CGIAR

RESEARCH PROGRAM ON Policies, Institutions, and Markets

Led by IFPRI

PIM Gender Research in 2016: Review

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Introduction

While there is significant and promising gender research being done within PIM, there are considerable opportunities to strengthen existing gender research as well as incorporate gender analysis into activities and research areas that do not currently do so. This Review analyzes gender research and analysis conducted through PIM in 2016. The objectives are both to highlight examples of strong gender research and to identify the gaps. Not all papers can or should have a gender focus, but for research that has scope to include gender analysis, we have tried to highlight some opportunities.

This report is one of an ongoing series of evaluations undertaken by the PIM Program Management Unit. The report was guided by Cheryl Doss with research assistance from Kelly Casey.

Methodology for the Review

This review analyzes deliverables, capacity building events, and outputs reported to PIM for 2016. The sources of information were each activity's "Progress Report for 2016," activity comments in the report, and the 2016 deliverables, which included but are not limited to: published journal papers, working papers, blog entries, datasets, questionnaires, tools, capacity building events, and presentations.

Within the Progress Reports, activities reported on 2016 deliverables and were asked to identify the level of gender analysis. For all activities that responded positively to the question, "Is there a gender research dimension to this activity?" we analyzed the deliverables that were provided and that were available in English. A number of the deliverables were not available or not provided, which may explain some of the discrepancies between our assessment and that reported by the activity.

Although gender coefficients were calculated based on the workplans in 2016 and reported to the activity leaders, we have not been able to replicate them for the original workplans and thus have not tried to calculate such coefficients for the 2016 reported activities. The CGIAR is moving to a new approach to calculating the gender content.

Definitions of Gender Analysis

Gender analysis refers to exploring the relationships, experiences, and inequalities between women and men. In order to conduct gender analysis, a range of information is needed, such as: Who decides? Who owns and accesses what? Who carries out which actions and why? And, who does what? This information helps to identify the dynamics that operate within households, communities, markets, policy institutions, agricultural research, among others. The gender relations between men and women can structure and reproduce opportunities and constraints.

Gender refers to the social construction of men's and women's identities. It goes beyond simply categorizing people as male or female. Within the agricultural sector, gender analysis could include discussion of decision-making, access, ownership, and roles and responsibilities within the household, on the farm, in agricultural value chains, and in the rural nonfarm sector. The experiences, needs, opportunities and barriers vary not only based on gender but also based on class, caste, ethnic group, employment status, and marital status, among other factors. Gender analysis recognizes that due to power dynamics, different positions, and varying constraints, the experiences of men and women are not the same, and cannot be taken as such when collecting and analyzing data and developing policy. Within

discussions of agriculture, it is essential to recognize the roles of both women and men and the experiences of women and men farmers in the context of their households, families, communities and national and regional policies.

We considered the extent to which gender dynamics were part of the research question or research objectives. Deliverables with strong gender analysis included gender as part of the research objectives, analyzed sex-disaggregated data, and discussed the findings based on the local context of gender relations.

Deliverables may have included more moderate gender content and analysis. Some deliverables included a variable for the sex of the respondent, farmer or worker in the econometric analysis, but provided little or no discussion of the results. They may have also referred to papers on gender within the literature review or in the conclusions, but not included much or any gender analysis of their own data. In some cases, papers discussed gender issues in the conclusion, noting factors such as that women had less training or access to resources, but these were not findings from the research itself.

Another set of papers focused on women, but did not discuss women within the context of their households, communities, or local or national policies. Good gender analysis would typically include discussion of both women and men.

Finally, there were a number of papers that included no discussion of either women or gender issues. These would include papers that only included a variable for the sex of the household head and had no discussions of gender relations.

Especially for papers that used econometric analysis, our assessment of gender analysis was not based on whether or not the coefficients on the gender variables were statistically significant, but on the discussion of the results. A gender analysis may find that gender is not the most important factor, but it will have discussed why this is so. Simply disaggregating the statistics by men and women is a useful first step, but the gender analysis comes through the discussion of the results.

Needless to say, we cannot evaluate whether any gender analysis was done as part of the research; we can only evaluate whether there is any gender analysis appearing in the final documents.

When deliverables included primary data and the questionnaire was available, we reviewed it to see the extent of sex-disaggregated questions. Sex-disaggregated data goes beyond simply identifying the sex of the household head or even the respondent farmer or worker. It requires capturing information through 'who' questions about labor, decision making, ownership, access, use, and responsibilities—so that this information is obtained for men and women.

When evaluating gender and capacity building, we considered two dimensions. The first is the level of participation, considering the extent to which women and men both participated and whether the program was designed to be inclusive. The second is whether the content of the event incorporated gender issues or gender analysis.

Key Findings

Overall, PIM researchers are doing a substantial amount of gender analysis in their research and this is reflected in the papers that are produced. Gender analysis tends to be strongest in the work that uses individual or household level analyses, particularly those relying on quantitative survey data or qualitative data. Modeling exercises, especially those at the national level, have done less well at incorporating gender analysis, although there has been some progress in these efforts. The challenge with these

modeling exercises is that they often rely on national level data, which often does not include sex-disaggregated indicators. Models that do not explicitly consider people find it difficult to include gender analysis.

The levels of gender research claimed in the activity reports do not necessarily match our assessments. The tendency is for the reports to report higher levels of engagement with gender than are actually present in the deliverables. There are a number of reasons why this may be the case. As noted above, some deliverables were not available for assessment. In addition, we can only assess the information in the final deliverables, not all of the work that was done. There may be additional gender analysis that will be reported in future deliverables. In addition, the understanding of what constituted significant or some gender analysis is somewhat subjective and the criteria may not have been clear. Activities are under some pressure to report gender dimensions to their work and thus may have erred on the side of being generous in their own assessment.

Flagship Portfolio Assessment

In this section, we consider each flagship. We consider which types of activities incorporate gender analysis and highlight particular instances of activities that include a strong gender dimension. The focus is much more on research papers and tools, rather than trainings, events and blogs. A much more detailed analysis of each activity is provided in the Annex.

Flagship 1: Technological Innovation and Sustainable Intensification

Cluster 1.1 Global and regional foresight modelling tools, includes almost no gender analysis in its modelling tools. A few papers within this cluster that use household survey data incorporate gender analysis into papers on technology adoption, women's increasing roles in agriculture, and dietary diversity.

The paper, "Feminization of agriculture: trends, interpretations and driving forces using micro-level evidence from the VLS villages of India," analyses the trends in India since 1975 regarding women's role in agriculture. The study finds that the number of women involved in agriculture, both as producers and laborers, has increased as a result of technological change, changes in cropping patterns, and diversification of income sources. The authors provide evidence to support their claim that agrarian transition is deeply gendered, and identify three modalities through which agriculture is 'feminized': men find off-farm employment or migrate to urban centers for employment; women engage in agriculture and use family land for cash crops; and women take up wage employment in the agricultural sector.

The other paper from cluster 1.1 that includes gender analysis is "Does Gender Matter in Effective Management of Banana *Xanthomonas* Wilt? Insights from a Survey among Rural Banana Farming Households in Uganda." The methodology is not quite clear in the paper, but it appears to use sex-disaggregated data from 227 households with a husband and wife in Uganda to analyze how consideration of gender could create more effective management of BXW in Uganda. Both men and women farmers were sampled. They find that while most household assets are jointly owned, men have more individual control and decision-making power than women regarding household assets and income. Perceptions on effectiveness of BXW control practices and communication channels differ between men and women. Men rate the cutting down of infected plants to be more effective than women, but tissue culture, removal of male buds and disinfecting of farm tools are perceived to be equally effective by both men and

women. The only gender differences regarding information sources, were that newspapers were more effective in delivering BXW information to men. These findings suggest that strengthening the adoption of banana bacterial wilt control practices requires understanding gender-based constraints and improving farmer perceptions on the effectiveness of the recommended BXW control practices.

Table 1

Table 5: Gendered Perceptions on the effectiveness of BXW control practices (n=227)

BXW Control Practice	Pooled (%)	Male (%)	Female (%)	Chi^2
Cutting down of infected Plants	44.93	50.63	31.88	6.82***
Removing of male Buds	29.07	29.11	28.99	0.00
Disinfecting tools	31.65	23.19	29.07	1.67
Use of Tissue Culture	16.03	17.09	14.49	0.24

Note: *** denotes significant differences at 1% level

Cluster 1.2 consists of only a few activities, with a large portion of the work focusing around the Pakistan Cotton Survey. This set of surveys examines the efficiency of markets for cotton seed in Pakistan, especially for Bt cotton seed. In the household surveys, sex-disaggregated data was collected on decision-making, access, ownership, labor, and control over income. The datasets have the potential to be used for gender analysis of the cotton sector.

Cluster 1.3 focuses on agricultural intensification and explores topics such as the role of technology in disseminating knowledge about agriculture, enhancing food security and nutrition through intensification, and the relationship between gender, the household, and sustainable intensification. Some of the work on extension and advisory services has a strong gender component. This is an area where gender concerns are particularly important so it is good that they are included.

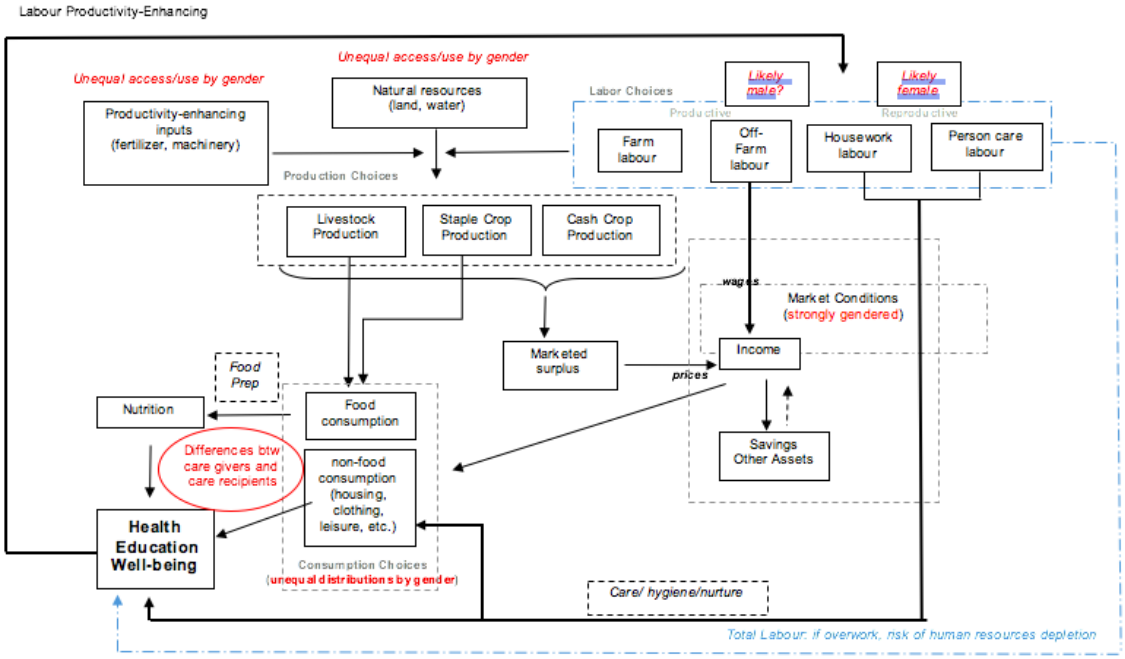
One innovative study produced the paper, "The power of television in triggering feedback through mobile phones" (Kiptot et al. 2017). It uses sex-disaggregated data to identify innovative ways to reach farmers in Kenya through testing the effectiveness of integrating TV and mobile phone technology in enhancing feedback mechanisms among smallholder farmers. ICRAF partnered with the media company that runs an agricultural program on TV, Shamba Shape Up (SSU) in Kenya, to broadcast 30-minute episodes twice a week, in English and Swahili, discussing issues for smallholder farmers. They then studied the impacts on men and women farmers. While more women than men viewed the program, fewer women sent SMS messages requesting additional information.

