culture and social context and that interventions are grounded in this context. Such requires institutional capacity to ensure that needs, priorities, opportunities and constraints of female and male farmers are being considered and that both participate in interventions and development of new practices or chain activities. Such capacity can be enhanced through well-functioning institutional mechanism such as learning platforms on gender equality issues, and exchange and other communication mechanism for male and female staff on the same.

4. Greening food systems – how can we ensure gender-smart interventions? A methodology

In this chapter, we take the concluding comments of the previous section forward. We present a methodology to design and implement interventions involving all key actors, from the community to the policy level, and ensuring that change is grounded in the realities on the ground. One of the methodology's key feature is the creation of spaces and opportunities for dialogue. It mitigates the lack of interconnection between national policy (as well international policy), and local-level practices and realities, a persistent barrier to make change various sources point at.¹²

4.1 Introduction

The methodology called Gender Action Learning System(GALS)¹³ aims to address all five gender asymmetries: more equal sharing of productive and reproductive tasks and more equal property ownership between women and men, better access to markets for women farmers, more equal access to information and new technologies and more equality in decision making between men and women.¹⁴

It is a sustainable community-led planning methodology based on participatory tools. It helps women and men get more control over their lives and work together based on shared visions and values of equality. The methodology involves three strategies: 1) Empowerment through community action learning at catalyst workshops, 2) Gender mainstreaming for innovation and institutional change at organisational level; and 3) Advocacy network for policy improvement at the national level. Thus, it does not only help identify the gender asymmetries existing in a community but also the interventions required to make change, for example, in the food system. The distinctive features of GALS are summarised in Box 7.

Box 7 - Distinctive features of GALS

Empowerment:

- Inspire with visions
- Change from day 1
- Everyone is a leader
- Human rights are non-negotiable
- Inclusion and equity
- Respect difference

Sustainability:

- Sustainability Plan
- Start with individual self-interest
- Participation means taking responsibility
- 'Pyramid' peer upscaling
- Integration in existing activities

Source: Rocky Road to Diamonds, Oxfam Novib 2014: 11-12

Below we present a case from the coffee sector which includes elements of greening of the food system: good agricultural practices, market improvement, as well as household's opportunities to purchase more diverse and nutritious food. First, coffee farming households will be analysed using the gender asymmetry model presented in chapter 3. Then GALS is explained: the three strategies with their participatory tools and the results of the methodology's application for coffee farming households and organisations, and of advocacy efforts.

¹² See for example BRIDGE. 2014. Chapter 5 of this document gives several examples on how the disconnect has been successfully addressed, while chapter 6 provides recommendations on how to achieve gender-just food and nutrition security.

¹³ GALS has been developed by Linda Mayoux. It has been used in different forms to promote gender justice by at least 100,000 women and men worldwide. GALS has evolved from the generic Participatory Action Learning System (PALS) methodology developed from 2001 onwards for small business and organisational planning with women and later men, in savings and credit groups and small cooperatives. From 2007 GALS has been developed as a coherent methodology to promote gender justice with organisations in Kasese district in Western Uganda as part of Oxfam Novib's WEMAN programme. (Oxfam Novib, Rocky Road to Diamond Dreams, 2014: 9-10 and Hivos, Coffee Toolkit 2015:41).

¹⁴ See <http://www.galsatscale.net/> for more information on the GALS@scale methodology and its tools.

4.2 Applying the gender asymmetries model to coffee farming households

In coffee farming households in East Africa, women do much of the reproductive and productive work, while men often own the land and the coffee trees (asymmetry in assets). Men get training in



Good Agricultural Practices, receive information about the prices (asymmetry in technology and information) and enjoy most of the benefits from the sales (asymmetry in markets). Women are the main person responsible for fetching water and firewood; since these resources are increasingly difficult and further away from their homes, their task leads to increased time use (there is asymmetry in risk and resilience). It is mostly men who decide how to spend the income (asymmetry in decision making at household level). Men also dominate in membership and leadership of producer organisations (asymmetry in decision making at producer organisation level). Men often go to the cities to find work, leaving the coffee farming to their wives. They return to sell the coffee thus getting income. Because of these asymmetries, there is little incentive for

women to improve coffee production, hence they turn to other crops, overall resulting in even lower coffee production levels. Consequently, progress in improving coffee production and the coffee sector in general is slow, and inequality between men and women is continuing or even increasing. Hivos, a Dutch NGO, sought to address these inequality issues through a gender component in coffee programmes in East Africa.

4.3 GALS Strategies, use of tools, and results

The first strategy 'empowerment through community action'

As mentioned the GALS methodology consists of three strategies. In the first strategy which focuses on the community level, GALS participants of a catalyst workshop first develop an individual "vision of change" with achievable targets and road maps to move towards their vision (individual vision and vision journey – see box 8 and 9). They also analyse for their own household the division of productive and reproductive work, assets, decision making, and how income is spent (gender balance tree – see box 10). They identify what they want to change (actions), and track these changes over time.

Next, the workshop participants identify people within their own social network with whom they have a self-interest in sharing the gender messages and GALS methodology (drawing circles, tool 4 -

see Box 11). The most effective participants are later paid from the additional profits and resources for the training in GALS of new organisations and communities.

The strength of the methodology is that it can be used for different purposes, such as sustainable agriculture, food/nutrition security as well as consumption/sustainable diets, but also for climate change, domestic violence, child labour, financial literacy, and so on. In change catalyst workshops drawing, participatory skills as well as planning, analytical, facilitation and leadership skills are taught through simple tools that can be easily and immediately applied by both male and female farmers. The same methodology can also be used by other community members and staff in organisations and institutions, including in the board room.

In the programmes in Tanzania and Kenya, the following results were recorded:

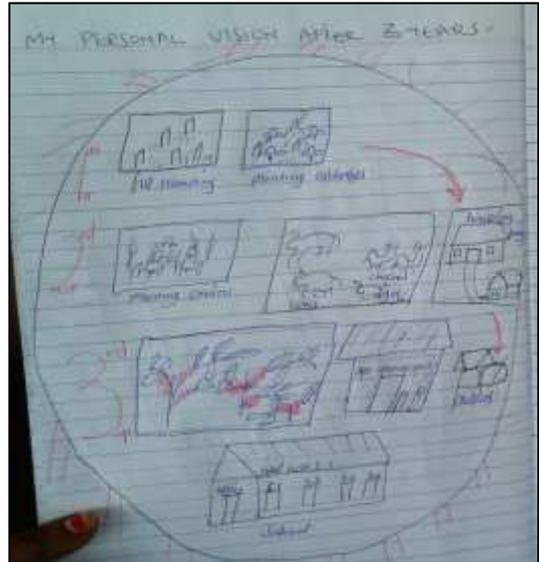
- Improved division of labour, both in the household and in agricultural tasks. For example, men start doing household chores, women and men divide coffee related tasks, both men and women collect firewood and water. They cooperate within the family to educate their children,
- Men reduced their drinking, therefore, improving their health,
- Improved symmetry in decision making: contrary to the past women get involved in financial decision making. Husbands and wives open joint bank accounts.^{xxxv}

Another gender programme, implemented by TWIN during five years in which seven smallholder coffee organisations in Africa were involved showed the following results. Thirty male and female nut farmers became gender champions for the smallholder association GASFAM in Malawi, following GALS training. Six months after the champions introduced the participatory tools to 253 farmers, 54 % progressed towards goals they had defined themselves in earlier GALS training (using vision journeys), and 71 % experienced positive changes in gender relationships. GALS training participant Rosemary Phiko said: “The most important change I have experienced through the work on gender has been a stronger bond with my husband. Previously family members would work separately but now we work together”.^{xxxvi} This programme was developed through GALS mainstreaming into TWIN’s overall approach.¹⁵ Gender mainstreaming at organisational level is the second GALS strategy which is the topic of the next section.

