



RESEARCH
PROGRAM ON
Wheat



WHEAT

led by CIMMYT

CRP WHEAT Gender Strategy

CGIAR Research Program on WHEAT

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1. Background

1.1 Introduction

Wheat provides 21 percent of the food calories and 20 percent of the protein for more than 4.5 billion people in 94 developing countries (von Braun et al. 2010). Accounting for a fifth of humanity's food, wheat is second only to rice as a source of calories in the diets of developing country consumers, and it is first as a source of protein (ibid.) Wheat is an especially critical staff of life for the approximately 1.2 billion wheat-dependent to 2.5 billion wheat-consuming poor— men, women and children who live on less than USD 2 per day— and approximately 30 million poor wheat producers and their families. In North Africa, Central and West Asia, which includes some of the currently most troubled countries, wheat provides from 35 to 60 percent of the daily calories. Demand for wheat in the developing world is projected to increase 60 percent by 2050 (Rosegrant and Agcaoili 2010). At the same time, climate-change-induced temperature increases are likely to reduce wheat production in developing countries by 20–30 percent (Lobell et al. 2008; Rosegrant and Agcaoili 2010). As a result, prices will more than double in real terms, eroding the purchasing power of poor consumers and creating conditions for widespread social unrest. This scenario is worsened by stagnating yields, soil degradation, increasing irrigation and fertilizer costs and virulent new disease and pest strains.

Building on the input, strength and collaboration of partners, the CGIAR Research Program (CRP) WHEAT, combines the strength of farming communities, international and national public and private sector partners, policy makers, and development organizations to catalyze the global wheat innovation network, coupling discovery science in advanced research institutes with national research and extension programs in service of the poor in developing countries.

The WHEAT gender strategy is conceived as part of a process of continual improvement. As such the current strategy represents the second iteration, incorporating information from the 2013 WHEAT gender audit and is aligned with the 2014 WHEAT extension proposal. The documents introduces CRP WHEAT very briefly (1.2), before presenting the objective of the WHEAT gender strategy (2); the rationale for addressing gender in WHEAT (3); and the beneficiaries of the WHEAT gender strategy (4). This is followed by an overview of the gender impact pathway for WHEAT (5), and section 6 which explains the approach to integration of gender analysis and gender research perspectives in each of the WHEAT Flagship Projects. Section 7 addresses the mainstreaming of gender in institutional frameworks and procedures, and is followed by a separate section on monitoring and evaluation (8). The WHEAT gender budget is described in section 9, while the organization of gender integration is explained in section 10. The final section (11) comments on the capacity for gender analysis and –research in WHEAT.

1.2 CRP WHEAT

The goal of WHEAT is *to ensure that publicly- funded international agricultural research contributes most effectively to dramatically boost farm-level wheat productivity and stabilize wheat prices, while renewing and fortifying the crop's resistance to globally important diseases and pests, enhancing its adaptation to warmer climates, and reducing its water, fertilizer, labor and fuel requirements.*

As set out in the WHEAT document, the vision of success of the CRP implies that:

1. Increasing demands for food are met, and food prices are stabilized at levels that are affordable for poor consumers.
2. Farming systems are more sustainable and resilient, despite the impacts of changing climate, and their dependence on irrigation and fertilizers is reduced.
3. Increased production in developing countries is achieved mainly through higher yields, thus lessening pressure on forests and hill slopes, encouraging diversification, and reducing competition for space with other crops.
4. Poverty and malnutrition are reduced for wheat consumers, especially women and children, by way of profitable and environment-friendly farming approaches.
5. Disadvantaged farmers and countries gain better access to cutting-edge, proprietary technologies through innovative partnerships, in particular with advanced research institutions and the private sector.
6. A new generation of scientists and other professionals guide national agricultural research in the developing world and work in partnership with the CGIAR, the private sector, policy makers and other stakeholders to enhance efficiency and impact.

Over the years, CIMMYT, ICARDA and partners have assessed approaches to focus wheat research for specific client groups and environments. One very useful approach has been the definition of 12 principal Mega-environments (MEs) based on biophysical constraints to wheat production. The ME based approach has enabled prioritization for international agricultural research engagement, collaboration, and technology exchange.

WHEAT targets eight out of twelve wheat growing environments, where 84 percent of the world's wheat-eating poor live¹. This includes approximately 60 million(M) poor farmers and their families (300M in total), living on less than USD 2 per day (see Table 1, below and WHEAT Proposal 2011, Page 12). The vast majority of resource-poor wheat farmers and poor consumers live in spring wheat growing areas that encompass 72 percent of the total wheat area. Favorable, irrigated, dry wheat areas (ME1) and low-rainfall areas (ME4) are the most important, based on wheat area and the number of the poor, followed by high-rainfall, normal soil (ME2) and warm, humid/dry areas (ME5). ME5 area is expected to increase significantly as climate change transforms ME1- and ME4-type areas. Improvements in intermediate-priority areas, which account for 15 percent of the wheat-dependent poor, will be pursued mostly through collaboration with strong partners such as Turkey and China. Table 1 below, indicates the five highest priority MEs for WHEAT and their respective representative regions.

¹ CRP WHEAT 2011 Proposal, <http://wheat.org/documents-about-wheat/> (Full proposal, English)

Table 1: Mega-Environments (ME) that are priority target areas for WHEAT*

ME	Description	Wheat area (million ha)	People earning less than USD 2/d (millions)	Representative regions
1	Favorable, irrigated, low rainfall production	32.0	556	Afghanistan, Egypt, India, Iran, Mexico, Pakistan
2	High rainfall, low edaphic constraints	7.0	107	Andes, Ethiopia, Kenya, Medi-terranean & Caspian coasts, Mexico
4	Low rainfall	21.6	75	India, Iran, North Africa, Syria, Turkey
5	Warm, humid/dry	7.1	238	Bangladesh, India, Nepal, Nigeria, Sudan
12	Low rainfall	7.9	14	China, Turkey, West and Central Asia

*A more complete overview of the 12 Mega-Environments and their characterizations, modified from Braun et al. 2010, is available in table 2 in the WHEAT CRP 2011 document (CIMMYT & ICARDA 2011).

WHEAT was originally organized along 10 mutually reinforcing Strategic Initiatives (SI), to address wheat-based farming systems in service of the men, women and children who depend on wheat for their livelihood or as their main food staple. Following subsequent changes in the CGIAR consortium guidelines and requirements for CRPs, as per 1 January 2015 WHEAT is consolidating its rolling 10-year R4D agenda, previously articulated in the 10 SIs into five Flagship Projects (FP) contributing to the CGIAR Intermediate Development Outcomes (IDOs), see annex 1. The titles and main clusters of activities of the five FPs are listed in the box1 below.

Box 1: CRP WHEAT Flagship Projects and their clusters of activities

FP1 Maximizing value for money, social inclusivity thru prioritizing WHEAT R4D investments

- 1.1 Foresight and targeting (ex-ante)
- 1.2 Adoption/impact pathway analysis & (ex-post) impact assessment
- 1.3 Gender research and mainstreaming

FP2 Novel diversity and tools to adapt to climate change and resource constraints

- 2.1 Seeds of Discovery
- 2.2 Affordable Hybrids
- 2.3 Wheat Yield Partnership (IWYP) to break the genetic yield barrier
- 2.4 Heat and Drought Tolerance to Combat Climate Change (HEDWIC)
- 2.5 Biological Nitrification Inhibition: Cytogenetic and pre-breeding for NUE
- 2.6 Pre-breeding: Transfer new alleles, translocations for prioritized traits from exotic sources into elite lines

FP3 Global partnership to accelerate genetic gain in farmers' field

- 3.1 Global Breeding Platform (IWIN) for traits suited to different needs and target groups
- 3.2 Accelerate breeding cycle through genomics, improved bioinformatics, and data management
- 3.3 Precision field-based Phenotyping Platforms for key traits
- 3.4 Durable Rust Resistance & Monitoring for gender-responsive Food Security
- 3.5 Resistance & Monitoring of major diseases and pests other than rusts
- 3.6 Genetic improvement to contribute to food safety

FP4 Sustainable intensification of wheat-based cropping systems

- 4.1 Multi-scale farming system framework to better integrate & enhance adoption of sustainable intensification options (linked to FP5, which works at wider scale)
- 4.2 Participatory approaches to adapt and integrate technological components
- 4.3 Development and field testing of agronomic technologies (has 6 sub-categories)

FP5 Human and institutional capacities for seed systems and scaling-out; a new generation of wheat scientists

- 5.1 Enable national coalition of multiple partners for technologies packages scale-out including seed system innovations
- 5.2 International short-term trainings (POWB 10.1. – 10.4.) for female and male professionals
- 5.3 Wheat University and WHEAT Volunteers: To build the next generation of scientists

Adapted from WHEAT Extension Proposal 2015-2016

2. Objective

This strategy document outlines the process and approach that WHEAT has adopted in order to contribute to and promote gender equality and equity in agricultural R4D related to wheat-based systems. Gender equality and equity are essential elements in the quest to further enhance agricultural growth, food security and sustainable use of the natural resource base. This strategy represents a concerted effort of the wheat R4D community to systematically consider and address gender disparities in wheat R4D and contribute to the promotion of gender equality in agricultural development in general. The objective of the WHEAT gender strategy is:

To strengthen the capacity to address issues of gender and social differentiation in wheat R4D and ensure that interventions do not exacerbate existing gender disparities, but instead contribute to improved gender equality and transformation of unequal gender norms and rights wherever possible.