The other highlight of cluster 1.3 is the paper, "A gender perspective on the sustainable intensification of agriculture: The household and unpaid work" (Fontana & Msangi 2016). This paper develops a model of the non-separable farm household to analyze unpaid domestic work and gender dynamics. It points to the importance of considering gender-differentiated time poverty, energy expenditures effects, and cash income effects when assessing the distributional impact of agricultural intensification. The authors use the model to uncover the 'bottlenecks' that keep women from increasing their economic productivity, and look at the effects of overwork (defined as more than 10.5 hours per day of paid and unpaid activities). The analysis showed that doubling the off-farm wage is not enough to reduce overwork and degradation of labor effectiveness for women. However, the provision of public services combined with giving women more control over their productive time, results in a significant reduction in the overall time burden for women, such that they are able to recover their full labor productivity and effectiveness. The authors acknowledge the importance for empirical studies to see whether the impacts of household labor-saving interventions result in significant changes to the work burden for women.

Figure 1

Fontana and Msangi Agricultural intensification and unpaid work

Figure A. Gendered relationships in agricultural production from the household-farm viewpoint



Flagship 2: Agricultural Growth and Transformation at the National Level

Cluster 2.1: Public expenditure: Measurements, drivers, and impacts has only one activity and few deliverables. The book *Agricultural productivity in Africa: Trends, patterns, and determinants* (Benin, ed. 2016), has one chapter that includes gender analysis; this chapter analyzes the factors that affect the effectiveness of 25 productivity-enhancing interventions.

Cluster 2.2, Structural transformation: Tools and analysis, is quite extensive and includes gender in a number of the activities. The various "Spatials," including Arab, Lebanon, and Tajikistan, are databases that include sex-disaggregated data where it is available. A book on nutrition in Egypt has some gender analysis in the chapters that consider decision-making within the household and its effect on nutrition. Much of the book focuses on the issue of obesity among women and undernutrition among children.

The work on mechanization has some references to gender issues, particularly with regard to how women's labor is affected. Yet, much of this work does not include a gender component, instead claiming that women are not involved in mechanization. Understanding the gender issues around mechanization

has the potential to both increase the adoption and the benefits of mechanization while decreasing the potentially negative consequences for women and landless workers.

One of the papers on youth, produced jointly with Flagship 5, does explicitly include both young men and young women. The IFPRI discussion paper "The Effect of Land Inheritance on Youth Employment and Migration Decisions: Evidence from Rural Ethiopia" (Kosec et al. 2016) uses panel data from rural Ethiopia to analyze how the amount of land youth expect to inherit affects migration and employment decisions. They find that land inheritance predicts a significantly lower likelihood of long-distance permanent migration and rural-to-urban permanent migration for men, but not for women. Larger inheritances predict a greater likelihood of working in agriculture for both men and women although the impact is larger for men. A small land inheritance may drive men to the nonagricultural sector, but women do not take up these nonfarm opportunities, possibly due to the higher barriers to entry that they face. The migration results are mostly driven by those aged 20–34 (older youth), as are reductions in employment in the nonagricultural sector. These results draw attention to gender considerations regarding land inheritance, employment, and migration, and point to how gender influences opportunities and experiences.

Table 2

Table 6.3 Analysis of impacts of size of land inheritance on migration and employment outcomes by gender and by age (OLS)

	Dummy - migrated ...			Dummy - primarily employed in ...		
Variable	Anywhere (1)	Out of woreda (2)	To urban area (3)	Agriculture (4)	Non-agriculture (5)	Student (6)
Panel A: By gender						
Log land inheritance (women)	0.097	0.024	-0.022	0.154***	-0.078	-0.082
	(0.073)	(0.044)	(0.053)	(0.047)	(0.047)	(0.065)
Log land inheritance (men)	-0.003	-0.155***	-0.188***	0.226***	-0.163***	-0.058
	(0.062)	(0.047)	(0.051)	(0.047)	(0.042)	(0.061)
Observations	1,170	1,167	1,167	1,167	1,167	1,167
R-squared	0.418	0.449	0.415	0.563	0.436	0.525
Number of households	625	624	624	625	625	625
P-value of difference	0.11	0.002	0.004	0.093	0.022	0.614
Panel B: By age						
Log land inheritance (20–34)	-0.010	-0.104*	-0.149**	0.220***	-0.139***	-0.011
	(0.068)	(0.055)	(0.058)	(0.053)	(0.040)	(0.058)
Log land inheritance (15–19)	-0.024	-0.028	-0.107	0.221***	-0.061	-0.082
	(0.09)	(0.056)	(0.066)	(0.046)	(0.048)	(0.077)
Observations	1,170	1,167	1,167	1,167	1,167	1,167
R-squared	0.407	0.425	0.393	0.542	0.424	0.501
Number of households	625	624	624	625	625	625
P-value of difference	0.799	0.096	0.317	0.984	0.069	0.181

Source: Authors' calculations based on IFPRI's Watershed Surveys of 2010 and 2014.

Notes: OLS = ordinary least square. Migrated is defined as living in the household during round 1, and living elsewhere in round 2. Estimates are from completely interacted models where gender and age (15–19 years versus 20–34 years) dummies are interacted with all controls. All specifications include dummies for gender, for age, for marital status, for being a child of the head of household, for being at least 18 years at the time of the kebele's last land redistribution, for completing cycle 1 of primary school (grades 1–4), for being the oldest direct descendant and being male, and for having multiple male descendants immediately following in the birth order. Also included are fixed effects for exact permutation of older sibling sex. P-value of difference refers to the p-value for the interacted log land inheritance variable. Standard errors are in parentheses and clustered at the kebele level.

Flagship 3: Inclusive Value Chains and Efficient Trade

Flagship 3, like Flagship 1, is relatively large within the PIM portfolio.

Cluster 3.1 examines national, regional and global trade policies. Two papers produced within this cluster seek to include gender issues. The first, "Agricultural Price Incentives: Towards Gender-differentiated Indicators," (Laborde & Lallemant 2016), uses data from the Uganda National Panel Survey (UNPS) from 2009/10 to compute gender specific Nominal Rate of Production (NRP) indicators and use them to assess the impacts of existing policies. Data is available on the sex of the manager of each plot. They conclude that because women are more likely to grow crops that are not export-oriented, the explicit and implicit taxation on export crops and livestock products, disadvantage men more than women. It is surprising to consider that the constraints limiting women's participation in export crops constitute an advantage for them. The second paper considers the impacts of trade liberalization on poverty, comparing male and female-headed households, but does not go beyond the level of headship.

Cluster 3.2 focuses on tools for assessing value chains and developed two tools that incorporate a gender lens. 5 Capital-G is a tool that incorporates gender into the 5Capital framework. The tool provides a means to explore gender differentiated access to and control over assets as well as decision-making. In 2016, prototypes of questionnaires for assessing the livelihoods assets of enterprises and households were tested across different value chains. This tool has the potential to result in useful gender research and analysis as well as programmatic impacts.

A second activity was the development of the LINK-Methodology Version 2.0. This methodology offers tools to better identify barriers and opportunities for men and women to have meaningful participation in producer organizations, access to information, participation in decision making, and access to capacity building. It provides a methodology to analyze women's access to markets, business models, and men and women's participation in the value chain, with a particular focus on women's economic empowerment. A test version was piloted in 2016 and case studies are ongoing. Situational analyses for bananas, sweet potato and cassava were all undertaken.

What does LINK offer?

LINK can help your business facilitate a systematic learning process between actors from a selected value chain, and discover new opportunities for innovation, based on the application of a participatory toolkit, with four main tools:

1 **The value chain map** Used to understand the macro context of markets and the businesses which link rural producers with buyers.

2 **The business model canvas** Used to understand in more detail each business which links rural producers with buyers.

3 **The New Business Model principles** Used to determine whether each business which links rural producers with buyers is truly inclusive.

4 **The prototype cycle** Used to continuously improve the inclusivity of every business which links rural producers with buyers.

By the end of the process you will have

- understood the relationship between specific business models (buyer and seller) and the overall value chain;
- identified critical areas for improvement;
- designed, implemented, evaluated and improved on the innovation prototype for the business model you selected; and
- evaluated the effects of these changes on small-holder farmers and on the business itself.

Cluster 3.3 focuses on interventions to improve value chains. Much of the emphasis is on post-harvest losses. Although some of the studies include the gender of the respondent or of the household head, there is little or no gender analyses in this work. Given the involvement of women in post-harvest processing for many of these crops, there is scope for gender analysis to provide key insights in this work.

Flagship 4: Improved Social Protection for Vulnerable Populations

Flagship 4 considers a range of social protection programs; it is involved in a number of impact evaluations of such programs. Much of the data is at the household or individual level, with outcomes at the individual. These types of analysis lend themselves well to gender analysis.

The cluster on safety nets, 4.1, includes discussion of women in almost all of their work, which is not surprising since it focuses particularly on evaluating nutrition programs and cash transfer programs, both of which are often targeted to women. The focus on women often, but not always, includes substantive gender analysis.

One particularly notable set of papers focuses on the relationships between cash transfers and intimate partner violence (IPV). "The effect of cash, vouchers, and food transfers on intimate partner violence: Evidence from a randomized experiment in northern Ecuador" (Hidrobo et al. 2016) provides evidence that transfers not only have the potential to decrease multiple forms of IPV in the short-term, but also that cash is just as effective as in-kind transfers in decreasing IPV.

Cluster 4.2 on insurance for the poor is a much smaller program of work. The paper, "Microinsurance Decisions: Gendered Evidence from Rural Bangladesh" (Clark & Kumar 2016), reports of research using an experimental design to explore whether men and women are willing to pay for agricultural insurance in Bangladesh. They find no gender differences in willingness to pay.

