

Annexes to Full Proposal without CVs →

3.4 DCL Gender Annex: Empowering women and young people in the drylands

DCL Gender M&E strategy

DCL Gender M&E strategy The plan for M&E of the Gender Strategy will be nested within the overall DCL M&E strategy, and will also draw on and be consistent with the CGIAR's indicators listed in the reporting requirements for the CRPs' Annual Reports. A participatory gender-explicit monitoring and evaluation framework will be implemented as result of phase I CRPs. The framework integrates local and gender-specific indicators for monitoring of outcomes. Monitoring focuses not only on equality of treatment for women and men, but also ensuring that the intervention outcomes provide benefits for both women and men in an equal way. To ensure this, all data from intervention activities, and M&E processes are disaggregated by gender and analyzed, provide feedback lessons for better mainstreaming of gender into the activities, programming and implementation process of the CRP as well as inform policy makers.

M&E framework

The CRP will work with gender experts to adapt a performance-measurement framework that identifies and integrates gender-specific, measurable indicators relevant for research and development interventions. Specifically DCL will work closely with WLE, CCAFS, Livestock and FTA having established a gender group with joint staff with those CRPs. In this regard, the common gender-sensitive indicators developed by the M&E committee of the CG Gender Network, the ones for the Gender Performance Fund prepared by the Consortium office and the latest indicators¹ proposed by the CapDev COP will be used wherever relevant.

Annual reviews by stakeholders and gender-specific audits will be organized periodically to assess the progress towards gender mainstreaming and to evaluate gender-specific social impact on smallholder well-being. The 2016 IEA CGIAR Gender review² will inform this process and stimulate specific review that DCL will conduct in partnership with other CRPs and Partners. Annual reports on gender M&E will be provided to the Research Management Committee. Feedback sessions, specifically for and with women, in which results of experimentation are discussed, will be part of the program. The program will aim for a balanced staff structure where the participation of women researchers and students will be encouraged. It is also proposed that the participatory M&E system in each center be guided by a performance measurement framework that integrates local and gender-specific indicators for monitoring project outcomes. This will ensure that these are measured both with technical indicators as well as with indicators generated by local women and men. Outcomes and outputs will be monitored for the extent to which they have affected both women and men.

Implementation arrangements

This M&E framework will be implemented through the CRP's existing organizational structures and processes. The results will be shared at annual CRP scientists meetings and also in annual CGIAR meetings. The findings will also be fed back to the participating CGIAR and non-CGIAR scientists and other partners (governments, CSOs, NGOs, producer organizations, UN, etc.). The collaborating organizations/networks of GAP, YPARD, and

1 https://library.cgiar.org/bitstream/handle/10947/4080/CapDevIndicators_18%20Nov2015.pdf?sequence=1

2 <http://iea.cgiar.org/evaluation/evaluation-gender-research-and-cgiar-workplace-0>

Africa Harvest, will play special roles in disseminating the findings, to influence policy-makers, development practitioners and researchers in a wide range of organizations.

Indicators

Some of the indicators used in phase I will be monitored in phase II. The increased interaction in the last year of phase I will also generate new type of indicators from our organization and create opportunities for synergies and joint data collection.

Process indicators: Indicate the extent of integration of gender into R4D and extent of use of gender analysis results in determining priorities, technology design and recommendations.

1. Identification of target population (men and women, other social groups, vulnerable and marginalized groups), and establishment of targets for reduction in gender equality pertinent to adoption and use of innovations.
2. Representation of women beneficiaries in participatory technology evaluations and related activities, in proportion to their representation in the population.
3. Consideration of gender differences in defining and prioritizing research problem (e.g. grant proposals).
4. Mechanisms and protocols in place for consultation and participation of women and men in the design and implementation of the program, and in the dissemination of findings and lessons learned.
5. A gender-responsive monitoring and evaluation system is in place, including measurable indicators (to monitor change processes, outputs, and outcomes).
6. Mechanisms in place, and used, to draw on country- and program-level gender expertise; gender integration becomes more demand than supply led.

7. Budget and staffing levels appropriately reflect the strategy's activities and outputs; representation of women in program staff, especially where gender segregation requires women staff to work with women.
8. Capacity needs of staff and partners assessed to integrate gender in the R&D program.

Output indicators:

1. Improved understanding of how to respond to gender differences in resources, technology adoption rates and value-chain positions.
2. Improved capacity and skills of women farmers.
3. Improved nutrition and health of women and children.
4. Improved market opportunities and benefits for women from use of resources, skills and technologies.

More opportunities for women's meaningful

Gender research questions in the impact pathway. In March 2015, a gender integration workshop for product line leaders in the CRP GL initiated a conversation of how to design gender research questions, well aligned within the impact pathway outlined for achieving of intermediate development outcomes. Investigation of assumptions made in 'who' would change and the 'behavior' they would change for the delivery of the IDOs lead to 'unique gender research questions' for 3 product lines. Leaders of two product lines increased their support to gender research³ in their portfolio of activities since the workshop. We learnt that it is not enough to have the gender capacities and money allocated, but having a well outlined 'gender research question' in the program is key. When the research question is clear, the biophysical scientists become allies in supporting gender research. Action 1: In DCL we have matched the gender research focus in each of the flagships to a unique area of research interest. Flagship 1 hosts the gender cluster of activities [COA1.3] that will focus on strategic and crosscutting research questions of intersection of culture and norms and innovations in legumes and cereals; how best to engage the youth in agriculture; women's participation in agricultural capacity building in unique cultures and gainful engagement of women in value chains. Action 2: DCL proposes to develop a gender competency framework, a mechanism for supporting research teams in understanding basic concepts in gender research, skills and attitudes that facilitate a team in identifying clear and distinct gender research questions while developing proposals and research activities.

Prioritizing gender preferred traits. The CRP on GL and DC is heavy on trait discovery, developing of varieties and hybrids; highly specialized areas of biology and science. Integrating gender research into these very specialized areas of biology has not been easy. The bean program has provided a unique example. The social economics team investigated farmers ranking of production and post-harvest bean traits under varying production conditions of Kenya. The study identified a very strong correlation between the weight attached to cooking time of a bean and a variety's acceptability [Katungi et al.,

2015]⁴ , information that was looped back to the program scientist. Cooking time⁵, is a women preferred trait. It relates to the labour [time] and firewood [cost] resources needed in household food preparations; and having a significant reduction in these resources made the reduced cooking time emerge as a key driver of selection of varieties by both women and men. The bean program has initiated a gender responsive breeding program to identify the markers for 'cooking time trait' with the possibility that the cooking time trait could be transferred to various bean varieties, taking advantage of the accelerated breeding tools and genomics. **Action 3:** We have identified a postdoc fellow to go back into the PVS/breeding history in GL and DC data and document the traits that have been prioritized in breeding programs, the consideration that has been given to gender preferred traits in the varieties/hybrids that have been released over time; the challenges and opportunities, in both in GL and DC and update the literature on gender differentiated traits. This information, the methodologies that are used will be carried forward into DCL. **Action 4:** Flagship 2 on trait discovery has been designed to prioritize advancement of this conversation, offering a space for interaction between the gender scientists and breeders giving room for methodology development and outcomes that lead to more focus on gender responsive breeding programs. The gender and breeding-working group of the CGIAR will be a key stakeholder in this process.

3 Product line 1 [beans program] hired a postdoc with a fellowship from the CO Gender Action Plan and product line 5 [bio-pesticides in cowpeas] allocated funding for gender research activities in cowpeas value chain.

4 Enid Katungi¹, Enoch Kikulwe and Rosemary Emongor (2015). Analysis of farmers: Valuation of common bean attributes and preference heterogeneity under environmental stresses of Kenya. African Journal of Agriculture Research. Vol 10(30): 2889-2901. DOI: 10.5897/AJAR2014.8979

5 Other traits that have been mentioned in PVS include the snapping trait [in finger millet, that saves labour in harvesting], the wood thickness in pigeon pea plants [for use as firewood]

Gender Yield Gap assessments: The FAO and the Worldbank have documented the importance of being aware of the gender yield gap in agriculture. In CRP GL, we prioritized to assess the state of gender yield gaps in legume production, in CRP DS optimizing dairy value chains through gendered systems research (Najjar, 2014; Rischkovsky, 2015, El-Dine Hilali, 2015, 2013). We have a postdoc fellowship that is targeted in generating evidence on this area in legume farming systems, starting in 2016. The TLIII project has full time gender position with the objective of assessing gender gaps in their target geographies. **Action 6:** DCL will take evidence from the findings of the gender gap assessment activities to design interventions that give resources to women farmers in improvement of their livelihoods.

Sex disaggregation of data: Household level data has been collected in a number of household surveys in different agricultural livelihood systems by DS, and in both HOPE and TLI/TLII, bilateral projects mapped to CRP DC and GL respectively. CCAFS also has household level datasets. Using these datasets for analysis of gender gaps in legume/cereals productivity or modeling of gender scenarios in climate change has not been satisfactory. The main challenge has been in the way data collection was designed in those surveys; where gender analysis was not among the key determinants of the process followed.

Action 7: We propose to develop a standard recommendation on how to best collect household data that can be used for gender responsive analysis. This will be especially critical for FP1 where adoption, impact assessment and foresight modeling activities are implemented.

Youth in Dryland Agriculture: The future of dryland agriculture and the role that the young people play, how the future generation will be fed, are questions that are rising among the global priority. Almost 200million people in SSA are aged between 15 – 24; Africa currently has the youngest population in the world. This demographic dividend presents both a opportunities and challenges [AGRA, 2015] There are rapid changes taking place in today’s globalized world that is typified by migration, urbanization, technological innovations, increasing educational levels and aspirations, and the IT and social media revolution linking the young people to global information and change movements. On one hand, these changes are leading to new opportunities for better- paid and higher-status work outside agriculture that cream off some of the best talent among the rural young people. On the other hand, these changes also create unrealistic aspirations of a better life in the cities that entice other young people to escape their grueling and often unrewarding agricultural work, especially in the marginal drylands, only to find their dreams dashed. With the exit of these young people, the agricultural labor force is ageing in many countries, raising serious questions as to how future populations will be fed. These topics are currently studied by CRP DS in cooperation with YPARD in North Africa. **Action 8:** Based on DS youth strategy, effective youth oriented policies and innovative development strategies are needed to tap the potential of this young labour force and channel it productively, especially in the agriculture sector [AGRA 2015]. DCL has prioritized research on ‘how best to engage with the youth in dryland agriculture’ as an important component of the gender strategy.

Women and dryland cereals and legume seed systems. Most of the cereals and legume crops that are produced in the drylands are designated as ‘women crops’. These crops are oriented to household food provision; they are labour intensive in their production and processing processes. Informal systems of seed management and distribution that are mainly handled by women are therefore important avenues for new legume and cereals seed injection into the drylands. CRP DS has several successful projects (ICRAF,2015, ICARDA, 2015), where farmers learnt to supplement their income through seed production and sale for local varieties. Tanzania has a policy supporting the quality declared seed processes. **Action 9:** FP3 will prioritize testing of different models of working with women 5 [as farmers, women groups, entrepreneurs] in the distribution of dryland legume and cereals seeds.

Women participation: from women farmers to women scientists. Researchers working in the TLII under chickpea research and development programme in Ethiopia highlight that there is very low participation of women in training events organized by the program compared to men. This is despite the program instituting a policy that every male farmer would be required to attend training with the wife. Even then, a training of about 70 participants would have only 5-6 women; and yet the scientists would ‘see’ the women working on the chickpea fields [Ojiewo, 2015: Personal communication]⁶ Women’s attendance in scientific meetings, even in the CRP, is always low. There is a possibility that the pool of women in the CRPs is small. As shown in DS research, this could also be related to social norms in the farming communities as well as in the scientific communities. Once social norms are addressed, women can be integrated in research in very gender- differentiated societies (CIP, 2016). Social norms are difficult topics for even well designed household surveys to explore effectively. Social norms of gender are in constant dialogue with women’s agency and may determine women’s capacity to act, participate and get involved in the agricultural continuum from farmers to scientists. **Action 10:** DCL will prioritize supporting women’s gainful engagement as well as capacity development along the cereals and legumes value chains – from farmers to scientists continuum.

There are examples of change in women participation in the American Society for Microbiology (ASM) General Meeting⁷. In 2015, they achieved gender equity, with 48.5% of the oral presentations being given by women. The mechanisms associated with increased female participation were (i) making the Program Committee aware of gender statistics, (ii) increasing female representation among session convener teams, and (iii) direct instruction to try to avoid 'all-male' sessions. The DS Gender Working Group carried out a series of norms studies regarding gender relations, women and youth in agriculture in 2015. The GL gender research team designed a qualitative study to investigate the culture, the norms and practices that lead to low participation of Ethiopian Women farmers in field based extension and capacity building trainings. **Action 10:** DCL will prioritize supporting women's gainful engagement as well as capacity development along the cereals and legumes value chains – from farmers to scientists continuum.

The **policy to integrate and support gender research** in the CGIAR programs culminated in hiring of gender researchers into the CRPs in the 1st phase and in the extension phase was a hallmark in changing the scientist constitution in the CGIAR since 2012. There was an allocation of an annual budget that was ring-fenced to support gender research in the CRP financing plan. **Action 11:** DCL will continue in supporting this policy [staff and budget] capacities for gender research are much better, there are now scientist/senior scientists as well as postdocs in most of the centres that are contributing to the DCL implementation, raising the bar for gender research higher in DCL than in the phase 1 CRPs.

Building on earlier work of CRP DS, DCL gender research prioritizes a **socio-ecological systems approach** to understand the social power web and its interaction with ecological elements of the system as well as the impact of agricultural development interventions in shaping rural food security and agricultural livelihoods. The systems approach is used to

6 Njuguna, EM., Liani, M., Beyenne, M., 2016: Cultural norms and practices influencing the Ethiopian women's participation in agricultural training and capacity development.

7 Casadevall A. 2015. Achieving speaker gender equity at the American Society for Microbiology General Meeting. *mBio* 6(4):e01146-15. doi:10.1128/mBio.01146-15

identify agriculture-related socio-economic factors and mechanisms needed to be managed for improving food and livelihood outcomes. This socio-ecological systems approach acknowledges the coherent interrelationships between biophysical and socio-economic systems that controls the functions and performance of agricultural livelihood systems in terms of total productivity, profitability, ecosystem services integrity and social equity. Change to ensure that women, men and youth in farming communities can benefit from research will happen through an understanding of what impact up-scaling of research products (technologies) have on the ground, on the socio-economic fabric and ecological situation of the targeted agricultural livelihood system on all stakeholders. The understanding of these effects and of the dynamics and feedback loops triggered by research interventions will allow stakeholders to see opportunities and adapt their behaviour. **Action 12:** FP5 will jointly with FP1 and other FPs research on social power web and its interaction with ecological elements of the system, on

gender interests in systems trade off analysis and on gendered impacts on household income, nutrition, ecological environment and general wellbeing.

DCL Gender in the M&E strategy

The plan for M&E of the Gender Strategy will be nested within the overall DCL M&E strategy, and will also draw on and be consistent with the CGIAR's indicators listed in the reporting requirements for the CRPs' Annual Reports. A participatory gender-explicit monitoring and evaluation framework will be implemented as result of phase I CRPs. There is a marked increase in appreciation of the existing M&E teams to embrace Gender indicators in the M&E frameworks. The framework integrates local and gender-specific indicators for monitoring of outcomes. Monitoring focuses not only on equality of treatment for women and men, but also ensuring that the intervention outcomes provide benefits for both women and men in an equitable way. To ensure this, all data from intervention activities, and M&E processes are disaggregated by gender and analyzed, provide feedback lessons for better mainstreaming of gender into the activities, programming and implementation process of the CRP as well as inform policy makers.

M&E framework

The DCL M&E team will work with gender experts to adapt a performance-measurement framework that identifies and integrates gender-specific, measurable indicators relevant for research and development interventions. Specifically DCL will work closely with the Gender Working Group established by DS, and WLE, CCAFS, Livestock and FTA having established a gender group with joint staff with those CRPs. In this regard, the common gender-sensitive indicators developed by the M&E committee of the CG Gender Network, the ones for the Gender Performance Fund prepared by the Consortium office and the latest indicators⁸ proposed by the CapDev COP will be used wherever relevant.

⁸[https://library.cgiar.org/bitstream/handle/10947/4080/CapDevIndicators_18 %20Nov2015.pdf?sequence=1](https://library.cgiar.org/bitstream/handle/10947/4080/CapDevIndicators_18%20Nov2015.pdf?sequence=1)

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Annex 3.4 Gender analysis and priority setting in FISH

This section presents the gender analysis that informed and shaped FISH priority setting and research design. It draws in particular on learning from L&F and AAS CRPs in FISH focal and scaling countries.

Sustainable aquaculture [FP1]

Women's involvement in small-scale aquaculture production helps increase productivity (Jahan et al. 2010) and fish consumption within the household (Heck and Béné 2007; Jahan et al. 2010; Kawarazuka and Béné 2010). Yet women's participation in small-scale aquaculture production is low compared to men (Jahan et al. 2015). Lack of access to and control over key assets such as land or ponds (Veliu 2009; Ndanga et al. 2013), capital, skills, technologies, and extension services (Puskur and Pant 2015) limit women's engagement. Moreover, social norms and power relations shape—and limit—women's adoption and use of aquaculture knowledge, technologies and practices through extension (Farnworth 2015; Morgan et al. 2016). Therefore the program will identify and test innovative strategies to increase women's engagement in small-scale aquaculture production by addressing these barriers.

Women receive lower returns and are disproportionately represented in less-profitable nodes of aquaculture value chains (Kruijssen et al. 2013). Driving factors identified to date include the following:

- women's limited access to credit (Bene and Merten 2008; Kruijssen et al. 2013; Ndanga et al. 2013)
- women's limited aquaculture skills, land and technologies (Veliu 2009; Weeratunge et al. 2012; Ndanga et al. 2013)
- harassment in the marketplace (Kantor and Kruijssen 2014)
- mobility restrictions (Morgan et al. 2016)
- time and labor burdens doing unpaid work (Shirajee et al. 2010)
- socialization towards income generation in less-profitable activities (Weeratunge et al. 2012).

Women also display lower levels of entrepreneurship than men and more frequently abandon entrepreneurial ventures (Weeratunge et al. 2012). Thus, the program will focus on refining and testing factors, models and strategies by which poor women can equitably participate in and benefit from the entrepreneurial and employment opportunities presented by aquaculture.

Finally, program scoping has identified two important areas not addressed in L&F: assessment of gendered preferences and needs; and gendered impacts of genetically improved fish, fish feeds and disease prevention practices. Insights in these areas are needed so that fish breeding, feeds and disease innovations equitably meet the needs of both women and men. The FISH CRP will therefore prioritize these areas in flagship 1.

Sustaining small-scale fisheries [FP2]

Decision-making in small-scale fisheries governance tends to be widely gender-imbalanced (Hilly 2012; Schwarz et al. 2014; Cohen and Steenberg 2015; Cole et al. 2015; Rajaratnam et al. 2015), with men dominating resource decisionmaking and men's priorities more strongly reflected in resource-management strategies (Weeratunge et al. 2012; Kruijssen et al. 2013). Gender norms and power relations underpin these imbalances, shaping women's relatively low agency in determining their time spent on and involvement in activities inside and outside their homes (Weeratunge et al. 2012; Cole et al. 2015; Rajaratnam et al. 2015). Without fundamental changes to norms and power relations, improvements in governance and gender mainstreaming (Hilly et al. 2011) are unlikely to be sustained and may be only partially effective in addressing gender biases in representation and distribution of authority in decision-making. To combat this issue, the FISH CRP prioritizes research on strategies for enhancing effective participation of women in fisheries and natural resources management and governance, including identifying and testing novel ways to increase gender-equitable engagement in decision-making. This ensures that both visible and underlying factors shaping participation are addressed.