¹⁵ TWIN uses a six-pillar holistic approach to development: 1) Gender justice (social and economic empowerment, equal, meaningful representation, gender policies and differentiated products); 2) Sustainable agriculture; 3) Business management; 4) Governance; 5) Quality and processing; 6) Market access. TWIN has secured BP 2.3 million from Comic Relief and DfD to develop the comprehensive gender programme with the seven smallholder coffee organisations. The initiative uses cross-learnings between organisations in Rwanda, DRC, Uganda and Malawi and will reach over 25,000 smallholder farmers. (Source: Development Through Trade, Annual Report 2013-4, page 16, 17)

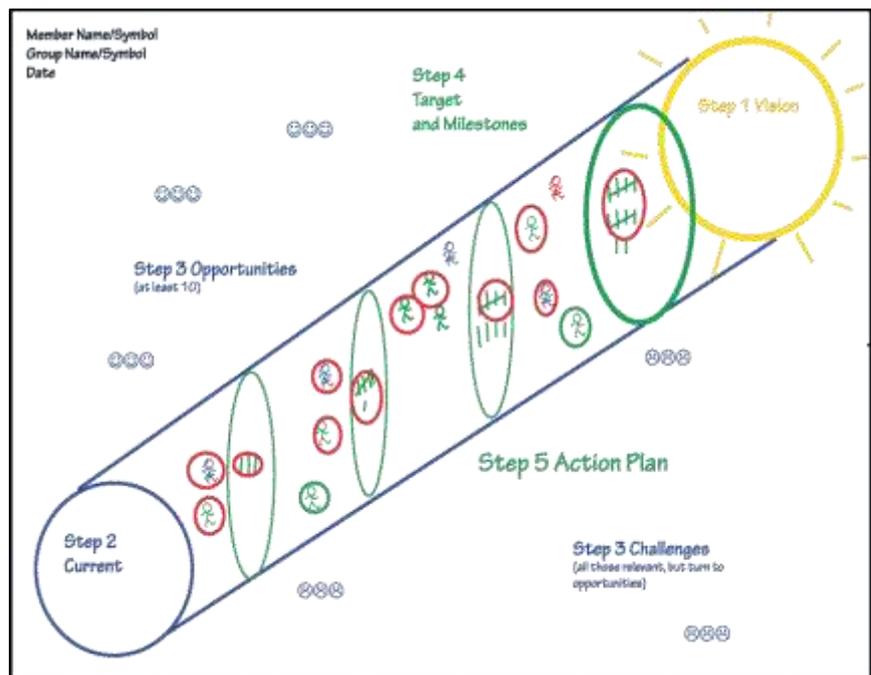
Box 8 - Drawing visions of change (Tool 1)

The first GALS tool is the drawing of a vision. Visions give inspiration and direction to planning. Without a clear vision, it is difficult to see where one is going and easy to get discouraged by challenges that will arise on the way. Visioning is therefore the basis and starting point for any GALS process - drawn at the beginning of each stage and for different purposes, then continually revisited to assess progress. Visions can be drawn by individuals, households and groups (organisational level). At the right, a drawing of a vision of three years of a young man in Uganda, in which he wants to plant onions and cabbages, as well as coffee as cash crop, and rear poultry.



Box 9 –Drawing journeys (Tool 2)

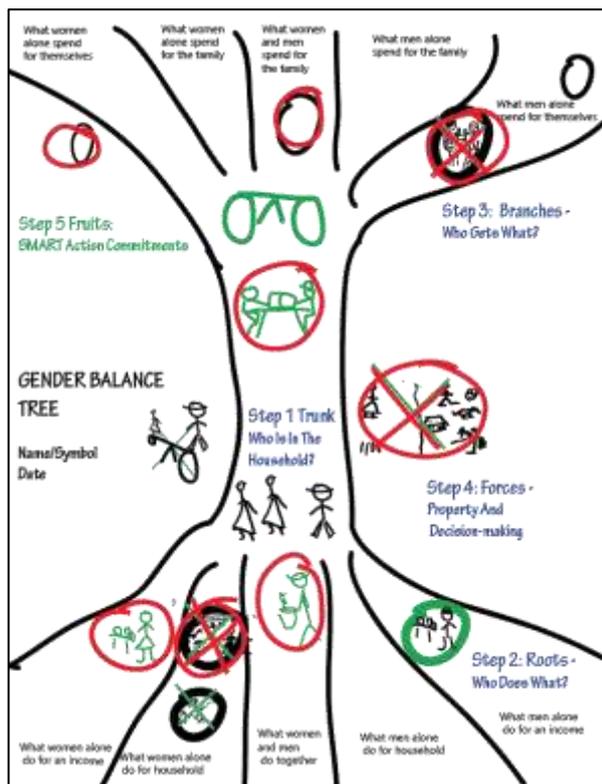
The underlying framework for all GALS processes is the 'Road Journey' change planning tool, the second tool. There are two basic types that can be combined or done separately: the Vision Journeys which look to the future and the Achievement Journeys which assess lessons from the past. The first Vision Journey which is made by an individual man or woman is a simple plan to achieve one or more elements of a bigger vision. Vision Journeys following the same steps are then adapted and drawn for planning of different visions at each stage. The basic Road Journey framework can be adapted to any issue related to the food system or other questions.



The figure in this box depicts a model on how to draw a journey towards a vision. It shows

- vision (step 1)
- current and past situation (step 2)
- opportunities (top of the road) (step 3) ☺
- challenges (bottom of the road) (step 3) ☹
- time bound targets, 3, 6, 9 and 12 months (green ovals in the “road”) (step 4)
- actions to go from target to target (step 5) – drawings in between the green ovals.

This Journey is tracked over time to assess progress, and reasons behind progress or the lack of it.