Flagship 5: Property Rights Regimes for Management of Natural Resources and Assets

Flagship 5 focuses on the management of natural resources and assets as well as exploring the implications of common property.

Cluster 5.1 on water and land policies has a strong gender focus throughout much of the work. A gender post-doc collected data on gendered impacts of a program of agro-investments in Tanzania as part of her intial program of work.

Research on small-scale irrigation also has a strong gender focus, with field work conducted and papers underway. One paper, "What Happens after Technology Adoption? Gendered Aspects of Small-Scale Irrigation Technologies in Ethiopia, Ghana and Tanzania" develops a framework for examining the intra-household distribution of benefits from the adoption of small scale irrigation technology. The qualitative analysis shows that the costs and benefits of technology adoption are not equally distributed across the household. And while one member of the household generally does not exclusively hold rights of use, management, *fructus*, and alienation, men are more likely to hold more of these rights as well as stronger claims to these rights.

Many of the analyses of land and tenure security are at the household level, which provide more limited opportunities for gender analysis. The paper, "Perceived land tenure security and rural transformation: Empirical evidence from Ghana" is one that is able to take advantage of both plot level and household level data. They find that tenure insecurity is lower for female household heads when land is relatively abundant and that female plot holders have better perceived tenure security than male plot holders. The authors note that women in monogamous male-headed households rarely hold their own plots.

Cluster 5.2 on collective action and property rights has several gender components. In particular, the work on seed banks highlights the role of women in creating and maintaining genetic diversity.

Cross-Cutting: Partnerships

Only one report was provided on cross-cutting partnerships, for the activity on Partnerships with China. This was reported as having no gender research dimension.

Cross-Cutting: Gender

The cross-cutting gender work focused on two themes. One is on developing data and methods for collecting sex-disaggregated data for gender analysis. Ongoing work on the Women's Empowerment in Agriculture Index (WEAI) is one component of this, along with the identification of best practices in collecting data on ownership and control of assets and time use. The second focused on analyzing gender myths.

One paper produced in 2016 on the WEAI, "Using Cognitive Interviewing to Improve the Women's Empowerment in Agriculture Index Survey Instruments: Evidence from Bangladesh and Uganda," investigates the use of cognitive testing to strengthen the survey instruments. A second paper, "Women's Empowerment in Agriculture: Implications for technical efficiency in rural Bangladesh," finds that lower empowerment gaps are associated with higher levels of technical efficiencies in Bangladeshi farm households. In addition, two papers were produced as part of a World Bank collaboration on improving data collection. They focus on measuring asset ownership and control and on measuring time use in developing countries.

Another paper, "Beyond Ownership: Tracking Progress on Women's Land Rights in Sub-Saharan Africa," presented at the World Bank Conference on Land and Poverty, compares the patterns of ownership, management, and control over output from land parcels, using the LSMS-ISA data from six countries in Africa. It is not the case that these rights are consistently held by the same person, suggesting that they should not be used interchangeably in any analysis. The gender gaps in land ownership tend to be the largest, but there are gender gaps in the other rights as well.

The Journal of Gender, Agriculture, and Food Security published it second special issue based on a write-shop held in 2015. The four papers considered different issues related to gender and agricultural production including, cassava leaf value changes, cassava commercialization, dietary diversity, and rural women's participation in producer organizations.

In the Gender Myth busting work, the paper, "Gender Impacts of Youth Migration on African Agricultural Households" uses panel data from Ethiopia and Malawi. It investigates how youth migration affects household labor, hired labor demand, and income, and whether these effects vary by migrant sex and destination. Labor shortages arise from the migration of a head's child. However, the migration of the head's sons produces a greater burden, particularly on female heads/spouses (in Ethiopia) and brothers (in Malawi). Gains from migration in the form of increased total net income justify the increased labor efforts in Ethiopia. Weaker evidence suggests households in Malawi substitute hired for migrant family labor at the expense of total household net income.

The second myth busting paper examines women's land ownership in Asia. "Analysis of gender, headship, and the life-cycle: determinants of landownership in four Asian countries," finds that married women in Bangladesh, Tajikistan, Timor-Leste, and Vietnam are landowners, although they own less land than men. Women own a smaller proportion of land as household landholdings increase.

Conclusions

The gender research and analyses through PIM have contributed substantively to our understandings of numerous critical issues. The insights range from the increasing importance of women's involvement in agriculture, the role that cash transfers can play in decreasing IPV, to the relationship of land and migration among youth. In addition, PIM has developed new methods for collecting and analyzing sex-disaggregated survey data and new tools for understanding women's involvement along value chains.

This review is simply a snapshot of the work at one moment in time. Much of the work is ongoing and the development of the new methods and tools indicates that gender analysis will be improving within the portfolio.

Gender analysis in the portfolio could be strengthened, both some relatively simple things and some that require a more significant commitment. First, projects collecting their own survey data could ensure that sex-disaggregated data is collected where appropriate. The document, Minimum Standards for Collecting Sex-Disaggregated Data, provides some guidelines. Often, adding a few of the "who questions" about key dimensions can provide a basis for more detailed gender analysis. These issues need to be incorporated into the planning of the research, rather than simply added on at the end.

When sex-disaggregated data is available, it should be included in the analysis and the results should be discussed. Even if gender is not the focus of the analysis, it is useful to discuss how gender may be important. If the econometric results on the gender variables are not statistically significant and there is sufficient power, then these findings are useful and contribute to our understanding. If they are statistically significant, there should be discussion and interpretation of the results.

While simply comparing male and female-headed households is not considered gender analysis, there are ways to improve analyses that are based at the household level. One option is to include more data about the structure of the household; typically, male headed households are larger and include both men and women, while female-headed households are smaller and do not include men. Instead of focusing on headship, it may be more useful to consider the household structure and composition. Whether a household includes multiple generations, is polygamous, includes both men and women, may be more important than just the sex of the head.

If data is available on household composition, then broader generalizations may be made. For example, rather than considering the number of male and female headed households that are impacted by a policy reform or project intervention, it may be possible to compare the number of men and women living in households that are impacted. For example, it is possible to consider the number of men and women living in poor households, rather than the number of male- or female-headed households that are poor. (This approach does not address the fact that policies may impact men and women within the same household differently; to do so would require more detailed data.)

ANNEX

Introduction

The following annex provides information by Flagship, on each activity. Each of the available deliverables for 2016 with gender content was analyzed. The information for this annex was obtained from each activity's "Progress Report for 2016," activity comments in the report, and the 2016 Deliverables, which included but are not limited to journal papers, blog entries, datasets, questionnaires, capacity building events, and presentations.

Only deliverables and capacity building achievements with at least some gender analysis are included in the activity descriptions provided here. Only documents in English were considered and deliverables that were not available were not assessed and their content is not reflected in this annex.

Flagship 1: Technological Innovation and Sustainable Intensification

Cluster 1.1: Global and regional foresight modelling tools

Activity 23 (ICRISAT)

No information provided; assessment not possible

Activity 94 (CIMMYT): Global Futures and Strategic Foresight

The deliverables have "some" and "none" gender analysis. The activity reported that there is no gender research dimension to the activity, but also stated: "Although our 2016 activities have some gender implications (e.g., in the capacity building), they don't directly address gender research." There are a number of deliverables marked with some gender analysis: a workshop entitled "Crop and bio-economic modeling under an uncertain climate," reports on the workshop, and two papers. The workshop had a total of 16 participants, 4 of which were women, but the blog post and write-ups on the workshop do not indicate inclusion of gender analysis. The paper "Feedback on scenario development and review of draft reports for IFPRI-led USAID scenarios exercise," and specifically 'Appendix 3: USAID-IMPACT study IDO Indicators with window towards 2022 and 2030 Draft 1' include gender analysis. Existing sources are used to make predictions about, among other relationships, wheat production/consumption and gender empowerment. Overall, the gender analysis is limited by the purpose and scope of the activity.

"Report of training workshop on bio-economic tools for foresight for national and regional partners in Africa", workshop report

- A few outputs fall under this deliverable, including blog posts covering the content of the five-day training workshop, entitled "Crop and bio-economic modelling for an uncertain climate." In the workshop, scientists applied crop and bio-economic models to estimate biophysical and economic impacts of climate variability and change. Scientists examined how technology development and policy or development interventions may influence farm household decisions on resource allocation and cropping patterns. Within the write-ups on the workshop, there is no gender analysis present, nor mention of women, gender, or girls. In the workshop report, gender is only mentioned in the feedback portion of the workshop.

"Feedback on scenario development and review of draft reports for IFPRI-led USAID scenarios exercise," IFPRI Report

- The first parts of the document do not include gender analysis, but focus on quantitative analyses of alternative future scenarios to inform decisions about the design of the portfolio of CGIAR research programs to be pursued during the period 2017-2022. Appendix 3 of the paper includes gender analysis through a systematic literature review exploring the interlinkages between, on the one hand, wheat production and wheat consumption, and on the other hand gender equity, poverty and malnutrition. Studies from various contexts were highlighted, and the paper acknowledges the limitation of drawing conclusions from studies conducted in different contexts. Gender is used to make comparisons about nutrition, education, and income in an effort to make predictions of how wheat production and consumption affect gender empowerment. Appendix 3 also provides a figure and analysis on theoretical pathways, including consumption, income, and gender pathways. No original research was conducted, but conclusions from existing studies are highlighted. One of the report's relevant gender conclusions is that there is no evidence available that improved wheat production leads to gender empowerment benefiting diet quality and nutrition.

Activity 141 (Bioversity): Global Futures and Strategic Foresight

Only one deliverable has any gender analysis. The paper entitled, "Does Gender Matter in Effective Management of Banana *Xanthomonas* Wilt? Insights from a Survey among Rural Banana Farming Households in Uganda," includes gender in the paper's research question, content, and analysis. The analysis offers contributions and suggestions for how to account for gender with management of BXW in Uganda.

Questionnaire: "BXW Impacts in East Africa Follow-up Survey Round for 2015 Household Questionnaire"

- Data was collected from 321 banana farmers, of which 227 lived in male headed households and 94 in female-headed households.
- Either a man or a woman farmer was interviewed; 31% of those interviewed in male headed households were women.
- Section 6.0 looks at Gender and Decision Making and asks questions on access, ownership and control of agricultural production and durable goods, as well as time allocation of women and men.
- Within the survey, the questions are sometimes unclear when referring to access ownership and control; the questions ask about "you" without specifying if it means the respondent or the household.