There are substantial gender inequities in access to and control of natural resources, including land and many aquatic resources (Weeratunge et al. 2012; Burnley et al. 2014; Kwashimbisa and Puskur 2014; Cole et al. 2015; Rajaratnam et al. 2015). Addressing these inequities requires understanding of (1) which assets are most beneficial to women and men to support their individual and joint livelihood security; and (2) why gender asset gaps exist (Weeratunge et al. 2012). The first research area was not pursued in AAS or L&F, and will be addressed in FISH. Investigation of the second focal area through AAS elucidated the potent roles of gender and social norms in shaping access, innovation and poverty outcomes (Cole et al. 2015; Rajaratnam et al. 2015). Furthermore, gender analysis indicated that strengthening fisheries conservation risks negatively affecting the livelihoods of poor women most dependent on these resources (Schwarz et al. 2014). In response, assessing strategies for win-win scenarios for women's livelihoods and ecological outcomes will be a priority for FISH. This includes testing the innovative, gender-transformative approach to microfinance piloted in AAS that applies gender-transformative strategies to overcome barriers to women's control over savings and create potential investment for alternative livelihoods.

Enhancing the contribution of fish to nutrition and health of the poor [FP3]

In Bangladesh, the relatively poor fit of small fish-harvesting technologies with women's needs was identified as an obstacle to women's involvement in homestead fish farming (Morgan et al. 2015). Early findings from pre-tests of women-targeted technologies indicate that they warrant full investigation. Moreover, AAS analysis signaled the need for research to address women's time and labor burdens in small-scale aquaculture (Weeratunge et al. 2012). In response, FP3 will focus on developing and testing women-targeted technologies and test labor- and time-effective strategies to enable women to raise and harvest small fish.

L&F identified significant sex-disaggregated data gaps in existing fish value chain literature, including extent of participation and costs and benefits of engagement, as well as a need for further understanding of policy and informal factors that result in gendered inclusions or exclusions. L&F found that women were concentrated in postharvest aspects of value chains (Macfadyen et al. 2011; Weeratunge et al. 2012), meaning that the estimated 27% postharvest losses in fisheries (Kelleher 2005)

have a negative effect on women's incomes. Moreover, preliminary action research signaled that when a postharvest innovation is introduced and external partnership is involved, men's interest in postharvest roles increases. This suggests that women's postharvest roles must be protected for innovations to have positive gender impacts. The FISH CRP will generate sex-disaggregated data across fish value chains and evaluate factors that result in gendered exclusion or inclusion. As detailed for each FP in section 2, the program will identify and assess opportunities to protect and expand women's engagement in and benefits from fish value chains, including women-targeted processing techniques and fish-based product opportunities.

The global recognition of the importance of fish in nutrition for children and pregnant and lactating women has not translated into increases in consumption in many social and economic contexts (Thilsted 2012). Preliminary evidence from both Asia and Africa indicates that withholding animal-source foods from women and children is fairly common (Gittelsohn and Vastine 2003; Nguyen et al. 2013). Consumption of fish depends on household decisions about child feeding practices and intra-household distribution of food (Puskur and Thilsted 2012), which are influenced by norms, attitudes and perceptions about appropriateness of fish for particular groups. Improving women's involvement in household decisions, including about intra-household food distribution, can result in higher levels of empowerment (Weeratunge et al. 2012). In response, the FISH CRP will undertake novel research into potential for scalable gender-transformative strategies to catalyze integrated behavior shifts in gender and social norms, women's empowerment, and intra-household food distribution.

Operationalization of gender in FISH

Gender research will be integrated in the research agenda for each flagship, supported by a cross-cutting team coordinated by the Gender Research Lead. This section presents the aims, organization, operationalization and indicators for M&E.

Aims The overall aims of the gender research team in the program are to do the following:

- Apply and support gender analysis to shape the priorities, agenda and design of the CRP and each of the three flagships.
- As a part of each flagship, undertake cutting-edge strategic gender research leading to the identified products and outcomes in each of the three flagships.
- Support all FISH research so that it is effectively gender-inclusive and gender-integrated, including through sex-disaggregated, intersectional analysis, as appropriate.
- Identify, develop and empirically test needed methods for gender research, in particular for assessing transformative change and women's empowerment.
- Contribute to systemic gender changes via gender capacity building for and with researchers and local to international partners, including young female scientists.
- Contribute to the continued development of gender in CGIAR through scientific and collaborative engagement in the CGIAR Collaborative Platform for Gender Research.

Organization

The gender team will be comprised of the Gender Research Lead (Senior Scientist at WorldFish), a team of gender researchers in all FP countries and headquarters, and a wider FISH gender community of practice (CoP), engaging an interdisciplinary group of scientists and partners. The Gender Research Lead will engage closely with the FISH Independent Steering Committee to ensure science quality and depth and breadth of gender in FISH research. The team will communicate and collaborate with gender researchers in other CRPs around emerging areas of interest, in particular on synergies between the entrepreneurial work in Livestock on animal feeds and the planned work in FISH on aquafeeds. It will contribute to and benefit from engagement in the new Gender Platform, including around methodological development and strategies for effective gender integration in CRPs. Further, it will contribute to and benefit from the CGIAR investment in gender through the Consortium's PostDoctoral Fellow Program, focusing on building the capacity of emerging scientists from developing countries.

Operationalization

Building on the success of the gender approach in L&F and AAS, the gender team will be organized towards the achievement of its goals by developing and implementing a road map for effective integration and implementation of gender research in FISH. The road map will be based on a collaborative process of visioning, goal-setting and action planning across key areas, including capacity development, research quality, outputs and M&E. This process will involve gender team and CoP researchers, as well as the FISH management committee and partners. The road map will be revisited and updated each year as part of ongoing M&E, catalyzing learning about progress and strengths, weaknesses or gaps, challenges, and opportunities, thus enabling iterative improvement in the planning and implementation of gender research (see also Annex 3.6).

As part of research activity planning in FISH, flagship research teams will involve gender researchers to consider in what way and to what extent gender is relevant to their research and integral to achieving the research aims. Researchers will jointly establish how the research will be gender-integrated, if there will be strategic gender research, and/or if gendertransformative strategies are required or should be tested. These are distinguished as follows:

- Gender-integrated research is defined by CGIAR as research that integrates consideration of gender into technical research of the principal topic of study; for example, plant breeding, aquaculture, postharvest technology development or systems intensification (CGIAR 2015). Note that the FISH CRP will aim to be intersectional in its approach to gender; i.e. addressing cross-cutting differences such as age, wealth, livelihood groups, caste or ethnicity, rather than simply distinguishing men vs. women.
- Strategic gender research is defined by CGIAR as research that studies gender as the primary topic in a social analysis designed to understand what the implications of gender are for agriculture; for example, how men and women allocate labor resources in intra-household decision-making about farm production (CGIAR 2015).
- A gender-transformative approach to research is an approach that “can be applied within research to examine, question and, most fundamentally, enable changes in inequitable gender norms, attitudes, behaviors and practices and the related imbalances of power (IGWG 2010). Through encouraging critical awareness among men and women of social inequality and

practices, [gender-transformative approaches] help people challenge and re-shape distribution of and control over resources, allocation of duties between men and women, and access to and influence in decision making (Caro 2009). They also enable men and boys to question the effects of harmful masculinity, not only on women, but also on men themselves” (Meng 2015, 1 in McDougall et al. 2015, 42).

In terms of research processes and methods, all types of FISH research will be gender-inclusive (i.e. applying tested and innovative strategies, methods and tools to ensure that women and men have equitable opportunity for, quality of engagement in, and returns from participation in FISH research processes).

In conjunction with the above, the gender team will organize integration and collaboration between various activities for the sake of coherence and synergies and spearhead synthesis of gender research across activities, generating international public goods as a result. Moreover, the gender team—together with the FISH flagships and management committee—will work with research teams to identify and address gender-related capacity development processes and initiatives. These will include in-house processes such as iterative reflection processes and mentoring, as well as externally led capacity development such as trainings and workshops. This will dovetail with the CGIAR Gender Platform capacity development agenda.

Monitoring and evaluation

As noted above, M&E for learning in relation to gender takes place annually through a systematic review based on the gender road map. The Gender Research Lead will partner with the M&E Lead to quantitatively track indicators of progress. The proposed M&E framework is in Table 1 below. These indicators focus on the proportion of activities that are gender-integrated and gender-strategic, on research products that reflect gender, and on gender capacity development. The evaluation of gender-related development outcomes is addressed as part of the broader resultsbased management approach in Annex 3.6.

Table 1. Indicators for monitoring and evaluation of FISH gender research integration, outputs and outcomes.

Focus of M&E	Indicators	Source	Timing
Gender integration in FISH research and capacity building	Percentage of activities that are gender-integrated; i.e. with sex-disaggregated data and analysis	Activity progress reports	Annual
	Percentage of activities that are gender-strategic; i.e. express gender within problem statement and research design and include gender-focused research questions or activities, including those targeting women or girls	Activity progress reports	Annual
	Number of female and male staff, partners, and local women and men who participated in trainings focused on gender, women or girls	Activity progress reports	Annual
	Extent to which gender plans and goals for gender integration, strategic gender research and gender-transformative research, as expressed in gender road map, are implemented and met	Participatory review of gender road map	Annual
	Extent to which gender plans and goals for capacity development expressed in gender road map are implemented and met	Participatory review of gender road map	Annual
Research products (outputs)	Percentage of outputs (peer-reviewed journal articles and in-house publications) presenting gendered analysis (i.e. sex-disaggregated data and analysis)	Activity progress reports	Annual
Research outcomes	Application of FISH gender findings, learning and insights in partner programming	Partner reports	3 years
Development outcomes	Reduction in gender gap in control over productive assets and resources (Sub-IDO XC 2.1.1)	Program impact assessments and evaluation reports	5 years
	Improved capacity of women and young people to participate in decision-making (Sub-IDO XC 2.1.3)	Program impact assessments and evaluation reports	5 years

Annex 3.4 Gender strategy

Synthesis of gender analyses and contribution to Phase II priority setting

The first phase of the CGIAR Research Program Forests, Trees and Agroforestry had a robust institutional architecture in place very early for gender mainstreaming. The CRP Gender Strategy produced in 2013 was one of the first to be approved by the ISPC and the Consortium office. Subsequently, a Gender Integration Team (GIT) representing the four participating Centers was created to ensure the implementation of the strategy and lead gender integration efforts across component flagships.

Gender research led by FTA focal points in Phase I generated substantive gender-relevant knowledge, research outputs and insights that enhanced understandings of key institutional, cultural and attitudinal elements that influence gender inequality and hinder sustainable management of forest and tree resources. FTA focal points at the same time provided sustained, tailored support to flagship science collaborators and partners across participating centers in the research program.

In 2013, four cross-country^{1,2,3,4}, comparative studies set baselines for research in three major flagship areas (climate mitigation/REDD+, NTFP value chains, and forest use and management). The studies illustrated how gender disparities in information, credit and institutional design (e.g. elections as mechanisms for selecting forest committee members) constrain women's participation in decision-making as well as in benefits capture. The findings and learning from these studies inform the gender research questions developed in Flagships 3 and 5.

Analysis of data by Coleman and Mwangi (2013) across 10 countries in Africa, Asia and Latin America shows that a history of women's participation, especially when women are seated on forest councils or attain leadership positions, is highly correlated with less disruptive conflict. The study substantiates earlier research on forest user groups in South Asia. Building on these findings, research in Phase II will study different approaches to forest management, the institutional arrangements that promote meaningful participation of both men and women, and their impact on smallholder livelihoods at the forest margin.

Ethnographic research in Southeast Asia and sub-Saharan Africa by gender scientists in FTA also documented the highly uneven effects of agribusiness expansion on women's and men's relative capabilities, access to land and capital, and employment prospects in Indonesia⁵. This, among other findings, supported the creation of a broad research theme within Flagship 5 that focuses on socially inclusive and gender responsive business model development. Other research in South Asia has explored how migration influences forest governance and decision actors, shedding light on the implications of migration and multi-local livelihoods on women and men in forested landscapes⁶. Moving forward in Phase II, these insights will guide and shape directions for further research on migration and gendered livelihoods in forested landscapes in this region.

As part of the cross-CRP global comparative study 'Genovate'⁷, an FTA-led case study on gender norms and agency shaping forest and tree management processes in Kyrgyzstan showed that barriers to

informal sharing of knowledge across and within gender groups, coupled with men's overreliance on a poorly functioning formal extension system, critically inhibit the dissemination of innovation in natural resource management. Results from the study contrasted with those arising from two similar case studies in Vietnam, another post-socialist context, where highly dynamic informal knowledge-sharing systems were observed. These findings are prompting renewed attention to strengthening informal and formal systems for knowledge sharing in Phase II. Other research that focused on community forestry in Mesoamerica threw light on the potential risk for forest user associations whose members are aging and that lack a succession plan as part of community planning processes. Similar research in Kyrgyzstan revealed the important role age plays in shaping access to 'rented' forest lands – given the shortage of land available to newly married 2 couples. Phase II research will build on these findings to further explore how young women and men can be supported to pursue sustainable livelihoods and participate in joint forest management.

Innovative gender research approaches and participatory methods developed and tested in Phase I brought into sharp focus the highly differentiated nature of knowledge, management and preferences for forest genetic resources across different sex and age groups. One example is the application of agent-based models and role-playing games in the study of gendered behavior in land use decisions and analysis of gendered dynamics that shape the multi-functionality of landscapes. Flagship 4 will deepen the understanding of these dynamics in CoA 4.4 using participatory land use planning methods that support effective and inclusive negotiations in multifunctional landscapes, thus ensuring representation of women and young people.

Innovative participatory methods were also used to enrich a quantitative impact evaluation of Nepalese home gardens with in-depth qualitative analysis comprising detailed contextual analyses, focus group discussions and life histories of women and men from marginalized communities. Mixing methods brought into relief the specific experiences of different gender, age, ethnic or socioeconomic groups and the unexpected outcomes as well as processes of empowerment that were achieved. The approach will influence impact assessments in FTA Phase II research.

In Uganda and Nicaragua, FTA researchers employed a participatory research tool, Adaptive Collaborative Management (ACM)⁸, to work with local communities to jointly identify and address barriers to gender inclusive participation in decision-making. The approach helped to generate new spaces for women to participate and build understanding between women and men from different socioeconomic backgrounds about the benefits of inclusiveness in forest management. The project has also increased women's confidence, while improving men's attitudes toward women's leadership. As a consequence, women have benefitted from greater opportunities to plant their preferred trees (including taboo ones) on farms that they now have secure tenure over. This approach will be adapted for future work on joint forest management in Phase II.

A FTA-supported gender research fellowship program facilitated the design and testing of a harmonized participatory research approach for studying social inclusion across multiple countries. In five countries, working in groups segregated by gender, age and in some cases ethnicity created an opportunity to share knowledge across groups, promote inter-group understanding and respect, confidence among women and marginalized groups, and research quality. This approach will be scaled out in the second phase of the CRP.

Efforts to develop gender analytical capacities in relevant forestry and agroforestry research programs and projects during the last four years of CRP implementation yielded substantive results: at least 180 scientists and partners were trained in gender concepts and research methods, and more than 20 toolkits and guidelines for gender sensitive research have been developed.

In addition, robust communication products developed by the gender team contributed significantly to communicating FTA gender research in language and formats accessible to a wide range of stakeholders at various levels. One example was a CIFOR-led collaboration with thirteen different organizations, including UN bodies and international non-governmental organizations, for the compilation and dissemination of a series of briefing notes showcasing FTA collective contributions to promoting gender equality in climate change during COP2015 in Paris.

The second phase of the CRP will build on the capacities developed and lessons learned through the gender mainstreaming process, and will broaden its focus to areas that had not been developed in Phase I. This will include: moving forward from the traditional understanding of gender issues, incorporating the latest thinking on gender and development in capacity-building efforts, creating learning and knowledge-sharing platforms, and supporting the integration of gender dimensions in monitoring and evaluation frameworks. Related activities and expected results are referred to in the 3 gender research strategy section of the proposal (see Annex 3.15 for more information about the Support Platform and its work with gender).

The results, experiences and capacities built from engagement in these early research and knowledge generation activities in Phase I have crucially informed research priority setting and the thrust of the gender research strategy for Phase II, setting critical baselines for strategic research that will directly contribute to the gender IDO and sub-IDOs.

Overview of gender operationalization in research agenda in Phase II FTA agri-food systems research

The gender strategy for FTA includes a strand to support gender integration and strategic research across component flagships, and a complementary strand that will continue to focus on gender mainstreaming and coordination efforts across the flagships. The operationalization of gender dimensions within each flagship narrative is summarized below and described in greater detail within each flagship narrative.

Flagship 1 – Genetic Resources for Production and Resilience: Gender aspects of tree germplasm production and delivery will be addressed by exploring the preferences of men, women and other social groups with respect to tree species and traits for conservation, domestication and utilization as well as inclusive and gender responsive delivery systems.

Flagship 2 – Enhancing trees and forest contribution to smallholder livelihoods: Research will identify gender-specific contexts underpinning decisions and choices over trees, crops, livestock and other livelihood components at the household and community levels. Approaches will be tested to lift barriers impeding the participation of women and marginalized groups in community forestry so as to promote more inclusive joint forest management.

Flagship 3 – Sustainable Global Value Chains and Investments: Gender research will be operationalized in Phase II through assessments of the gendered implications of cash-crop expansion and various private commitments, such as zero-deforestation and product certification schemes. Research will also focus on

analysis of appropriate tools and methodologies that promote inclusive and equitable business models and value chains, highlighting benefit-sharing mechanisms relevant to gender, age and ethnicity aspects, and their use for ensuring sustainable forest development.

Flagship 4 – Landscape Dynamics, Productivity and Resilience: Research will explore gender-specific decisions and influences over changes in land-use patterns; and the heuristics that men and women use in regards to their livelihoods, and how these relate to their expectations of landscape functions. Research in this Flagship will deepen understanding of contexts underpinning men’s and women’s choices in relation to external drivers/actors shaping decisions over land use and landscape management.

Flagship 5 – Climate change mitigation/adaptation opportunities in forests & agroforestry: Research in the new Cluster of Activities on forests and energy will address gender aspects of producing, transporting and dealing with wood energy, and will investigate the differential impacts of emissions reduction in schemes that prioritize the role of men and women, and indigenous and marginalized communities in forest management. There will also be a continued focus on developing recommendations for gender sensitive Nationally Appropriate Mitigation Actions (NAMAs) and policy making on REDD+. Strong collaboration with CCAFS is envisaged to identify trends in men’s and women’s use of forests and trees to support gender-sensitive climate-smart agricultural (CSA) practices.

Monitoring progress, measuring results

Monitoring will be done on two levels, (i) gender integration in research and action across flagship portfolios, and (ii) contribution of strategic gender research to transformative outcomes on equity and inclusion in particular flagships.