3. Justification and rationale for addressing gender in WHEAT

The combined challenges of continued population growth, declining agricultural productivity growth and environmental depletion put pressure on agricultural research and development to work on all fronts to further enhance agricultural productivity and food security. Addressing the gender disparities between women and men farmers in the developing world has a significant development potential in itself, and as such is a key element in meeting these challenges.

Although women play a crucial role in farming and food production, they are often disadvantaged and face greater constraints in agricultural production than men (Meinzen-Dick et al. 2011; World Bank, FAO and IFAD, 2008.) Rural women are consistently less likely than men to own land or livestock, adopt new technologies, access credit or other financial services, or receive education or extension advice (FAO 2011). In some cases, they do not even control the use of their own time. The FAO 2011 State of Food and Agriculture report, estimates that if women had the same access to production resources as men, they could increase yields on their fields by 20-30 percent. The FAO calculates that this alone would raise total agricultural output in developing countries by 2.5-4 percent, and that this, in turn, could reduce the number of hungry people in the world by 12-17% or 100-150 million people (FAO 2011).

In addition to this, improvements in gender equality tend to enhance economic efficiency and improve other development outcomes, e.g. family food and nutrition security and education (Fafchamps et al. 2009; Quisumbing and Maluccio 2003.) Finally, gender equality is also a development objective in itself: Just as reduction in income poverty or ensuring greater access to justice is part of development, so too is the narrowing of gaps in well-being between men and women (World Bank 2011).

Nevertheless, despite the strong evidence base and convincing arguments, addressing gender inequality can be arduous and require great resourcefulness. Gender differences are particularly persistent when rooted in deeply entrenched gender roles and social norms, and WHEAT faces a special challenge in this regard in several of its main target regions: To a large extent the representative regions indicated in

table 1, where most of the population living on less than USD 2 per day that WHEAT is targeting is found, form part of what has been referred to in the literature as the “patriarchal belt”². Traditionally, these regions have been characterized by societies with strong cultural and social norms supporting particularly tenacious and unequal gender roles and relations (e.g. Kandiyoti 1988, Offenhauer 2005). Despite many changes at different levels over recent years and decades, traditional values and ideals remain pervasive and continue to exert strong influence on gender relations in several parts of these regions (Agarwal 1994; Cameron 1995; DFID 1995; Echavez 2012, Kabeer et al. 2011, Moghadam 1992, Naher 2005; Nyrop and Seekins 2001).

The unequal gender relations commonly affecting intra-household dynamics in these target populations also tend to shape the economic and social functions of wheat as a cash crop and as a staple food in smallholder livelihoods. Even though improved wheat productivity may lead to overall increased household income, there is no firm basis for expecting that this will benefit women and men equally, and /or improve the general household welfare and nutrition (Hillenbrand 2010, Smith & Haddad 2000; Quisumbing & McClafferty 2006).

For improved wheat technologies to have a positive impact on gender inequality under these circumstances, appropriate consideration of context specific gender dynamics and very careful targeting is likely to be required. This may include special measures to start transforming unequal gender-differentiated norms and rights that affect how labor, land, capital or knowledge are accessed and used for producing, marketing and consuming wheat. Without appropriate incorporation of gender considerations, otherwise technically superior innovations may instead lead to further exacerbation of gender inequalities and fail to achieve key anticipated impacts.

In recognition of the special challenges related to traditional gender inequalities in WHEAT target regions, as well as the general need to address gender disparities in agriculture and harness the capacities, opportunities and empowerment of men and women alike, this strategy aims to leverage the gender potential in wheat research for development and to create synergies between wheat R4D and gender development goals.

3.1 Current knowledge on gender in wheat-based agriculture

Though considerable literature exists on gender and agriculture in general, and on farming systems, very few studies have explored gender and social equity issues specifically in relation to wheat-based systems and livelihoods, or the gendered outcomes of improved wheat technologies (Klawitter et al, 2009, Jafry 2013). A Scoping Study on the Integration of Gender and Social Equity in R4D on Wheat-Based Systems in South Asia was commissioned by CRP WHEAT in 2013 with the purpose of assessing how gender and

²The concept of the ‘patriarchal belt’ appears to have originated with John C. Caldwell (1982). Offenhauer (2005) describes the ‘patriarchal belt’ as stretching from North Africa across the Muslim Middle East to South and East Asia and characterized by kin-based patrilineal extended families, male domination, early marriage (and consequent high fertility), son preference, restrictive codes of behavior for women, and the association of family honor with female virtue. Occasionally, the family structure is polygamous, and in some areas veiling and sex-segregation form part of the gender system.

social equity issues are currently being addressed in wheat R4D in the region; and how this can be strengthened further. The study (Jafry 2013) found overall national policy frameworks to be generally favourable and in support of greater social and gender equity, although specific measures to operationalize and enforce these overall policy frameworks are still limited and often lacking resources. Many entities with capacity to address gender and social equity exist, but there is little evidence of interaction between these and the national wheat research systems. However, considering the significant, general knowledge base on gender and social equity issues in South Asia as well as the role of wheat-based agriculture in the region, one of the most weighty findings of the scoping study, was the general lack of data/evidence/information on gender roles and social equity in the specific context of wheat-based systems in South Asia.

Studies on the role of women in agriculture in different production systems highlight the different roles played by women in agricultural activities in different regions within the four focus countries of the scoping study (India, Pakistan, Nepal, Bangladesh). While it is increasingly clear that women are engaged in production and post-harvest operations in agriculture, lack of systematic studies on their role in relation to wheat production and the types of challenges they face, represents a challenge for policy as well as R4D interventions. Indeed, referring to the Indo-Gangetic Plains, Erenstein and Thorpe (2011) have highlighted the “apparent homogeneity of vast irrigated plains”, which “masks” significant social diversity. Other authors have also cautioned against simple generalisations based on the limited documentation, pointing out the significant social heterogeneity within and across social groups and regions in wheat-based systems (Jafry 2013; see also World Bank 2005). Keeping this in mind, the existing literature nevertheless allows us to identify a number of issues to consider in relation to gender in wheat-based systems.

Trait preferences: Aspects related to milling, baking and cooking quality and other processing and consumption related wheat grain quality traits have long been important elements of international wheat improvement (e.g. Subira et al. 2014; He et al. 2013; Esmaeilzadeh Moghaddam et al. 2011; Liu et al, 2003; Gelalcha et al. 2000). As such there is a significant technical knowledge base regarding wheat grain quality traits and related processing issues, as well as their interaction with abiotic stress and agronomic factors. However, despite the focus on quality aspects in wheat R4D, the gendered dimensions of these and other traits, are so far sparsely documented.

While the current gender related documentation of trait preferences in wheat is limited, studies of trait preferences in other crops may help identify gender differences that could be relevant for gender responsive wheat improvement. For instance, while both men and women farmers tend to value grain yield and stress resilience, several studies show, that they often rate crop characteristics differently and prefer different combinations of traits, because of the intended consumption objectives, e.g. for market, for own consumption, food security, special dishes, feed etc. (Bellon 1996; Bellon et al. 2000; Bellon 2002; Bellon et al. 2003; Deere 2005; Badstue 2006; De Groote and Kimenju 2008; Hellin et al. 2010, Lunduka et al 2012). Men often prefer high-yielding varieties in view of the associated potential for selling of surplus production. In most cultures, women are regarded as the custodians of family diets, and their reproductive roles tend to influence their priorities towards a focus on food security and/or

varieties that are both palatable and nutritious and further meet processing and storing requirements (Smale et al 1992; Smale and Heisey 1994, 1997; Smale 1995; Doss 2001; Bellon et al. 2003; Badstue 2006; Hellin et al. 2010.)

These findings on gender and trait preferences in other crops are similar to what has been found in a limited number of studies that consider wheat trait preferences. For example, Ortiz-Ferrara et al. (2000) report on male and female farmers wheat trait preferences based on participatory varietal selection in Nepal (see box 2), and comment that “Women farmers are usually in charge of making bread and storing grain at home, while men farmers are more concerned with “filling the sacks”. In a study from Ethiopia, Tsegaye and Berg (2007) point

Box 2: Ranking of farmer-preferred traits based on gender criteria, Bankatti Village, Rupandehi District (Terai), Nepal, 1999-2000.

Women:	Men:
• Disease resistance	• Late heat stress tolerance
• Pest resistance	• Large, white grains
• Good chapati-making	• Shattering tolerance
• High yield	• Disease resistance
• High tillering	• Lodging tolerance
• Medium height	• Early maturity
• White-bold seed	• High yield
• Lodging tolerance	• Medium height
• Large spikes	• Good chapati-making
• Shattering resistance	
• Short awns	

out the links between common wheat-based foods, quality trait preferences and gender roles. Another recent study from Ethiopia (Nelson 2013) assessed male and female farmers’ preferences for six traits of bread wheat, and highlights the need for further research on the difference in quality preferences between men and women based on their respective gender roles.