"Does Gender Matter in Effective Management of Banana *Xanthomonas* Wilt? Insights from a Survey among Rural Banana Farming Households in Uganda," journal article submitted to peer reviewed journal

- Gender is integral to the research question, literature review, and data analysis, and the paper provides recommendations for how gender considerations could help create more effective management of BXW. The study utilizes sex-disaggregated data from 227 households with a husband and wife in Uganda to analyze gendered access to agricultural resources and their control; whether men and women in the targeted banana-farming communities share similar perceptions toward the effectiveness of the BXW control technologies and their respective information dissemination pathways; whether gender influences the choice of BXW management practices used; and impacts of adopting of BXW control practices and other socioeconomic characteristics on food security.
- Respondents were either the man (husband), woman (wife), or both. In the regression, all observations were included.
- The key findings include:
    - whereas most of the household assets are jointly owned, men have more individual control, and decision-making roles regarding household assets and income from them than women.
    - perceptions on effectiveness of BXW control practices and communication channels differ between men and women.
    - Men rate the cutting down of infected plants to be more effective than women, but tissue culture, removal of male buds and disinfecting of farm tools are perceived to be equally effective by both men and women.
    - no differences are found in effectiveness of other BXW information sources, other than newspapers which were more effective in delivering information to men.

- Factors such as farmer's sex, perceptions, household size, education and importance of bananas in the household diet are found to affect adoption of BXW control practices which in turn affected food security.
- These findings suggest that enhancing the adoption of BXW control practices requires understanding all gender-based constraints and improving farmer perceptions on the effectiveness of the recommended BXW control practices.

Activity 5 (CIAT): Global Futures and Strategic Foresight

None of the deliverables have a gender dimension. The activity reported that there is no gender dimension to this research project: "Due to the macroeconomic nature of much of this work, there is not a specific gender focus."

Activity 82 (ILRI): Global Futures and Strategic Foresight

Among the eleven deliverables outlined by the activity, two have some gender content. There is minimal gender analysis present, and gender is not included in the research questions or objectives of the papers. While the authors reference women briefly when analysing livestock, there is no analysis of gender.

"The role of livestock in food and nutrition security: statistics and model projections for selected low to middle income countries" (under review), Enahoro, Lannerstad & Pfeifer

- This paper reviews available statistics to quantify the contributions of domestic livestock production to food and nutritional supplies in eight countries in Africa, Asia, and Central America. Results report a range of nutrient types and scenario simulations and discussion focuses on how countries' changing diets influence the income and nutritional benefits that target groups, such as poor livestock-keeping households, could derive in the future. The assessment of nationally-representative survey data for four of the study countries shows potential for targeted livestock-ownership initiatives to benefit the poorest households.
- Overall, there is minimal reference to gender in the paper, as the household is the unit of analysis. Data from the Demographic Health Surveys (DHS) (Rutstein and Rojas, 2006) are used to describe livestock ownership and consumption of livestock products at household level.

"Enhancing livestock productivity and trade for improved food security and livelihoods in West Africa," Proposal.

- This proposed study uses a multi-disciplinary approach to assess the potential roles of improved animal genetics, feeds, and vaccines in livestock sector development in West Africa that takes into consideration a changing macro environment and the importance of cross-border trade. The strategy includes economic, crop, livestock, hydrology and climate modelling, and simulates the impact of global drivers of change. Gender is listed among other 'impacts considered – but no specific gender analysis or additional focus on gender is discussed.

Activity 90 (WorldFish): Enhancement of methods and tools for fish foresight and targeting at various scales (global to local level)

All deliverables are listed as having no gender focus. Although the activity states in the Progress Report that the activity to some extent addresses gender issues, none of the deliverables include any gender analysis or any reference to gender, women, females, or girls.

Activity 22 (ICRISAT): Global Futures and Strategic Foresight (Development and enhancement of integrated model for assessing alternative technologies of dryland crops, targeting and priority setting)

In this activity, one deliverable has significant gender analysis while the remaining deliverables have none. The deliverable with 'significant' gender analysis included three papers which use sex-disaggregated data collected through the ICRISAT Village Dynamics Studies in South Asia (VDSA) project. They address crop diversity and household dietary diversity, the role of pulses in improving nutritional status of rural communities, and the feminization of agriculture. The paper on the feminization of agriculture includes substantive gender analysis, and gender is integrated into the paper's research question and objectives. The other two papers include gender references but not significant analysis; some data relates to women (including the use of Women's Dietary Diversity Scores (WDDS) or a gender dummy variable), but gender is not centrally part of the driving research questions and objectives. Both acknowledge the potential importance of gender analysis to understand important behavioural relationships in future research.

"Feminization of agriculture: trends, interpretations and driving forces using micro-level evidence from the VLS villages of India"

- Includes significant gender analysis; gender is integrated into the paper's research question and objectives.
- The paper uses ICRISAT's Village Dynamics Studies in South Asia (VDSA) to analyze women's roles in agriculture since 1975. The number of women in agriculture has increased, both as producers and laborers. This is the result of technological change, changes in cropping patterns, and diversification of income sources such as out-migration. The paper includes observations about the gender dynamics involved with time spent, wages, and type of labor performed. Results show that women are playing an increased role in agriculture, which has wide-ranging impacts on agricultural productivity as well as policy implications.
- Conclusions on women and time include: women spend four times more time on domestic activities and in the care economy than men; women spend almost double the number of hours per hectare on agriculture activities (either on their own farms or as paid labor); sowing, weeding, harvesting continue to be the dominant activities (75-80% of women's time in agriculture). Time spent on farm work, rearing livestock, and non-farm work, does not differ for men and women. The difference is spent in domestic work and leisure time, with women spending about 10-12% of their time doing household chores, while men spend about 2-4% of their time.
- The paper demonstrates that women are still invisible as agricultural workers and argues women will only be acknowledged when they improve their knowledge and gain access to information. The authors advocate for technological empowerment, enhancing skills and knowledge, and training programs to bring about gender equality.

"Understanding the Linkages between Crop Diversity and Household Dietary Diversity in the Semi-Arid Regions of India"

- Gender is not incorporated into the paper's research questions or objectives. In the framing of agriculture, it is acknowledged that agriculture affects gender equity, but no additional analysis is provided. Gender is incorporated in regressions as is the sex of the household-head, but not further analyzed. The unit of analysis is the household and gender dynamics within the household are not analyzed. Findings conclude that crop diversity alone does not affect dietary diversity in semi-arid tropics, and there is a potentially important behavioral relationship to be investigated, which could provide scope for inclusion of gender analysis in the future.

"Role of Pulses in Enhancing Nutritional Status of Rural Poor: Micro-Level Evidence from Semi-Arid Tropics of India"

- This paper presents evidence on the role of pulses in enhancing the nutritional status of rural communities in the semi-arid tropics (SAT) of India. Women are mentioned in the pulse value chain, but there is minimal discussion of gender until the conclusion which suggests how women's empowerment along the pulse value chain can enhance production and consumption. When estimating individual level dietary diversity, sex is included in the regression, but we might expect that sex also interacts with some of the other controls (such as marriage status). There is specific analysis of the role of pulses in women's dietary diversity.

Activity 95 (ICARDA): Global Futures and Strategic Foresight

The activity does not claim to include gender analysis, explaining, "Most of the analysis we conducted in our various activities are conducted at the macro and sectoral levels, with focus on national perspectives. The use of aggregated and secondary data, such is the case of this activity, doesn't allow for specific focus on gender analysis." Currently, the deliverables are reported as having no gender analysis, except for one deliverable that claims some gender analysis. This deliverable, "Comprehensive assessment of pressures on water resources and its effect on the agricultural sector and food security in Tunisia," describes a policy dialogue organized by ICARDA in Tunis to share with Tunisian policy makers and other national partners preliminary scenarios and results of ICARDA's research on the impact of pressure on water resources and its effect on food security in Tunisia. It does not appear to have discussed gender issues.

Activity 78 (IITA): Global Futures and Strategic Foresight

Overall, the activity states there is no gender dimension to the research, giving the following explanation: "The overall strategy in IITA was to first develop credible results on foresight for food security in sub-Saharan Africa (SSA) using the bio-economic tools available under the Global Futures and Strategic Foresight (GFSF) project. For now, these tools are global/regional in nature and do not yet incorporate micro-level analytical tools, including those involving gender. However, in the medium- and long-term, IITA's strategy is to incorporate gender dimensions, including youth, in foresight analysis. This would be done by combining the bio-economic modelling tools under the GFSF project with micro-level modelling tools which incorporate gender analysis. This approach might call for additional gendered data collection for which new funds would be needed."

One deliverable, "Contributions to USAID scenarios exercise led by IFPRI: data on yield changes brought by promising technologies" claims some gender analysis, but it is not visible in the outputs. The "Executive Summary: Quantitative Foresight Modeling to Inform the CGIAR Portfolio" does not contain any gender findings and only mentions women in the conclusion. The authors list a number of research priorities in the Strategy and Results Framework and state that these can, in part, be addressed through the creation of more opportunities for women in the agriculture sector.

Activity 13 (CIP): Global Futures and Strategic Foresight

The activity states there is no gender dimension to the project because, "The modelling approach developed and applied in this activity is generally gender neutral in its scope." However, one presentation at a capacity building event did contain gender analysis.

"Workshop on impact assessment for priority setting in agricultural research,"

- The workshop was organized by CIP to acquaint national and regional partners with state-of-the-art methods of ex-ante, ex-post impact assessment and foresight modelling. The blog post, providing an overall workshop description does not include gender analysis or findings. Cecelia

Turin, CIP gender expert, led a workshop session about the role of gender on impact assessment. Turin's presentation slides (in Spanish) discuss how gender is becoming increasingly important in studies as it allows to better understand the distribution of benefits and decision making within the household. The presentation discusses the difference between sex and gender, draws attention to gender theory, and talks about different world regions before going specifically into case study examples of WEAI in Bangladesh, Ghana, and Junín, Peru.

- The Woman Empowerment in Agriculture Index (WEAI) as central tool was also presented and discussed by participants, together with an example of an application of WEAI in a case study looking into the impact of land property and access to land on the empowerment of women to make economic decisions in the region of Junín in Peru.

Activity 97 (IFPRI- EPTD): Global Futures and Strategic Foresight

None of the deliverables include gender analysis. The activity provides the following explanation in the Progress Report: providing the following explanation: "This activity did not have a gender dimension in 2016, due to limitations on appropriate data and tools for global foresight modelling. However, we propose to begin exploring some gender-related questions in 2017."

Activity 17 (ICRAF): Global Futures and Strategic Foresight - State-of-the-art data assimilation and global gridded crop model development: A new direction for the biophysical components of IMPACT

None of the deliverables include gender analysis. The activity provides the following explanation in the Progress Report: "The models developed in 2016 do not include a gender component, but could be used to address gender in agricultural production in 2017 and beyond."

Activity 136 (IRRI): Global Futures and Strategic Foresight

Three of the deliverables were reported as have some gender analysis. Of these deliverables, one paper and one abstract were obtained. The available data reflects minimal gender reference and no accompanying analysis. In the Progress Report, the activity offered the following comment: "Our initial activity, focusing on model development to see the impact on yield gain did not have any focus on gender dimension. In the subsequent activity, we translated the output further into a measure of impact on socioeconomic aspects, including gender dimensions."