In (i), the Gender Equality in Research Scale (GEIRS) will be used to monitor and track gender integration in relevant flagship projects. GEIRS is based on a set of minimum standards for gender integration that should be applied in all projects assessed as relevant from a gender perspective. Application of the tool will facilitate systematic assessment of the application of gender analyses and collection of sex-disaggregated data, and will also identify projects that will require support from the GIT.

In (ii), the GIT will work closely with the Monitoring and Impact Assessment team to conduct impact studies on selected projects. Selected studies will examine gender-differentiated impacts and gender relations in forests and agroforestry landscapes. The focus of the studies will be twofold: i) to identify which specific types of interventions support or foster greater equality between men and women of different ages and sociocultural backgrounds in forests and agroforestry landscapes; and ii) to monitor progress and contributions toward sub-IDOs 1 and 3.

Target beneficiary populations

Gender research and capacity development efforts are integrally connected to research work in and across component flagships. Thus, target beneficiary populations for gender research and capacity development will be the men, women and other social groups in the selected geographies in which flagship research clusters of activities will be conducted. These particular geographies are well aligned with the site integration strategy developed by the CGIAR consortium.

Budget

On an overall basis, FTA intends to spend at least 10 percent of its resources on Gender, though the levels of investments may vary across various FPs (see FP budget narratives). With the current budget planning, Gender represents 12 percent of the whole CRP budget (excluding management costs)

Livestock Agri-Food Systems

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Annex 3.3 Gender annex

Gender-informed research priority setting and delivery can contribute to inclusion and equity among the women, men and young people involved in livestock-related livelihoods. The Livestock and Fish CRP made headway in integrating gender analysis into the development of livestock-related technologies, in studying key gender-based constraints and opportunities related to livestock and animal-source food consumption, in studying gender-transformative approaches, and in enhancing the capacity for gender research of CRP partners. These efforts were guided by the Livestock and Fish CRP Gender Strategy, which is the basis for the proposed Livestock CRP's gender research and capacity development. However, it will be revised and updated at an early stage. A key challenge for the proposed program is to continue deepening and embedding gender analysis throughout its research, so that gender-responsive research and interventions become the norm. This requires institutional change and continued capacity development among gender and non-gender scientists, with partners, and in CRP management. This annex sketches how gender analysis has informed the proposed program's priorities and how gender research will be organized and implemented across the CRP—and how it will be institutionalized.

Livestock Genetics

This flagship will assess species and breed preferences in relation to gender norms, and factor in gender dimensions to genetic improvement approaches and delivery mechanisms, building on Livestock and Fish CRP findings (Marshall et al., 2014; Ojango and Mora, 2015; Waithanji et al., 2015). Other studies show the gendered importance of this flagship's priority species: chicken and small ruminants to women's livelihoods in Ethiopia (Zahra et al., 2014); dairy for both women and men in Tanzania (Njuki and Sanginga, 2013); goats for women in Kenya (Waithanji et al., 2015); and pigs for women in Uganda (Ouma et al., 2014). In value chains where this research has not yet been conducted, the proposed program will systematically integrate gender into the process of selecting species and determining breed preferences. Gender dimensions will be integral to the process of genetic improvement and delivery, including: ensuring the participation of women and men livestock keepers in defining genetic improvement strategies; ensuring that the genetic technologies provided are relevant to women and men; ensuring gender-equitable access to genetic technologies and associated information; and addressing issues of control over genetic technologies (in collaboration with the livelihoods flagship). Phase 2 will also explore gender norms affecting, for example, participation in breeding initiatives, and adoption of or access to, genetic technologies—a research area that was not addressed in the Livestock and Fish CRP.

Livestock Health

Gender-integrated research in the Livestock and Fish CRP corroborated the directions in which this flagship was moving and helped identify crucial entry points to address inequalities. Thus, gender analysis is increasingly being incorporated into the evaluation of animal health needs and delivery options. Women and men may have different priorities for vaccine adoption and both vaccine adoption and the impact of diseases may be gendered, as was demonstrated in a study on the gender and socio-economic factors affecting the adoption of contagious bovine pleuropneumonia vaccine (Waithangi et al., 2015). Gender implications with regard to emerging drug resistance will be further investigated in the proposed program, building on Livestock and Fish CRP studies on: the dynamic nature of gender roles and relations in pig management and implications for effective African Swine Fever protocols (Dione and Ochago 2015); and, on analysis of the gendered impacts of the infection and treatment method of immunization against East Coast fever (Kiara and Teufel, In preparation). A salient focus for gender-integrated research for this flagship lies in the new area of herd health and management, which provides opportunities for gains in equity as well as productivity. Herd health research in this flagship focuses on the human component—the management aspects of animal health. Now is our opportunity to capitalize on this focus by adopting 277 and developing herd health packages based on gender and social analyses, so that they respond to the preferences, opportunities and constraints of women, men and young people.

Livestock Feeds and Forages

Gender dynamics and norms affect the choice of feeds and forages—and of full-purpose crops. These preferences in turn influence what feeding practices and technologies livestock keeping households adopt. In the Livestock and Fish CRP, these gender dimensions were integrated into a key diagnostic tool for this flagship called FEAST, which underwent pilot-tests in Ethiopia and Tanzania (Lukuyu et al., 2015). In the proposed program, gender dimensions will continue to be integrated into diagnostic tools for the site-specific selection of feeds and forages recognizing that women and men control different livestock species (Njuki and Sanginga, 2013), which entail different forage needs. The proposed program will discern and respond to gendered forage and feed needs by systematically adopting gender-sensitive participatory methodologies, which have proven to successfully elicit gendered preferences (Galiè, 2012). They will be included in innovation systems in three livestock CRP sites. Research on the effect of gender-specific forage systems on household food security (Galiè et al., 2015), will be further pursued and we will assess gendered variety preferences as affected by labour allocation and gender norms, together with the opportunities and constraints affecting variety adoption and cultivation. Finally, gender analysis will be systematically integrated into the process from trait prioritization to seed delivery. This includes seed delivery systems and seed governance frameworks, which both affect access to and control over seed technologies at intra-household level (Kerr, 2013; Galiè, 2013). We will continue to explore the empowerment potential and limitations of inclusive seed development (Song and Vernooij, 2010; Galiè, 2013).

Livestock and the Environment

This flagship merges the environment and livestock agendas, building particularly on gender evidence from the WLE (Huyer et al., 2015) and CCAFS (Twyman et al., 2014) CRPs, but with a specific focus on livestock. Gender research in this flagship will explore both the gendered roles that affect the mitigating impacts of livestock production on the environment and the gendered impacts of climate change on resilience. We will draw on the growing body of literature and evidence within CGIAR on gender and climate change in agriculture. We will assess gendered relations and constraints in environmental management, seeking to ensure that women and men of all ages have access to relevant strategies that enhance the environmental sustainability of livestock systems, and to increase adoption of these strategies. The impact of environmental degradation on gender relations will be studied, building on ongoing research (Tavener and Galiè, in preparation). The flagship has a strong focus on women as target beneficiaries, but more comprehensive gender analysis is still needed. Promising issues to explore include gender-based opportunities and constraints in adopting mitigation strategies, the impact of environmental degradation on gender relations and the income generation opportunities emerging with payments for environmental services.

Livestock Livelihoods and Agri-Food Systems

This is the integrating flagship for the CRP and the home to the gender and social equity cluster of activities. As such, gender is embedded throughout its activities, which demonstrates a program-wide shift in orientation to plan, design and deliver technologies to gender-differentiated users. Systems analysis for priority setting and scaling up integrates gender as comprehensively as possible in order to inform research priorities across the CRP and support gender-responsive delivery and interventions. Commitment to gender integration in systems analysis and targeting, while based in the Livestock Livelihoods and Agri-Food Systems Flagship, illustrates heightened level of effort program-wide towards strengthening the potential to deliver gender-responsive results. This work draws on ongoing research on gender-sensitive geographical targeting (Pfeifer, 2015) and gender- differentiated best-bet evaluation (van Wijk, 2015). Research on nutrition will look specifically at the nexus between women's empowerment and intra-household nutrition, drawing on studies undertaken through the Livestock and Fish CRP. This is a relatively new research area, which will expand. Gender research in the value chain clusters will examine how different species contribute to different and gendered pathways out of poverty, as well as examine gender dimensions of the policies, markets and institutions that affect the performance of value chains. It is here that we connect gender norms at household level with the broader social arena, where these norms are reproduced and reinforced. To explore how institutional frameworks produce and reinforce gender norms, we will continue the gender-integrated value chain research begun in the Livestock and Fish CRP, which focused on designing and implementing dairy and pig hubs (Rao et al., 2015; Basu et al., 2015), on hub sustainability (Baltenweck et al., 2015), on innovation platforms and on the development of a methodological framework for collection and analysis of producer level sex-disaggregated value chain data (Poole et al., 2015).

Operationalizing gender in the CRP agenda

The Livestock and Fish CRP saw a surge of interest gender-integrated research, particularly in its final two years, in part due to support for a coordinated set of gender-integrated research activities that strengthened the capacity of many researchers in this area. Acknowledgement that gender analysis

improves the quality of technical research and its delivery was a key outcome. During preparations for this program, it became apparent that integrating gender analysis into research projects does not necessarily lead to fully embedded gender analysis informing all CRP research. Operationalising the gender strategy implies a process of institutionalization that requires a combination of program-wide and interlocking elements, as outlined below.

Gender representation in the management committee. To institutionalize gender in all aspects of the program, a Gender Coordinator will be a part of the program management committee. The Gender Coordinator's role is not to police decisions but rather to participate in making them. This embeds a gender perspective in management decision-making processes and planning. The Gender Coordinator will track and guide gender research budgeting and implementation, including the development of more precise gender guidelines. Further, the Gender Coordinator will review research proposals and outputs for science quality in relation to gender dimensions. The Gender Coordinator will also provide quality control in terms of reviewing the programs results-based management systems to ensure relevant gender indicators are in place.

Capacity development of non-gender scientists. Livestock and Fish CRP investment in building the capacity of non-gender scientists to integrate gender into technical, systems and value chain research included gender coaching for scientists working on gender-integrated technical research projects. These initiatives demonstrate both the commitment of CRP management to invest in gender integration and the growing interest of researchers to undertake gender-informed research. As a result, a cadre of gender-sensitive technical researchers are available to the proposed program. Building on this 'proof of concept', gender integration coaching will be adopted by the new livestock CRP, possibly with a joint gender/capacity development staff member leading the initiative. In addition, a seminar series on gender research for both gender and technical scientists will continue in the proposed program as a resource for all undertaking gender research.

Incentives for interdisciplinarity. Interdisciplinary research teams are a key mechanism to embed gender analysis throughout the research for development cycle. The commitment from program management and flagship leadership to promote teams that include both social and technical scientists will be operationalized through investments in capacity development of non-gender scientists (see above) and in the increased gender expertise available (see below). Small grants will be incentives for interdisciplinary collaboration, again building on the 'proof of concept' in the 279 Livestock and Fish CRP where scientists receiving grants also benefitted from 'gender coaching' and were referred to as 'Gender Fellows'. As their capacity to integrate gender is built up, the Gender Fellows are becoming recognized as resource people on gender integration within their flagships and value chains. Annual events such as the April 2016 gender integration writeshop will be used to reinforce interdisciplinary collaboration and capacity development.

Human resources and staff

One lesson learned from Livestock and Fish CRP's experiences is that more gender-integrated research means more input from gender scientists. This translates into the need for additional gender staff to meet the growing demand. The proposed Program will appoint:

- Gender coordinator. This person will participate in overall CRP management (see above). Second, (s)he will oversee the overall strategic and integrated gender research agenda. Third, (s)he will coordinate capacity development on gender and team building activities for the Gender Initiative and Gender Fellows' community of practice.
- **Two gender scientists to lead the strategic and integrated gender research.** Livestock and Fish CRP experiences demonstrated that to fully explore gender integration requires additional senior scientist input, alongside the strategic gender research focus. The integration agenda will not only cover gender integration in technical, systems and value chain research, but will also develop emerging ideas as to the institutional aspects of mainstreaming gender in livestock research institutes and programs. Collaboration with the Royal Tropical Institute (KIT) will continue to help address the evolving needs of the program and in joint proposal development and research.
- **Gender focal points.** Each CGIAR centre partner in the program will have a gender focal point to ensure that relevant gender research across the centre is aligned with the program's overall gender agenda and that sufficient staff, budget and other resource allocations are in place.
- **Post-doctoral fellows.** Ideally each flagship would have one gender-related post-doctoral fellow. Several are already in place for the proposed program.
- **Gender experts at each country site.** Over the first two years of the CRP's implementation, a gender expert will be physically located at each of the country sites. This could be a research assistant or technician to support field work and implementation.
- **Gender fellows.** These are non-gender scientists leading gender-integrated research in the research program. See 'incentives for interdisciplinarity' above.

Gender budgeting

The Consortium Office guidelines (June 2015) are the basis for accounting for gender research allocations. These will be updated and better tailored to the proposed program as part of updating the gender strategy. Each flagship has a gender budget allocation: 5% for technical flagships; 10% for environment; and 15% for livelihoods. This can be met through either bilateral or W1/2 allocations. Each flagship handles the gender allocation differently. Some pay for gender expertise in a value chain, others reserve funds for strategic investment. The livelihoods flagship will use W1/2 funding to support research coordination and synthesis as well as strategic gender and integrated research in the value chains. Twenty per cent of the Gender Coordinator costs will come from the management budget. Both technical and gender scientists will seek out further bilateral funding.

To meet demand from scientists for support for gender integration, part of the capacity development budget will be allocated to gender-related activities, including: a joint gender/capacity development staff member to support coaching, the seminar series, and work with partners to build gender capacity. For contributions to review proposals or papers, where a gender scientist is providing a service to the other flagships without full participation in a project or co-authorship, a recharge mechanism will be explored in the new CRP. This may be organized through an annual fee 280 or through a 'research

support' budget line. The intent of this recharge mechanism is to provide added incentives for good interdisciplinary collaboration and co-authorship of outputs; and a fee for services where this does not happen.

Monitoring and evaluating gender progress

Assessing progress in embracing gender-responsive approaches in the program means looking at the process and the results. In addition to monitoring progress on the three gender-related sub-IDOs, (see section 1.0.4), results we anticipate include: papers co-authored by gender and technical scientists; gender-responsive technologies developed for gender-differentiated users groups; and, gender analysis integrated into all ex-ante assessments. Process indicators include: interdisciplinary research teams; gender coordinator participation in management and governance; that the 'who' of livestock keeping will be more explicit across all CRP projects; and assessing the different needs, preferences, roles and relations of men and women will become an integral part of research analysis and interpretation. Progress on the gender strategy will be assessed by integrating gendered indicators into monitoring and evaluation frameworks, and by developing specific tools (e.g. to measure changes in empowerment). Monitoring and evaluation of gender progress should yield learning to improve practice, as well as demonstrating accountability.

Figure 3.3a Budget estimates for Gender in the Livestock CRP (Cross-cutting & contributions of budgets to sub-IDO)
(For 2017-2022, it assumes 5% growth held constant at CRP and across all FPs and sources of funding)

Year 1 - 2017	Total CRP/Flagship	of which...	Gender W1/2	Gender Bilateral	Gender W3	Total Gender	Gender as % of total
Livestock Genetics flagship	\$ 10,549,446		\$ 681,851	\$ 742,428	\$ 587,362	\$ 2,011,642	19.1%
Livestock Health flagship	\$ 7,970,185		\$ 667,790	\$ 392,774	\$ 242,478	\$ 1,303,041	16.3%
Livestock Feeds and Forages flagship	\$ 6,598,000		\$ 233,320	\$ 68,886	\$ 333,853	\$ 636,058	9.6%
Livestock and the Environment flagship	\$ 5,305,958		\$ 655,433	\$ 164,440	\$ 679,438	\$ 1,499,310	28.3%
Livestock Livelihoods and Agri-food Systems flagship	\$ 8,134,718		\$ 545,927	\$ 54,160	\$ -	\$ 600,087	7.4%
Sub-total Flagships	\$ 38,558,307		\$ 2,784,321	\$ 1,422,688	\$ 1,843,131	\$ 6,050,140	15.7%
Management & cross-cutting budget	\$ 2,408,620		\$ 50,000	\$ -	\$ -	\$ 50,000	2.1%
Strategic Investment Fund	\$ 2,533,074		\$ 379,961	\$ -	\$ -	\$ 379,961	15.0%
Total	\$ 43,500,001		\$ 3,214,282	\$ 1,422,688	\$ 1,843,131	\$ 6,480,101	14.9%
Entire Program - 2017 - 2022	Total CRP/Flagship	of which...	Gender W1/2	Gender Bilateral	Gender W3	Total Gender	Gender as % of total
Animal Genetics flagship	\$ 71,756,412		\$ 4,637,893	\$ 5,049,933	\$ 3,995,188	\$ 13,683,015	19.1%
Animal Health flagship	\$ 54,212,502		\$ 4,542,248	\$ 2,671,612	\$ 1,649,313	\$ 8,863,173	16.3%
Animal Feeds and Forages flagship	\$ 44,879,023		\$ 1,587,020	\$ 468,554	\$ 2,270,838	\$ 4,326,412	9.6%
Livestock and the Environment flagship	\$ 36,090,665		\$ 4,458,197	\$ 1,118,507	\$ 4,621,475	\$ 10,198,179	28.3%
Livestock Livelihoods and Agri-food Systems flagship	\$ 55,331,641		\$ 3,713,351	\$ 368,392	\$ -	\$ 4,081,743	7.4%
Sub-total Flagships	\$ 262,270,243		\$ 18,938,709	\$ 9,676,998	\$ 12,536,814	\$ 41,152,522	15.7%
Management & cross-cutting budget	\$ 16,383,224		\$ 340,096	\$ -	\$ -	\$ 340,096	2.1%
Strategic Investment Fund	\$ 17,229,748		\$ 2,584,462	\$ -	\$ -	\$ 2,584,462	15.0%
Total	\$ 295,883,215		\$ 21,863,267	\$ 9,676,998	\$ 12,536,814	\$ 44,077,079	14.9%

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No annex information

Annexes to the Full Proposal 2017-2022 →

Annex 4. Gender

Synthesis

The GRiSP proposal in 2010 included a gender strategy as a work in progress that was regularly updated as the results of relevant GRiSP studies were reported. The strategy was revised in late 2012, presented and debated at a “Gender in Rice” workshop in the Philippines in mid-March 2013, and reviewed by outside experts. The resulting revised [gender strategy](#) was endorsed by the CGIAR gender network in October 2013 and became operational in 2014. The main objective of the GRiSP Gender Strategy was to reduce the gender gap in the rice sector. The strategy was based on a gender-specific impact pathway and theory of change on how the empowerment of women in the agricultural-research-for-development arena and in the rice value chain accelerates the delivery of GRiSP’s intermediate development outcomes. The term empowerment integrates the strengthened role of women in the design, execution, and evaluation of research for development, as well as improved access to resources (e.g., production inputs, knowledge, and pro-gender improved technologies) and control over outputs (harvested rice, processed rice, and derived income). Enhanced empowerment of women will take place only after substantial transformative changes have taken place in the mind-sets and behavior of all actors in the research-for-development arena and in the rice value chain, from grassroots to leadership, among both men and women. Hence, GRiSP’s gender strategy included important components of capacity building and training.