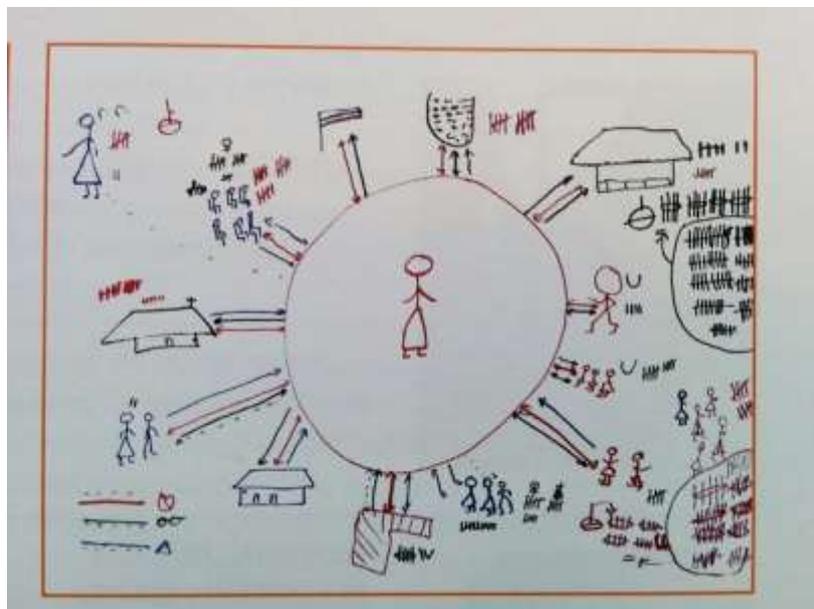
Box 10 - Drawing trees, gender balance tree (Tool 3)

The third tool is developing and drawing of trees. Trees start from a trunk which may represent an issue or a household or community. Inputs, causes of the challenge are shown as roots and outputs, solutions to the challenge, as branches. GALS trees have fruits or commitments towards concrete action. Furthermore, they may show circular linkages from branches to roots to show cycles of cross-fertilisation. The figure to the left gives a model of a *gender balance tree* as an example on how an individual can develop a tree about the household assets, decision making, division of labour and expenditures. The Gender Balance Tree identifies gender inequalities in work contribution (in the roots) and expenditure, i.e. benefits or income from coffee (in the branches) in the household. The changes wanted in terms of balancing gender asymmetries to make the tree 'grow straight' are drawn as green circles for planned action, with red circles for achieved actions. Black is used for actions that are no longer wanted or needed.

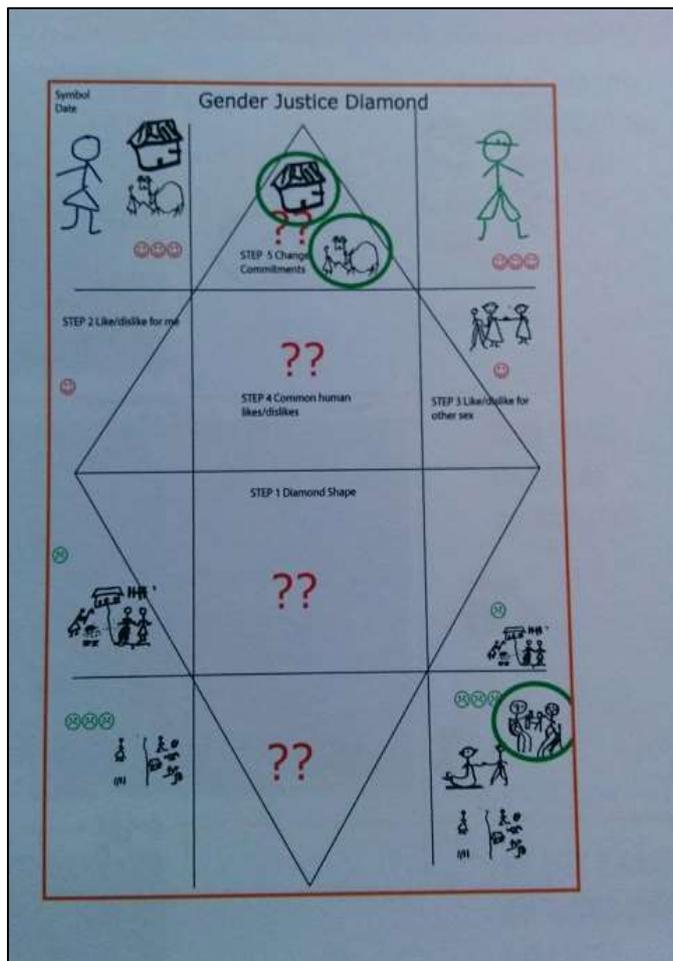
Box 11 - Drawing circles (tool 4)

The fourth GALS tool is developing and drawing circles. The drawing at the right shows quantitative peer scaling up by seven participants of a catalyst workshop to hundreds of others in the family, friendship networks, schools and groups over about a year. The circle can also be used to identify markets (market map). The steps are as follows:

- who am I? (step 1)
- who is important in my life? (step 2)
- why are they important? (step 3)
- what can I change? (step 4)
- how can I change it? (step 5)



Source: Rocky Road to Diamond Dreams Oxfam Novib 2014: 71.



Box 12 Diamonds (tool 5)

Diamonds are used to deepen visions, establish SMART indicators and specific targets, and for rapid impact assessment. Examples include: Gender Justice Diamonds, Violence Diamonds, Property Diamonds, Decision Diamonds. The different steps for the gender justice diamond are:

Draw the diamond shape (step 1)

Draw how you want to be (top part) /do not want to be (bottom part) as a woman (left) or a man (right) (step 2)

Draw how you want people of the opposite sex to be towards you (step 3)

Common human likes/dislikes (step 4)

Action commitments - circled in green (step 5)

Illustration from Rocky Road to Diamond Dreams, Oxfam Novib 2014: 121

The second strategy 'gender mainstreaming for innovation and institutional change'

The second strategy focuses on the organisation's level, such as a farmers' cooperative, a company, and so on. The same tools are applied: the staff of the institution develop a vision on how the organisation would want to mainstream gender and a road map to move towards its vision (institutional vision journey). It uses gender justice diamonds for gender awareness throughout the organization (the fifth tool – see Box 12) and makes organisational challenge action trees to solve likely challenges in achieving its vision. In Box 13 on the next page two examples illustrate how well the second strategy can work out.

The third strategy 'Advocacy network for policy improvement'

GALS third strategy uses the achievements of the first and second strategy to make both the public and private sector aware of the impact of gender changes. Hivos has used the achievements of the various GALS interventions to advocate for gender equality during annual African Fine Coffee Association conferences. This effort has contributed to increased interest in implementing gender strategies, including GALS, to reduce the five gender asymmetries among more and more players in the coffee sector, for example, traders such as ECOM and Volcafé and large roasters, such as Nestlé and JDE (Mondelez). Some strategies are recently applied and therefore, its results at farm level are not available.