Technology diffusion and uptake: As pointed out, among others by Doss (2001), the gender of a farmer can affect adoption of new technologies and crop varieties. For example, in the central highlands of Ethiopia, 30 percent of male-headed households (MHH) adopted improved wheat varieties as compared to only 14 percent of female-headed households (FHH), (Tiruneh et al. 2001). The authors found that in MHHs extension services and farm size had a positive effect on the adoption of improved wheat varieties, whereas radio ownership and farm size increased the odds in favor of adopting improved varieties for FHHs. According to Klawitter et al. (2009) the issue of gender in relation to wheat technology uptake, is becoming increasingly important as more FHHs produce wheat, due, largely, to the increase of men’s involvement in wage laboring, both in rural areas and through urban migration.

If adoption of new agricultural technologies depend on access to land, labor, or other resources, and if, in a particular context, men tend to have better access to these resources than women, then in that context, the technologies will not benefit men and women equally (Doss and Morris 2001). It follows that it is important to ensure that the development of improved technologies, and interventions to promote their adoption, takes the needs, preferences and constraints of both men and women, and other disadvantaged groups, into account (e.g. Doss 2001; Klawitter et al. 2009; WB 2009; Kingiri 2010). In some circumstances this may require special measures to avoid furthering existing gender disparities. For example, in systems with high dependency on wheat for food security, political stability and rural incomes, but with very conservative or restrictive gender norms, the introduction of improved wheat

varieties and related field technologies would be high priority, but would likely mainly benefit male farmers, thus, potentially further augmenting inequalities between men and women. To mitigate this, complementary approaches would need to be developed, for example, combining introduction of field technologies with improved post-harvest technologies and/or gender-transformative value-chain development interventions (Beuchelt and Badstue 2013.)

The gendered division of labor: Studies including Ethiopia, Pakistan, Afghanistan, India and Nepal report that men are more likely to prepare the land and plant the (wheat) crop, whilst harvesting and transport/carrying of head-loads is shared between men and women, and weeding and post-harvest processing is either shared or mainly done by women (Tiruneh et al 2001; Klawitter et al. 2009; Pennels 2011; Grace 2004; Thankur 2001; Taj et al. 2007; Tavva et al. 2013; Thakur et al. 2001). However, as indicated by some authors (E.g. Nelson 2013; Ashrafi 2009; Grace 2004; World Bank 2005), the discourse on the local division of labor, i.e. the categorization according to local norms and ideals, does not always match the actual practice that can be observed with more in-depth or qualitative approaches. This is illustrated by Nelson (2013) a study from Ethiopia, where men use oxen to plow the fields, and where it is not culturally acceptable for women to plow. Land preparation is therefore considered a man's activity. However, the study found that women participate in land preparation by following behind the plow with a hand tool, breaking up the clods that were too large to be broken apart by the plow. Another example is chemical application which respondents characterized as the sole responsibility of men. However, through further enquiry it became clear that women fetch the water and bring it to the field for the men to mix with the chemicals. Depending on the product, this may require between 100 and 1000 liters of water per hectare (Ibid.)

Different explanations for the variation in gender roles in wheat-based agriculture have been suggested. Findings from Afghanistan indicate that women's involvement in wheat-production and other cropping activities depends on a number of factors including: economic standing, marital status, labor resources, land ownership, as well as the degree of stigma related to men's and women's involvement in certain activities, and how strongly individuals and households adhere to these (Ashrafi 2009; Grace 2004; Munoz et al 2013; World Bank 2005; Thakur et al. 2001.)

Other factors which may influence the division of labor in wheat growing households, include increasing male out-migration (Klawitter et al. 2009; Grace 2004; Jafry 2013) as observed in many parts of the world; as well as the introduction of new agricultural technologies, which sometimes can affect women's labor burden, e.g. increased weeding because of fertiliser use, or increased post-harvest processing because of higher total yields (Satyavathi et al. 2010; Doss 2001; Beuchelt and Badstue 2013.)

Vulnerability and risk: It has been argued that due to their socially constructed roles and responsibilities and the various constraints that tend to weigh heavier on women, women are often particularly vulnerable to shocks, e.g. climate variability and change, and depletion of the natural resource base (Alston and Whittenbury 2014). For example, as custodians of household food security in many contexts, women have a lot more at stake when a season fails, because they bear the brunt of managing hungry, malnourished and sick children.

4. Beneficiaries of the WHEAT gender strategy

WHEAT is primarily a research for development collaboration and it is important to consider how the research outputs, including from gender research and analysis, will be used by different institutions and social actors in order to reach the expected outcomes for women and men wheat farmers. Agricultural research and extension organizations may need to address issues of gender awareness and capacity internally, before they can be effective agents of change in relation to gender responsive R4D practices, and for this reason gender mainstreaming is a core element in this strategy.

The **ultimate target beneficiaries** of the WHEAT gender strategy are the female and male smallholders of diverse social groups and their children, living and working in wheat-based farming systems. Data collection approaches will be adapted to ensure that the needs, preferences and constraints of diverse groups inform the technology development and dissemination processes, and that both women and men of different ages and social groups will be able to participate in, and ultimately, benefit from the research.

The **immediate beneficiaries** include researchers and professionals from the agricultural R&D sector at national, regional and global levels.

Additional beneficiaries and stakeholders include: Policy makers at different levels, value-chain actors, e.g. service- and agro-input providers/manufacturers, grain buyers, micro-finance and wheat consumers

5. WHEAT gender impact pathway

5.1 Goal, impacts, outcomes and outputs

The **overall goal** of the WHEAT gender strategy is to increase the quality, efficiency and impact of wheat R4D by ensuring that wheat R4D interventions do not exacerbate existing gender disparities, but rather, whenever possible, contribute to improved gender equality and support the transformation of unequal gender norms and rights.

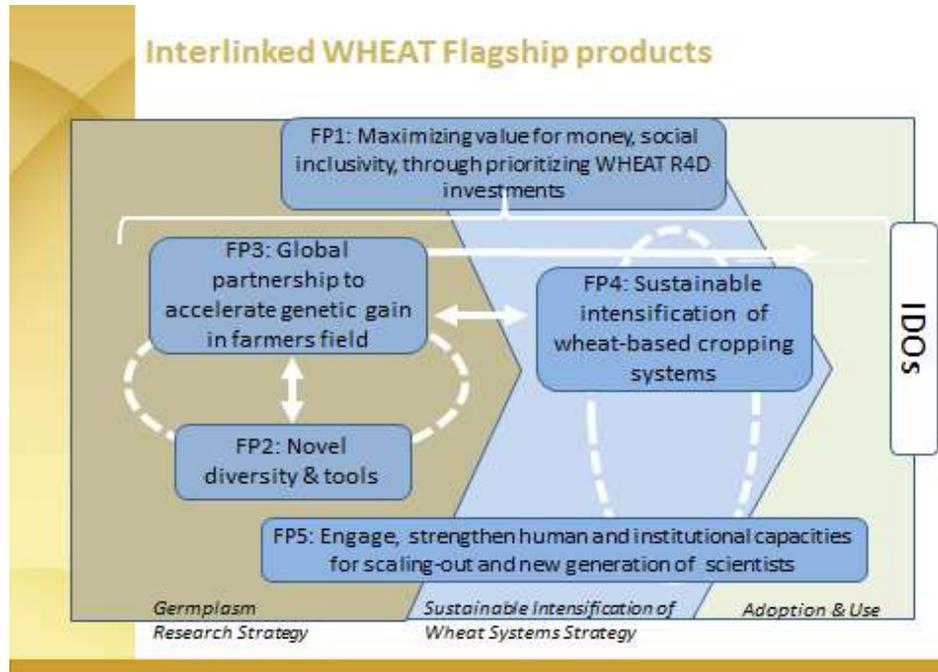
The **expected long term impacts** of the strategy are: Improved livelihoods of smallholder families due to improved equality of opportunity and outcomes between women and men wheat farmers in relation to access to and control over assets, inputs, and benefits, including improved wheat technologies that address the needs, preferences and constraints of both women and men. The high-level impact pathway for gender research is matched to WHEAT Research Strategies and Flagship Projects in figure 1 below.

The expected outcomes include:

1. Reduced vulnerability and increased benefits from wheat production to both female and male small-scale wheat farmers through increased gender equality in the access to and use of appropriate, improved wheat technologies and management practices, developed with special consideration of their needs and preferences.
2. Increased gender responsiveness of wheat R&D partners reflected in gender responsive and inclusive business models and practices, and inclusive institutional arrangements that increase

gender and social equity in the distribution of benefits from sustainable intensification and increased market integration.