Since 2010, GRiSP made considerable effort to mainstream gender in research and development projects. In light of the [minimum standard guidelines](#) issued by the CGIAR Gender and Agriculture Research Network in 2014, a gender inclusive survey and sampling protocol was developed to collect gender-disaggregated data. GRiSP developed a comprehensive quantitative gender module to measure empowerment gaps in rice farming and to identify women’s constraints. A qualitative framework of gender empowerment was also developed and tested ([Rutsaert et al 2015](#)). Innovative data collection techniques were used to gather information about women’s role in rice farming and identify gender specific barriers and inequalities in South and Southeast Asian economies ([GRiSP 2015](#)).

Since 2010, many studies in South and Southeast Asia, Africa, and Latin America have added weight to the importance of women’s contributions to all parts of the rice value chain (e.g. [Ojehomon 2014](#); [Rutsaert et al 2015](#); [Twyman et al 2015](#)). In addition to these broad “baseline” gender studies, specific studies have investigated the constraints that women face in the rice sector in more detail (e.g. [Akter et al 2015](#); Fisher et al 2015). The conclusion of such studies was that women make significant contributions to rice farming, processing, and marketing. Their roles are defined by farming practices and sociocultural norms across countries. In Asia and South America, women are primarily involved in crop establishment, harvesting, and post harvesting activities while men take the lead in land preparation, crop management, machine operation, and marketing. In Africa, women play a more prominent role in agriculture by performing most of the farm activities except for land preparation.

Although women have different levels and capacity of involvement in rice farming and rice value chains in different countries and they face different (levels of) constraints, a general tendency exists for women farmers to be overburdened by manual backbreaking work and they have less access to information and inputs (new technologies and finance) and to be less involved in decision making and control over income and assets than men. Studies outside GRiSP have shown that such gender inequalities reduce women-managed farm productivity by 20–30% compared to farms managed by men (FAO 2011). Gender inequality also hinders the progress of other development outcomes such as family planning; maternal, newborn and child health; nutrition; education; and food security (Gates 2014).

GRiSP studies showed that women are increasingly taking up lead role in rice farming due to increase in male outmigration to urban areas ([Mohanty 2014](#)). As male outmigration is likely to accelerate in the future as a result of climate change-induced stress and the increasing trend of nonfarm employment, the role of women in agriculture will continue to become prominent. Hence, empowering rural women and increasing their access to resources, inputs, information, and services are keys to achieve agricultural development.

Other studies, reported in [Women in Motion](#) and [IRRI Gender Blogs](#), investigated the impacts of new rice technologies and of enabling actions targeted specifically at the empowerment of women farmers such as ensuring women's access to seeds and seed preservation training ([Cueno 2014](#), [Villanueva 2014](#)). The conclusion of these studies was that positive contributions to the empowerment and equity of women can be made by (1) taking their specific needs and preferences into account when developing new rice technologies; (2) specifically targeting women in dissemination and capacity development on such new technologies (see, for example, [Burundi women in rice farming, Women at the heart of technology delivery](#)); and (3) developing their entrepreneurial skills as businesspersons and service providers (see, for example, "enhanced [marketing skills](#)", "[InfoLadies extension](#)", "[Women introduce mechanized farming in Bihar](#)").

The GRiSP gender research took into account women's vulnerability to changes and shocks in their natural resource base, which are increasing and becoming exacerbated by climate change ([Akongo 2014](#), [Mehar 2014](#)). Women who are most likely to be poor and marginalized cultivate low-lying farm land, which is prone to flooding or saline intrusion. Smallholder women farmers are thus disproportionately affected by the consequences of climate variability and other weather shocks, with very little means to cope or adapt. Women are also significantly more risk averse than men, a trait that may lead to aversion to new technologies (e.g., improved rice varieties and climate-smart technologies). This implies that gender difference in climate change vulnerability and heterogeneity in risk preference are important considerations for designing effective technology targeting strategies. GRiSP research results also noted the prevalence of gender stereotypes and social restrictions that often exclude women from rice research and extension programs ([Rutsaert et al 2015](#)). Consequently, women face constraints that limit their potential roles as leaders and as farmers in increasing rice productivity and in disseminating technologies through their social networks.

Based on the findings of the previous research in GRiSP, the following priorities have been identified for gender research in RICE:

1. increased opportunities for women's employment throughout the rice value chain
2. increased women's access to seed and extension services

3. improved productivity and reduced women's drudgery through mechanization
4. increased productivity, income, and nutritional status for women
5. increased women's adaptive capacity to climate change through stress-tolerant varieties, climate-smart technologies, and diversification.

Overview of how gender will be operationalized

Gender mainstreaming will be addressed by integrating gender equality issues into design, planning, implementation, monitoring, and evaluation of RICE and its FPs. Transformative processes will be fostered to ensure that RICE researchers actively take into account the gender-specific barriers and needs of actors in rice value chains, and become cognizant of gender-differentiated impacts of the adoption of new technologies. For each FP, specific entry points identified during GRiSP will be taken further to enhance gender equity and promote women's empowerment (see section 4 of the RICE proposal). Special attention has been given to gender during the process of indicator development to facilitate adequate targeting, monitoring, and reporting. All RICE sub-IDO, IDO and SLO indicators and target populations (where relevant and feasible) will be disaggregated by gender and expressed as male and female individuals rather than as households.

Research priority, FPs 1 and 2. The analysis of gender gaps and the cross-cutting and synthesizing gender-specific research will be carried out in FP1. Research under FP1 will focus on (1) understanding specific gender roles in rice farming and rice value chains, (2) identification of genderspecific constraints and needs for technology, (3) development of opportunities to overcome barriers and innovation of pro-gender technologies, and (4) targeting. Special attention will be given to strengthening women's entrepreneurial skills in rice farming, processing, and marketing. FPs 1 and 2 will also identify gender- and age-differentiated impacts of rice-related technologies and the changing role of women in rice farming. Women farmers will be targeted as beneficiaries of new rice varieties, and women farmers and entrepreneurs will be trained on seed multiplication, distribution, and marketing. FPs 1 and 2 will involve the development of multistakeholder platforms that involve women's groups and women-oriented NGOs, and through capacity development of women. Special attention will be given in FP2 to the development and dissemination of postharvest technologies that specifically increase women's productivity and reduce their drudgery such as improved harvesters, threshers, mills, and dryers.

Household surveys, farm level analysis, key informant interviews and focus-group discussions will be the main research methodologies. Where available, open-access secondary data collected by government and international agencies will be used for preliminary socioeconomic assessment. Socioeconomic data will be combined with spatial data (e.g., GIS and remote sensing) to develop gender-inclusive targeting strategies. A stocktaking exercise to be undertaken in 2016 will synthesize the results from the large-scale baseline surveys conducted in 2013–2015. The findings of the survey will reveal new knowledge gaps, guide a next update of the gender strategy, and set new priorities and pathways for research. Transformative changes will be facilitated through the development and dissemination of [policy briefs](#), [awareness raising](#), [advocacy events](#), inclusion of gender aspects in planning workshops, training of own staff and NARES partners on gender and diversity, [and working with NARES partners](#) in developing-country/site-specific [gender action plans](#).

Research priority, FPs 3–5. FP3 will develop and deliver a wide range of technologies and farming options to close yield gaps, reduce production risk by helping women farmers adapt to climate change and other abiotic shocks, and increase women's income generation opportunities and nutritional security. It will introduce and evaluate new short-duration varieties (developed in FP 5) that allow the introduction of other crops such as vegetables into the farming system. It will also foster farm diversification to increase nutritional diversity and quality, e.g., through introducing fish and livestock husbandry activities typically undertaken by women. Special attention will be given to the development and dissemination of production technologies that specifically increase women's productivity and reduce their drudgery such as mechanized crop establishment. In collaboration with FP1, negative unintended consequences of FP2 products will be identified and mitigating actions will be developed. For example, the introduction of mechanized transplanting alleviates women from backbreaking labor, but may also deprive them of income. Hence, together with FP1, collaboration will be established with women's groups and NGOs to assist those women in moving to more remunerative employment (or other use of their time). One example is the training of women as service providers of mechanized transplanting services.

In FPs 4 and 5, the genetic basis for rice plant traits preferred by women farmers and consumers such as cooking time and specific taste characteristics will be discovered. Also, nutritious and healthy rice varieties will be developed. In FP5, special attention will be given to the development of new rice varieties that take women farmers' and consumers' preferences into account. Participatory varietal selection, taste panels, and household surveys will all involve 30–50% women. The development of varieties with improved productivity in unfavorable environments, either as a result of better stress tolerance or higher water-use and nutrient-use efficiency will benefit particularly women farmers as they are more likely to be resource constrained and occupy farm land in unfavorable areas where male outmigration rate is high.

These new varieties will be disseminated in FP1 through a women-centric technology delivery approach. At least 30% of the target seed recipients will be women. In collaboration with FP1, sustained access by women and marginal farmers to seeds will be ensured by fostering the development of a seed system. FP1 will develop and test business models that will enable some women to become seed entrepreneurs. The impact of these new varieties on farmers' income, women's empowerment, and nutritional security will be assessed by FP1. Adoption studies will identify the adoption rates and diffusion paths under different dissemination models in different environments.

Monitoring and tracking

FP1 will be responsible for monitoring and tracking the progress of the gender-specific outcomes through its gender-responsive monitoring, learning, and evaluation (MLE) system (Annex 6). The MLE system will involve periodic and systematic collection and analysis of R&D, extension, and dissemination data. All these data (where relevant) will be disaggregated by gender. In addition to monitoring and tracking gender-specific outcomes, the MLE data will allow monitoring of adoption rates, evaluation of seed diffusion pathways, and identification of gender-specific constraints for accessing improved varieties. FP1 will be responsible for providing feedback to scientists on improvements in technology development and targeting and to generate knowledge for out-scaling RICE products and services.

[Annexes to the Full Proposal 2017-2022](#) →

ANNEX 3: RTB Gender

Key goal and objectives

RTB's gender objective is to improve food security and reduce poverty while strengthening gender equity. For this to happen, both men and women farmers must be able to benefit from science and technology interventions developed by the RTB research team and its partners. A key goal of the gender strategy is to level the playing field where possible by providing access to knowledge, capacity building, and market opportunities, and by ensuring that the technology developed through the program is made available to both sexes. However, RTB research and evaluations have shown that men and women are not always equally benefiting from RTB technologies. For example, women may adopt technologies more slowly than men due to gender related constraints, such as lack of access to knowledge, information, training, resources and decision making powers within the home (Mudege, et al. 2015) 1 . Thus in order to ensure that RTB research and technology development contributes to meeting gender equitable IDOs and targets RTB aims to 1) mainstream gender across the RTB flagships and clusters with gender integrated research 2) undertake strategic gender research to build a body of knowledge on gender and agri-food system innovation for RTB crops.

RTB will develop a set of gender impact indicators to monitor changes and access to resources, in agricultural production, research and entrepreneurship as a result of adoption of RTB technologies and innovations. In order to equip RTB scientists and partners to do gender-responsive research and achieve gender transformational outcomes and empowerment of women and youth, guidelines and briefs on gender research methods and context-specific gender situational analyses will be developed. A gender capacity development program will ensure that 1) expertise on gender research is available within RTB and 2) non-gender experts within RTB know when and how to make use of this expertise.

To achieve this, the program is guided by the RTB gender strategy which outlines priority areas for gender research. In preparation for RTB Phase II, the strategy will be revisited, updated and operationalized taking into consideration lessons learned (see 1.4) from RTB Phase I and in alignment with the new RTB structure and flagships. A cross cutting Flagship Project 5 (FP5) contains CC5.3 on gender equitable development and youth employment that will provide learning and support for all FPs to contribute towards achieving gender responsive sub-IDOs – gender equitable control of productive assets and resources, and improved capacity of women and young people to participate in decision-making. RTB will mainstream gender through integrated and strategic gender research.

Integrated Gender Research

Integrated Gender Research is the systematic integration of gender into research process— priority setting, planning, design, implementation, monitoring and evaluation - and into the management of this

process (Ashby et al, 2013)². The purpose of gender integration is to consider gender norms and cultural practices when designing and implementing research in order to develop strategies to address gender based inequalities when developing a program or research strategy. In RTB, this means integrating a

1 Mudege, N.N.; T.; Kapalsa; Chevo, T.; Nyekanyeka, E.; Demo, P. 2015. Gender norms and the marketing of seeds and ware potatoes in Malawi. Journal Article the Journal of Gender, Agricultural and Food security. Vol 1, Issue 2, pp 18-41. Africa Centre for Gender, Social Research and Impact Assessment: Nairobi.

2 Ashby, J.A., Annina Lubbock, Hendrika Stuart (2013): Assessment of the Status of Gender Mainstreaming in CGIAR Research Programs CGIAR Consortium.

gender dimension into Flagships 1 to 5. Key to facilitating gender integration in these flagships is to ensure that there are resources set aside for integrated gender research across the flagships.

Integrated gender research will involve some or all of the following: methodological aspects of collection and use of relevant sex-disaggregated information, analysis of gender-related constraints and opportunities, studies of the impact of research and development on gender equality outcomes. Integrated gender research will focus on specific key areas within each of the flagships (Table 1).

Table 1. Gender integration options by Flagship Project

Flagships	Gender Research Objective
FP1: Discovery research for enhanced utilization of RTB genetic resources	Develop a gendered understanding of indigenous knowledge and practice in the conservation and use of genetic resources.
FP2: Adapted productive varieties and quality seed of RTB crops	Characterize gender differentiated preferences for traits and their consequences, in order to help breeding strategies accelerate varietal development.
FP3: Resilient RTB crops	Understand local knowledge of male and female farmers in disease management in order to develop information and communications strategies that inform both women and men of safe pest and disease control methods.
FP4: Nutritious food and value added through postharvest innovation	Develop inclusive RTB value chains that improve access to and utilization of RTB products for nutrition and health as well as to promote gender equity in the distribution of benefits from increased commercialization.
FP 5: Integrated systems for livelihoods	Ensure that developed RTB technologies, tools and innovations are useful to men, women and youth farmers and lead to livelihood improvement and increased wellbeing

Under Integrated gender research, RTB will also undertake selected studies on topics that have greater gender relevance and contribute towards developing gender specific tools and methods, and explore the potential of undertaking cross-CRP collaborations for co-investments and complementary gender research. The trainers guide on Gender Integrated Participatory Market Chain Approach (PMCA) is one of the examples of PIM and RTB cross collaboration work in Phase I. Guidelines to integrate a gender

perspective in CGIAR centers intervention in value chain development for RTB crops will be piloted in Phase II. Tools, guidelines and modules for gender responsive participatory varietal selection will be rolled out.

In order to meet flagship objectives RTB will ensure that gender budgets are adequate. For example in addition to budgeting for personnel and sex disaggregated surveys we would ensure increased budget for gender integrated research as well as outcome support to achieving more equitable access to RTB technologies. Most of the gender work conducted in RTB has been on nutritious foods, value addition through post-harvest processing and trait selection in breeding and varietal selection. One of the key areas on which RTB would like to focus is integrating gendered knowledge and preferences into banana breeding in Tanzania and on cassava trait preference to inform genomics assisted cassava breeding. Research in cassava breeding will be undertaken in a close collaboration with the NEXTGEN cassava project³ and various national partners in East and West Africa. Likewise, banana breeding will be done

³ NEXTGEN cassava project is an initiative taken by Cornell University researchers with various national and international partners. It is supported by the Bill & Melinda Gates Foundation and the UK Department for International Development (<http://www.nextgencassava.org/>).

with the Breeding Better East African Highland Bananas (BB-EAHB) project and other national partners in Tanzania. Research on gender and potato trait preference will continue in selected SSA countries. While this is important in the next phase we would also like to see more investments in resilient cropping systems and discovery research.

To further institutionalize integrated gender research, RTB has adopted an approach towards harmonizing and strengthening gender capacity for RTB in-house staff members and partners by continuing to undertake capacity development activities in close coordination with RTB partnering centers' GFPs and following up with the trained participants to establish a feedback loop for monitoring, evaluation and learning. We expect that this work will continue in Phase II.

Strategic gender research

Strategic gender research refers to specialized studies on dimensions of gender relations that can affect research and development outcomes. The main research focus is on gender roles, norms and agency, rather than on technical issues, into which gender is integrated. Strategic gender research in RTB is housed in FP 5. This type of research can crosscut flagships and Centers and is of importance to strengthening equity and efficiency. Strategic gender research is also expected to contribute insights and research conclusions to all RTB flagships and thus strengthen integrated gender research. Examples of research questions and areas of focus of strategic gender research are:

- How do gender norms and agency advance or impede the capacity to innovate and to adopt technology in agriculture and NRM across different contexts?
- How do new agricultural technologies or practices affect gender norms and agency across different contexts? Under what conditions can they do harm to women? And 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 (CGIAR SLOs)? What contextual factors influence this relationship?

- What are the gender roles and dimensions of inequality in RTB seed systems?
- How does intra-household resource use and decision-making for equity and innovation vary in different RTB agri-food systems?
- What are the gender implications of agro-industrialization and gender dimensions in access to RTB based agro enterprises in different regions and countries?

To answer these questions, RTB is collaborating with other CRPs in the CGIAR global study on Enabling Gender Equality in Agriculture and Natural Resource Management (GENNOVATE) and has a total of 15 case-studies in RTB target countries: Uganda (4), Malawi (2), Burundi (1), Nigeria (2), Colombia (4), Bangladesh (2) and Vietnam (2). The first few products of this study are expected to come out as scientific publications, reports, guidelines and methods in early 2017. FP5 on improved livelihoods at scale will make it possible to pilot GENNOVATE lessons with the objective of contributing to gender related sub-IDOs and IDOs.

In Phase I it was learned that when interventions do not address underlying social structures and gender norms related to household decision making and control of income agriculture research may not benefit women. For instance, although a seed potato project aimed to ensure that men and women have access to clean seed, women did not have access to quality potato seed because they lacked access to credit and training, and did not control household income to purchase seed (Mudege et al 2015). Research on long shelf life banana and potato ambient storage technology in Uganda also had similar results. Gender norms and ideologies can be barriers to access, therefore projects need to address these in order to contribute to development outcomes including women's empowerment. The strategic gender research will therefore make significant contributions towards meeting IDOs.

Strategic gender research creates an enabling environment for integrated gender research and sets the scene for gender transformative outcomes. Gender transformative outcomes are those outcomes where both men and women are helped while gender roles are transformed and more gender-equitable relationships between men and women are promoted. However, it is more challenging to achieve gendertransformative outcomes, given the structural gender inequalities in many sectors that are not easily influenced by an agricultural research program. Research in RTB has shown that addressing gender norms to achieve transformation is not always easy as researchers, and in many cases extension officers and partners, often lack experience or are uncomfortable addressing these issues. As noted below RTB will reevaluate its partnership approach to ensure that non-traditional partners who can help us to achieve transformative outcomes are engaged.

Impact pathway

Measurement of progress towards gender impact in RTB will be systematic and undertaken at all stages of the research cycle. It will be based on the regular monitoring of a set of identified gender responsive indicators which will contribute towards achieving gender sub-IDOs and IDOs. These indicators will be developed at all levels (products, research and development outcomes) from the impact pathway for both integrated and strategic gender research.