"An ex ante economic assessment of C4 rice adoption" (Bairagi, Mohanty, et al. 2017)

- The focus of the paper is not on gender and it does not include gender analysis within the paper's aims or objectives. Women are only mentioned with regard to the fact that the share of females with secondary schooling is modeled as a factor influencing the number of malnourished children.

"The impact of drought and flood on global rice market, food security, and poverty. In-preparation"

- Only the abstract and preliminary results of this paper are currently available. There is no inclusion of gender in this abstract, and the initial findings do not highlight gender. The paper focuses on evaluating the impacts of climate-extreme-events and shocks (drought, floods, etc) on food security and poverty but does not mention gender as a factor of study.

Activity 125 (IWMI): Global Futures and Strategic Foresight

This activity was previously listed as having no gender analysis in their deliverables, but in the Progress Report one deliverable was listed as incorporating some gender analysis. Although one deliverable is marked as incorporating gender analysis, in the Gender Research section of the report the activity states there is 'no' gender dimension to the activity; no further explanation is provided. Capacity building did

not have a gender focus but was conducted: Shanali Pethiyagoda, a woman and intern at IWMI, has been informally trained in the use of the IMPACT model and in the research issues related to groundwater and food security at regional to global level. There is no gender analysis present in the outputs we received.

Cluster 1.2: Science policy and incentives for innovation

Activity 158 (IFPRI- EPTD): Biosafety support and capacity building for CGIAR biotechnology research

The three deliverables each state some gender analysis on the Progress Report, but the deliverables have limited gender content. Data collected from CGIAR personnel does keep track of employees' gender, and this information is reflected in the "survey results" presentation. Beyond this, no analysis accompanied this data, and no gender analysis was incorporated into the associated workshop.

Questionnaire: "Biosafety Status and Capacity of CGIAR Centers"

- When a respondent or personnel's name is provided, the title and gender of the person is recorded.
- The Program for Biosafety Systems (PBS) has designed this questionnaire to determine the current status of biosafety management and compliance in each of the CGIAR centers that will help identify strengths and gaps related to biosafety status, capacity, and management in the CGIAR system. This questionnaire is for people working within CGIAR.

"CGIAR Centers Biosafety status and capacity: Survey results" – Patricia Zambrano (IFPRI)

- There is no gender analysis in this report, although a slide does present data on personnel with RC expertise by men and women. In addition, there are visuals in the presentation that may represent the breakdown of answers by gender, but no further analysis.

Workshop for interested CGIAR Centers (Washington DC, December 6-7, 2016)

- None of the presentations conducted at the workshop include gender analysis. The presentation, "Introduction to socioeconomic considerations and decision making" given by Jose Falck Zepeda (Senior Research Fellow), describes socio-economic assessments; these would be a logical place to incorporate gender issues.

Activity 49 (IFPRI-EPTD with contributions from DSGD and MTID) Comparative science, technology, and innovation systems in developing-country agriculture

This activity, representing the merging of four different projects, contains two deliverables with some gender analysis. Sex-disaggregated data was collected; the questionnaires include questions on gender, decision making, access, ownership, control over income, etc. The 2013 questionnaires seem to have the most developed questions regarding decision making and gender, and also contain a separate questionnaire for the female decision maker in the household. There is not yet a deliverable that uses this data. The other deliverable with gender analysis is unavailable, due to limited progress (Minot, N. et al. Seed development programs in sub-Saharan Africa: An updated review of experiences). In the Progress Report, the activity state that their main gender achievement is the public release of gender-disaggregated household and labor data as part of a larger household and farm production dataset on cotton and Bt cotton technologies in Pakistan.

Survey datasets for Pakistan (gender-disaggregated household and labor data)

- This deliverable includes a number of surveys and datasets for different years. The Pakistan Cotton Survey (described March 14, 2017) was conducted to examine the efficiency of markets for cotton seed in Pakistan with particular emphasis on the market for genetically modified cotton seed. The five survey rounds were designed by the International Food Policy Research Institute (IFPRI) and implemented by Innovative Development Studies (IDS).
- Pakistan Cotton Survey 2013, Round 1.1 collected data (from March 2013 to May 2013) on household, farm, and plot characteristics of cotton growers. It includes information on the sex of the household head. There is a questionnaire for both a male and a female respondent. The survey asks about for the main decision maker for a variety of activities, and has a section to list male and female.
- Pakistan Cotton Survey 2013, Round 1.2 collected data (from September 2013 to November 2013) related to input use and pesticide poisoning symptoms up to the first picking of cotton. The household survey is very similar to 1.1 with a few minor differences, including asking about the number of male and female agricultural workers, changed wording for decision maker for an activity (which household member performed a majority of the activity), and this round does not ask about income and consumption.
- Pakistan Cotton Survey 2014, Round 1.3 collected data (from January 2014 to February 2014) on the harvest of each picking and on the total sales of cotton. The 'male questionnaire' is the household questionnaire while the 'female questionnaire' is an individual questionnaire. The Household questionnaire is quite detailed and includes sections on decision making and gender. In the gender section, questions on decision making and performance for each activity, perceptions about cotton and Bt cotton cultivating, leadership, and access, ownership and control are included. The Individual Questionnaire for the 'main female HH decision maker' was to be administered separately to the self-identified primary female member responsible for decision making in the household. The survey asks about: who takes decisions, how much input the respondent has, and who performs the activity; perceptions about cotton and Bt cotton cultivation; participation in networks, leadership, and influence in the community; paid work; ad access, ownership, and control over assets.
- Pakistan Cotton Biophysical Survey, 2013, collected data in September 2014, to measure the presence and expression level of Cry protein in farmers' fields.
- Pakistan Seed Dealer Survey (data collected in 2015) interviewed seed dealers and used DNA fingerprinting to test for purity and other traits (germination, moisture, etc.). The Pakistan Seed Dealer Survey had no reference to gender and did not document the gender of the respondent, even though name, age, and how long they have been in the business are all documented.

Activity 157 (IFPRI-EPTD): Analyzing investments and capacities metrics in agricultural research and its links to productivity

There are no deliverables with gender analysis, although an interactive dataset highlighted by the activity can be disaggregated by gender.

The Progress Report states no gender analysis with deliverables but asserts there is a gender dimension to the activity. Under main gender achievements, it lists "Paper on women participation in agricultural research: 90% completed" but the paper is not available.

While not listed with the deliverables, the activity did report the collection of sex-disaggregated data on number of agricultural researchers for 40 countries. ASTI's data graphing and download tool can be used to access datasets on agricultural research expenditures and human resource capacity in a large number of low- and middle-income countries. Data can be filtered by country, indicator, or sub indicator, and one of the additional options is: "Disaggregate by: degree, gender, age, institutional category, commodity focus, and discipline." This provides an opportunity to use the data for gender analysis.

Cluster 1.3: Technology adoption and sustainable intensification

Activity 114 (CIAT) Mapping of CGIAR CRP's research and development activities

No documentation on this activity was available.

Activity 151 (ICRAF/ICRISAT) : Preliminary studies on how the income composition of rural smallholder households influences preferences for, and adoption of, new agricultural technologies

None of the deliverables are listed as having gender analysis. While no gender analysis is stated, in the gender research section of the Progress Report it says 'yes' to the question on collection of sex-disaggregated data. No further information was provided so this assertion could not be explored.

Activity 128 (IFPRI-DSGD): Strengthen extension and advisory services – what works where and why?

All deliverables have some gender analysis. While gender is not part of driving research questions or objectives in the deliverables obtained, however, some gender recognition and reference is included in deliverables. These deliverables include an IFPRI discussion paper, a knowledge exchange event, and an IFPRI blogpost.

There appear to be deliverables with promising gender analysis that are not yet available. The activity states that there is a gender dimension to the research, and gender is included in analysis of book chapters that are currently being edited. In regard to sex-disaggregated data, the activity states in the Progress Report: "The team collected primary data (sex-disaggregated by respondent) from 5,400 female and male respondents in 3,001 households in Malawi. It is part of the larger research program that was initiated through PIM seed funds, although it is not part of the main deliverables under PIM for 2016." These elements of their research can be evaluated in the future.

Capacity building was conducted through a knowledge exchange led by PIM to share evidence-based knowledge and discuss means for achieving widespread farm-level impact in Africa and other poor agriculture-based economies through innovation at scale, within the context of the "best-fit" approach. The activity stated that INGENAES participated and included gender topics.

"Framework to Assess Performance and Impact of Pluralistic Agricultural Extension Systems - The Best-fit Framework Revisited" – IFPRI Discussion Paper, November 2016

- While the paper does not directly include gender analysis, there is reference to gender in the framework. The paper aims to operationalize and improve the best-fit framework to guide the evaluation of complex extension and advisory services (EAS) systems and reviews IFPRI 'best-fit' framework. It examines experiential and empirical insights and explores methods to assess EAS systems, drawing on existing literature to illustrate methods and tools to analyze each component of the framework. The framework references gender as a facet of larger community considerations. "Figure 2.3 Framework for designing and analyzing advisory services" is a detailed visual with four main contextual factors listed, one being community aspects. Gender is listed as one of four sub-categories of community aspects, along with land size/distribution, education levels, and capacity to cooperate. In a different part of the diagram, ten impacts are listed,

including 'Gender specific impact.' The inclusion of gender in the framework leaves scope for the possibility of incorporating more gender research in the future, especially since the conclusion of the paper states a need to improve analysis of behavioral change.

Knowledge exchange event (proceedings); the Global Forum for Rural Advisory Services (GFRAS) website

- The webpage provided (http://www.g-fras.org/en/) links to a page entitled "Professionalism of Rural Advisory Services." The webpage describes efforts to examine current levels of professionalism in rural advisory services (RAS), and a study commissioned in 2016 to analyze professionalism in GFRAS's 11 regional networks. The aim of the study is to provide evidence to guide activities and tools offered by GFRAS and promote inter-regional learning and information exchange.
- The activity provided two relevant comments with this deliverable in the Progress Report: "Developing a "Last Mile Agenda" for African Agriculture: Turning Knowledge into Farm-Level Impact through Innovation at Scale: Knowledge Exchange at the GFRAS Annual Meeting Brief and white paper to be developed as follow up by the partners," and, "Brief and white paper to be developed as follow up by the partners." The webpage does not contain any information with that title, nor a white paper that matches this description. It is uncertain which aspects of the outputs on the webpage the activity was specifically involved in.