Figure 1:



The research outputs that contribute towards the expected outcomes are based on gender analysis and gender research³, carried out as part of the WHEAT Flagship Projects 1-5. The research outputs include the following:

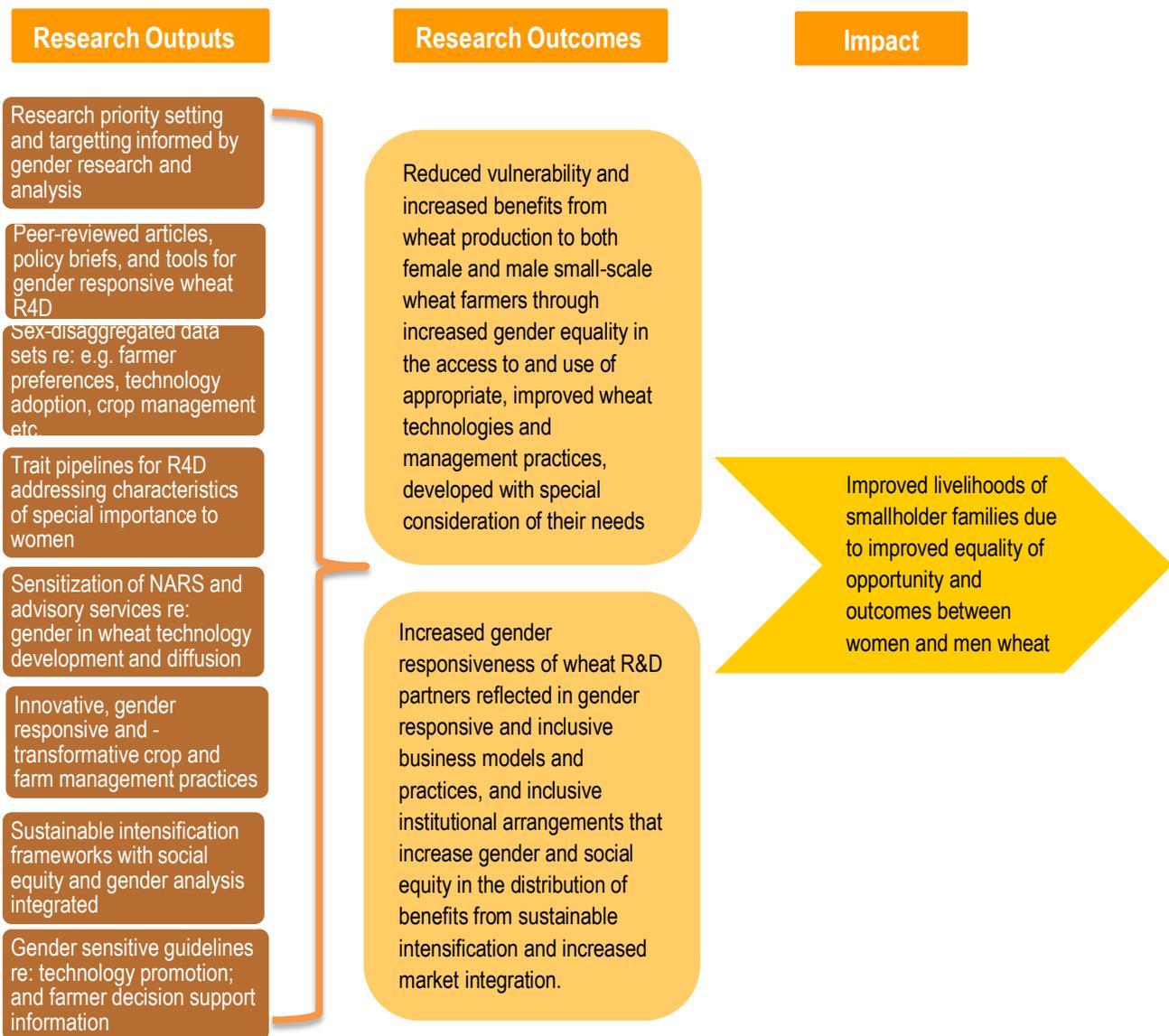
- WHEAT research priority setting and targeting informed by gender research and analysis
- Integration of social equity considerations and gender analysis in sustainable intensification frameworks and approaches
- Innovative, gender responsive crop and farm management practices
- Sex-disaggregated data sets related to male and female farmers' needs, constraints and preferences (e.g. trait and variety preferences, technology evaluation, training and capacity building, technology adoption, crop management etc.) documented and informing WHEAT technology development and diffusion strategies
- Trait pipelines for R4D that address characteristics of special importance to women wheat farmers and consumers

³ Following the CO definition (REF), *gender analysis* refers to the identification of differences between men and women with respect to their vulnerabilities, assets, capacities, constraints and opportunities using quantitative or qualitative methods. Gender analysis can be integrated into agricultural topics which are the main focus of CRP research, such as plant breeding. In contrast to *gender analysis*, *gender research* refers to studies in which gender and gender relations are the main research topic.

- Guidelines for gender sensitive communication related to variety promotion and farmer decision support information
- Sensitization of NARS and advisory services enterprises regarding the rationale for a gender perspective in wheat technology development and promotion
- Peer-reviewed journal publications, policy briefs, and guidelines and tools for gender responsive wheat R&D

A summarized graphic representation of the impact logic is presented in figure 2 below. The integration of gender analysis and gender research in each of the five WHEAT Flagship Projects is described in more detail in section 6.

Figure 2: The WHEAT gender strategy impact logic



6. Integration of gender analysis and gender research perspectives in WHEAT Flagship Projects

Gender and other social inequalities are an important factor in low production levels, inefficient marketing, and limited uptake of innovations. Empowerment, or at least adequately considering the needs, preferences and constraints of women and men of different age and social groups, is key to sustainable productivity and food security gains. To ensure that interventions are gender-responsive and socially equitable – and avoid situations in which apparently technically superior innovations exacerbate existing gender inequalities, research and analysis is needed on how gender and other social inequalities interact with technological change and development.

Five general categories of research questions or themes set the overall stage for gender analysis and gender research in CRP WHEAT:

- a) What are male and female farmers needs and preferences with regards to wheat germplasm and other wheat-related technologies
- b) What are the constraints that male and female wheat farmers face, and what is the potential/the assets they have? How is this different for male and female farmers?
- c) What is the capacity for gender responsive technology generation and dissemination of R&D partners, including advisory services, input- and service providers, and seed enterprises?
- d) How are the products of wheat R4D used? Who controls the benefits?
- e) What is the distribution of adoption? What are the impacts of wheat R4D, who benefits from them, and how?

The prioritization and way of addressing these aspects depend on various issues, including the specific Flagship Project in question, the general socio-cultural, agro-ecological and economic context, and the resources available. The following presents an overview of how WHEAT plans to address researchable issues related to gender in each of the five Flagship projects. It should be noted that certain approaches will be used in several Flagship Projects; hence some elements of repetition may appear. Similarly, though not explained in detail for every Flagship Project, the overall principle applies that, where relevant, findings from one Flagship Project may also feed into other Flagship Projects and vice versa.

FP1: Maximizing value for money, social inclusivity thru prioritizing WHEAT R4D investments

Gender responsive objective: To strengthen the evidence base on gender in wheat-based systems and livelihoods; and ensure that foresight and targeting, adoption- and impact studies, as well as wheat related value chain development interventions, are informed by a gender and social inclusion perspective.

Flagship Project 1 focuses on foresight analysis, research targeting and prioritization. Adoption and impact analysis, the use of gender analysis as well as strategic gender research in relation to wheat-based systems all feed into this. Under FP1, WHEAT partners will furthermore expand research on the

potential for inclusive market opportunities for small-holder wheat farmers. Relevant research questions include:

- What are the key social and gender differentiated impacts of wheat R4D?
- How do men and women benefit from improved wheat technologies? What contextual factors influence this and how do they affect women and men differently?
- How can wheat R4D contribute to strengthening gender equality in agriculture? What types of investment will particularly benefit poor women in wheat-based farming systems? And how can wheat R4D engage with both male and female youth to harness agriculture and food production for the future?
- How might current changes in production relations in rural communities (e.g. out-migration, feminization of agriculture) affect the future of smallholder agriculture, and what are implications hereof for wheat R4D?
- What factors affect technology adoption (resources, benefits, decision-making, values)? Does this vary for different types of technologies, and/or for men and women?
- How do intra-household gender dynamics affect the articulation of demand for and adoption of mechanization and other technologies/practices? And what have been the consequences of household adoption for different women?
- How do gender norms and agency advance or impede the capacity of individuals to learn about, try out and take up new agricultural technologies? And how do new agricultural technologies or practices affect gender norms and agency across different contexts? Under what conditions can they do harm and under what conditions can they benefit different social groups?
- How are gender norms and women's and men's agency changing, and under what conditions do these changes catalyze innovation and lead to desired development outcomes? What contextual factors influence this relationship?
- What is the place/role of wheat farming in the livelihoods of different households (including as agricultural laborers)? What are the roles of men, women, girls and boys with regards to activities related to wheat production, including post-harvest management and processing? What is the labor intensity of different activities in the farming cycle for different members of the household? And what are options to reduce labor intensity/burden?
- What are promising strategies for equitable inclusion of women and men in wheat-related value-chains? What types of arrangements can improve gender equity in the distribution and control over benefits from increased market participation?

A gender and social inclusion perspective forms part of Flagship 1's overall conceptual understanding of the socio-cultural and economic contexts of wheat-based farming systems and livelihoods. Gender work in Flagship 1 includes both gender analysis, e.g. as part of foresight analysis, adoption studies, impact assessments and value-chain development; as well as gender research, where gender and gender relations are the main topic of research.