Box 13 – Gender mainstreaming in a farmers’ cooperative and an international organisation

Bukonzo Joint Cooperative Union (BJCU), a coffee farmers’ organisation of about 5000 female and male farmers in Western Uganda, has been using the GALS methodology since 2007. Women form 70 % of total membership, and 50 % of the leadership. GALS training is an integral part of any training to members of the cooperative union, i.e. about Good Agricultural Practices, cooperative management, and adhering to sustainability standards. BJCU has mainstreamed gender in its organisation, reports both improvements in coffee, as well as gender changes. The trainers are successful male and female farmers, “champions”, who have made significant changes in their own lives, and on voluntary basis trained many farmers in GALS, who in turn also showed significant changes. Institutional visions and vision plans are regularly made and achievement journeys are systematically made, using GALS tools. BJCU has become one of the most efficient cooperative unions of Uganda, attracting trade finance, and development organisations wanting to cooperate with them. Their products are both organic and fair trade certified. The Union exports directly to the US and Japan. It has been able to improve the quality and increase the quantity of coffee, and has its own processing and roasting facility. Coffee quantity increased from 57,600 kg in 2011 to 161.400 kg in 2015, while quality went up from 77 to 86 points. Gender changes have been: women and men share domestic and productive work, they have joint land ownership (improved symmetry in assets), both women and men get training in GALS and in Good Agricultural Practices (improved symmetry in access to information and technology), they both know how the price of the coffee when it is sold (improved symmetry in markets), and they agree together on how to spend the income (improved symmetry in decision making). The Union is continuously expanding in numbers and geographically.

Source: Paneito Baluku in presentation during FAO conference in Rome in June 2016

In 2012 IFAD’s Executive Board approved its Policy on Gender Equality and Women’s Empowerment. It has three strategic objectives: 1) To promote economic empowerment to enable rural women and men to have equal opportunities to participate in, and benefit from, profitable economic activities; 2) To enable women and men to have equal voice and influence in rural institutions and organisations; and 3) To achieve a more equitable balance in workload and in the sharing of economic and social benefits between women and men. The Policy is central to the overall goal of IFAD’s Strategic Framework 2011-2015, namely enabling poor rural women and men to improve their food security and nutrition, raise their incomes and strengthen their resilience. Methodologies focusing on households, including GALS, are being used in IFAD supported projects in Kyrgyzstan, Malawi, Mozambique, Nigeria, Rwanda, Sierra Leone and Uganda. About 50,000 people are participating and reported a wide range of benefits. These include greater resilience in the face of shocks (improved symmetry in risk and resilience), increased happiness, more girls and boys in school and tertiary education (improved symmetry in knowledge), and increased productivity, incomes and food security (improved symmetry in assets and markets)¹⁶.

Source: IFAD. 2012. Gender equality and Women’s empowerment Policy

<https://www.ifad.org/documents/10180/6c7b7222-8000-48a3-982d-98eb973595b3>; *Gender Equality and Women’s empowerment: IFAD’s work and results. IFAD, Rome January 2015; presentation Maria Hartl “How far have we come in IFAD” at Household Methodologies Forum in Rome, June 2016*

5. Towards gender-smart greening of food systems

In chapter 3 we attempted to provide insight in the main issues of the gender divide as it shows in food systems. We stated that to green food systems, which refers to investments in food systems to improve human well-being and social equity, reduce environmental risks and ecological scarcities, gender asymmetries must be addressed. In chapter 4 we described a methodology to identify and ensure gender-smart interventions based on the realities of male and female farmers and linkages between community and (inter)national level. Based on experiences in the field of sustainable agriculture, food and nutrition security, and consumption, among which the good practices described above, we adjusted the **interventions to promote a sustainable food system**, given in Table 1, **to improve human well-being and social equity** – see the green coloured interventions in Table 2 below.

For all these interventions towards gender-smart green food systems it holds that four conditions should be fulfilled, namely

1. ***Start from the notion that women, like men, are active agents of change exploiting and creating opportunities, using their specific knowledge related to their diverse tasks.*** Women and men generate different but mutually supported ideas for addressing agricultural problems.
2. ***Do not focus on women only to address gender inequalities. Achieving gender equality requires concerted efforts by women and men.*** Change, more especially socio-cultural change, can only happen with support from all members of society.
3. ***Develop strategies to green food systems based on***
 - ***Gender analysis to identify differences in women's and men's productivity, market involvement, and technology use, and their underlying causes (access/ use of land, labour, credit, inputs, services, etc.)***
 - ***Analysis of gender dynamics of vulnerability and gender sensitive risk assessment.***
4. ***Address gender asymmetries in decision making***
 - ***Use methodologies such as GALS to improve joint decision making at household level and beyond***
 - ***Increase women's voices and representation in organisations and institutions, nationally and internationally***
 - ***Enhance cooperation/ partnership between support organisations or institutes and (women's) organisations that promote gender equality at community and higher levels.***

Table 2: Interventions to promote gender-smart green food systems

	Environment	Nutrition	Economic	Socio-cultural
Sustainable agriculture	<ul style="list-style-type: none"> - Follow sustainable agricultural practices - Enhance resilience of production systems - Ensure that both women and men are represented and hold leadership positions in national resource management organisations and bodies dealing with risk and resilience at all levels (symmetry in decision making and risk and resilience) - Deploy and maintain diversity 	<ul style="list-style-type: none"> - Promote diverse food - Produce nutritionally dense product - Ensure that women and men have equal access to information and services (symmetry in technology) 	<ul style="list-style-type: none"> - Deploy affordable cultivation practices - Promote self-reliance through local produce - Ensure that women and men have equal access to land and financial services (see Box 1); Explore options for co-ownership of land by women (symmetry in assets) - Integrate technological time-saving practices building on existing practices of women and of men (symmetry in technology) - Ensure equal access to markets and market information for women and men (symmetry in markets) - Ensure have equitable control over benefits of production for women and men (symmetry in assets) 	<ul style="list-style-type: none"> - Maintain traditional agriculture practices and promote local varieties - Ensure women’s access to resources and services needed for sustainable agriculture (symmetry in assets and technology) - Use both women's and men’s knowledge of traditional food systems (symmetry in technology and information) - Introduce labour-saving tools, equipment and machines that can be used by and are acceptable to men and women (symmetry in technology and information) - Promote equality in household decision making on agriculture-related issues (symmetry in decision making)
Food/nutrition security	<ul style="list-style-type: none"> - Reduce impact of production, processing, commercialisation and involve both women and men in developing strategies to this end - Integrate rural women’s knowledge and experience about (the management of) natural resources and the environment in interventions to adapt to climate change and redress loss of biodiversity. - Ensure that both women 	<ul style="list-style-type: none"> - Preserve nutrients through the food chain - Meet needs and interests of women and men (symmetry in risk and resilience) 	<ul style="list-style-type: none"> - Strengthen local food systems. - Support women farmers/ groups in entering value chains building on activities they traditionally control (symmetry in markets) - Produce affordable food - Ensure that new business opportunities and markets for “green” products include space for women producers/ entrepreneurs (see Box 2) (symmetry in markets) - Facilitate female entrepreneurs through training and business support (symmetry in technology and information) - Ensure that ICT used in all value chains are available and accessible to both women and men (symmetry in technology and information) - Introduce (innovative) labour saving technologies and 	<ul style="list-style-type: none"> - Produce culturally acceptable food - Encourage a gender-balanced division of productive and household tasks within in farming families - Promote women’s membership in farmer organisations and cooperatives and their participation in governance structures (symmetry in decision making), so that women’s voices are heard and their interests are well-taken into account - support women achieve economies of scale and access markets