RTB envisages two main strands in the impact pathway. The first contributes to the technical research undertaken in integrated gender research across all flagships. Technical research will focus on topics which have greater gender relevance and also contribute towards developing gender specific tools and methods. These areas will be identified in a priority assessment exercise for gender research during the updating exercise of the RTB gender strategy. The second strand will concentrate on catalyzing a change in attitudes and practices of next users and end users in relation to adoption and use of gender and youth responsive outcomes and results of RTB flagships. This change in attitude and practice is achieved through harmonizing and strengthening the capacity of RTB researchers, scientists and partners through investments and interventions on capacity development and an interdisciplinary teamwork approach, which promotes continuous interactions among a team of experts while undertaking empirical integrated gender research. One of the underlying assumptions that emerged from gender work in Phase I is that as knowledge, understanding and skills on gender responsive research improve, the more gender equity concerns are taken into consideration by scientists, researchers and partners while setting research priorities and designing questions.

Integrated gender research contributes to gender responsive outcomes while strategic gender research can build on this to contribute to gender transformative outcomes. Through the use of integrated gender and strategic gender research the gender impact pathway will contribute to two IDOs (See Fig. 1):

1. Increased and more gender-equitable income for poor participants in RTB value chains (SLO 1, 2)
2. More effective policies supporting development and use of pro-poor and gender inclusive RTB technologies developed and adopted by agricultural organizations, national governments and international bodies (SLO 1, 2)

Progress towards these IDOs will be tracked using milestones and indicators that have logical links to the impact pathway. These indicators will be developed based on outcomes delineated in the performance indicator matrix.

Figure 1 shows the gender impact pathway depicting outcomes from Integrated and strategic gender research with associated risks and assumptions.

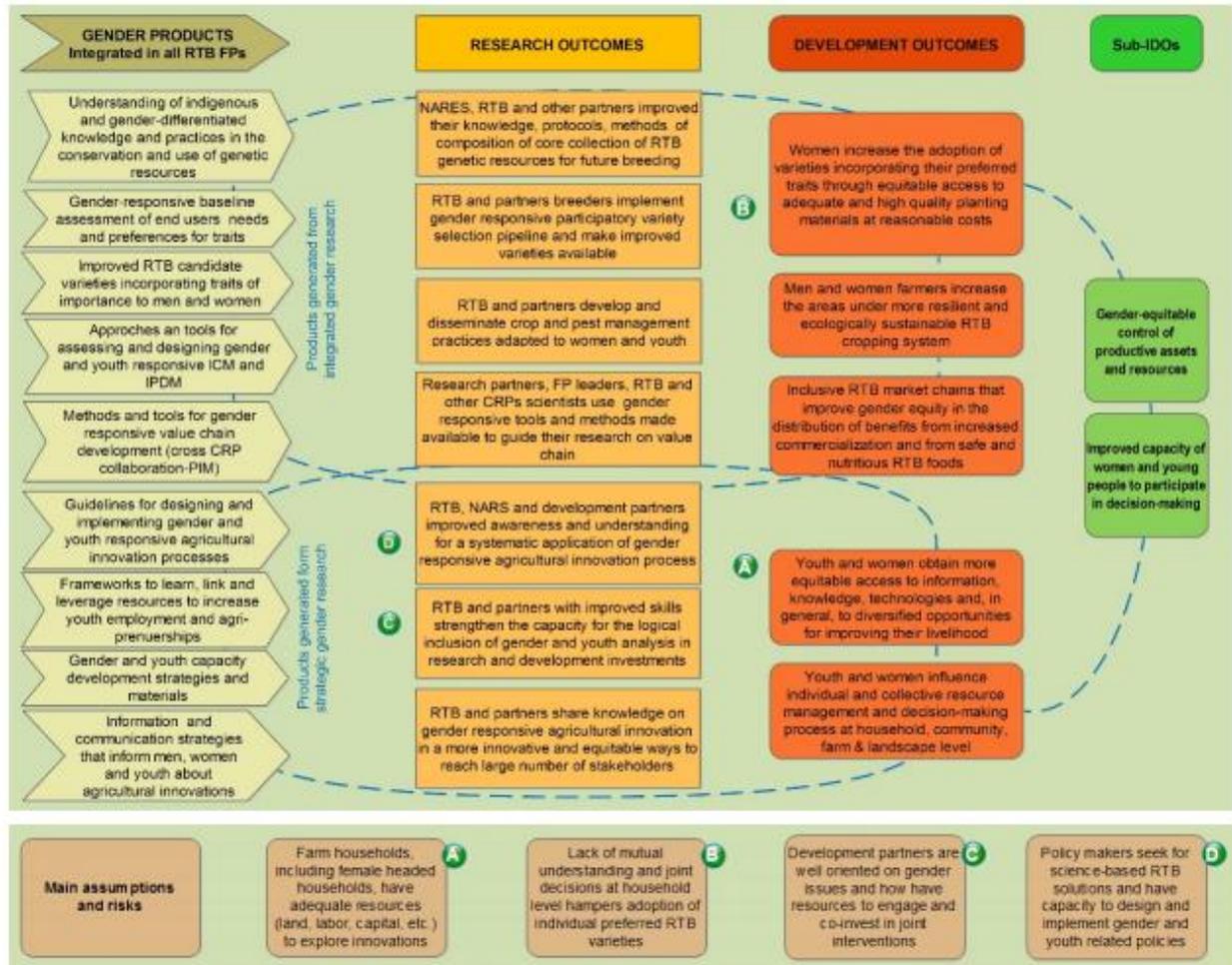


Figure 1. Gender impact pathway

Wheat Agri-Food Systems

WHEAT: Annex 3.4: page 132-135

3.4 Gender strategy

Knowledge on gender in wheat based agri-food systems gained in Phase I and informing Phase II

Until 2011, the integration of gender and social equity in CRP WHEAT'S socio-economic research was not an institutional priority. It was based on individual interpretations and interests and tended to be donor-driven. Since then structured, strategic work to create an effective learning research institution able to support, assimilate and mainstream researcher-driven learning on gender in wheat and maize systems has been an important focus. Work to date includes Gender Audits in WHEAT and MAIZE (2013), a Gender Capacity and Awareness Building Program to strengthen scientist research skills in gender

(Wong et al. 2015); Research Management Framework; developing gender in IDO and Flagship Projects (2014-2015); developing gender-responsive Key Performance Indicators; Gender budget tracking (DAC); and a Gender Policy (draft 2015). This work has contributed towards a dramatic upsurge in bilateral partnerships and funding, from 4 projects in 2012 to 20 in 2014 and 18 in 2015. CRP WHEAT leadership demonstrates strong support through ensuring gender is addressed in meetings, TOC workshops, reviews etc.

Challenges to integration between Flagships remain. It can be difficult for upstream scientists to understand how their work on germplasm suited to large environments can address what appear to be trait preferences by small niche groups, including women or particular indigenous communities. Taking gender to the types of scale WHEAT operates on is a further challenge. The increasingly high profile of gender in WHEAT's work can create expectations among scientists and partners for support in gender research and analysis that cannot currently be met within existing staff capacity. A community of practice is under development and it is expected this will help expand analytic skills and knowledge.

The revised Gender Strategy for WHEAT (approved 2014) guides gender research planning and implementation. Given the paucity of gender data in wheat-based systems in particular (Jafry, 2013), WHEAT is prioritizing building a strong evidence base on gender relations in these systems. The aim is to contribute towards equality of opportunity and outcomes from wheat R4D between resource-poor women and men farmers. The research strategy for gender in WHEAT is broadly:

- To initiate research in a geographical area with a scoping study to document the current state of knowledge and experiences to date, including both research and development related to wheat, as well as overall policy frameworks and the organizational landscape.
- Subsequently, to complement this with cases studies on gender norms and agency in wheat producing areas.

During Phase I, WHEAT undertook a scoping study to assess the status of integration of gender and social equity in wheat R4D in South Asia, a priority region for the CRP (Jafry, 2013). The scoping study confirmed the paucity of evidence regarding gender and social inclusion in wheat-based livelihoods. Initial capacity strengthening for sex-disaggregation in data collection was initiated in Phase I and will be consolidated in Phase II.

WHEAT Phase II research priorities (see section 1.4) are further informed by WHEAT research on gender and rural livelihood diversification (Rahut et al. 2014); women's participation in farming activities in Pakistan (Ali et al. 2014, 2015); the need to address gender trade-offs of new agricultural technologies (Beuchelt & Badstue 2013); and the potential of gender-responsive service provision and information diffusion in South Asia (Mittal & Mehar, 2014). The literature review covering WHEAT research and similar research suggests that wheat growing areas are facing significant climate-change related stress, and other forms of stress. However, sharply unequal gender relations render women particularly vulnerable with weaker coping strategies, particularly when men out-migrate. At the same time, the rehearsal of socially acceptable gendered behaviors in public forums may belie considerably more complex intra-household decision-making processes. Women are actually far more involved in almost all tasks in many (though not all) wheat-based farming systems than social norms suggest; intersectionalities with caste and age make the picture more complex still. There is limited evidence, requiring further study, that when wheat lines express strongly marketable traits such as rust-resistance these may be grown entirely for sale as seed by men (Nelson, 2013). Women may not be able to access women-preferred traits if they are also offered in these lines unless downstream work on intra-household decision-making is conducted (etc.). Gender-responsive and gender-transformative research is needed to understand and negotiate carefully between public accepted social norms and more complex realities. Examples of WHEAT research in Phase I are described below. Phase I focused on setting up small and large research projects and collating data; research has produced emerging findings and is ongoing in most cases. Phase II will begin analyses of data as well as conduct further research.

GENNOVATE: CRP WHEAT is a leading actor in GENNOVTE (<https://gender.cgiar.org/collaborative-research/gennovate/>), a cross-CRP comparative research initiative examining how gender norms and agency influence the ability of men, women and youth to learn about, try out, adopt and adapt new agricultural technologies. In WHEAT 48 case studies were developed in 8 countries. Initial findings are taking shape: In Uzbekistan male outmigration contributes to increased involvement of women in value addition and farm management. This is beginning to influence changes in gender norms related to 'what a woman can do'. In Morocco, mechanization of agricultural activities in wheat production is ranked amongst the top innovations for women reducing female drudgery in weeding, sieving, winnowing and cleaning seeds. However, despite increasing female involvement in both Morocco and Uzbekistan in farm management women prefer to consider these roles as temporary. This may be a strategy for managing 'dissonance' between societal norms and what is actually happening.

Promoting ICT-based delivery of climate-smart agricultural practices to women and men in Bihar and Haryana, India: Research on the mobile phone delivery of information on weather, modern seed varieties, and climate-smart agricultural practices to 900 men and women farmers indicated reduced information asymmetry among farmers in general, and between women and men farmers specifically. The listening rate (i.e. the proportion of the full duration of the message listened to) of women farmers was equivalent to that of men farmers. Women farmers reported agro-advisory messaging has improved their knowledge about climate-smart technologies as well as their participation in intra-household decision-making because they are now better informed and recognized as such by male partners.

Gender Dimensions of the Ability to Adopt Climate-Smart Agricultural Practices in Bihar and Haryana, India: Comparative research on differences between men and women farmers in climate-smart villages, regarding their ability to select and adopt climate-smart agricultural practices (CSAPs) showed social institutions, including gender, caste and tribal status, as well as the economic position of the household are significant factors determining the ability of households to adopt CSAPs. Although adoption of CSAPs in Bihar is low due to poverty and small landholdings, female-headed households are more likely to adopt CSAPs than male-headed households.

Wheat Trait preferences: Only a limited number of studies consider gender differences in wheat trait preferences. For example, an Ethiopian study (Nelson, 2013) shows that both women and men value high-yield attributes, tillering and also baking quality, grain marketability, and plant dry matter for animal fodder, fuel, and roofing. Women prefer 'tried and tested' older varieties for preparing traditional dishes, home-made fermented beverages, and as straw for roofing material. Men are primarily concerned with marketability and high yield. New, widely grown rust-resistant varieties have, in the study area, never been cooked or used for other purposes. They are grown only for seed due to high market demand (Nelson, 2013, see also Ortiz-Ferrara et al. 2000). This has strong implications for work to develop integrate traits: marketability in male-dominated markets may prevent women from accessing and benefiting from secondary traits they favor. Downstream work may need to focus on securing equity in benefit flows, securing women a niche in markets, etc.

Persisting unequal gender roles and relations in many core wheat regions

Many WHEAT core target regions, particularly rural areas, from North Africa, across the Middle East and into South and East Asia, frequently exhibit rigid cultural and social norms (Abdelali-Martini 2011; Jafry 2013; Offenbauer 2005). Despite planned and unplanned change in all these regions, including civil rights and women's movements, tenacious and unequal gender roles and relations, and consequentially differential abilities to benefit from technologies often persist (Kabeer et al. 2011; Echavez, 2012; Behera et al., 2015). Research on laser land levelling (LLL) in Haryana, India, show that female headed households (FHH) have almost no access to information, and women farmers depend on male relatives or children to approach a male LLL owner or service provider to draw up a contract (Aryal et al. 2015). Studies elsewhere report that men more likely to prepare land and plant, whilst harvesting and transport/ head-loading is shared between men and women. Weeding and post-harvest processing is either shared or mainly done by women (Ashrafi 2009; Klawitter et al. 2009; Munoz et al. 2013; Tavva et al. 2013).

Interpretative caution is important: Women and men frequently deliberately model gender roles in public spaces in accordance with local societal norms. However, actual roles and responsibilities, and intra-household decision-making processes, can be considerably more complex. Projects developed on the basis of 'public displays' run the risk of obscuring actual behaviors and processes and can further marginalize women by excluding consideration of their needs and priorities. Gender-blind projects may result in further supporting the capabilities of men thereby deepening inequalities (Galiè, 2014). Indeed, 'conceptual lock in' persists in many research and extension systems whereby men are considered farmers and women helpers (Ashrafi 2009; Aryal et al. 2014; Farnworth & Colverson, 2015), despite strong participation by women in reality (Nelson, 2013; Galiè et al. 2013, 2014).

In Pakistan households with active female participation were able to grow high value crops, required less hired labor and had a higher income compared to households with no women's participation (Ali et al. 2014, 2015). Findings from Afghanistan indicate that women's involvement in wheat production depends on factors including economic standing, marital status, labor resources, land ownership, 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; Munoz et al. 2013).

Studies in the IGP on gendered vulnerabilities to climate changes suggest that inequalities in existing social structures shape gendered patterns of vulnerability (Sugden et al. 2014). Women typically have weaker social support networks, weaker access to assets including land and credit with which to potentially bridge a difficult season, less access to advice on adaptation and mitigation technologies, and lower participation in intra-household decision-making around which coping, adaptation and mitigation strategies to adopt (Sugden et al. 2014; Sheremenko & Magnum, 2015; Mehar et al. 2016). Male outmigration is a primary response to livelihood stress; this can magnify the vulnerabilities of women left behind (Sugden et al. 2014, see also Rahut et al. 2014).

Two-pronged approach to implement the WHEAT Gender Strategy

As described in section 1.4, the Gender Strategy is implemented through

- Strategic gender research
- Mainstreaming gender research into ongoing and future programs and projects, whilst incorporating gender research into institutional frameworks. How is this achieved?

Incorporating the gender research dimension in institutional frameworks

Under the WHEAT Research Management Framework (RMF) funded projects prepare a detailed work plan. Activities planned are assigned to the person responsible in the Research Management System

(RMS). This person must provide progress updates at the task and summary task levels. Reports are then aggregated up to the project level and up to the Cluster of Activity, Flagship Project, and CRP levels. Physical progress reported to the RMS is integrated to financial management. This allows financial and physical issues in implemented to be notified and projects to be recalibrated as necessary. Key Performance Indicators (KPIs) are registered at the RMS level. Gender is mainstreamed into all relevant CRP WHEAT research development, implementation and evaluation processes:

- Gender-responsive R4D project design; Gender budget tracking (DAC).
- Gender Competency Framework: to strengthen scientist research skills in gender.
- Gender-responsive and sex-disaggregated research implementation in targeting, data collection and analysis, participatory technology testing / evaluation, demonstrations and training.
- Monitoring and evaluation through tracking gender-responsive Key Performance Indicators.
- Accountability for gender-responsive outcomes.

Strong attention will be paid to managing iterative research processes. As results and lessons learnt with respect to gender are generated they will be fed back into FP and CRP learning processes, thus contributing to further development, and calibration of, the programmatic and institutional frameworks. In turn this will inform the next generation of research projects and FP implementation.

Tracking and evaluating progress

Under the WHEAT Research Management Framework (RMF) funded projects prepare a detailed work plan. Activities planned are assigned to a specific individual in the Research Management System (RMS). This person provides progress updates at task and summary task levels. Reports are then aggregated up to project level and thence to Cluster of Activity, Flagship Project, and CRP levels. Physical progress reported to the RMS is integrated with financial management reporting. This allows financial and physical issues arising during implementation to be assessed with projects recalibrated as necessary. Key Performance Indicators (KPIs) are registered at RMS level.

Sex-disaggregated KPIs include the number of (i) Wheat lines with characteristics valued by women farmers, (ii) Technologies evaluated with explicit relevance for women farmers, (iii) Trials conducted with women farmers, (iv) Demonstrations conducted with women farmers, (v) Technologies demonstrated with explicit relevance for women farmers, (vi) Surveys with sex-disaggregated data. Adoption studies and impact assessments (especially under CoA 1.2) investigate uptake of CRP WHEAT technologies.

When funding has been secured for projects sex-disaggregated data on beneficiaries to be reached can be provided.

Global Integrating Programs (GIP): full proposals for CGIAR Research Programs 2017 - 2022

Agriculture for Health and Nutrition

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Element 5: Gender Sensitive Approaches		Medium Intensity
GEE Unit with input from all FPs	<ul style="list-style-type: none"> Expand gender and nutrition CoP led by the GEE unit to help evaluation and gender staff in other CRPs apply state-of-the-art methods and tools Project partners trained in WEAI methods and tools through formal and informal means (led by GEE unit) Reflection/learning events to refine pro-WEAI implementation and share findings (led by GEE unit) 	
Element 6: Institutional Strengthening		High Intensity
FP1	<ul style="list-style-type: none"> Develop individual and institutional food system champions by building the capacity of partners in the analysis of diet change data, the use of nutrition-sensitive agriculture and healthy diet tools, plus the design and appraisal capacities amongst public and private agents to design, implement and assess innovations and interventions approaches 	
FP3	<ul style="list-style-type: none"> Extend initial efforts with the EAC on evidence for aflatoxin risk and control options through the AU-PACA networks Provide support to national and regional food safety policy and advocacy forums in key countries and built on current initiatives such as support to the national food safety policy task force in Vietnam and the regional work on informal dairy markets in East Africa. 	
FP4	<ul style="list-style-type: none"> Convene annual global and regional events to look at both innovation and on development outcome demands between agriculture research and nutrition and health policy and advocacy communities with EU-UNICEF, SUN Civil Society and other networks Build on past work undertaken by the EVIDENT team on nutrition-relevant capacity in Africa, to develop, test, and document approaches for strengthening capacity and leadership of key actors and organizations in target countries. 	
FP5	<ul style="list-style-type: none"> Link past investments in agriculture-health networks (like from Wellcome Trust in Africa - SACIDS and Afrique One) with coordinated research in the AgroEcoHealth Platform for the West and Central African region and the LCIRAH One Health program (RVC and LSHTM) to share expertise and models for institutional strengthening among medical and veterinary partners, in particular 	
Element 7: Monitoring and Evaluation of Capacity Development		Medium Intensity
All FPs	<ul style="list-style-type: none"> Monitor A4NH and flagship-level contributions to capacity in a variety of ways as part of the program's M&E and report on achievement of milestones through case studies that describe capacity levels in target audiences in the beginning of the Phase II and changes in capacity and institutional strengthening in selected countries. Link A4NH M&E to existing systems that monitor capacity development at the Center level (IFPRI Capacity Strengthening program) and country levels (IFPRI Country Strategy Support Programs). 	
Element 8: Organizational Development		Low Intensity
FP2 and FP3	<ul style="list-style-type: none"> Collaborate with NARS in select countries to change knowledge, attitudes and practices as they relate to mainstreaming biofortification (FP2) and managing food safety risks (FP3) 	
FP4	<ul style="list-style-type: none"> Strengthen national level nutrition taskforces and committees to better integrate nutrition in the national agricultural investment plans in selected countries (e.g., through CAADP) 	
Element 9: Research on Capacity Development		Low Intensity
FP4	<ul style="list-style-type: none"> Learn from current capacity building approaches (in EVIDENT and ANLP, for example) and apply to approaches in this flagship and across CGIAR 	
Element 10 Capacity to Innovate		Low Intensity
FP1 and FP4	<ul style="list-style-type: none"> Explore innovative opportunities, in country contexts, to strengthen nutrition policy processes as part of food systems (FP1) and nutrition-sensitive agriculture (FP4) 	

Annex 3.3

GENDER STRATEGY

Introduction

The objective of this annex is to summarize gender-related research and activities in Phase I carried out by the CGIAR Research Program (CRP) on Agriculture for Nutrition and Health (A4NH), and to describe how it has informed priority-setting in Phase II. This section discusses the role of A4NH's cross-cutting

Gender, Equity and Empowerment (GEE) unit, along with a plan on how gender research will be operationalized in Phase II at both the CRP- and the flagship-levels. Additional details on flagship-specific gender research questions, capacity development activities, and monitoring of gender in A4NH research projects can be found in CRP Section 1.4. A [detailed Gender Strategy for A4NH](#) is also available.