Gender analysis requires relevant and valid data pertaining to the perspectives, needs, preferences and constraints of both women and men. Hence, in relation to adoption studies, impact assessments and

value-chain related research, whenever relevant, research questions, survey instruments and approaches take gender and social inclusion aspects into consideration. Furthermore, in order to strengthen the basis of data-sets for gender analysis (Doss 2014), Flagship 1 will standardize sex-disaggregation in all people-level data collection and analysis, and will emphasize the recruitment of female enumerators for survey data-collection with female respondents. Sex-disaggregation as a standard survey practice has also been included in the staff Key Performance Indicators.

In line with the ambition to promote equality of opportunity and outcomes between resource-poor women and men in wheat-based livelihoods, and thus overall strengthen the social equity of wheat R4D impacts, Flagship 1 will systematically integrate a gender and social equity perspective in all ex-ante and ex-post impact assessments.

In order to expand the current evidence base on gender and wheat-based livelihoods, and address strategic questions pertaining to the implications of gender dynamics in relation to development of wheat-based systems, Flagship 1 also undertakes strategic gender research, which feeds into and informs WHEAT research priority setting and targeting. In its first phase, CRP WHEAT undertook a scoping study on the integration of gender and social equity issues in wheat R4D in South Asia (Jafry 2013). Findings of the scoping study stressed the limited knowledge base on gender dynamics specifically in relation to wheat-based systems, and the sparse interaction between the wheat R4D communities and social development disciplines in the region, despite otherwise seemingly favorable policy frameworks. Building partly on this study, ongoing strategic gender research under CRP WHEAT includes:

Comparative study of gender norms and agency in wheat-based systems: This research forms part of a global, cross-CRP comparative research initiative on gender norms and agency in agriculture and natural resources management. The study's research design is informed by a gendered agency-opportunity structure conceptual framework, and the analytical approach gives primacy to local men's and women's own understandings, interpretations and experiences with innovating in agriculture and NRM. Drawing on maximum diversity sampling principles, the individual village-level cases are selected purposively to ensure strong variance on two dimensions theorized to be important for outcomes: i) economic dynamism, and ii) gender gaps in assets and capacities. A standardized package of data collection instruments is being applied in each research village, and includes same-sex focus groups with youth and adults, key informant interviews, and in-depth semi-structured interviews. WHEAT has pledged to undertake minimum 30 cases in wheat-based systems under this joint strategic gender research initiative.

Establishing the foundation for gender responsive and -transformative wheat R&D: Applying mixed methods and working with local partners at multiple levels, this special project will undertake a thorough analysis of gender in wheat based livelihoods and related interventions in Afghanistan, Pakistan and Ethiopia. The overall aim of the project is, through engagement of diverse local actors, to generate evidence and openings for shaping and targeting research and development activities related

to wheat, in ways that increase the empowerment of disadvantaged groups, in particular poor women and youth in wheat-based systems and help unleash their potential.

FP2: Novel diversity and tools to adapt to climate change and resource constraints

Gender responsive objective: To ensure that perspectives of male and female end users are taken into account in up-stream targeting and decision making.

Flagship 2 focuses on up-stream tools and approaches for genetic gain and breeding efficiency, including indexing of native trait variation in wheat, trait pipeline development, breeding informatics and advanced phenotyping tools. As such the focus of this Flagship appears far removed from the farmer and consumer interface. Even so, although the relevance of the gender dimension may seem to grow as we move further down-stream in the technology development process, the concern with end-user needs, challenges and preferences remains pertinent at the upstream level. This is namely often where key decisions regarding overall direction and priorities of research are made, which, in turn, have bearing on what (- and whose) issues will be addressed. Relevant gender research and analysis questions therefore include:

- What priority trait categories are particularly relevant for key beneficiary groups, and (how) are they related to gender?
- How can research on the gendered nature of wheat production leverage and add value to the analysis of native trait variation and trait pipeline development?
- How can down-stream gender research and -analysis findings in the technology development continuum inform up-stream targeting and decision making?

WHEATs strong emphasis on heat tolerance is particularly relevant to poor women in wheat-based systems and livelihoods, because they tend to be particularly vulnerable to shocks, including climate variability and change. Furthermore, under Flagship 2 WHEAT will continue and further prioritize traits that address nutritional and processing qualities and other issues, which in some cases are of particular importance to women. Some of these have already been established, e.g. high zinc and iron content; grain softness/hardness etc. This may also include early foliage development (for reduction of weeding drudgery). To complement the above, gender analysis findings generated in Flagships 1, 4 & 5 will continue to inform overall priority setting in Flagship 2.

FP3: Global partnership to accelerate genetic gain in farmers field

Gender responsive objective: Understanding gender differentiated preferences/constraints in relation to specific traits in wheat germplasm, and the implications hereof in relation to priority setting and targeting of wheat breeding strategies.

The focus of FP3 is on development of climate resilient, disease and pest tolerant, nutritious wheat lines with high end use quality through the use of new molecular based breeding tools and selection

methods. NARS partners participate in breeding, apply more precise phenotyping approaches and other tools to develop diverse, high yielding varieties, adopted to farmers needs in in Asia, Africa and Latin America – with the aim of achieving globally, annual genetic yield gains of at least 0.7 percent.

In order to address its gender responsive objective, Flagship 3 will address the following research questions:

- What are the needs, preferences and constraints experienced by men and women wheat farmers with regards to wheat varietal traits? In what ways are these similar for men and women; and in what ways are they different? To what extent are these related to gender specific labor burdens?
- How, and to what extent are the needs, preferences and constraints of both female and male farmers considered in the improved wheat germplasm development process?
- Apart from production constraints, what other traits or combinations of traits related to quality do farmers and consumers in different contexts, or from different social groups, prioritize? For example, what are the post-harvest/ processing /consumption/ nutrition or fodder related traits that men and women demand?

In addition to addressing abiotic and biotic stress tolerance, an important aspect under this Flagship is the incorporation of specific quality traits that address the needs and preferences of different farmer- and consumer-groups and markets, e.g. micro-nutrient content (especially zinc, iron), baking quality, freshness, grain hardness/softness (milling), shattering and ease of threshing. These and other quality traits are considered in many wheat improvement initiatives and depending on the context, several of these are of particular relevance to women. Another characteristic with potentially high relevance from a gender point of view in areas where weeding is the responsibility of women and children, is weed competitiveness or early foliage development, - a trait which is already incorporated in CIMMYTs bed planting trials.

Participatory Varietal Selection (PVS) is a useful arrangement employed by WHEAT partners for capturing trait and varietal preferences of women and men farmers. In order to strengthen the incorporation of male and female farmers' feedback into breeding programs/product advancement WHEAT will promote and further strengthen the use of PVS including by increasing the proportion of female participation in PVS events, and by standardizing sex-disaggregation in the data collection and gender analysis related to farmer PVS feedback. In addition to this, WHEAT will also promote the representation of different age groups and social groups in PVS events.

FP4: Sustainable intensification of wheat-based cropping systems

Gender responsive objective: To ensure that sustainable intensification of wheat-based systems and livelihoods take gender- and social disparities into account and delivers positive benefits to both men and women of different social groups.

Wheat-based systems are complex and dynamic and evolve with important drivers of change, including feminization of agriculture, demographic change, climate change, resource depletion, and diverse socio-cultural factors. To make progress, it is essential for WHEAT, as a global program, to embrace the agro-ecological and social heterogeneity at multiple spatial scales, and to prioritize investments and thematic areas. Entry and end points for sustainably intensifying wheat-based systems hence differ between contexts. To achieve desired outcomes and positive development impacts in the lives of male and female wheat farmers and their families, innovations and technologies as well as their dissemination pathways must be well tailored and adapted to the local contexts to ensure positive outcomes.

Intensification, environmentally friendly or conventional, is linked to the question of resources, including natural resources and financial resources, but also knowledge, technology and labor as well as social and political capital. Intensification implies changes in resource management and increase in resource use efficiency, for example in the form of inputs, knowledge, technology and/ or labor. From a gender and social equity perspective, access to and control over resources is therefore a fundamental issue to address.

By their sheer numbers, women and youth are an important potential for agricultural development that needs to be understood, taken seriously, and be served. However, acquiring new knowledge, experimenting with market participation, new institutional arrangements, or the adoption of new technologies and practices involve social interaction with different social actors, may require time away from home, and financial or labor investment. Lack of opportunity and resources, rigid social norms and traditions, as well as domestic and caring responsibilities are factors that can limit women's and youth's abilities to engage with new opportunities for agricultural innovation. Important research and analysis questions related to gender and sustainable intensification of wheat-based farming systems include:

- What are the differences between men and women small-scale wheat farmers' access to and control over production means and resources? How does this influence their technology choices?
- How does technology adoption and productivity of male and female wheat farmers differ? What are the factors underlying this and how can this be characterized in ways that can enhance the targeting of wheat R4D?
- What types of institutional arrangements and business models can enhance the ability of poor women farmers and marginalized groups to access and benefit from more efficient and labor saving technologies?
- How do social and gender norms constrain/enhance individuals' ability to engage in agricultural innovation processes? And what are effective measures to address barriers to social inclusion in technology development and dissemination?
- What are potential trade-offs of sustainable intensification technologies from a gender and social inclusion perspective? And what approaches can help mitigate these?
- How can improved crop and soil management technologies enable male and female farmers in wheat-based systems to reduce risks and vulnerability?