	and men are represented and hold leadership positions in (inter)national bodies concerning the environment (<i>symmetry in decision making</i>)		<i>practices for production, processing/ manufacturing and household tasks benefiting women and men (symmetry in technology)</i> - <i>Combine both international or national top-down investments with bottom-up efforts to ensure that women and men's voices and interests are integrated (see Box 4)</i>	<i>(symmetry in markets)</i>
Consumption/ sustainable diet	- Reduce the environmental impact of feeding practices - Promote sustainable consumption patterns through information on production processes and implications for the environment and women (<i>symmetry in technology and information</i>)	- Promote dietary diversity, food balance and seasonality for both women and men	- Promote access to dietary diversity - Target women consumers to promote organic and 'ethical' food and dietary diversity. ¹⁷	- Safeguard food traditions and culture - Meet local preference and taste - Ensure that women's voices are heard in consumer organisations (<i>symmetry in decision making</i>)

¹⁷ Ethical refers to food (and products) that are made, distributed, and consumed without exploitation of humans, animals, or the environment. Research indicated that women in industrialised countries make more ethical consumer choices. (Von Hagen and Willems, 2012)

References

- ActionAid. 2013. From marginalisation to empowerment: the potential of land rights to contribute to gender equality – observations from Guatemala, India and Sierra Leone http://www.actionaid.org/sites/files/actionaid/from_marginalisation_lr.pdf
- ADB. 2013. Gender Equality and Food Security. Women’s Empowerment as a Tool Against Hunger. ADB and FAO <http://www.fao.org/wairdocs/ar259e/ar259e.pdf>
- Aguilar, L. e.a. 2009. Training manual an gender and climate change. IUCN, UNDP, GGCA
- Bill and Melinda Gates Foundation. What We Do. Agricultural Development. Creating Gender-Responsive Agricultural Development Programs. <http://www.gatesfoundation.org/What-We-Do/Global-Development/Agricultural-Development/Creating-Gender-Responsive-Agricultural-Development-Programs> Accessed 27-10-2014
- BRIDGE. 2008. Gender and climate change: mapping the linkages. A scoping study on knowledge and gaps. <http://www.bridge.ids.ac.uk/go/cutting-edge-programmes/gender-and-climate-change>
- BRIDGE. 2014. Gender and Food Security. Towards Gender-Just Food and Nutrition Security. Overview Report. Cutting Edge programme. Institute of Development Studies. <http://www.bridge.ids.ac.uk/bridge-publications/cutting-edge-packs/gender-and-food-security>
- Bijleveld, Leontine, Josine Stremmelaar, Anouka van Eerdewijk. 2010. Policy Brief Gender Mainstreaming. On Track with Gender – Taking Stock Phase.
- Bijleveld, Leontine, Josine Stremmelaar, Anouka van Eerdewijk, Ireen Dubel. 2011. Policy Brief Gender Mainstreaming 2.0. On Track with Gender – Moving Forward Phase
- CARE. 2014. 2015 and beyond: Action for a just, gender-equitable and sustainable future http://www.careclimatechange.org/files/Gender_equality_and_climate_justice.pdf
- Croppenstedt, Andre; Goldstein, Markus; Rosas, Nina. 2013. *Gender and agriculture: inefficiencies, segregation, and low productivity traps*. Policy Research working paper; no. WPS 6370. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/2013/02/17371511/gender-agriculture-inefficiencies-segregation-low-productivity-traps>
- De Schutter, Olivier. 24 January 2014. Report of the Special Rapporteur on the right to food, Final report: The transformative potential of the right to food. http://www.srfood.org/images/stories/pdf/officialreports/20140310_finalreport_en.pdf
- Dutch Sustainability Unit. 2014. Integrating Gender Equality in Climate-Smart Development. Quick Reference Guide MFA’s policy cycle and opportunities for integrating gender in climate-smart activities. http://api.commissiener.nl/docs/os/i71/i7111/def_guide-gender_climate_change_20_march_2014.pdf
- Edmunds D, Sasser J, Wollenberg E. 2013. A Gender Strategy for Pro-Poor Climate Change Mitigation. CCAFS Working Paper no. 36. CGIAR Research Program on Climate Change, Agriculture and Food Security (CAAFS). Copenhagen, Denmark. www.ccafs.cgiar.org
- El-Fattal, Lamia. 2012, POLICY BRIEF Climate-Smart Agriculture is “Smarter” When Informed by a Gender Perspective, WOCAN http://wocan.org/system/tdf/FINAL%20120919_WOC_Policy_Brief_3_vol1.pdf?file=1&type=node&id=594
- El-Fattal, Lamia. 2013? POLICY BRIEF. Turning Agriculture into Agribusiness: Overcoming Institutional Barriers to Rural Women’s Entrepreneurship. Women Organizing for Change in Agriculture and Natural Resource Management (WOCAN) http://wocan.org/system/tdf/WOCAN_Turning%20Agriculture%20into%20Agribusiness.pdf?file=1&type=node&id=603
- FAO Info graphic gender climate change <http://www.fao.org/assets/infographics/FAO-Infographic-Gender-ClimateChange-en.pdf>