"New Project on agriculture extension in Malawi" – August 19, 2016; Cynthia Kazembe; IFPRI blogpost

- This blogpost was not accounted for under deliverables but was listed in the 'significant outcomes' section of the Progress Report. The blogpost relates to the project and data mentioned in the sex-disaggregated data description. Although it is not part of the 2016 deliverables, it holds promise for future inclusion of gender analysis. The project will involve two rounds of panel household surveys, community-level survey, and in-depth focus group discussions and two rounds of surveys of both government and non-government agricultural advisory service providers, and will run for three years from July 2016 to July 2019. The project, which involves assessment, capacity strengthening, and policy support, will analyze demand for and supply of agricultural extension services in Malawi in order to design activities and improved extension policies. The project itself does not appear to focus on gender, but the collection of sex-disaggregated data provides scope for gender analysis.

Activity 150 (ICRAF): Evidence and outreach to strengthen advisory services and knowledge exchange functions

Three of the deliverables have some gender analysis, and outputs were received for two deliverables. The paper "The power of television in triggering feedback through mobile phones" uses sex-disaggregated data to analyze, "the degree to which men and women watched Shamba Shape-Up TV show, what they learned from the show, whether they sought more information via SMS, and how they used the information" (Progress Report). The second deliverable involves contributions to "Extension Options for Better Livelihoods and Poverty Reduction: A Selected Review 2012–2015," a paper that does not include gender in its research questions or objectives but does include gender in its considerations.

"The power of television in triggering feedback through mobile phones" (Kiptot et al. 2017); Report on World Agroforestry Centre (ICRAF)

- The activity frames the data collected in this project as its main gender achievement. Overall, the research question is not gender focused; however, gender is a facet of the work and conclusions

about men and women, as well as gender analysis, are present in the article. The driving research question is how to use Information Communication Technology (ICTs) to dissimenate knowledge and receive feedback. The findings yield the possibility of recommendations for gender targeted or sensitive strategies.

- The study focuses on identifying innovative ways to reach farmers in Kenya through testing the effectiveness of integrating TV and mobile phone technology in enhancing feedback mechanisms among smallholder farmers. With the increasing accessibility of mobile coverage and TVs in Kenya, the expectation is that productions can be tailored towards agricultural information for rural farmers and can trigger interest and feedback through mobile phone technology, as well as a change in attitudes, knowledge, and behavior. The World Agroforestry Centre (ICRAF) partnered with the media company that runs an agricultural program on TV, Shamba Shape Up (SSU) in Kenya to broadcast 30 minute episodes twice a week, in English and Swahili, covering issues and problems faced on farms, solutions, and opportunities. A pre-broadcast survey was undertaken in March 2015 by the media company, with about 800 respondents interviewed. Post broadcast surveys were conducted in October 2015, with a postal survey and an SMS survey. For the postal survey, a database of TV viewers was used to randomly select 500 respondents from a list of 1,148 viewers who had texted their feedback using the provided hotline short code. The 500 selected viewers were then sent questionnaires through the post and requested to return the completed forms within a specific time. Questions focuses on the acquisition of new knowledge and change in attitude by farmers who watched SSU. A total of 171 respondents returned the questionnaires, of which 79% were men and 20% were women. An SMS survey was administered to 300 randomly selected SSU viewers to determine whether they benefited from watching SSU and the cost efficiency of using SMS as a data collection tool. The study showed that most farmers received information from: family and friends (88%), the radio (80%), TV (slightly over 50%), and informal social networks.
- Gender analysis is used in the discussion of the differences in responses between men and women. The article offers explanations for the gender discrepancy in the postal survey, hypothesizing that the population used to select the sample size selected for the postal survey was smaller for women respondents due to the fact that fewer women texted after watching the shows (27% of women and 66% of men) and/or that few women returned questionnaires because of reasons such as immobility. They suggest that the gender gaps were due to fewer women owning individual phones and women's lower literacy rates.
- Other gender differences were with regard to knowledge and behavioral change. The postal survey questionnaire asked about knowledge of calliandra learnt from SSU or elsewhere; only 39 % of women and 29% of men respondents knew about calliandra as a feed for livestock before watching the SSU. About 60% and 34% of men and women viewers respectively learnt new knowledge from the SSU show. Comparison between men and women found no significant difference between themes learnt, other than that men were more likely to learn the amount of feed required by a cow per day. The ratings of knowledge between men and women did not differ significantly. More women (80%) than men (78%) indicated that they had changed practices in their farms as a result of the show, although the difference was not statistically significant. Overall, the paper concludes that information should be tailored to specific audiences it intends to reach, information aired should also be packaged in a way that farmers both literate and illiterate can understand, and other feedback mechanisms should also be available for farmers who might want to send further questions. These suggest that gender should be considered in the development of new programs.

"Extension Options for Better Livelihoods and Poverty Reduction: A Selected Review 2012–2015" Davis, K., Franzel, S., Spielman, D. (2016); Contribution to Michigan State University International Development Report, Working paper June 2016

- While the overall purpose of the report is not linked to gender analysis, issues of gender and women are actively considered throughout the paper when discussing extension knowledge. The overall goal of this report is to provide up-to-date information on key topics related to extension knowledge and perspectives and to enable decision makers to identify areas where (1) further evidence on extension through commissioned research is needed, and (2) extension investment practices should be reconsidered. As a global-level review, the report uses primary and secondary data on key extension trends in the last five years, looks at what's working, what's not, and why, in an effort to scale efforts up and make them more sustainable.
- Gender analysis is included in sections on empowering different types of farmers in the community, discussions of constraints, potential benefits, considerations in nutrition, and considerations for extension services. Issues discussed include women making up only a small proportion of extension staff and female farmers having less access to extension than male farmers. If the proportion of women among farmer-trainers is higher than the proportion among professional frontline extension staff, then farmer-trainer programs should help increase the proportion of women providing extension services; however, the results on this are mixed. In certain organizations, such as those in Uganda, farmer-trainers had a dramatic effect on raising the proportion of women providing extension services, since they found it easier to recruit female farmer- trainers than to hire female field staff. Researchers also confirmed that having more female farmer-trainers resulted in more women trained in Cameroon, Kenya, and Malawi. The relationship between gender and potential benefits is also discussed: an important but neglected advantage of F2FE programs is that they can often help organizations to increase the proportion of women providing and accessing extension services; however, many F2FE programs are unaware of this potential and thus have low proportions of women in their farmer-trainer programs. Methods for increasing gender balance in F2FE programs are discussed, including policy makers and organizations increasing the proportion of women providing and accessing extension services and proactively recruiting women, through methods such as targeting women's groups for recruitment and setting quotas for female farmer-trainers. Other areas of the report that mention gender include additions of gender considerations in nutrition discussions (in terms of gender bias and women's limited access to extension services), and guidelines to improving nutrition that include the aim to empower women.

Activity 145 (CIP): Enhancing nutrition, food security and income through sustainable system intensification with roots and tubers crops in Asia and Sub-Saharan Africa

Gender analysis is present in one deliverable, a working paper entitled "Sustainable Intensification of Cereal-based systems in Asia: the case of potato intensification in the Indo-Gangetic Plains." While it does not include gender analysis in the paper's objectives it does include data on gender and has some limited analysis when discussing the effect of potato cultivation on women's labor. The literature review considered women's labor. The paper points to the need for gender research on these issues in the future. A second activity that was expected to include gender, was cancelled.

"Sustainable Intensification of Cereal-based systems in Asia: the case of potato intensification in the Indo-Gangetic Plains" (Gatto & Hareau); CIP working paper.

- This working paper is a scoping study on tradeoffs and potential impact of agile potato in Indo-Gangetic plains of Bangladesh and North & Eastern India. It focuses on three research questions: (1) What is the potential of SI in Eastern IGP? (2) What are the effects of SI on farming outputs and inputs? (3) What are the trade-offs of SI? None of these questions have a gender focus, however the effects on gender and labor are briefly considered.
- References to women are included in considerations for labor and nutrition. The paper argues intensifying cereal systems requires additional labor days to manage the introduced potato, and therefore demand for labor increases, which could boost the involvement of women and youth in agriculture. Additionally, the argument is made that introducing the potato will offer important vitamins that women and children are currently deficient in; increased potato could lead to better nutrition for women and children and 'contributes to the fight against hunger.' No additional analysis accompanies these comments. The most significant discussion of women is in a section on women and employment. The paper states that unemployment rates for women are very high in Bangladesh and intensification could boost women's employment in the case of complementing rice systems. Although women's labor seems to have increased over the past decade, potato cultivation is still dominated by male labor and seems to have more opportunities for female family labor than hired female labor. More research is needed to analyze employment opportunities for female labor, either family or hired, and there is scope for the activity to explore this topic and include more gender analysis in the future.

Activity 152 (ICRAF): Learning network on technology adoption and impact

There is no 152 activity sheet for 152 (ICRAF). Assumption made that this activity was combined with 152 (ICRISAT).

The deliverables have no gender analysis.

Activity 170 (ICRAF): Monitoring and Evaluation of the uptake of Volunteer Farmer Trainer Programs and use of good practice notes

One deliverable has some gender analysis, and the outputs attributed to that deliverable are in French. The 'Feed-the-Future' post displays incorporation of women into projects. In the Progress Report, the activity says there is no gender dimension to the activity, giving the following explanation: " Low level of resources available for this study precluded gender analysis. We wanted to focus on the simpler aspect of the extent to which organizations adopted the approaches, rather than the complex assessment of what the impact of adoption was on gender issues."

Report on uptake of VFT and rural resource center approaches in Cameroon

- The deliverable with some gender analysis incorporates reports and briefs on the 'uptake of VFT and rural resource center approaches in Cameroon.'Extension, "Les Centres de Ressources Ruraux. Catalogue. World Agroforestry Centre, Yaounde Cameroon" (ICRAF-Cameroon 2016) shows that 'CIMAR Centre d'Insertion aux Metiers Agricoles et Ruraux,' one of the 6 RRCS, target women and children to build new agricultural skills. The policy brief included, "Formation de paysan-à-paysan au Cameroun: Les acteurs dévoilent une approche efficace de vulgarisation. Guide Politique N°5. Série Agroforesterie et Institutions. ICRAF, Yaoundé Cameroun" (Tsafack S & Degrande A. 2016), presents key results on different surveys on F2FE in Cameroon, challenges and key policy recommendations.

"Scaling up Climate-Smart Agroforestry Technologies for improved market access, food, and nutritional security in Mali (SmAT-Scaling) – 'Feed-the-Future'"

- The most significant inclusion of women is with a USAID funded project that ICRAF is a partner of in Mali, entitled "Scaling up Climate-Smart Agroforestry Technologies for improved market access, food, and nutritional security in Mali (SmAT-Scaling), 'Feed-the-Future.'" It is unclear how much involvement this activity has in this project. Overall, women are considered in the objectives and outcomes of the project development. The blogpost link provided by ICRAF provides a description of the activity. The Mali project is working to enhance access to and use of tree-based climate-smart technologies through effective scaling- up of already-developed and proven agroforestry technologies and improved market access to increase food and nutritional security and build resilience in farming systems. The seven main objectives to the project are focused around identifying options, approaches, partnerships, and policies. None of these objectives are gender specific but there is a separate section addressing gender objectives which include: create awareness and improve rural communities consumption of tree-based nutritious tree products for improved food and nutritional security; improve the quality and competitiveness of shea products, strengthening cooperative organization, finances and management as well as improving food and nutrition security; create wealth to improve livelihoods and strengthen the resiliency of rural women through the development of sustainable organic beeswax production and marketing; and set up an efficient supply chain of Jatropha grains collection, install a soap factory unit and add value to the press cake through processing into organic fertilizer and add glycerin valuation for soap.