- What is the capacity for social inclusion and gender responsive development practice among R&D partners? What is the capacity for social inclusion and gender responsive business development among input- and service providers? Is capacity building of R&D partners reflected in greater incorporation of female and male farmers' perspectives in wheat technology development and dissemination?

Women farmers and entrepreneurs constitute a significant development potential and a core clientele for knowledge-, input-, and service providers, but it must be considered that they may have distinct needs, preferences and constraints. As indicated in section 3, WHEAT faces special challenges in this respect given that several of its target regions are characterized by particularly deep-seated and unequal gender roles and relations. However, this also makes integration of gender considerations in R4D particularly important in order to avoid exacerbating existing gender disparities. To address this, Flagship 4 will integrate gender analysis in the R4D process with R&D partners and male and female farmers. As part of this, WHEAT will promote that partners for innovation and scale-out systematically embed gender relevant insights into their business models and training programs, to help women gain more access, more control and enable their use of technology, knowledge etc. Technology generation and testing, including of mechanization and diversification options will follow gender responsive and gender transformative approaches, and in parallel with this we will leverage existing partnerships with social networks for collective action and self-help groups for understanding and reaching farmers, especially women farmers and farmers from disadvantaged social groups.

FP5: Human and institutional capacities for seed systems and scaling-out; a new generation of wheat scientists

Gender responsive objective: Ensure gender considerations in human and institutional capacity strengthening related to WHEAT.

FP5 focuses on strengthening the capacity of WHEAT partners for seed systems and scaling out through institutional strengthening and professional capacity building. As part of this, FP5 supports the diffusion of findings and lessons from other Flagship Projects, as well as their implications for gender and social inclusion, to partners in the wider WHEAT partner network, including policy makers at different levels. FP5 will promote scale out processes that are based on a solid understanding of gender opportunities and constraints and which aim to address the needs and concerns of both men and women of different social groups. In particular, FP 5 will encourage partners to support actions that strengthen the ability of women in wheat based farming and livelihoods to provide input to wheat technology development, and to learn about, access and benefit from new practices and technologies in agriculture. This may include paying special attention to the representation of women in program staff, especially where gender segregation requires female staff to work with women.

FP5 has special focus on strengthening the human resource base for high quality wheat R&D. Building the capacity of young professionals and scientists, in particular women, to breed for traits, and stacking of traits, that address both male and female farmers concerns, is an important element of Flagship 5.

International and regional training and scholarship opportunities that are linked to cutting edge WHEAT research will be strengthened further, and special emphasis will be put on increasing the proportion of female talent in these opportunities. Building on the sex-disaggregated PVS data and additional research findings on farmer preferences and adoption from other Flagships, WHEAT will strive to use professional capacity building events as a vehicle for informing and sensitizing the next generation of wheat R&D professionals to the gendered dimensions of agricultural R4D.

7. Linking gender research and analysis to WHEAT institutional framework

The gender analysis and –research outlined in the previous section will generate knowledge relevant to achieving gender responsive outcomes of WHEAT, however, this potential is not automatically leveraged across WHEAT activities and WHEAT partners. To realize the potential of the gender analysis and the gender research it is of critical importance that the WHEAT research management procedures and the WHEAT impact pathways systematically consider and, if relevant, incorporates the findings related to gender in wheat-based systems and livelihoods.

In addition to the application of gender analysis and implementation of gender research, WHEAT will promote the consideration of gender issues as an integral part of formal research management and procedures. Accompanied by strengthening of capacity and technical support in the area of gender, this, in turn, facilitates that new wheat research for development projects explicitly consider gender in relation to the specific research in question.

Thus, the integration of gender into the Research Management Framework (RMF) along with additional enabling, institutional circumstances for systematic gender consideration, will support the integration of gender analysis into the research project portfolio and the related budgeting and funding aspects. At the same time, to further strengthen the knowledge base and inform WHEAT priority setting and targeting, gender research will be carried out to address issues of strategic importance. Ultimately, all of this will lead to more gender responsive wheat research for development, greater and more equitable benefit sharing and contribute to closing the gender gap in wheat-based agriculture.

Due to the enhanced institutional frameworks and procedures and the strengthened gender awareness of staff and partners, the evidence base on gender in relation to wheat research and wheat-based livelihoods will be expanding, the number of gender responsive R4D initiatives under WHEAT will increase significantly, and the proportion of female farmers', who provide feedback to participatory research activities will grow substantially. Together these changes inform the research process as well as the research targeting and priority setting. It is expected that this will lead to better targeting of research outputs and dissemination, and that this, in turn, in a longer term outcome perspective will stimulate increased and accelerated adoption of improved wheat technologies by female as well as male farmers.

The integration of gender in WHEAT is conceived as a process of continual improvement, in which research design and practice, and research management frameworks and procedures are complement and mutually support each other. The scope of the strategy includes: a) Integration of gender analysis and gender research in wheat R4D (section 6 above); and b) Integration of gender in key wheat R4D management frameworks and procedures. The relation and synergy between these two twin-tracks is described below in sub-sections I and II below.

As gender analysis capacity, and frameworks and procedures that support and encourage gender responsive R4D are strengthened, this will influence research practice and further catalyze integration of gender analysis in wheat research projects and FP portfolios. As a result, the proportion of gender responsive and gender transformative projects in the WHEAT R4D portfolio is expected to increase. Eventually, the main emphasis will be on gender research and analysis in wheat research projects and FP implementation, while a moderate emphasis on enabling frameworks will continue to be required in order to run and maintain the institutional structures and resources for gender integration and related technical backstopping. This shift in focus is illustrated in figure 3.

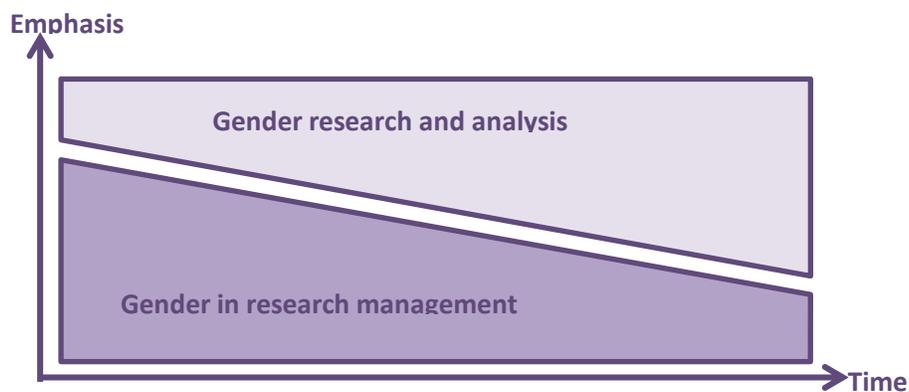
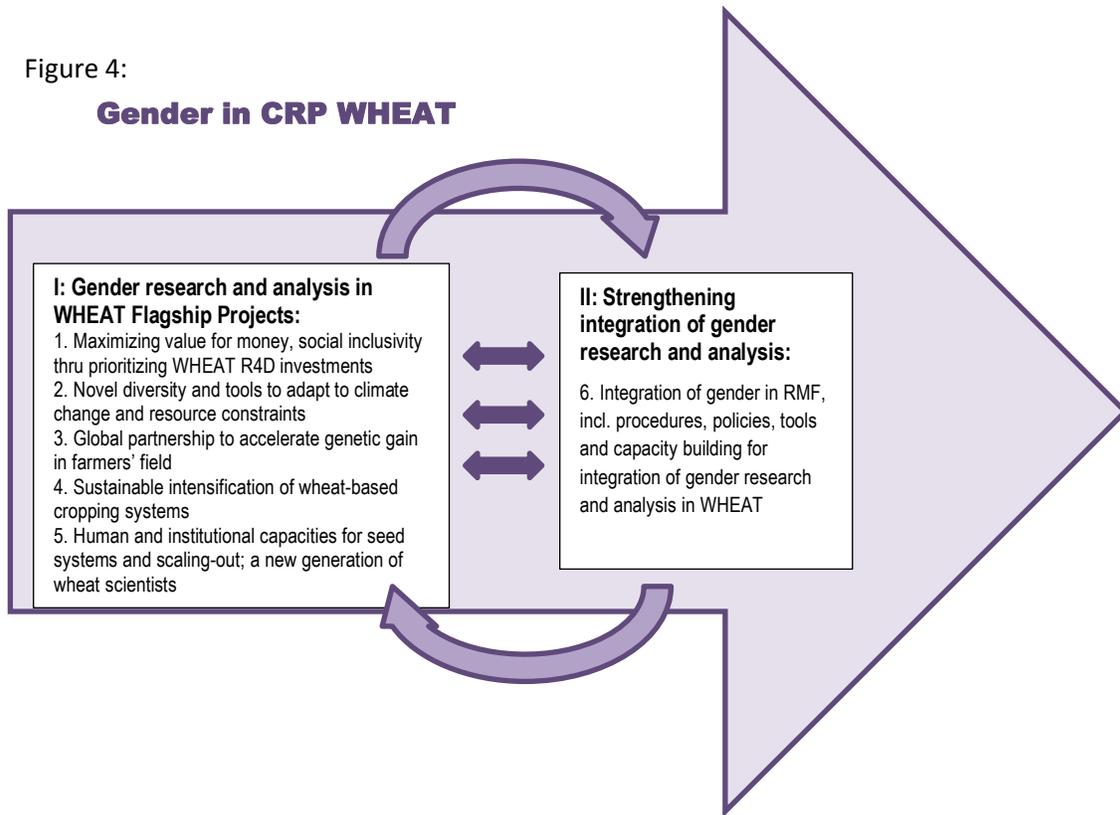


Figure 3: Integration of gender research and analysis in WHEAT is conceived as a process of continual improvement in which the functions of research design & practice, and research management frameworks & procedures complement each other.