- FAO. 2008. Climate change and food security: a framework document. <http://www.fao.org/forestry/15538-079b31d45081fe9c3dbc6ff34de4807e4.pdf>
- FAO. March 2010. Economic and Social Perspectives. Policy Brief 8 Gender and Land Rights. Understanding Complexities; Adjusting Policies <http://www.fao.org/docrep/012/al059e/al059e00.pdf>
- FAO. 2011. State of Food and Agriculture 2010-2011, Women in Agriculture: Closing the Gender Gap for Development <http://www.fao.org/3/dde644f1-be15-54c6-9e52-906bdd40ca9f/i2050e.pdf>
- FAO. 2012. Sustainable diets and biodiversity. Directions and solutions for policy, research and action. <http://www.fao.org/food/sustainable-diets-and-biodiversity/en/>
- FAO. 2012. Policy on Gender Equality: Attaining Food Security Goals in Agriculture and Rural Development. <http://www.fao.org/docrep/017/i3205e/i3205e.pdf>
- FAO. 2012. Gender and Nutrition Issue paper. Draft. <http://www.eldis.org/go/home&id=63247&type=Document#.VHSC18kVjKo>
- FAO. FAO and Post 2015: Nourishing People, Nurturing the Planet. 100 facts in 14 themes linking people, food and the planet. http://www.fao.org/fileadmin/user_upload/mdg/100_facts/100facts_EN.pdf
- FAO. 2016. Addressing women's work burden <http://www.fao.org/3/a-i5586e.pdf>
- FAO, CGIAR, CCAFS. 2012. Training Guide Gender and Climate Change Research in Agriculture and Food Security for Rural Development <http://www.fao.org/docrep/015/md280e/md280e00.htm>
- FAO GEA Rio+20. 1 March 2012. Working Paper 4: utilization. Improving Food Systems for Sustainable Diets In A Green Economy. <http://www.fao.org/fileadmin/templates/ags/docs/SFCP/WorkingPaper4.pdf>
- Gates, Melinda French. 2014. *Putting women and girls at the center of development*, in: Science Magazine 12 September, 2014 vol 345 issue 6202 p. 1273-1275. <http://www.sciencemag.org/content/345/6202/1273.full.pdf>
- Gender CC. Gender, Climate Change and Biodiversity <http://www.gendercc.net/fields/biodiversity.html>
- Goh, A.H.X. A literature review of the gender-differentiated impacts of climate change on women's and men's assets and well-being in developing countries. CAPRI Working Paper No. 106. 2012. Washington, D.C.: International Food Policy Research Institute. <http://dx.doi.org/10.2499/CAPRIWP106>
- Gross, R. e.a. April 2000. The four dimensions of food and nutrition security: definition and concepts. In Went.FAO http://www.foodsec.org/DL/course/shortcourseFA/en/pdf/P-01_RG_Concept.pdf
- Haneef, C. e.a. 2014. Women and entrepreneurs: the impact of having an independent income on women's empowerment. Chars livelihood programme http://clp-bangladesh.org/wp-content/uploads/2014/08/Women-as-Entrepreneurs_The-impact-of-having-an-independent-income-on-womens-empowerment_August-20141.pdf
- Hivos. Investeren in vrouwen loont. Respecteren van vrouwenrechten in lagelonenlanden. <https://www.hivos.org/activity/womenwork-campaign-netherlands>
- IFAD. 2012 Gender equality and women's empowerment Policy http://www.ifad.org/gender/policy/gender_e.pdf
- ILEIA. Farmers and their landscapes. Farming Matters 09/ 2014-30.3
- Johnsson-Latham, Gerd. 2007. A study on gender equality as a prerequisite for sustainable development: what we know about the extent to which women globally live in a more sustainable way than men, leave a smaller ecological footprint and cause less climate change. Report to the Environment Advisory Council, Sweden 2007:2 http://www.atria.nl/epublications/2007/study_on_gender_equality_as_a_prerequisite_for_sustainable_development.pdf

- Johnston, Jessica L., Jessica C. Fanzo, Bruce Cogill. et al. Understanding Sustainable Diets: A Descriptive Analysis of the Determinants and Processes That Influence Diets and Their Impact on Health, Food Security, and Environmental Sustainability. *Adv Nutr* 2014; 5:418-429
<http://advances.nutrition.org/content/5/4/418.full>
- Joynson-Hicks, Emma and Jacqueline Terrillon. 2013. Is it profitable for the coffee sector to invest in women?
- Kaplan, Sarah & Jackie VanderBrug The Rise of Gender Capitalism in: *Stanford Social Innovation Review*, 11, Fall 2014, p.36-41 <http://www.ssireview.org/>
- KIT, Agri-ProFocus and IIRR. 2012. Challenging chains to change: Gender equity in agricultural value chain development. KIT Publishers, Royal Tropical Institute, Amsterdam
<http://makingtheconnection.cta.int/resources/gender-value-chains>
- Klennert, K. (ed.), *Achieving Food and Nutrition Security: actions to meet the global challenge – A training course reader (3rd Edition)*, Inwent, Bonn
- Klugman, Jeni, e.a. 2014. Voice and agency: empowering women and girls for shared prosperity. World Bank Group http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/05/21/000442464_20140521112039/Rendered/PDF/881790WP0Voice00Box385212B00PUBLIC0.pdf
- Landesa. March 2012. Issue brief: Land rights and food security. The linkages between secure land rights, women, and improved household food security and nutrition.
<https://www.landesa.org/wp-content/uploads/Landesa-Issue-Brief-Land-Rights-and-Food-Security.pdf>
- Lairon, Denis. *Biodiversity and sustainable nutrition with a food-based approach*, in FAO. 2012. Sustainable diets and biodiversity. Directions and solutions for policy, research and action.
<http://www.fao.org/docrep/016/i3004e/i3004e00.htm>
- Malhotra, Anju, Jennifer Schulte, Payal Patel, Patti Petesch. 2009. Innovation for women's empowerment and gender equality. ICWR . <http://www.icrw.org/publications/innovation-womens-empowerment-and-gender-equality>
- Manfre, Cristina, e.a. April 2013. Reducing The Gender Gap In Agricultural Extension And Advisory Services. How to Find the Best Fit for Men and Women Farmers. MEAS Discussion Paper 2 <http://www.culturalpractice.com/site/wp-content/uploads/2013/04/3-2012-39.pdf>
- Mehra, Rekha and Mary Hill Rojas. 2008. Women, Food Security and Agriculture in a Global Marketplace. A significant shift. ICWR <http://www.icrw.org/files/publications/A-Significant-Shift-Women-Food%20Security-and-Agriculture-in-a-Global-Marketplace.pdf>
- Mtigwe, Bruce and Colletah Chistike. 2014. Making Markets Work for Women and Youth. Hivos
- Nelson, Sibyl, Sophia Huyer. April 2016. A Gender-responsive Approach to Climate-Smart Agriculture. Evidence and Guidance for Practitioners. Practice Brief Climate-smart agriculture. Global Alliance on Climate-smart agriculture, FAO, CGIAR, CCAFS <http://www.fao.org/3/a-be879e.pdf>
- O'Neil, Glenn & Patricia Goldschmid. 2013. OXFAM'S GROW Campaign Mid-Point External Evaluation. Final Report
<http://www.oxfam.org/sites/www.oxfam.org/files/oxfam-grow-midterm-report-oct2013.pdf>
- Oram, Julian, 2014. The great land heist: How the world is paving the way for corporate land grabs. ActionAid International
- Pathways to Participatory Farmer Plant Breeding: Stories and Reflections of the Community Biodiversity Development and Conservation Programme. 2006, Section 4 – Gender Responsive Approach: Changes in Gender Roles and Relations <http://searice.org.ph/2012/08/19/pathways-to-participatory-farmer-plant-breeding/>
- Perez C, Jones EM, Kristjanson P, Cramer L, Thornton PK, Förch W, Barahona C 2015. How resilient are farming households and communities to a changing climate in Africa? A gender-based perspective. *Global Environmental Change*. 34:95–107.
<http://www.sciencedirect.com/science/article/pii/S0959378015000825>