In Phase I, the GEE unit, based in the A4NH Program Management Unit (PMU), was referred to as the Strategic Gender Unit. The name change reflects a recommendation of the [A4NH External Evaluation](#) to pay more attention to equity issues and to highlight A4NH's increased focus on empowerment issues. See Box 1 for definitions of the terms 'gender,' 'equity,' and 'empowerment.'

CRP-level research priorities

As a research program that focuses on nutrition and health, women have always been at the forefront of A4NH research because inadequate nutrition affects not only women's own health, but also the health of their children. Children of nutrition-deficient women are more likely to experience poor physical and cognitive development and a higher risk of morbidity and mortality throughout their lives (Black et al. 2008; Victora et al. 2008). For biological and social reasons (e.g. lack of education, poverty, disempowerment) women are more likely to suffer from nutritional deficiencies than men. At the start of the CRP, most flagship programs (FPs) in A4NH—especially those focused on nutrition—targeted women and collected sex-disaggregated data. However, as Phase I research progressed, A4NH researchers became increasingly aware that gender matters not just for women's own nutritional status, but also for the pathways linking agriculture to nutrition and health (Box 2) (Kadiyala et al. 2014; Hawkes and Ruel 2006; Herforth and Harris 2014). Thus, gender issues had to be fully incorporated into their research plans. To assist flagship teams in identifying key gender questions and evidence gaps, and in some cases re-orient their research priorities, the GEE unit provided technical assistance to research teams, organized gender workshops, and conducted its own research on strategic gender issues.

In Phase I, A4NH's PMU conducted a [detailed inventory of gender research being done in A4NH projects](#) to document the types of gender research questions being asked, and to identify gaps. The inventory highlighted key constraints researchers faced integrating gender into their projects. This was used by the GEE unit to design appropriate capacity building activities, outreach, and technical assistance for A4NH researchers. The inventory also led to the redesign of A4NH's monitoring system to enable the PMU to track gender integration within projects and their deliverables—a practice that will continue in Phase II. The information generated by the gender monitoring system will be used by flagships and the GEE unit to revise and update research priorities as needed.

Although consensus on the pathways exists, as a guiding framework for research and practice on leveraging agriculture for nutrition and health, a number of systematic reviews have pointed to the lack of documentation on the effects of these pathways in practice (Hawkes, Turner, and Waage 2012; Herforth, Jones, and Pinstруп-Andersen 2012; Masset et al. 2012; Ruel and Alderman 2013). The pathways can thus be grouped into three strands of research: (1) impact of **gender-based differences** on

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nutrition- and health-related outcome, (2) improving nutrition through **women's empowerment**; and (3) avoiding **unintended consequences** to women's well-being and empowerment.

A4NH has addressed these research themes in Phase I and will continue to investigate and refine them in Phase II, using diagnostic gender analysis, gender impact studies, and explicit gender-based targeting. The research themes translate into specific research priorities for each flagship, as outlined in CRP Section 1.4. The [A4NH Gender Strategy](#) contains the background research on these priorities.

Flagship-level research priorities

The Value Chains for Nutrition flagship from Phase I (which has now been incorporated in **FP1: Food Systems for Healthier Diets**) started off integrating gender into their research by recognizing women as

a target group for nutritious products, by collecting sex-disaggregated data, and by studying value chains of products that are of nutritional value. However, no significant gender research questions were being addressed. In Phase I, a framework for studying nutritious value chains was developed (Gelli et al. 2015), recognizing gender as an important variable of analysis. This framework will be used in Phase II to design value chain interventions for achieving improved nutrition and to help explain how gender interacts with different points of the food chain, including in food choices. The GEE unit supported this flagship in Phase I by targeting capacity building activities such as [Gender-Nutrition methods workshops](#) to researchers from CGIAR Centers working on nutritious value chains (e.g. ICRAF (fruits), ICRISAT (pulses), and WorldFish (fish-based complementary foods)). GEE also gave small grants and technical assistance to help new research studies to incorporate gender into their design.

In Phase II, FP1: Food Systems for Healthier Diets will support other CRPs through a learning platform (or Community of Practice) to ensure that food system research and food chain assessments examining impacts on diet-related indicators incorporate sex-disaggregated data and gender in their analysis. In this flagship, a detailed review of food systems in target countries will be undertaken, where gender relationships will be viewed as crucial to understanding how food systems work, along with implications of agriculture and food policies on different gender groups. An Associate Research Fellow hired as part of the CGIAR Gender Post-doctoral Fellowship will help integrate gender and nutrition into agro-food value chains research.

The HarvestPlus program under **FP2: Biofortification** undertook an ex-ante analysis in its initial phase (pre-dating the start of A4NH) (Lividini and Fiedler 2015; Birol et al. 2014), which incorporated sexdisaggregation, setting the overall priorities for the HarvestPlus program. At that stage, the focus of HarvestPlus was on technical feasibility and not much weight was given to gender concerns apart from recognizing women as a key group in consumer acceptance studies. As it shifted towards delivery of biofortified crops, the flagship commissioned gender experts to carry out a [strategic gender assessment \(SGA\) of the HarvestPlus program](#). The findings of the SGA suggested opportunities to improve the integration of gender considerations in hypothesis development, data collection, and analysis. These are being continuously implemented and gender-responsive programming will continue into Phase II. This includes re-analyzing previously collected data through a gender lens, and recognizing intra-household dynamics and gender issues by including the Women's Empowerment in Agriculture Index (WEAI) in assessment studies on the adoption of biofortified crops. The HarvestPlus Monitoring, Learning and Assessment (MLA) team has started collecting sex-disaggregated data with the intention of closely tracking gender issues and identifying gender-related concerns to improve program design and delivery methods. A gender consultant was hired in Phase I and there are plans for hiring a gender coordinator in Phase II in order to improve gender integration in the program.

Technical assistance was also provided to projects within **FP3: Food Safety** which resulted in a paper on gender and food safety (Grace et al. 2015) and the construction of the Women's Empowerment in Livestock Index (WELI) as part of a project in Tanzania. There is now a greater understanding of men's and women's differential exposure to agriculture-related risks and health outcomes and these findings have been used to formulate research questions for Phase II (see CRP Section 1.4). In Phase II, there will be greater integration of gender issues in aflatoxin research, recognition of the importance of involving women to achieve food safety impacts and of supporting them to engage in emerging formal markets,

and the development of tools and metrics on assessing food safety which will consider gender-based barriers to adoption of technologies that reduce foodborne disease risks.

In Phase I, **FP4: Supporting Policies, Programs, and Enabling Action through Research (SPEAR)** has made considerable progress in mainstreaming gender, as projects have evolved from merely targeting women, to incorporating gender issues in evaluation design and analysis, and conducting research on approaches to empower women. Projects within this flagship have generated datasets, online tools, and journal publications with a significant gender focus, which have been disseminated to stakeholders through workshops and learning sessions. In Phase II, this knowledge will be used to explore a variety of new platforms to empower women in agriculture and new approaches to sensitize men about gender roles and women's equity while acknowledging the diversity and complexity of social and gender relations embedded within current agri-nutrition conceptual frameworks. For example, joint research on women's empowerment and nutrition with the CRP on Policies, Institutions, and Markets (PIM) (Sraboni et al. 2014; van den Bold, Quisumbing, and Gillespie 2013) has [informed the development of a pilot study being implemented by the Ministry of Agriculture in Bangladesh](#) in which different modalities for nutrition and gender-sensitive agriculture will be evaluated.

The different roles men and women play in agricultural systems indicate their differential exposure to agriculture-associated health risks (Grace et al. 2015; Wang et al. 2006). This area still remains under-researched within A4NH, and one of the knowledge gaps we aim to fill in Phase II is the interaction of gender with agriculture and health linkages. GEE began paying closer attention to these linkages in Phase I. A seminar was held on the influence of health on gender dynamics in rural livelihoods and blog posts on this topic have been published on the A4NH Gender Nutrition Idea Exchange. The new flagship on Improving Human Health (FP5) provides an opportunity to explore questions around gender differentials in exposure to health risks, gender differences in health benefits from agriculture, how decision making around agricultural intensification can be made gender-inclusive, and how men can be engaged to play a greater role in supporting better health outcomes. This flagship is jointly managed by an external partner, the London School of Hygiene and Tropical Medicine (LSHTM), and A4NH hopes to draw upon their extensive research expertise on gender issues in public health.

Strategic cross-cutting gender research

In addition to gender research within the five flagships, in Phase I, GEE conducted its own research on strategic issues and developed tools and methods which are being utilized by A4NH research projects and have helped flagships develop research. Four priority themes (see CRP Section 3.4) have been identified which fill important knowledge gaps (both globally and within flagships) on gender, nutrition, health, and agriculture. A summary of background research on themes can be found in the A4NH Gender Strategy.

A4NH will continue to invest in research that builds evidence on key conceptual and methodological questions, and develop and validate indicators, tools, and metrics that can be used to measure impact along the pathways. A significant stream of strategic gender and nutrition research in A4NH will be conducted in 2015-2020 as part of the second phase of the Gender, Agriculture, and Assets Project (GAAP2), which will adapt and validate a project-level Women's Empowerment in Agriculture Index (pro-WEAI) that agricultural development projects can use to diagnose key areas of women's (and

men's) disempowerment, design appropriate strategies to address deficiencies, and monitor project outcomes related to women's empowerment. GAAP2 research will generate the first systematic body of evidence on how different types of agriculture projects can improve gender equity and improve nutrition and health outcomes, to be utilized in future A4NH research projects and to inform new A4NH research priorities.

Operationalization of gender in A4NH

Objectives and outcomes of gender research

A4NH research will contribute to the cross-cutting issue on Gender and Youth, and in particular, to the sub-IDOs (Intermediate Development Outcomes) on gender-equitable control of productive assets and resources, and improved capacity of women and young people to participate in decisionmaking. Table 1 presents some proposed outcomes of the gender research undertaken by A4NH and how these will be verified and tracked as research progresses. The A4NH gender theory of change (CRP Section 1.4) outlines how we expect gender research to be taken up by flagships, other CRPs, and research users outside CGIAR.

Budget

Although A4NH has made good progress on gender research in Phase I, as noted by the external evaluation, more human and financial resources will need to be invested in implementing the gender strategy for Phase II. The proposed annual base budget is about \$367,000 of Window 1/Window 2

(W1/W2) funds and more than \$8 million in total from bilateral funds, to support cross-cutting work on gender¹, in addition to dedicated funds allocated for gender research for each flagship. About 25% of the base W1/W2 budget (\$560,000 in total) will co-finance strategic gender and nutrition research as part of GAAP2 in 2015-2020. The remaining 75% of this base W1/W2 budget (\$273,000 annually) will be used to support coordination and capacity building work, including a core gender team² and for funding workshops and other outreach activities. An expanded team will be formed, subject to additional funds from an uplift budget. See Table 2 for team composition for the two different budget scenarios.

With an expanded mandate, the GEE unit intends to add expertise on equity and empowerment, to ensure adequate attention is given to equity issues. Other major expenditure areas subject to the uplift budget include workshops, outreach and other capacity-building activities, and small grants to A4NH-mapped research projects. In the research flagships, gender funds may be used to hire gender experts, add gendered research components to existing studies, and establish strategic partnerships to complement CRP-level efforts. Table 3 shows the estimated distribution of funds from the base budget allocated for gender across the flagships and CRP – level cross – cutting programs for Phase II.

¹ This includes \$5 million for GAAP2 plus additional funds that the A4NH PMU plans to raise in Phase II

² Detailed descriptions of these positions can be found in the A4NH Gender Strategy

Box 1: Definitions of gender, equity and empowerment

Gender	Social category usually associated with being a man or a woman. It encompasses economic, social, political, and cultural attributes and opportunities as well as roles and responsibilities
Equity	Based on the idea of moral equality i.e. the principle that people should be treated as equals and that despite many differences, all people share a common humanity or human dignity. The three principles of equity are: equal life chances, equal concern for people's needs and meritocracy
Empowerment	Expansion of people's ability to make strategic life choices, particularly in contexts where this ability had been denied to them

Source: Gender (Rubin, Manfre, and Barrett 2009), Equity (Jones 2009), Empowerment (Kabeer 2001)

Box 2: Pathways from agriculture to nutrition and health

<ol style="list-style-type: none"> 1. Agriculture as a source of food: Farmers produce for own consumption. 2. Agriculture as a source of income for food and non-food expenditures: As a major source of rural income, agriculture influences diets and other nutrition- and health-relevant expenditures. 3. Agricultural policy and food prices: Agricultural conditions can change the relative prices and affordability of specific foods and foods in general. 4. Women's roles in agriculture and intrahousehold decision making and resource allocation may be influenced by agricultural activities and gendered control of assets, which in turn influences intrahousehold allocations of food, health, and care. 5. Maternal employment in agriculture and child care and feeding: A mother's ability to care for her child may be influenced by her engagement in agriculture. 6. Women in agriculture and maternal nutrition and health status: Maternal health and nutritional status may be compromised by the often arduous and hazardous conditions of agricultural labor, which may in turn influence child nutrition outcomes.

Source: Kadiyala et al., 2014

Table 1: Selected proposed milestones of gender research

Flagship	Research Milestones	Means of verification
FP1: Food Systems for Healthier Diets	<ul style="list-style-type: none"> Identification and design of gender-sensitive interventions to improve diets in key countries At least four gender-sensitive interventions co-designed and tested with local platforms, partners, and stakeholders in key countries and/or additional countries 	<p>Proposals for 2 interventions in each country developed (with gender analysis components) and submitted for funding</p> <p>Age- and sex-disaggregated datasets generated as part of intervention testing made available; Reports on key leverage points available; policy briefs on evidence of key food systems innovations available</p>
FP2: Biofortification	<ul style="list-style-type: none"> Lessons learned about factors (e.g., gender, equity) facilitating and hindering adoption and consumption developed and widely disseminated for use in decisionmaking by partner and implementing organizations Efficacy of multiple biofortified crops in culturally accepted combinations for women of child bearing age and for children 6-24 months of age, and results are incorporated into decisionmaking tools 	<p>Publications (include gender and equity analysis); Head of Impact</p> <p>Head of Nutrition; Publications (include gender analysis)</p>
FP3: Food Safety	<ul style="list-style-type: none"> Evidence from Phases I and II is turned into gender-sensitive guidelines for traders and policy/regulators in at least two types of value chains (dairy, fish, vegetables) in target countries At least 40 public sector agencies and agri-businesses adopt gender-sensitive aflatoxin mitigation technologies (Aflasafe, post-harvest practices and aflatoxin testing) for reducing aflatoxin in crop value chains 	<p>Monitoring reports; publications which include a section on gender</p> <p>Partner reporting; tracking (including gender indicators) of implementation of regulations and policy</p>
FP4: Supporting Policies, Programs and Enabling Action through Research (SPEAR)	<ul style="list-style-type: none"> Discourse, attitudes, behaviours, practices on cross-sectoral nutrition-sensitive agriculture incorporate new knowledge/ approaches on climate change and gender relations Program implementers (governments, INGOs, NGOs, UN institutions) have increased understanding of (gendered) impact of nutrition-sensitive agriculture programs and improved capacity to use evidence, tools and methods in program design resulting in 16.8 million women and children in target countries benefitting from improved nutrition-sensitive programs being implemented by partner organizations and governments 	<p>Annual reporting (which include gender) from partners; citations in official policy statements and documents</p> <p>Tracking of program implementing partners through targeted interviews and reviews of documents on nutrition-sensitive agriculture programming, investments and best practices in 2018, 2021 and 2024</p>
FP5: Improving Human Health	<ul style="list-style-type: none"> Third theme-based symposia involving natural and social scientists from health and agriculture held to identify and develop research areas, recognizing gender and equity issues Field trials of methods to reduce disease risks in irrigated crop production systems, based on initial assessments of Knowledge, Attitudes and Practices of household farming communities in relation to vectors and vector-borne disease problems (including household decisionmaking and role of women), completed in sites in West and East Africa 	<p>Event reports; gender sessions in symposia</p> <p>Monitoring and evaluation reports that include gender indicators</p>
Cross-cutting: Gender, equity & empowerment	<ul style="list-style-type: none"> A4NH flagships and other CRPs use A4NH tools and approaches to measure gender, assets and empowerment Institutions incorporate pro-WEAI tools and approaches into their academic and certificate programs for development professionals 	<p>Monitoring database; GAAP2 annual monitoring and final evaluation; web searches on "pro-WEAI" to identify other users</p>

Source: A4NH Phase II proposal, Performance Indicator Matrix Table D

Table 2: GEE Gender Team composition under different budget scenarios (FTE = Full time equivalent)

Position	Core gender team (base budget)	Expanded gender team (uplift budget)
Gender research coordinator	33% FTE	67% FTE
IFPRI-based Senior Research Assistants/Research Analysts	20% FTE	200% FTE
Region-based Research Assistants	-	150% FTE
Gender postdoctoral fellow	50% FTE	-
Senior gender advisor	8% FTE	25% FTE
Senior equity consultant	\$20,000 annually	\$50,000 annually

Table 3: Distribution of proposed Phase II gender budget by flagship

Flagships	Budget (in US\$ millions)
FP1: Food Systems for Healthier Diets	4.7
FP2: Biofortification	4.6
FP3: Food Safety	0.8
FP4: SPEAR	43.5
FP5: Improving Human Health	2.7
Cross-cutting: Gender, Equity and Empowerment	10.9
Total budget for gender	67.2
<i>% of total A4NH Phase II base budget</i>	<i>11%</i>

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Annex 3.0.3 Gender Annex

Gender Analysis in CRP Priority Setting and Research

Gender research has substantially influenced the direction of CCAFS in all four areas identified by Lipper et al (2014) (see Section 1.0.4), as well as in FPs. Gender research in Phase I included: modelling yield gaps to identify and prioritize adaptation measures that benefit women farmers (2014); baseline surveys in all CCAFS sites that include a gender component (2013); systematic review of gender issues in climate risk management and gender-disaggregated field-based analysis of local use of climate information

(2012); and training, models, tools and approaches to collect gender and social differentiated information on climate analogues, climate information, institutions, mitigation, and adaptation and risk (2011).