As results and lessons learnt are generated in gender analysis and -research implementation, these will provide feed-back to the programmatic learning processes and contribute to further development and adjustment of the programmatic and institutional frameworks, which, in turn, will inform the next generation of research projects and adjustments in the diverse FP implementations. As these dynamics progress and gain traction, the integration of gender in WHEAT continues to expand and improve. The complementarity of this overall approach in WHEAT is illustrated in figure 4 below.

Figure 4:

Gender in CRP WHEAT



I) Gender research and analysis:

In the process of integrating gender research and analysis in WHEAT, the concept of gender is used as an analytical tool to strengthen the relevance and targeting of wheat R4D and enhance development impacts. On one hand, gender analysis is applied as part of other technical research, e.g. socio-economic surveys or wheat breeding, as explained in section 6, to capture differences in the perspectives and assets of male and female farmers from different social groups, and feed this into the technology or policy development process. On the other hand, also described in section 6, this is complemented by gender research on strategic issues to further expand the knowledge base concerning gender in relation to wheat-based farming and livelihoods to inform and deepen the relevance of other research themes, as well as overall priority setting and targeting, in order to better address gender constraints related to wheat-based systems development.

II) Mainstreaming gender in the WHEAT Research Management Framework (RMF)

In order to take stock, and achieve a rigorous input to the process of strengthening the integration of gender as an analytical tool for enhanced targeting and impact of research for development under WHEAT, the CRP conducted a comprehensive programmatic gender audit in 2013. The audit applied a participatory, interactive and iterative approach and involved staff at different levels from CIMMYT and ICARDA, project teams, -partners and -beneficiaries. The implementation phase took place from January to July 2013. The methodology included Key Informant Interviews, Focus Group Discussions, specific project case-studies in Asia, Africa and Latin America, online staff survey, participant observation and document reviews. The findings of the GA were discussed and validated in a collaborative workshop

which included participation of CRP coordinators, senior management, gender experts and biophysical scientists. Key recommendations of the Gender Audit include:

- Mainstreaming gender in institutional and programmatic frameworks and procedures
- Develop and implement mechanisms to support the integration of gender in research project design, budgeting and M&E
- Establish a gender equality competency framework and invest in gender capacity and awareness building to support the development of required staff gender equality competencies by level and area of work.

The following outlines how WHEAT plans to address the recommendations from the gender audit.

Institutional frameworks and procedures have important roles in clarifying, streamlining and guiding the research management process throughout the project cycle. The RMF is based on best practices from the fields of project management and monitoring and evaluation, and applied to international wheat research for development. Mainstreaming gender into this key framework and related procedures can thus help actively promote the consideration of gender issues in relation to the research in question, and ensure that such issues are addressed, whenever it is relevant and appropriate. A key element in this regard is the establishment of procedures, which ensure that the relevance of gender is considered for new research projects. If, for example, gender is not relevant for the research in question, the proposal simply moves on to the next step in the project processing. For the proposals where issues relating to gender are identified and need addressing, the gender screening procedure will serve as a quality check in terms of the approach and specific measures taken; appropriate output and outcome formulation, as well as the related funding requirements in the project budget. This in turn will constitute the foundation for follow-up on integration of gender in implementation, as well as in output and outcome monitoring. Basic guidelines for scientists and research teams with regards to incorporation of gender concerns in project design have been elaborated and 26 WHEAT scientists received initial training on their use in December 2013.

To further encourage and strengthen the incorporation of gender consideration in project design and implementation a series of policies and practical guidelines for their implementation in wheat research for development will be developed. This will entail the formulation of a gender-in-research policy for WHEAT; as well as the development of practical support tools to enhance gender integration in research; for example a protocol for gender disaggregated data collection and analysis (in progress); and guidelines for social inclusion in participatory research activities.

To strengthen capacity for gender integration in WHEAT a gender equality competency framework will be developed, which maps out the minimum level of gender related Knowledge, Attitudes and Skills (KAS) expected of WHEAT staff positions and areas of work. The competency framework will be accompanied by a gender equality capacity strengthening program to support the development of required staff gender equality competencies by level and area of work. The modular program will incorporate different and complementary learning approaches to allow individuals to develop their own

leaning strategies and be responsible for achieving minimum competencies. Implementation of the gender equality capacity strengthening program will be subject to resources availability.

WHEAT is represented in the CGIAR Gender and Agriculture Research Network by the Gender Specialists of CIMMYT and ICARDA. The Gender and Agriculture Research Network constitutes a forum for identifying and taking forward strategic issues related to gender analysis and gender research across the CRPs, in addition to identifying needs and opportunities for cross CRP collaboration in research and capacity strengthening and ways of addressing these. The network operates as a virtual community and meets once or twice yearly.

In summary, successful gender mainstreaming of the RMF will lead to wheat research projects with gender responsive, or even gender transformative approaches, which in turn will lead to progress with regards to: Increased access to and benefits from improved wheat technologies by men and women alike; greater incorporation of both male and female farmers perspectives in wheat technology development and diffusion; and ultimately, increased equality of opportunity and outcomes between female and male wheat farmers.

8. Monitoring & Evaluation

Monitoring and Evaluation (M&E) of the gender strategy for WHEAT is an integral part of the M&E of the WHEAT CRP Research Management Framework (RMF) which covers:

1. Gender screening of new WHEAT project proposals
2. Planning of gender related activities and assignation of clear responsibilities for execution and reporting
3. Monitoring of gender related activities across all projects in WHEAT
4. Reporting of gender relevant Key Performance Indicators
5. Assessment of progress at staff, project, and CRP level and if relevant adjustment of plans according to lessons learned.
6. Adoption and impact assessment studies

All WHEAT work is project based and the M&E work is initiated with the incorporation of gender in the project plans as described above. New projects are formulated in the Research Management System (RMS) and the socioeconomics program manager, PM, is automatically alerted on all new projects and is responsible for the initial gender screening the projects. If specific gender analysis needs to be undertaken the program manager contacts the relevant staff with gender analysis competences (see table below). In this way the incorporation of gender is systematically considered in all new projects under WHEAT.

Once a project is funded the detailed work break down structure is defined, and the planned activities are assigned to the person responsible in the Research Management System. This person is also responsible for providing progress updates on the task and summary task level. The progress reported is

then aggregate up to the project level and up to the Cluster of activity, Flagship Projects, and CRP level. The physical progress of the projects is in the RMS also linked to the financial management, which allows us to identify if the physical progress is behind the financial execution and this in turn helps solve problems at an early stage.

As W1 and W2 funding for WHEAT only make up some 20 percent of the total budget, most of the gender work in this strategy is carried out as part of bilaterally funded projects, and the activities are planned within these projects. Being able to track progress on the 150 bilaterally funded projects is an informational challenge; however, the research management system is being revised in order to be able to easily identify projects and activities that are of particular interest to the gender strategy. In addition the activities directly managed under the gender unit and funded by W1 and W2 are managed as a separate project within the RMS.

The Research Management System is also the main platform for registration of a series of Key Performance Indicators. A measure for sex-disaggregation has been integrated in some of the KPIs and currently includes: Number of

- a) Wheat lines with characteristics valued by women farmers;
- b) Technologies evaluated with explicit relevance for women farmers;
- c) Trials conducted with women farmers;
- d) Demonstrations conducted with women farmers;
- e) Technologies demonstrated with explicit relevance for women farmers;
- f) Surveys with sex-disaggregated data.

This information is entered by all research staff and is used in staff evaluations, which creates a strong incentive for staff. The KPIs are also used for institutional reporting for example to donors.

All the elements in the Research Management System are used by management at different levels to systematically assess the progress of staff activities, project plans, and the overall strategic levels. The M&E system in WHEAT has considerable advantages as it aligns staff incentives with project plans and with overall strategy, and it also reduces the need for duplicated reporting at different levels.

A final element in the WHEAT M&E work is the adoption studies and impact assessments where the uptake of the WHEAT technologies is investigated. This is a field with a long research history and very considerable impact of wheat research has been documented. Nevertheless, most of the studies have not considered in debt the gender aspects, and this will have to be addressed more thoroughly in the future adoption studies and impact assessments under WHEAT.

9. WHEAT gender budget strategy

WHEAT is the CRP with the second lowest funding level from W1 and W2, and 80 percent of the funding is sourced from bilateral projects. Most CRPs have a W1 and W2 funding level around 45 percent, which implies that they have a larger degree of freedom in allocating resources for example to gender work,

and that it is easier to carry out a coherent strategy. In the case of WHEAT the strategy is dependent on an annual budget from 150 separate grants, which represents a considerable managerial challenge. The dispersed sources of funding have a large level of uncertainty, and it is difficult to project future investments in a specific topic such as gender.