- Pionetti, Carine. 2016. Filling Buckets, Fuelling Change. Ensuring Gender-Responsive Climate Change Adaptation - Learning from the Canada-UNDP Climate Change Adaptation Facility. UNDP <https://ccafs.cgiar.org/publications/cultivating-equality-delivering-just-and-sustainable-food-systems-changing-climate#.V3EQtzUfeFY>
- Project plan project Chongwe Green Village/Productive landscape project 1008461
- Rawe, Tonya, Karl Deering, William Echols et al. 2015. Cultivating Equality: Delivering Just and Sustainable Food Systems in a Changing Climate. CARE, Food Tank, CGIAR, CCAFS http://careclimatechange.org/wp-content/uploads/2015/10/CARE-Food-Tank-CAFS_Report_Cultivating-Equality.pdf
- Romero Gonzales, A. M., A. Belemvire and S. Sauliere. 2011. Climate Change and Women Farmers in Burkina Faso. Oxfam Research Report
- Senders, A, Lentink, A, Vanderschaeghe, M, Terrillon, J. 2013. Gender in value chains. Practical toolkit to integrate a gender perspective in agricultural value chain development <http://www.agri-profocous.nl/wp-content/uploads/2013/10/Final-toolkitEN-24092013.pdf>
- Senders, A. e.a. 2014. Coffee Toolkit. Sustainable coffee as a family business. Approaches and tools to include women and youth. Hivos, Agri-ProFocus, FSAS, SCP <http://www.agri-profocous.nl/2014/publications/coffee-toolkit-sustainable-coffee-as-a-family-business/>
- Skinner; E., A. Brody, G. Aboud. November 2011. BRIDGE INBRIEF 22 • BRIDGE BULLETIN, Issue 22 Gender and Development. *Gender & Climate Change* <http://www.bridge.ids.ac.uk/go/bridge-publications/cutting-edge-packs/gender-and-climate-change&id=59290&type=Document&langid=1>
- SOFA Team and Cheryl Doss. The role of women in agriculture. ESA Working Paper No. 11-02 March 2011 Agricultural Development Economics Division, FAO <http://www.fao.org/docrep/013/am307e/am307e00.pdf>
- Stern, Michelle, Lindsey Jones-Renaud, and Marya Hillesland. 2016. Intervention Guide for the Women's Empowerment in Agriculture Index (WEAI). Practitioners' Guide to Selecting and Designing WEAI Interventions. REPORT #10. USAID. http://pdf.usaid.gov/pdf_docs/PBAAC419.pdf
- Tandon, Nidhi. 2012. Empowerment of Women in a Green Economy in the Context of Sustainable Development and Poverty Eradication. The case for community-based, gender-equitable and human rights-based green economic development <http://www.networkedintelligence.com/wp/wp-content/uploads/2012/04/Empowerment-of-Women-in-a-Green-Economy-Tandon.pdf>
- Tacoli, Cecilia, Emily Polack, Isilda Nhantumbo and Janna Tenzing. 2014. Building resilience to environmental change by transforming gender relations - IIED Briefing Issue date May 2014. <http://pubs.iied.org/pdfs/17237IIED.pdf>
- Terry, Geraldine (ed) 2009 Oxfam GB Climate Change and Gender Justice <http://policy-practice.oxfam.org.uk/publications/climate-change-and-gender-justice-115359>
- The World Bank Gender Policies. Updated: June 13, 2004 <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTGENDER/0,,contentMDK:20193052~pagePK:210058~piPK:210062~theSitePK:336868,00.html>
- The Worldbank. 2008. Gender and agricultural markets. Module 5 – in Gender in Agriculture, p. 173 – 183. www.worldbank.org/genderinag
- The World Bank, FAO, IFAD. 2009. Gender in agriculture sourcebook. <http://www.fao.org/docrep/011/aj288e/aj288e00.HTM>
- The Worldbank. 2013 Gender and Agriculture, inefficiencies, segregation and low productivity traps. Policy Research Working Paper 6370 <http://elibrary.worldbank.org/doi/book/10.1596/1813-9450-6370>
- Tibesigwa, Byela, et al. August 2015. Gender Differences in Climate Change Risk, Food Security, and Adaptation: A Study of Rural Households' Reliance on Agriculture and Natural Resources to Sustain Livelihoods. Environment for Development. Discussion Paper Series

<http://www.efdiinitiative.org/publications/gender-differences-climate-change-risk-food-security-and-adaptation-study-rural>

- Turrall, S. (ed). Jan 2012. Innovative approaches to gender and food security. Changing attitudes, changing behaviours. Knowledge Services, IDS
<http://www.eldis.org/vfile/upload/1/document/1202/insights82.pdf>
- UNDP. 2009. Resource Guide on Gender and Climate Change. UNDP, GGCA
<http://www.undp.org/content/undp/en/home/librarypage/womens-empowerment/resource-guide-on-gender-and-climate-change/>
- UNDP. 2010. Gender, Climate Change and Community-Based Adaptation. A guidebook for designing and implementing gender-sensitive community-based adaptation programmes and projects. UNDP, New York.
http://www.undp.org/content/undp/en/home/librarypage/environment-energy/climate_change/gender/gender-climate-change-and-community-based-adaptation-guidebook-.html
- United Nations. 2014. A survey on women's entrepreneurship and innovation. UNCTAD.
http://www.unctadxi.org/Sections/DITE/empretec/docs/UNCTAD_DIAE_ED_2013_1.pdf
- UNREDD, WOCAN, USAID, LEAF. 2013. Scoping Study of Good Practices for Strengthening Women's Inclusion in Forest and Other Natural Resource Management Sectors.
<http://www.wocan.org/resources/scoping-study-womens-inclusion-REDD>
- UNISDR, UNDP and IUCN. 2009. Making Disaster Risk Reduction Gender-Sensitive Policy and Practical Guidelines
http://www.unisdr.org/files/9922_MakingDisasterRiskReductionGenderSe.pdf
- UN Women. 2011. The women's empowerment principles - Equality means business. UN Global Impact Office http://www.weprinciples.org/files/attachments/EN_WEPs_2.pdf
- UN Women. 2014. The World Survey on the Role of Women in Development. Gender equality and Sustainable Development
- UN Women, UNDP, UNEP, and the World Bank Group. October 2015. The Cost of the Gender Gap in Agricultural Productivity in Malawi, Tanzania, and Uganda.
<http://www.unwomen.org/en/digital-library/publications/2015/10/the-cost-of-agricultural-productivity>
- UN WomenWatch. 2010. Fact Sheet Women, Gender Equality and Climate Change
http://www.un.org/womenwatch/feature/climate_change/
- Von Hagen, Markéta, Johanna Willems. 2012. Women's participation in green growth – a potential fully realised? A scoping study for the Green Growth Working Group (GGWG) of the Donor Committee for Enterprise Development (DCED).
http://www.greengrowthknowledge.org/sites/default/files/downloads/resource/Women%27s_participation_in_GG_DCED.pdf
- WOCAN. 2014. REDD+ and Gender Policy Brief 1 Findings And Lessons Learned: Barriers and Entry Points for Women's Inclusion in REDD+ in Asia-Pacific. USAID-LEAF, WOCAN, UN-REDD
<http://wocan.org/system/tdf/Gender%20and%20REDD%2B%20Policy%20Brief%202014.pdf?file=1&type=node&id=1184>
- Zwart, Gine, Sarrah Doornbos, Willy Douma. *Theme overview - Agriculture, biodiversity and communities: does it add up?* In: Farming Matters | 30.1 | March 2014
<http://www.bridge.ids.ac.uk/go/cutting-edge-programmes/gender-and-food-security>