Activity 152 (ICRISAT): Learning network on technology adoption and impact

The deliverables have no gender analysis. The original gender coefficient was listed at 0.3, with the comment that all deliverables have some gender focus. Activity focus must have shifted, as there is currently no gender dimension to the activity.

Activity 98 (IFPRI – EPTD) BioSight (tools for assessing tradeoffs around sustainable agricultural intensification)

One deliverable has significant gender analysis. There is a gender dimension to the activity, and the activity has extended their collaboration with a gender expert, Marzia Fontana, to build upon a 2015 BioSight working paper that she wrote to identify the important "entry points" to consider gender in the analysis of sustainable intensification. They constructed a simplified empirical example to illustrate some of the key dimensions of time use that matter for women within a household farm, and used the quantitative results to write a conference paper. The illustrates important interactions between men and women, and potential interventions to increase women's on-farm productivity. In the Progress Report, the activity states that the construction of the model is its main gender achievement of 2016, and recognize: "This is an output, rather than an outcome – but we hope to use it as a building-block for generating further outputs and outcomes in 2017 and beyond."

"A gender perspective on the sustainable intensification of agriculture: The household and unpaid work" (Fontana & Msangi 2016).

- This working paper includes significant gender analysis and the paper's research questions, objectives, and model incorporate gender. The paper provides a substantive literature review and a model based on an archetypical household. The paper looks at production, reproduction, and consumption within a framework of gender analysis, and acknowledges linkages between agriculture production and environmental social sustainability as strongly mediated through

gender norms in both agricultural work and unpaid housework. The paper discusses the gender-aware economic modelling literature, and specifically the potential of the farm household approach, to identify promising techniques for exploring questions regarding unpaid domestic work and gender dynamics and presents a stylized model and simulations of an East African farm household to illustrate the crucial role that unpaid housework and care plays in agricultural production and well-being. Even though the household farm modelling framework treats the household as a single-decision making unit, it allows for different opportunity costs and different constraints faced by men and women within the household and can illustrate non-separability between production and consumption choices. The authors state "We see such a model as a potential first building block for the construction of a gendered bio-economic model or any other macro-micro model that explicitly accounts for the gendered nature of linkages between agricultural policies, public infrastructure and household well-being in a low-income country."

- Results: The analysis finds that doubling the off-farm wage is not enough to reduce the overwork and degradation of labor effectiveness for women. The authors introduce a scenario where the household can obtain nurture goods from outside the household – through the increased availability of public services. First the scenario involved having to purchase it at market price, and then they introduce a scenario where the prices is much lower. The overall working time for women is significantly lower with the availability of outside care good provision. The overall working time goes well below the threshold of 10.5 hours per day, therefore this case has a big (and positive) impact on labor effectiveness for women. The authors argue the market failure for care is perhaps the most serious one that the household faces, and that the coercive forces exerted by men are not able to diminish this benefit. The authors then revisit the scenario where the off-farm wage for women is increased, and see if the response of off-farm labor is changed when the higher wage is combined with the possibility of sourcing care goods from outside the home. Results contrast previous findings. Overall, results show that the provision of public services boosts the availability of care goods within the household, and frees up time for women to pursue other economic activities (like paid, off-farm work). The provision of the public service, in combination with giving women more control over their productive time, results in a significant reduction in the overall time burden for women, such that they are able to recover their full labor productivity and effectiveness (in contrast to the base case without public good provision and more limited freedom of time allocation). Authors argue this model can represent a wide range of cultural contexts that might actually be observed in the rural populations of eastern Africa as well as other parts of the world.

Activity 45 (IFPRI- EPTD): Mapping of CGIAR CRP's research and development activities (1.3)

One deliverable is listed as having gender analysis. The activity appears to gather information for platforms and does not seem to carry out research. In the Progress Report, the activity stated: "No; there is no significant gender relevance to the data collected and analyzed in this activity."

"Version 3.0 of the Agricultural and Nutrition Technology (ANT) Ontology"

- This is a website that organizes data on a number of topics and subtopics related to agricultural technology ontology. Some of these datasets could include sex-disaggregated data or data collected for gender analysis, but from the dataset titles it does not appear that data collection was specifically geared towards gender analysis.

Activity 152 (IFPRI-EPTD) Learning network on technology adoption and impact

There is no gender analysis in this activity. One deliverable is listed as incorporating some gender analysis, although in its current state the working paper does not include gender analysis. In the Progress Report the activity states: "Yes, there is a gender dimension, but just tangentially as we look at measurement issues at individual as well as household level. There is no sex-disaggregated data because 'this is a desk study', a review of literature of technology adoption and impact studies."

"Micro-economic studies of the impact of agricultural technology on productivity: a review of methods"

- This working paper on methodological guidelines for technology adoption and impact studies (80% completed). The paper is delayed, currently in draft form, and does not include mention of gender. Comments on the draft do not add any suggestions to include gender analysis. Additionally, the section specifically referenced in the Progress Report, section 5 on measuring adoption of technology, does not include gender analysis. One sentence in the paper states that going forward having sex-disaggregated data would be useful.

Activity 159: Monitoring the Geospatial Diffusion of Agricultural Technologies

The activity reports having deliverables with gender analysis. The activity states that there is a gender dimension to the research and states its main gender achievement is: "Findings from the survey show that household headship in the survey areas was dominated by males (69.6% in Rwanda; 70% in DRC and 67.4% in Tanzania). This could have positively influenced levels of adoption of the technologies in the target areas besides other factors since male-headed households usually have access to more resources available to them to invest and sustain the adoption process." Sex disaggregated data was collected through, "the technology adoption survey collected the gender of technology adoption decision maker in the household." Only including the sex of the household head and spec

"What does market access have to do with technology adoption? Evidence from Tanzania" (Haile 2016) IFPRI

- The purpose of paper is to examine the link between market access and adoption of improved maize seeds in Tanzania using data from the 2012/13 Tanzania National Panel Survey (NPS) and data collected through SMS. A negative association is found between market access and the use of improved seeds. Adoption of improved maize seeds is also correlated with a number of socioeconomic factors highlighting the need for multi-dimensional interventions, alternative seed systems, extension services, and the bargaining power of households.
- There is no gender analysis in the paper. The only comparison are at the level of household headship and there is no analysis of why even these differences exist. The SMS survey collected information on gender, age, and educational attainment, so the paper should have the possibility remains to add in more significant gender analysis

Survey: TechTracker Questionnaire 2015, "Quality Protein Maize in DR Congo Households"

- Only one question (and no follow up questions) relate to gender. It aggregates all agricultural production decisions.
    - In your household, who takes decisions concerning the agricultural production (Select one)?
        - Female
        - Male

- Both

Survey: TechTracker Questionnaire 2015, "Quality Protein Maize in Dr Congo: Key Informants"

- The survey keeps track of the respondent's gender.
- The survey asks key informants one question relating to women: "How many of these households are headed by females?"

"Adoption and Diffusion of Agricultural Technologies Promoted by ASARECA in Eastern and Central Africa" (Odeke & Koo)

- The paper analyzes adoption studies that were conducted by ASARECA in partnership with IFPRI to track adoption and diffusion of selected technologies generated and promoted in Tanzania, DRC, and Rwanda.
- The surveys analyze the data based on the sex of the household head. In addition, they collected data on the sex of the person who makes adoption decisions.
- Survey findings show that the level of joint decision making is slightly over 50%, at country level, and that decision making in agricultural production is dominated by men, especially in Tanzania. The authors acknowledge that it is important to explore whether women's participation in decision making is equal or simply consultative. Across the countries, 75% of the households reported joint decision making followed by DRC (52%) and Tanzania (34%). Findings also show that decision making is still dominated by the men in Tanzania (46%), followed by DRC (40%).

  A series of data sets were produced, they report having some gender analysis. Limited sex-disaggregated data that is available to be included in them means that they will not support much gender analysis.

Activity 152 (IITA): Learning network on technology adoption and impact

There is no gender analysis in this activity. One deliverable is listed as incorporating some gender analysis, although the available working paper does not include gender analysis.

In the Progress Report, in response to the question on if the activity involved gender research, the activity responded "not quite" and provided the following explanation: "Although the work is a review paper focusing largely on methods for measuring adoption and impact of agricultural technologies, we provide some discussion on how gender should be incorporated in the measures of productivity effects of agricultural technologies."

The deliverable listed as incorporating gender analysis is the deliverable also listed in 152 (IFPRI-EPTD), "Micro-economic studies of the impact of agricultural technology on productivity: a review of methods."

Flagship 2: Agricultural Growth and Transformation at the National Level

Cluster 2.1: Public expenditure: Measurements, drivers, and impacts

Activity 41 (IFPRI): Within- and cross-country agricultural public expenditure analysis and metrics

A few of the deliverables have some gender analysis. There is minimal reference to gender in the 'Institutional Arrangements' paper, and gender analysis is incorporated into Chapter 6 of the 'Agricultural Productivity in Africa' book. Sex disaggregated data was collected in 2013-2014, resulting in a 2015 and 2016 discussion paper (which was unavailable for evaluation).

Extensive capacity building was carried out by the activity, however while women participated in the training, the content did not include gender analysis. The number of women who participated in "Feed the Future" events was included for each event (more men participated then women, but women participated in each). The "Strengthening the capacity of Resident District Commissioners (RDCs), Moderators and Rapporteurs for effective implementation of community advocacy forums (Barazas)" in Uganda first trained 40 people (of which 15% women), and held a second training where 80 people were trained (16% of which were women).

"Institutional Arrangements to Make Public Spending Responsive to the Poor—(Where) Have they Worked?" (Mogues & Erman 2016); IFPRI Discussion Paper

- The paper examines four institutional arrangements that explicitly endeavor to make public spending responsive to the needs of the poor by moving decision-making procedures closer to the population—participatory budgeting, community- driven development (CDD) programs, decentralization, and delegated targeting of transfers. The authors use existing literature to compare experiences across the four arrangements and countries.
- The only discussion of women refers to household headship. The impact of the sex of the household head is referenced with regard to whether the household received farm inputs subsidies (Malawi and Zambia), Tanzania (input vouchers) and Bangladesh (Food-for-Education).

Agricultural productivity in Africa: Trends, patterns, and determinants (Benin, ed. 2016); book publication.