FP1: Priorities and Policies for CSA. The Linking Knowledge to Action theme (2011-2014) influenced the integration of gender into the CCAFS MEL and P&R frameworks. This contributed in 2014 to RBM that substantively integrated gender into all Flagship research. The social learning approach also prompted expansion of the gender approach to include social “differentiation” (Kristjanson et al. 2014; Jost et al. 2015a). GSI was highlighted as a key strategy through which CCAFS research (including the Gender and Inclusion Toolbox) would help next users both inside and outside of the CRP to champion changes in CSA adoption approaches, policies and institutions (Jost et al. 2014). Work by Meinzen-Dick et al. (2012) and Beuchelt and Badstue (2013) highlighted the centrality of gender and women’s empowerment for nutrition and food security and the fact that women play different roles in attaining food security. As a

result the FP focuses on the role of climate-smart institutions to increase women's ability to control and make decisions around the use of resources to improve child health, enhance food and nutrition security, and increase education, all of which contribute to poverty reduction. In relation to climate policy, research has highlighted the low representation of gender in national and global policy and the importance of gender equality to achieve food and nutrition security and climate objectives (Gumucio and Tafur, 2015; Huyer, 2016).

FP2: Climate-Smart Technologies and Practices. Gender research in this FP has highlighted the lack of data and evidence on how CSA practices will impact women and men, and analysed gender benefits in CA. Findings include that men and women have different priorities for CSA, and that an enabling environment (policy, incentives, etc.) for gender and CSA considers strategic gender needs in addition to practical gender needs (Acosta et al. 2015; Gumucio and Tafur, 2015). The Gender Household Survey

(CCAFS et al. 2013) provides differentiated data at baseline and subsequent stages which has been crucial to understand the gender aspects of climate vulnerability. Analysis of the survey has helped to inform the agendas of all FPs, but most specifically FP2 and FP4 (particularly in relation to accessing CSA information). Main findings are that across sites in Africa and Asia, women tend to be less aware of CSA practices and that they receive less information than men about climate change and agriculture

(Twyman et al. 2014; Jost et al. 2015; Mittal, forthcoming). This research has also influenced an understanding that research and action need to be taken to the individual rather than the

household/farm level to understand intra-household dynamics and decision making processes (Twyman et al. 2015), and the implications for CSA adoption of out-migration to urban areas. Greater understanding of women's non-traditional activities is needed, along with changes occurring in gender roles as a result of environmental and social factors (Twyman, 2015; Gonda, forthcoming).

FP3: Low Emissions Development. FP3 has set research priorities and identified high impact research for specific mitigation options in the regions. A gender and LED strategy developed in 2013 (Edmunds et al. 2013) identified three priority topics: (1) increasing awareness of norms of power, control and influence between men and women in decisions about LED practices; (2) improving innovation systems to value women's needs and knowledge to support new management practices, and providing women with information; and (3) assessing the impacts of LED practices on women to provide early warning about potential inequities, identify where change is needed and contribute to the design of more successful interventions. Action research in three countries with ProInnova has informed recognition of the need for community-level action in scaling up and using innovation approaches that create spaces for exchange of views to support changes in gender relations. In Honduras women worked with men to select agroforestry species (Hottle, 2015). Focusing on priority sectors and regions for mitigation, research in 2015-2016 synthesized existing knowledge, analysed opportunities for improving gender outcomes, and developed gender workplans with project leaders for fertilizer use, rice and livestock

(Farnworth 2015, forthcoming a, b, c, d).

FP4: Climate Services and Safety Nets. Patterns of unequal access to climate information and advisory services exist according to who can or cannot make use of these services to manage climate risks and strengthen resilience. Phase I provided insights into the differing needs of women and men for climate information and related services. FP4 research has found that the farmers who tend to be most vulnerable to climate change stresses are resource-poor, female and lower caste, marginalized by

community sociocultural norms, and invisible to many outsiders (Tall et al. 2014). However, FP4 research also demonstrates that women farmers value climate and agricultural information when they have access to it, and that it is an important factor in the adoption of CSA by women (Kristjanson et al. 2015; Twyman et al. 2014). Gender-specific and -tailored climate services are required that take into account women's agricultural tasks. The nature of communication channels required to reach the most vulnerable groups will differ according to sociocultural and gender differences (Kristjanson et al. 2015; Tall et al. 2014). FP4 research on index insurance indicates that trends in adoption also reflect gender differences in access to resources (Kumar forthcoming).

Operationalizing gender in the CRP research agenda

Research to date in CCAFS has demonstrated that integrating GSI into the program is critical for it to achieve its objectives. Program management recognized in 2014 that even greater emphasis on gender was needed and a new cross-cutting theme on gender was established, with the hiring in 2015 of a Global Research Leader on Gender and Social Inclusion. The draft recommendations from the CCAFS External Review also point to the need for increasing the focus on gender. It is in this light that the GSI strategy has been prepared. In Phase II, GSI research and results will be integrated through: Flagship research; gender-disaggregated data sets; indicators on technology uptake, gender-focused CapDev indicators (see Annex Table 3b) and indicators for six of the 12 CCAFS sub-IDOs; % of budget allocated to strategic and integrated gender research; and staff diversity indicators. As a result of ongoing reviews and syntheses in 2015-2016 of Phase I research, a series of gender gaps in research and assessment have been identified for integrating GSI more systematically into the CRP, along with promising areas for further analysis.

Flagship research. All FPs are using the results of gender research, analysis and tools to identify research priorities for Phase II. FP1 will utilize and build on research that informs, catalyses and targets CSA for women and other vulnerable groups (Jost et al. 2015a,b). Recognizing that a lack of sex-disaggregated data has resulted in underestimation of women's contributions to livelihoods, health and nutrition (Huyer 2014), sex-disaggregated data collected during Phase I will be used for ex ante evaluation and priority setting to understand the implications of CSA interventions on men, women, youth, and marginalized groups. FP1 will explore and test the best methods for formulating policies and programs that encourage equitable access to and control of productive assets. This will involve examining how GSI research findings are taken up by decision-makers. The aim is to better integrate gender into climate change policy and investment decisions.

In Phase II FP2 will identify trade-offs of food security, adaptation and mitigation of CSA and whether they differ for men and women, young and old. It will address intra-household dynamics and decision-making processes to identify incentives for women's adoption of and benefits from CSA (including finance instruments). Addressing questions related to CSA and gender will help identify those practices and technologies that have positive impacts on the control of productive assets and resources within communities. Work initiated in 2016 will continue to develop a conceptual framework and GSI metrics for designing context-specific and gender-sensitive interventions. These include gender in CSA indicators at national and project levels; and inclusion of gender in the CSA best practices compendium.

It also includes integrating gender into scaling up frameworks, for example in CSVs. A major challenge for CSA is to identify the context-specific technologies and supporting measures that may be needed; and the trade-offs and co-benefits that different combinations of options will deliver, for different

stakeholders including women (Beuchelt and Badstue, 2013; Bryan et al. 2015; Locatelli et al. 2015; Thornton and Herrero 2015). CCAFS proposes to address fundamental questions via participatory research at climate-smart villages (CSVs) and district scale with farmers and development agencies, including the private sector. This research will be linked to higher-level analyses (e.g. models of scaling processes and trade-offs) to generate IPGs on alternatives for agricultural development.

Phase I work informs FP3 priorities and plans for Phase II in several ways: those mitigation options with the highest potential impacts involve activities dominated by men, especially in decision-making, so targeting women for adoption in the short-run will cause trade-offs in meeting SLOs. As a result FP3 has focused on increasing women's technical expertise, for example in the CLIFF and LAMNET PhD programs, and engagement in policy. Other opportunities include targeting value chain niches where women are more active, such as dairy; and analysis of gender safeguards, a requirement for climate finance. Participatory analysis of incentives for alternate wetting and drying in rice will take place in Southeast Asia. Current research on gender priorities and training in livestock in Kenya is influenced by an understanding that overcoming barriers for women in the sector is important for achieving NAMA goals. Dairy-related research with a gender dimension will take place in several countries. Two postdoc positions on gender and livestock are in place.

FP4 research in Phase I demonstrated that climate services can be implemented in a way that either reinforces existing gender and social inequities, or fosters equity by effectively targeting women and other social groups. As a result, institutional services that target rural communities are a major part of the FP4 agenda. In Phase II, research will build on these findings to strengthen understanding of how climate services and agricultural insurance can meet the differing needs of women and men and integrate this understanding into scaling up. Current evidence will be synthesized and new evidence will be generated to inform investment, design and implementation of services that reach both women and men.

Current gaps and areas for future research. In Phase I, insufficient attention was paid to coordinating research and results across the program. Steps need to be taken to collect, synthesize and assess research to date and to establish a basis for priorities going forward. Plans are underway for synthetic activities in 3 FPs in 2016 (FP1: climate and food systems policy; FP2: CSA measurement and scaling up frameworks; FP4: climate services). In 2017 a synthesis of FP3 research will refine a GSI agenda for LED.

Another gap is **gender impact assessment of CSA technologies**. An assessment in 2013 indicated that 29% of Flagship products produced were explicitly targeted to women farmers, while 0% Flagship products were assessed for likely gender-disaggregated impact. In 2014, these percentages increased to 38% and 25% respectively. CCAFS will continue to measure this through the Phase II FP2 indicator

“Number of site-specific targeted CSA technologies/practices tested, with all options examined for their gender implications”. A gender impact assessment framework and method for this is being developed.

While steps have been taken, the challenge for CCAFS is to move beyond diagnostic research to gender-transformative research, or transformation of gender roles and relations between women and men (Cole et al. 2014). Action research is needed to analyse the most promising options for promoting the inclusion of women and youth in CSA. Development of tools and methodologies for CSA policy and programming, integration of GSI into scaling up strategies, and methods for working with policy makers, finance institutions and local institutions are also needed.

Power relations and socio-cultural norms affect the ability of different social groups to access and control productive resources and to participate in decision making. Phase II research will help to better understand intra-household dynamics and decision making, as well as options, models and methods for promoting equitable decision making among household members. An FP3 gender and livestock post-doc position will contribute research on household methodologies.

Gender monitoring indicators. CCAFS has included gender components in six of its 12 sub-DOs. Included in these are two gender and youth sub-DOs (Section 1.0.4). Sex-disaggregated data on beneficiary populations and participants are collected in all projects, and are integrated into all monitoring and endline data. The capacity development strategy also includes four gender-focused indicators that will be tracked (Annex Table 3b). Gender is integrated into the MEL, P&R and RBM frameworks. Independent evaluations (including one undertaken in 2015) also integrate sex-disaggregated data and assessment of gender analysis in their review. The percentage of program funds going to gender-focused activities is targeted at 20% for Phase II (up from 15% in 2015). Attention to serious gender research will be monitored through RBM, and poor performance will be penalized by budget adjustments. There will also be capacity development efforts to raise understanding about gender research. Gender research budgets will follow the guidance contained in Definitions of Gender Research for CRP Budgets (June 2015), prepared by the CGIAR Gender and Agriculture Research Network. Staff diversity indicators in the GSI Strategy will monitor % women on the Program Management Committee, as Research Leaders and as Regional Program Leaders. The ultimate goal is that all bodies achieve a target of 50% women.

Enabling environment for women scientists

CCAFS supports women's active participation in research, capacity building, policy engagement activities and events at local to international levels. It will increase access of women scientists to research and training opportunities. It has a policy of recruitment and leadership development of women scientists. Three of seven members of the PMC will be women in Phase II, while three of six FPLs/Global Research Leaders and two of five RPLs are women.

[Annexes to Full Proposal 2017-2022 without CVs →](#)

3.4 Gender Strategy

This annex responds to guidance received from the Consortium Office and has a dual purpose: (a) to show how key findings from PIM's gender research in Phase 1 have informed research priority-setting within the PIM flagships in Phase 2; and (b) to describe how gender research will be operationalized in PIM, including the Monitoring and Evaluation framework for the gender dimensions of the program.

Integration of gender into PIM's Phase 2 research priority setting

Flagship 1 – Technological Innovation and Sustainable Intensification

The Agricultural Science and Technology Indicators (ASTI) project provides the only comprehensive source of sex-disaggregated data on agricultural research staffing in developing countries. On average, less than one quarter of agricultural researchers in developing countries are women, and women are generally concentrated at lower job classification levels (Beintema 2014), **confirming that PIM's efforts to strengthen agricultural R&D systems must include attention to gender imbalances within NARS.**

During Phase 1, work on extension methods in Mozambique showed that men point-of-contact farmers were less likely to train women than men farmers in their villages, and that training women contact farmers increased training of women farmers (Kondylis et al. 2014). Other PIM research from East Africa found that Volunteer Farmer Trainers (VFTs) can reduce the gender gap in access to information (Franzel et al. forthcoming), mainly because of gender biases in hiring public extension staff which to some degree are overcome by VFT programs. Phase 2 will continue research along these lines to assess the extent to which innovative extension methods not only improve access to information for women, but also lead to outcomes such as increased adoption of technology and productivity. FAO has expressed interest in partnering with PIM on the issue of gender and extension.

In Phase 2, PIM will invest in generating gender insights within its foresight modeling work and in the support to the Virtual Information Platform for Africa, two areas where not much progress on gender was made in Phase 1. Both activities are exploring links to microlevel datasets to enable larger-scale analyses to be linked to distributional effects across gender, age, and poverty levels. This cannot be done at a global level due to data limitations, but will be explored in priority countries. To support these efforts, work on expanding the understanding of gender preferences in the demand for and adoption of technology will be intensified (this research was initiated in Phase 1, but analyses are not available at the time of proposal submission).

Flagship 2 – Economywide Factors Affecting Agricultural Growth and Rural Transformation

Flagship 2 focuses on job creation for young men and women, and addresses the factors that affect occupational choice. The work identifies systemic barriers (for example, in access to land, finance, and information) that constrain livelihood strategies, and examines how these differ for young men and

women. This flagship also investigates **the differential impacts of public expenditures on men and women, the degree of women’s inclusion in the design and advocacy of policies, and methods to lift barriers to women’s involvement.**

In Phase 1, research analyzed migration patterns and their implications for agriculture. While women’s responsibilities on the farm increase with the migration of male household members (de Brauw et al. 2013), their engagement in decision making regarding agricultural investments may still be restricted. Some studies in Asia indicate that women, as migrant breadwinners or managers of migrant households, may gain control over resources and determine the end usages of expenditures (Mueller et al. 2015). Research in Phase 2 will assess how gendered migration patterns and off-farm employment trends in Asia and Africa influence women’s bargaining power, agricultural investments, and resulting productivity (in conjunction with Flagship 6). In addition, the team will seek to understand the genderrelated employment opportunities in agriculture and nonagricultural sectors, with attention to the constraints faced by women beyond intrahousehold decision making. The constraints explored will include economywide factors, such as policies affecting land access and labor mobility, and linkages between urbanization and dynamics in rural livelihood diversification. This will enable analyses of policy effects to better reflect gender outcomes.

Flagship 3 – Inclusive and Efficient Value Chains

Flagship 3 identifies interventions that increase gender equity in control of assets and in opportunities for employment along value chains. In addition, this flagship develops tools for gender analysis in value chains, which will be disseminated through the value chain hubs.

Research from Phase 1 confirmed the hypothesis that asset endowment is critical to successful participation in value chains (Johnson et al. 2016; Stoian et al. 2016; Donovan and Poole 2016), with important implications for women – who typically have lower resource endowments. A recent PIM compendium of value chains case studies concludes that “gender issues need to be considered specifically in the design, implementation, and evaluation of interventions” (Devaux et al. 2016). In Phase 1, PIM supported an analysis of the ability of quantitative tools to measure gender differences within value chains (Madrigal et al. 2016), as well as the incorporation of an explicit gender lens into the PIM value chains tools (e.g. LINK, PMCA and 5 Capitals); the gendered version of these tools will be further validated and disseminated for wider use by the private sector and NGOs in Phase 2. Interventions to address gender inclusiveness in value chains will aim to overcome poor endowments of resources (such as land) and constraints in accessing credit and inputs (for example, through testing of contract farming arrangements). Attention will be accorded to creation of wage work along the value chain and gender implications of wage employment.

Flagship 4 – Social Protection Strategies and Programs

Flagship 4 studies how social protection programs assist women and men, change intrahousehold dynamics, and include gender in targeting and choice of instruments for delivery. Previous research has demonstrated that social protection programs can be an effective mechanism for increasing women’s control over household decisions in the spheres of child education and health and durable goods purchases (de Brauw et al. 2014; Ahmed et al. 2009). In Phase 2, researchers will explore how transfers may also improve women’s control over agricultural plots and the associated harvests.

A review featured in the FAO/IPPRI book *Gender in Agriculture: Closing the Knowledge Gap* suggests that financial products designed to allow women to save, borrow, and insure are essential for strengthening their roles as producers and broadening their opportunities (Fletschner and Kenney 2011). In Phase 1, PIM explored this issue through experimental research. In a study in Burkina Faso, Delavallade et al. (2015) found that female farm managers were less likely than male farm managers to purchase agricultural insurance, and more likely than male farm managers to invest in savings for emergencies – perhaps because women are usually the ones who have to deal with health risks associated with fertility and childcare. These differences were associated with higher productivity on farms managed by men farmers than by women farmers, showing that the offering of insurance products alone may exacerbate gender inequities. On the other hand, a PIM study in Bangladesh (Clarke and Kumar 2015) found men and women equally likely to state intent to purchase index-based weather insurance, though women were less literate on issues of finance and risk, putting them at a disadvantage in purchasing insurance. In Phase 2, PIM will strive to identify the circumstances that explain these different results, and to identify the best context-specific approaches for addressing gender. This flagship will also examine the effects of integrated social protection and agricultural interventions to assist men and women to manage shocks and risks, while at the same time being able to invest in agriculture and build assets.

Flagship 5 – Governance of Natural Resources

Flagship 5 explores pathways to strengthen tenure security of particular groups, especially women, drawing on assessments of promising innovations. Research in Phase 1 contributed to better understanding of gender-based differences in tenure security and decision making over resources as well as how interventions can reduce inequities.

PIM's research in Phase 1 contributed to the development of methods for measuring tenure security at intrahousehold level. For example, land tenure survey modules developed for Nigeria were adapted for the Living Standards Measurement Study (LSMS) in other countries. These instruments allow disaggregation by gender and age. In Phase 2, PIM will analyze these data and expand the development of sex-disaggregated data to include collective/community land tenure as well as rights to other resources such as water, trees, and fish stocks.

Phase 1 studies from Ethiopia, Mozambique, and Nigeria show the need for pragmatic and context-specific approaches to land policy and governance interventions to improve tenure security for women (Hagos 2012; Ghebru et al. 2014; Ghebru and Holden 2013). Putting women's names and photos on land certificates in Ethiopia can contribute to their tenure security and investment in land, provided that women know about these provisions (Kumar and Quisumbing 2015). Community-based legal assistance is an innovative approach to increasing women's likelihood of understanding and acting on their rights to land (Behrman et al. 2013; Billings et al. 2014). This work builds upon existing research suggesting that enhancing women's roles can open new opportunities for institutional change (Ratner and Smith 2014). These initial results show promise for identifying useful approaches to strengthening the tenure security of women; in Phase 2, PIM will continue to validate and support their introduction with governments (mainly in connection with the Land Policy Initiative of the African Union Commission).