Endnotes

- ⁱ Most of the sources reviewed refer to figures of 2010/ 2011: FAO. 2011. State of Food and Agriculture 2010-2011; SOFA Team and Cheryl Doss. 2011. FAO. FAO & Post 2015: Nourishing People, Nurturing the Planet. 100 facts in 14 themes linking people, food and the planet. http://www.fao.org/fileadmin/user_upload/mdg/100_facts/100facts_EN.pdf For a critical note on figures/ facts see <https://wle.cgiar.org/thrive/2015/06/25/debunking-myth-female-labor-african-agriculture>
- ⁱⁱ See, for example, de Schutter, 2014. Rawe, Tonya, Karl Deering, William Echols et al. 2015.
- ⁱⁱⁱ Source: http://en.wikipedia.org/wiki/Food_systems, the definition is based on: Discovering the Food System - A Primer on Community Food Systems: Linking Food, Nutrition and Agriculture <http://foodsyst.cce.cornell.edu/primer.html>; Conceptualizing food systems for global environmental change research – Polly J. Ericksen Environmental Change Institute, Oxford University Centre for the Environment, Oxford, OX1 3QY, UK Received 17 August 2006; received in revised form 5 September 2007; accepted 12 September 2007; Development Policy Review, 2003, 21 (5-6): 531-553 Food Policy Old and New - Simon Maxwell and Rachel Slater.
- ^{iv} Padilla, Martine, Roberto Capone and Giulia Palma. 2012. p.231, 232.
- ^v The right to food: De Schutter, Olivier. 2014; Rawe, Tonya, Karl Deering, William Echols et al. 2015. BRIDGE. 2104
- ^{vi} <http://www.fao.org/resources/infographics/infographics-details/en/c/180754/>, dated 2013
- ^{vii} See Goh, A.H.X. 2012. p.18, referring to various researches.
- ^{viii} FAOSTAT, 2006; FAO. 2011
- ^{ix} UN Women, UNDP, UNEP, and the World Bank Group. October 2015.
- ^x Research of Ali, Deininger, and Goldstein, 2011 referred to in Croppenstedt, Andre; Goldstein, Markus; Rosas, Nina. 2013. p.13
- ^{xi} Researches mentioned in Edmunds e.a. 2013 and in Turrall, S. (ed) 2012.
- ^{xii} P. Roberts and S. Johnson, “Data-Driven Insights about Impact Entrepreneurs and Accelerators. 2013. Mid-Year Data Summary”, presented at the ANDE Metrics Conference, June 12-13, 2013, Washington, D.C., referred to in: Kaplan, Sarah & Jackie VanderBrug 2014
- ^{xiii} International Finance Corporation, “Banking on Women.” http://www.ifc.org/wps/wcm/connect/Industry_EXT_Content/IFC_External_Corporate_Site/Industries/Financial+Markets/MSME+Finance/Banking+on+Women/ referred to in: Source: Kaplan, Sarah & Jackie VanderBrug, 2014
- ^{xiv} <http://www.fao.org/gender/infographic/en/>
- ^{xv} More information on how to enhance gender equality in companies operating in the food sector can, for example, be found in Mehra, Rekha and Mary Hill Rojas. 2008; Kaplan, Sarah & Jackie VanderBrug, 2014.
- ^{xvi} Markéta von Hagen and Johanna Willems. 2012
- ^{xvii} See, for example, the women agri-food entrepreneurs in Uganda, who took part in the Women in Business Trade Mission to the Netherlands. Of the 21 entrepreneurs, 2 lead women-only business and 13 are engaged in CSR activities at community level. Source: *Holland, Pioneers in international business. Multisectoral Trade mission from Uganda, 2014*
- ^{xviii} KIT, Agri-ProFocus and IIRR. 2012; UNREDD, WOCAN, USAID, LEAF. 2013; Mehra, Rekha and Mary Hill Rojas. 2008.
- ^{xix} Perez C, Jones EM, Kristjanson P, Cramer L, Thornton PK, Förch W, Barahona C. 2015, Section 4.
- ^{xx} At the UN Climate Change Summits between 2000-2012, only 30% of registered country delegates were women - <http://www.fao.org/assets/infographics/FAO-Infographic-Gender-ClimateChange-en.pdf>
- ^{xxi} Pionetti, Carine. 2016; UNREDD, WOCAN, USAID, LEAF. 2013; Pathways to Participatory Farmer Plant Breeding. 2006
- ^{xxii} UNDP. 2009. Chapter 5. Good practices, p.72-75; CARE. 2014; www.greenbeltmovement.org
- ^{xxiii} UNISDR, UNDP and IUCN. 2009. p. 52
- ^{xxiv} UN WomenWatch. 2010. Section Women, gender equality and technology in adaptation responses to climate change
- ^{xxv} Stern, Michelle, Lindsey Jones-Renaud, and Marya Hillesland. 2016, especially p.31-33, 70-72; Aguilar, L. e.a. 2009.
- ^{xxvi} United Nations. 2014. The entrepreneurs (in developed and developing countries) involved in the study were at least 3 years in business of a variety of sectors and generated between the equivalent of \$10,000 and \$10,000,000 in revenues.
- ^{xxvii} Malhotra, Anju, Jennifer Schulte, Payal Patel, Patti Petesch. 2009.
- ^{xxviii} O’Neil, Glenn & Patricia Goldschmid. 2013. Other examples of successful interventions can be found in Stern, Michelle, Lindsey Jones-Renaud, and Marya Hillesland. 2016.
- ^{xxix} In Edmunds e.a. 2013, reference is made to various studies demonstrating these differences, see p.12, 13.
- ^{xxx} Researches mentioned in Edmunds e.a. 2013 and in Turrall, S. (ed) 2012.
- ^{xxxi} See, for instance, WOCAN. 2014
- ^{xxxii} Such as the Adaptation Fund, Green Climate Fund, Climate Investment Funds (the World Bank)
- ^{xxxiii} CARE. 2014 referring to CIF, 2014: CIF Gender Action Plan. https://climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/CTF_SCF_12_7_Gender_Action_Plan_.pdf; Commission on the Status of Women, 2014: Challenges and achievements in the implementation of the Millennium Development Goals for women and girls. Agreed conclusions. E/CN.6/2014/L.7 http://www.un.org/ga/search/view_doc.asp?symbol=E/CN.6/2014/L.7; Women’s Major Groups et al., 2014: Final compilation of amendments to goals and targets. <http://www.womenmajorgroup.org/wp-content/uploads/2014/07/OWG13-MGoS-Compilation-Document.pdf>
- ^{xxxiv} See for more details <http://namanews.org/news/2016/02/12/empowering-women-to-mitigate-climate-change/>
- ^{xxxv} Source: NORC. Coffee Partnership for Tanzania (CPT) – Focus Group Discussions Report 2015. Page 25
- ^{xxxvi} Ibid, page 17.