In order to be able to estimate the investments in gender research and mainstreaming in a systematic and transparent way, and in consultation with the CO Senior Gender Advisor, CRP WHEAT has adopted the DAC Gender Marker developed and tested by the UNDP (see annex 2.)

Very considerable investments in WHEAT are related to gender, and the mainstreaming strategy outlined in the present strategy document has a significant potential for achieving large impacts at very limited additional cost. This distribution of investments is one of the reasons why the WHEAT gender strategy operates based on a dual and complementary set of actions: Gender analysis and research is carried out in the largely bilaterally funded projects, and the outputs from this work are used and the outcomes multiplied via the institutional mainstreaming processes.

Gender remains a relatively new area of research within WHEAT, and the bilateral fund raising is still on an initial stage. Nevertheless, awareness raising among Project Leaders has increased the number of requests for gender inputs in new project proposals, and the RMS project cycle also contributes to more effective gender screening in all new projects. In addition fund raising is being undertaken for more specific gender research, for instance a Euro 1.2 million gender research project was approved by BMZ recently, and additional donor contacts have been established.

10. Organization of gender integration in WHEAT

The overall integration of gender in WHEAT is led by CIMMYT's strategic leader for gender research and –mainstreaming , who forms part of the CIMMYT Socio-Economics Program (SEP) and reports to the Director of SEP, who, in turn forms part of the WHEAT Management Committee. In a similar way, as a co-lead center, ICARDA shares responsibility for the integration of gender in WHEAT through the contributions of the ICARDA Lead Gender Specialist.

To ensure alignment with the gender strategy, staff for who gender makes up an important part of their work, form part of the gender unit coordinated by the strategic leader for gender research and -mainstreaming. As coordinator of the gender unit, the strategic leader for gender research and –mainstreaming manages the budget specifically related to strategic gender research and gender specialist activities, and is responsible for providing technical support to Project- and FP Leaders and other researchers with respect to gender integration, awareness- and gender analysis capacity strengthening; as well as guidance and recommendations with regards to strategic gender research and targeting.

The incorporation of gender in planning, implementation and reporting at the individual project level follow the steps and procedures laid out in the Research Management Framework, and are the responsibility of the Project Leader and, ultimately, the respective Program Director. When possible, gender concerns in project implementation are addressed via partner expertise. Gender integration in processes at the FP and CRP level is the responsibility of FP leaders and the CRP manager.

Table 1. WHEAT staff with gender analysis competencies

No.	WHEAT Staff	Qualification	Discipline/Field
1	ALI, Akhter	PhD	Agricultural Economics
2	ARYAL, Jeetendra Prakash	PhD	Agricultural Economics
3	BADSTUE, Lone	PhD	Rural Development Sociology
4	CHRISTIANSEN, Irene	PhD	Plant Physiology
5	DEBELLO, Moti Jaleta	PhD	Agricultural Economics
6	ERENSTEIN, Olaf	PhD	Agricultural Economics
7	FISHER, Monica	PhD	Impact Assessment Economics
8	HELLIN, Jonathan	PhD	Social Geography
9	KAHAN, David Gerald	PhD	Agri-Business Development
10	KEIL, Alwin	PhD	Agricultural Economics
11	LOPEZ, Diana	MSc	International relations
12	MITTAL, Surabhi	PhD	Agricultural Economics
13	MOTTALEB, Khondoker	PhD	Applied Socio-Economics
14	NAJJAR, Dina	PhD	Social Anthropology
15	NELSON, Jenny	MBA	Research Management
16	RAHUT, Dil Bahadur	PhD	Economics
17	RIIS-JACOBSEN, Jens	MSc, MTM	Information technology
18	ROSSI, Frederick	PhD	Agricultural Economics
19	TSEGAYE, Mulunesh	MA	Gender studies
20	YIGEZU, Yigezu	PhD	Agricultural Economics

11. Assessment of capacity for gender analysis and gender research in CRP WHEAT

An assessment of the capacity for gender analysis and gender research in CRP WHEAT was carried out as part of the 2013 WHEAT Gender Audit. The WHEAT gender audit found that there is an overall appreciation of the relevance of gender to CRP WHEAT. While in most cases this does not entail an understanding of gender as a social relation, thereby ignoring the relative opportunities and constraints women and men experience, the Audit did uncover such perspectives in a minority of cases. Also present, though not common, was an understanding of promoting gender equality as an end in itself.

Overall the gender audit found that the level of capacity with regards to analyzing and addressing gender issues in wheat R4D needs strengthening. The extent of gender integration varied considerably across and within projects, and the gender knowledge and skills of staff and partners was considered to be relatively weak. The lack of capacity among staff was also found to be linked to the absence of

systems and procedures that guide and hold staff accountable, which leaves the question and implementation of gender strategies open to individual interpretation.

Efforts to integrate gender into projects under WHEAT were observed in technology development with an emphasis on the promotion of women's participation through the targeting of women, including integrating gender issues in breeding and other technology development, particularly in conducting gender-aware Participatory Varietal Selection. Also, some projects under WHEAT are focusing on 'brokering relationships' between women farmers and different actors across the wheat value chain, for example by linking farmers, researchers and other stakeholders in such a way as to provide space for solving local problems and taking advantage of opportunities. The audit also found examples of good practice, such as the targeting and organizing of women farmers, support for women extensionists, and the promotion of women in non-traditional agriculture roles, as well as the adoption of other gender transformative approaches. More recently, more projects seem to include more activities aimed at addressing gender concerns. The gender audit findings also highlighted that when and where the effort is put in, women participants in WHEAT projects speak of experiencing greater access to agriculture inputs as well as greater recognition as farmers.

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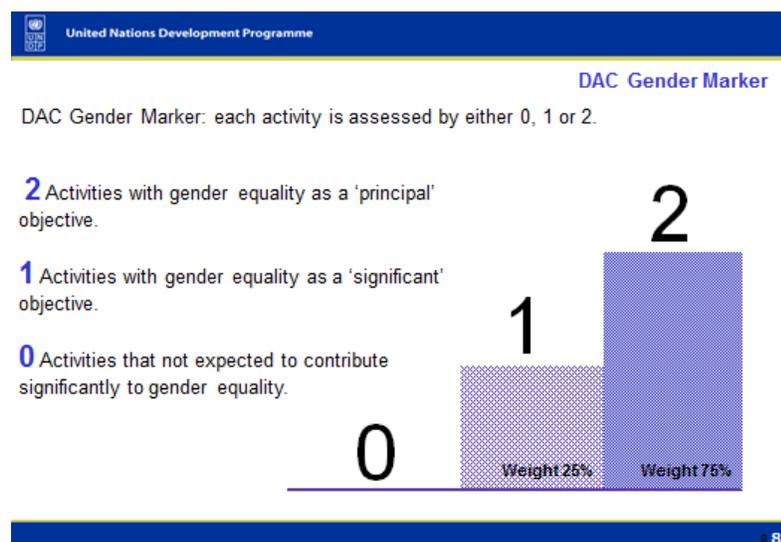
Annex 1: WHEAT Flagship Projects delivering towards IDOs

Common IDO / FP	FP1 Maximize value	FP2 Novel diversity & tools	FP3 Accelerate genetic gain on-farm	FP4 Sustainable intensification	FP5 Capacities for scale-out
1 Productivity					
2 Food security					
3 Nutrition & health			Via CRP AR4NH	Via CRP AR4NH	
4 Income					
5 Gender empowerment					
6 Capacity to innovate				Jointly with other CRPs	Jointly with other CRPs
7 Capacity to adapt				Jointly with other CRPs	Jointly with other CRPs
8 Policies, Institutions	Via PIM			Via PIM	Via PIM
9 Environment					
10 Future Options: greater resilience of systems		Via Systems CRPs	Via Systems CRPs	Via Systems CRPs	
11 Climate - carbon sequestration		Via CCAFS	Via CCAFS	Via CCAFS	

Annex 2: DAC Gender Marker in WHEAT budgeting

Levels		Criteria/Examples
4 - Projects with gender equality as the SOLE objective	100%	Sole use for (strategic) gender research. Budgets of gender specialists.
3 - ... a PRINCIPAL objective	75%	Majority are women beneficiaries and they are selected and will be likely the main partners/beneficiaries/users of the project results.
2 - ... a SIGNIFICANT objective	25%	Gender is mainstreamed in these projects and significant/substantive benefit by women is will be achieved and documented.
1 - ... with SOME CONTRIBUTION to gender equality	10%	Projects with evidence that they work on women prioritized constraints (eg processing, quality, HH food security) or generate products/outcomes that are particularly relevant for women (eg lower wheat prices). Effort to reach women needs to be made.
0 - Projects that do not expect to contribute significantly to gender equality	0%	Gender neutral research; Examples: Genebank, molecular breeding, bioinformatics.

Adapted from UNDP approach:



Further information: http://www.gender-budgets.org/index.php?option=com_joomdoc&task=document.download&path=resources/by-theme-issue/financing-for-gender-equality/tracking-gender-related-investments-in-undp&Itemid=823,
http://www.wikigender.org/index.php/Gender_Equality_Marker_System;
<http://www.undp.org/content/dam/undp/library/corporate/fast-facts/english/FF-Gender-and-Institutional-Development2.pdf>