With regards to governance of resources in landscapes, ICRAF, CIFOR, and WorldFish have found that multistakeholder processes build trust, diminish power asymmetries, and better align divergent

interests in ways that can yield more equitable outcomes for resource policy and institutional reform. At the same time, disadvantaged groups need support and assistance to engage effectively in key forums (Leimona et al. 2015; Ratner et al. 2014). In Phase 2, PIM will build on case study work to more systematically understand how different models for governance of shared resources can accommodate interests and benefit multiple stakeholders, including women.

Flagship 6 – Cross-cutting Gender Research and Coordination

In Phase 1 PIM invested significantly in development of gender research methods, and produced guidelines for collecting sex-disaggregated data and a review of qualitative gender research methods (Rubin forthcoming). In Phase 2, as leader of the CGIAR Collaborative Platform for Gender Research, PIM will be well-positioned to disseminate these guidelines widely.

PIM, IFPRI, IRC, and the World Bank are reviewing methods of measuring men and women's time use, asset control, and agency. In Phase 2, the team will analyze existing data on these topics, and implement and assess measurement innovations in order to facilitate more informed policy recommendations to enhance gender equity.

Numerous partners used the Women's Empowerment in Agriculture (WEAI) questionnaire in Phase 1. Availability of additional WEAI data will allow continued validations of the tool and research on women's empowerment in Phase 2. The team will explore new applications of the WEAI in the areas of labor force participation, technology adoption, and agricultural productivity.

The book "Gender in Agriculture: Closing the Knowledge Gap", the result of a collaboration between FAO and IFPRI during Phase 1, presents the evidence base on gender in agriculture, and highlights the many gaps that remain. PIM also analyzed sex-disaggregated data on landownership and management in Africa and Asia, finding large gender gaps, data gaps, and discrepancies in the reporting of indicators (Doss et al. 2015; Kieran et al. 2015). FAO's Gender and Land Rights Database has adopted PIM's conceptual framework and indicators of these gaps (De la O Campos et al. 2015). In Phase 2, PIM will continue to work with FAO to learn from the use of these indicators and improve other gender indicators.

Findings from Phase 1 indicate that households commonly report men and women's "jointness" in decision making, actions, and asset ownership. Since existing gender analysis has tended to focus on differences between men and women, little is known about the importance of jointness, and this topic will be emphasized in Phase 2.

Monitoring and Evaluation of the program's gender dimensions

Starting in Phase 1, PIM researchers are asked during the research design stage to determine whether gender is relevant to the proposed research. If not relevant, they are asked why. If relevant, they are asked to classify the extent to which deliverables incorporate gender. This facilitates monitoring of both strategic and integrated gender dimensions of the program. ² The leader of Flagship 6 – a gender expert from outside CGIAR – also plays a strong gender coordination role for the entire PIM portfolio. With assistance from two full-time junior scientists, the leader of Flagship 6 ensures that gender issues are addressed, where relevant, in all flagships, and that there is coherence and communication across all activities with a gender dimension. In addition, the gender team provides guidance and feedback on gender research questions and methods, thereby building the capacity of researchers to conduct

rigorous gender analysis. The leader of Flagship 6 will oversee the work of the CGIAR Collaborative Platform for Gender Research, and the Platform Coordinator will also report to a Steering Committee to provide for independent oversight (see Section 2.12 of the Flagship 6 narrative).

² See the CGIAR Gender Monitoring Framework for definitions of these terms.

The Program Management Unit monitors gender work across the portfolio by collecting indicators of progress in the annual activity progress reports (see Table 3.4.1). These reflect the proportion of activities collecting sex-disaggregated data, as a percentage of activities collecting primary data; the percentage of activities analyzing sex-disaggregated data; and the proportion of activities using findings to reduce identified gender inequities or to explicitly target women, girls, or both. In compliance with the CGIAR Gender Monitoring Framework, PIM's goal in Phase 2 is for all individual-level data to be sexdisaggregated. The information collected in the activity progress reports also helps to identify areas of the portfolio that may need increased attention from the gender team to address methodological issues. In response to recommendations from the PIM external evaluation team, self-reporting by researchers will be augmented by selective verification.

A subset of PIM outcomes will be assessed to determine the role of gender analysis in achievement of outcomes. This work will start modestly, and expand over time. In addition, selected impact evaluations will be conducted to measure the effect of various interventions on relevant gender gaps. These impact evaluations will usually be undertaken with the implementation partners funding and administering the projects.

Table 3.4.1. PIM gender Monitoring and Evaluation framework

What will be monitored or evaluated	Indicators of progress	Data collection methods	Frequency	Responsible parties
Gender research integration in PIM portfolio	Percentage of data collection activities generating sex-disaggregated data (number of activities collecting sex-disaggregated data/number of activities collecting primary data)	Activity progress reports	Annual	Reported by Activity Leaders Assessed by gender support staff
	Percentage of activities presenting findings from gender analysis	Activity progress reports	Annual	Reported by Activity Leaders Assessed by gender support staff
	Percentage of activities that use sex-disaggregated data for priority-setting	Activity progress reports	Annual	Reported by Activity Leaders Assessed by gender support staff
	Percentage of activities that explicitly target women, girls, or both	Activity progress reports	Annual	Reported by Activity Leaders Assessed by gender support staff
	Number of people who participated in trainings focused on gender, women, or girls	Activity progress reports	Annual	Reported by Activity Leaders Assessed by gender support staff
Research outcomes	Quality of gender analysis conducted by PIM researchers	Number of ISI publications from activities indicating significant/some focus on gender	Annual	Assessed by Flagship 6 leader and gender support staff
Development outcomes	Reduction in gender gap in control over productive assets and resources (Sub-IDO CC2.1.1)	Reports from development partners and impact evaluation in selected cases	3-5 years	PIM Senior Research Fellow, with input from gender team
	Improved capacity of women and young people to participate in decision making (Sub-IDO CC2.1.3)	Reports from development partners and impact evaluation in selected cases	3-5 years	PIM Senior Research Fellow, with input from gender team

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3.3 Gender annex

3.3.1 Gender Analysis in CRP Priority Setting and Research

Gender research has influenced the direction of WLE in various ways, both in the flagships and in the program overall. As the program evolved, the notion of gender and equity (or equality), along with the ecosystem framework, has become one of the main upper level questions/hypothesis of WLE. Starting with the gender strategy in 2013, gender research has tackled a variety of issues related to the gendered use and management of water, land and ecosystems. Initially, the work was largely diagnostic, focused on understanding the overall roles and opportunities of women and men within WLE. Understanding the critically important role of social equality, especially gender equality, as a precondition for sustainable development, as mentioned by Leach et al. (2013) and Raworth (2012), has gained traction as a way of framing the work in the WLE flagships. Developing the Phase 2 proposal has provided WLE with an opportunity to reflect on lessons learned, and to build a more concrete research agenda focused on enhancing the role and importance of gender equality.

Overall framework of gender research in WLE in Phase 1. Research and experiences (Quisumbing 2003; Zwarteveen 1997; Valdivia and Gilles 2001) have clearly identified access to, and control and decision-making power over, water, land and ecosystems as prerequisites and entry points for women to actively manage and use natural resources. For WLE in Phase 1, this meant to empower women to deal with, for instance, degradation of land and variability of water supply, they need to have secure access to decision-making power over, water, land and ecosystems; and they need to co-develop solutions, if they are to be major stakeholders in sustainable intensification. In practical terms, this meant developing gender research questions at WLE and flagship levels to integrate gender by identifying and piloting specific entry points. As a result, the goal was to understand how WLE's interventions, models, and solutions in the flagships contributed, or could contribute, to increasing access to and decision-making power over these natural resources, and how we could increase women's ability to contribute to sustainability.

Flagship: Regenerating Degraded Landscapes (RDL). Degraded landscapes present numerous challenges to the men and women inhabiting them. RDL gender research focuses on getting a better understanding of these challenges and identifying possible solutions. A large baseline survey carried out as part of a project on "addressing challenges to sustainable land management through social constraints to adoption and designing incentives to overcome these obstacles" in eight communities in East and West Africa is already producing important results. As a reaction to land degradation and consequent food insecurity in Ghana, women are migrating, often seasonally, to seek work as laborers or sellers of small commodities. In Malawi, the poorest women and men respond by selling their labor during peak agricultural times. This cycle of working for others means that work on their own farms suffers. As also found by VCR, the gendered use of ecosystems also emerged in the baseline research, providing researchers with information on how landscapes are valued and used differently, and how proposed interventions can benefit or disrupt essential services to women and men. Innovative, locally-produced solutions for community members in collaboration with partners are also being identified. Two other

areas where gender research has influenced the direction of RDL were gender and land tenure, and the need to look beyond tenure if women are to become stakeholders in regeneration (GLF); and the audit of policy documents on gender and the environment in Ghana, which established the existence of significant institutional barriers to using research results (Dittoh et al. 2015).

Flagship: Land and Water Solutions (LWS). Gender research in this flagship concentrated on documenting the ways in which female farmers often face substantial and multiple challenges in 204 accessing improved agricultural water and land management (AWLM) practices and technologies. These challenges include high upfront investment costs and limited access to information to enable them to make informed investment and management choices. Dessalegn (forthcoming, a) illustrated this with the raised bed technology in Egypt, where access to the machine is the same for both men and women because they have to rent it from the private sector. However, access to the rest of the recommended package, including fertilizers and selected seed varieties, was not equal, as this required significant credit, which was difficult for women to access. Work on irrigation in Zambia and Ghana (van Koppen et al. 2013), and on fuel-saving cooking stoves in Ethiopia (Dessalegn forthcoming, b) also highlighted similar constraints. Research enabled the flagship to reexamine and rethink the stereotypical prioritization of domestic water for women, instead of highlighting the importance of economic empowerment through access to productive water (de Haan et al. 2015).

Flagship Rural and Urban Linkages (RUL). An analysis carried out in Phase 1 showed that genderspecific perceptions of waste and waste reuse can be decisive factors for the success of resource recovery and reuse (RRR) businesses, such as water reuse at scale; and gender awareness in RRR is important in view of access to organic waste resources, information, credit and resale markets. While RRR can create new jobs for women, such as in municipal solid waste, not all waste materials are culturally acceptable/assessable/possible, for example, handling fecal sludge in India (Drechsel et al. 2015). Similar work is being carried out to critically examine the specific roles women play, and can play, within the RRR value chain and within the business models around RRR developed by the flagship. This work is due to be completed by the end of this year.

Flagship: Managing Resource Variability, Competing Uses and Risk for Increased Resilience (VCR). WLE Phase 1 research showed that mapping gender and natural resources can provide important insights on priorities regarding access to and use of ecosystems and natural resources. In a unique case study in Ethiopia, “women showed a strong concern over soil fertility, men focus more on grazing lands and eucalyptus, and researchers are heavily focused on crops and farming systems” (Baker et al. 2015). This research, piloted in 2013, influenced a range of projects developed in the WLE focal regions that examined gender-specific ecosystem services. Work by Meinzen-Dick et al. (2014) showed that even where women are disproportionately affected by variability and loss of ecosystem services (as when groundwater depletion affects domestic water supplies), they may not be able to respond because they tend to lack sufficient understanding of underlying biophysical processes. This argues for better understanding of the capacities and capabilities required for natural resource management (NRM), as a basis for designing appropriate solutions. In the absence of such gender-disaggregated knowledge, proposed solutions may well be inappropriate and even counterproductive. In another cluster of work on transboundary river basins, gender-disaggregated data were collected under a project entitled the ‘Four Gender Basin Profile’ (4GBP). The project collated data for each of the WLE focal regions to build indicator maps and profiles of regional gender issues. These will be used to inform further work in those regions (as part of the gender analysis). This work will be finalized in 2016, but as an initial output there

has already been a chapter on gender in a book on the Volta River Basin (Sullivan et al. 2016). The results will be used to inform policy and investment planning in the near future.

Flagship: Enhancing Sustainability across Agricultural Systems (ESA). One important lesson from WLE's gender work has been the advantages of addressing gender issues right from the start in defining flagship projects and CRP's problem statement, rather than adding this dimension later. This was a clear lesson from the work of the Integrated Solutions into Policy and Practice (ISP) Flagship (now ESA) in the focal region WLE-funded projects.

These projects provided opportunities to work on gender from the beginning. Thus, each project went through a rigorous selection process and worked closely with the Gender and Inclusive Development team, so that an initial gender analysis could influence the issues that the projects were addressing. The work started in 2015, and a diverse set of results around gender and access, and decision making is anticipated by the end of 2016. For example, in East Africa, the Harnessing floods for enhanced livelihoods and ecosystem services project developed a gender strategy and produced a research guide for inclusive development, and an innovative analysis on the gendered implications of changing water distribution when harnessing floods. The 32 projects under ESA will be analyzed and a synthesis report will be available by the end of Phase 1.

3.3.2 Operationalizing Gender in the CRP Research Agenda

Gender impacts on WLE research: Prior to implementation of the gender strategy, the notion of gender equality was not prioritized by WLE. It is now recognized as being critical to achieving sustainable agricultural intensification. The concept is gaining ground and is framing thinking within WLE, but still needs to be fully operationalized.

In Phase 1, the emphasis was on examining how gender research could contribute to enhancing equitable access, participatory decision making, and improving the ability of women to invest in natural resources. Recent results have shown that this agenda was too broad. Therefore, in Phase 2, WLE has developed a more targeted gender-specific research agenda (see section 1.0.4 of the main WLE proposal) looking at specific gendered capabilities that need to be strengthened, and gendered power relations that need to be understood, to enable more equal access to natural resources, and to facilitate women to become active users and managers of natural resources. WLE's entry points are at landscape and institutional levels. By the end of Phase 2, this research will have identified new insights, policy and reform options, implementation strategies, and investment opportunities for achieving gender equality in the countries and regions where WLE works. This work will be implemented with agri-food system (AFS) CRPs and other partners. Promising areas of work are identified below.

Using the baseline developed on gender-differentiated uses of and access to ecosystems, the RDL Flagship will prioritize enabling women to engage in restoration and regeneration efforts. This will be done through: 1) understanding the gendered power barriers to resource access and landownership; 2) calculating the costs and benefits of these services to different community members; and 3) building on successful community initiatives identified in Phase 1 for out-scaling in Phase 2.

LWS Flagship research has demonstrated the multiple challenges women face in accessing improved AWLM practices and technologies. It will now prioritize identifying opportunities to remove these barriers and strengthen women's capabilities to reduce their work burdens and increase agricultural productivity. This will be done as part of research conducted on how higher returns can be gained by

tailoring AWLM practices and technologies to meet the specific needs of women, and developing innovative pathways and investment options to catalyze gender equity.

RUL's Flagship has prioritized gender-specific research in several areas: 1) a comparative analysis of gender-specific income along traditional and exotic vegetable value chains in urban and peri-urban West Africa; 2) assessment of economic impacts on women and men of potential changes in fuel (towards waste-based alternatives) and cooking equipment in northern Ghana; and 3) an analysis of opportunities for women in businesses based on nutrient recovery from domestic and food waste for agricultural reuse.

The VCR Flagship will aim to understand the potential of gender-equitable institutions to deal with water variability, scarcity, degradation and competing uses within ecosystems. Researchers will carry out institutional analyses focused on how gendered power relations within institutions affect women who could benefit from options developed to manage water variability, scarcity and degradation. VCR will also explore how the concept of capacities or enhanced knowledge of ecosystems can contribute to more resilience and empowerment over resources for women.

The ESA Flagship has prioritized examining how access to and benefits from natural resources change within different agri-food systems in collaboration with AFS CRPs, and assessing current power relations and capabilities to identify key change agents and leverage points to advance gender equality through uptake of ESA research. It will develop and test a toolbox of possible solutions.

Gaps in operationalizing gender research in WLE. WLE has developed a more coherent and targeted approach to gender and NRM. At flagship level, there is awareness of the issues, and each flagship has one or two pieces of research that has influenced the flagship priorities and research investments, and several have housed it in specific clusters of activities (CoA), i.e. RDL in CoA 1.1. In the near future, more interactions on gender capacity development are needed within and between the flagships. WLE will also need to develop a more systematic approach to identifying opportunities, collecting data, and assessing progress and impact.

Most past gender research has been done at intra-household level. In Phase 2, WLE will focus on examining gender issues at landscape and institutional levels, looking at institutions as actors that often maintain gender barriers but also offer possibilities for enhancing opportunities. This is an innovative area of work, which will require time to demonstrate results.

Institutionalizing gender research within WLE: All WLE work is expected to contribute to the crosscutting the CGIAR Strategy and Results Framework and the GID theme. The work is led by WLE's GID core theme, working with the WLE flagships and AFS CRPs. A main aim will be to improve the prioritization and determine the gender research agenda within the flagships and the CRP, so as to be more responsive and transformative in the next 6 years. Two mechanisms to operationalize this research will be used: 1) implementation of a specific gender research agenda; and 2) strengthening the capacity for flagships to integrate gender into their research. Each flagship will develop a three-year gender research plan, assisted by GID. These work plans will ensure that: 1) sufficient gender research capacity is available and allocated in each flagship (and where necessary, recruited); and 2) gender research is well-integrated into key elements of the flagship portfolio and not perceived as a separate franchise. GID will embed a gender specialist within each flagship. GID will also continue to be an active player in the CGIAR gender network or platform as it develops.

To strengthen gender research capacity in Phase 2, and in line with recommendations from the Independent Evaluation Arrangement (IEA) of CGIAR, WLE will provide gender capacity building support through: 1) a virtual advisory committee whose function will be to guide the research; and 2) gender training and awareness workshops and interactions to develop common frameworks and approaches.

Partnerships: WLE's gender research partners include the Institute of Development Studies (IDS, UK), Wageningen University (The Netherlands), Institute for Poverty, Land and Agrarian Studies (PLAAS) (South Africa), Pennsylvania State University (USA), and national universities. Through such partnerships, we can leverage additional resources, for example, to support female as well as male PhD and postdoctoral fellows. WLE will collaborate with AFS CRPs to generate gender analysis tools and methodologies applicable to integrating gender priorities, NRM and crop value chains. WLE will also collaborate with the CGIAR Research Program on Policies, Institutions and Markets (PIM), combining its capabilities on intermediary institutions, and water and land management with PIM's strength on land tenure.

In addition, GID will work with WLE's international boundary partners. These include the World Bank, Asian Development Bank (ADB), African Development Bank (AfDB), regional economic communities (e.g. East African Community [EAC] and Economic Community of West African States [ECOWAS]), the Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD), Global Water Partnership (GWP), and the United Nations Development Programme (UNDP). Through these and national partners, WLE supports transformation of gender relations in the management of water, land and ecosystems.

Monitoring and evaluation: Progress will be monitored as part of WLE's Monitoring, Evaluation and Learning (MEL) system. WLE will continue to systematically collect information on the gender research dimensions of its projects, gender outputs and possible outcomes. The three-year gender work plans will also be important monitoring tools. The detailed impact pathways to be included in these plans will enable monitoring progress in achieving specific gender-related measurable outputs and outcomes.