- Gender analysis appears exclusively in Chapter 6, "Factors Influencing the Effectiveness of Productivity-Enhancing Interventions: An Assessment of Selected Programs. The paper asks, how are different constraints faced by men and women internalized in the productivity-enhancing intervention to maximize its benefits and distribution?
- These issues of gender are discussed throughout the analysis. One of the 13 factors that affect productivity focuses on gender and advocates for gender differences to be taken into account in project design and implementation to address constraints and enhance productivity. One of the indicators used to rate performance against the criteria of successful project implementation is a set of gender consideration measures, including evidence of gender consideration in project design and implementation; involvement of women and youths; evidence that gender issues were mainstreamed; evidence that benefits were accessed by women, men and youths; and a performance rating indication assessing gender considerations. The paper analyzes 25 productivity-enhancing interventions evaluated in the study, in relation to the 13 project implementation performance indicators. The "gender consideration" indicator was used to evaluate each intervention.

Cluster 2.2: Structural transformation: Tools and analysis

Activity 112 (IFPRI-DSGD): Central Asia food security - Regional training course in applied econometric analysis for young researchers in Central Asia

The deliverables have some gender analysis. Interactive tools display data relating to women and girls. In addition, trainings were held in the region and about half of the participants were women. There was no gender analysis included in the course material.

Spatial development and food security information and analytical tool for Tajikistan (web platform)

- The activity states that this web platform, Tajikistan Spatial, was launched on September 20, 2016. The web platform consists of interactive maps on the site illustrating food security and development concerns. Data are available on women's education, iodine and anemia for women, and access to reproductive health.
- The document "Food security system – a new conceptual framework" has minimal references to women or gender, other than in the literature review. They mention that mothers play a role in food preparation and that pregnant women are at an elevated risk of malnutrition.

Activity 37: Arab Spatial: Databases, Tools and Blogs for Tracking Agricultural Projects and Food Security Related SDGs

Deliverables have a mixture of significant and some gender analysis. There is a significant gender data component to the interactive website Arab Spatial. The website incorporates sex-disaggregated data and presents data on the food and nutrition security related to SDGs. As the activity reports, there are 22 layers in Arab Spatial that cover women's health and well-being in the Arab World. Users can track women's access reproductive health services, such as contraception and antenatal care at the national and sub-national levels, and over time. Users can also monitor the performance of key nutrition indicators such as the prevalence of underweight and overweight women. Lebanon Spatial also incorporates some gender data, although not to the same extent as Arab Spatial. The Arab Food and Security Blog incorporates women researchers but only has two blogs with some gender content. The book *Nutrition and economic development: Exploring Egypt's exceptionalism and the role of food subsidies* (Ecker et al. 2016) incorporates gender analysis through discussion on how obesity and over nutrition affect women in Egypt.

Arab Spatial 4.0: Databases and tools (website)

- Significant gender data is available through this interactive map. The activity reports that the tool has been expanded to become a monitoring tool for food and nutrition security related Sustainable Development Goal (SDGs). Data on a number of areas relating to women can be viewed, from women's participation in agriculture, unemployment rate, education, to SDG Goal 5. The interactive map allows the viewer to visually engage with data in five broad spheres (economies, households, policies, shocks, and sustainable development goals) and then look at subcategories of data in each of these areas. In the economy section, one can view data on women in agriculture under 'employment,' and young women under 'unemployment rate.' Through the larger sphere of households, one can view the global gender gap index under 'human well-being', (under malnutrition there is nothing specific to women, only children), and education among women (primary, secondary, none) can be viewed under 'access to services, along with maternal care (including antenatal care and contraception). In the policy section, one can view the share of

researchers who are women under 'agricultural research and development'. In the Sustainable Development Goals section, the Subpart of Goal 5, Gender Equality, includes data on women.

Lebanon Spatial (website launch event)

- Some gender data is incorporated into the interactive tool. While there is some data on women presented in this map, the data is far less exhaustive then in the previous deliverable, Arab Spatial. The activity reports that the new data platform for Lebanon is now managed by AUB, with support from IFPRI. Reproductive health (contraceptive use) is included under 'health,' while the human well-being section includes data on the age dependency rate index and Gender Gap Index. Areas like health capacity, water and sanitation, household characteristics, and household food consumption are not sex-disaggregated. The malnutrition and disease section includes data on anemia in children, anemia in pregnant women, child stunting, etc., but does not keep track of data on women in general. Morality keeps track of human mortality rate, under five, and infant mortality rates, but not maternal mortality. Education only marks illiterate members and does not specify further. Within each of these 'spatial' websites, there is a 'household and individual' section but the extent to which gender is considered varies.
- Referenced in this deliverable is "Developing Lebanon Spatial, A student experience; Arab food and nutrition security blog"; there is no gender analysis in the blog.

Arab Food and Security Blog (website)

- The activity reports that more than 25 original, evidence based blogs from leading thinkers have been published, and the blog has been widely advertised through the IFPRI office in Egypt. Women from different backgrounds and positions (policy makers, researchers, national and international experts) have contributed their opinions to the Arab Food and Nutrition Security Blog's knowledge repository.
- While women have taken part in the creation of this resource, only two blogs reference gender:
    - "The Poor Quality of Egypt's Food is in a Crisis" by Dr Susan Robertson discusses the low rates of food insecurity in Egypt. FAO's 2015 report on food security showed that under 5% of the population are considered undernourished; 60% of women and 25% of men are obese, suggesting that Egyptians regularity enjoy a 'surfeit of calories.' Robertson argues a closer look reveals significant issues, such as the fact that between 21 and 30 percent of Egyptian children under the age of 5 are stunted, and 40 percent of children under 18 months and 27 percent of children under 5 years old are anemic. While women are referenced in obesity statistics, the focus of the paper is on systematically dysfunctional aspects of the food system (such as with bad milk, lack of refrigeration, and poor food safety regulations) and the stunting levels and health of children.
    - "No Peace, No Sustainable Development: A Vicious Cycle that We Can Break" by Khalida Bouzar looks at the connection between peace and food security. The blog post acknowledges gender issues and establishes that women, along with youth, are disproportionally affected by conflict. Bouzar also highlights the need to target and include women, both women graduates as well as women in small farm households, in development. Due to women's limited opportunities for productive work beyond the farm, IFAD is pushing for policies to create better opportunities for women and youth (in Near East and North Africa, NENA). The blogpost argues the SDGs have an intrinsic relationship to peace and stability, and without peace, the needs of women and children cannot be addressed.

Nutrition and economic development: Exploring Egypt's exceptionalism and the role of food subsidies (Ecker et al. 2016); published book (IFPRI)

- The gender analysis in this book focuses on how obesity and over nutrition affect women in Egypt. The book analyses nutritional challenges in Egypt, such as the 'growth-nutrition disconnect' (high economic growth was not accompanied by reduction in chronic child malnutrition), and the simultaneous presence of chronic undernutrition and over nutrition. Both challenges are exceptionally pronounced in Egypt compared to other developing countries, and the book examines these challenges and their relation to public policy. Authors examine four key drivers of Egypt's nutritional challenges: (1) the nutrition transition, (2) economic crises and rising poverty, (3) insufficient nutrition-sensitive investment, and (4) the food subsidy system. The main hypothesis of the book is that Egypt's large food subsidy system (as in place until May 2014) was ineffective in reducing child and maternal undernutrition.
- The authors argue that from an economic development perspective, malnutrition among women of reproductive age and among young children is of particular concern. Women's body mass indexes (BMIs) and the probability of female overweight and obesity in Egypt increase as prices of the foods that are subsidized under the national food subsidy system fall. Egypt has also one of the highest female overweight rates in the world, affecting 78 % of all (non-pregnant) ever-married women 15– 49 years of age, while almost 40 % are obese. The prevalence of child stunting exceeds 30 percent in Egypt. The gap between the actual prevalence rate of female overweight and obesity and the expected one given the actual child stunting rate is very wide in Egypt. The authors acknowledge how the sex of the household head, as the main decision maker in the household, affects the nutritional status of household members, especially young children. However, including just the sex of the household head as a covariate yields misleading results given the Egyptian context. According to the author's data, most female- headed households in Egypt (79.2 percent) are households where no adult male is present, so decision- making power is with her by necessity. Most households with adult males are headed by men (95.8 percent). Therefore, the authors included instead a variable that identifies households headed by single mothers because single mothers usually face major time constraints due to their dual responsibility as main income earners and main child caretakers, which may adversely affect child nutrition. Authors look at the low physical exercise of women, and present statistics on diseases in men and women, female obesity, and over nutrition. They conclude that where maternal schooling is low, income support needs to be accompanied by formal female education and behavior change communication to effectively reduce child stunting and to protect women from unhealthy weight gain.

Activity 148 (CIMMYT): Mechanization and Agricultural transformation: South-South learning and knowledge exchange

The deliverables have no stated gender analysis. In the Progress Report, the activity stated there is no gender dimension to the research, and provided the following explanation: "It was expected that few lessons could be learned from Bangladesh where women have little known role in the agricultural mechanization there."

Activity 148 (IFPRI-DSGD): Mechanization and agricultural transformation: South-South learning and knowledge exchange

The deliverables do not incorporate gender analysis; a few references to women are included. The activity provided the following comment on gender analysis in the Progress Report: "While gender research is not the direct focus of this activity, indirect evidence on the gender-bias related to agricultural mechanization

(machine ownership of different types, service provisions, farm and non-farm labor uses, etc) is provided." The activity states that direct evidence on gender was not obtained, but that indirect evidence and narratives have been gathered on how female labor is affected by the adoptions of mechanization. This information will be synthesized in a draft for a book on mechanization that is expected to be completed in 2017. Therefore, there is scope for future inclusion of gender analysis.

"Agricultural mechanization and south-south knowledge exchange: What can Ethiopian and Kenyan policymakers learn from Bangladesh's experience?" and "Agricultural mechanization and south-south knowledge exchange: What can Ghanaian and Nigerian policymakers learn from Bangladesh's experience?"

- These are policy briefs on a Bangladesh mechanization study tour report by African government officials. The brief does not have any gender analysis present, but notes, "Agricultural engineers in Bangladesh also have designed and produced tools, like simple maize shellers, that can particularly benefit female farmers who are often involved with post-harvest processing."

"Agricultural mechanization and agricultural transformation" (Diao, Silver, & Takeshima 2016); IFPRI Discussion Paper

- The paper reviews the factors likely to influence farmer demand for mechanization in Africa and details different existing and potential mechanization supply models. It suggests that private-sector-driven supply models are better positioned to meet this demand than direct government involvement and certain types of subsidized programs.
- There is little mention of women or gender. The arduous nature of manual threshing is acknowledged, as is the fact that this job is typically carried out by women.

"Custom-hired tractor services and returns to scale in smallholder agriculture: a production function approach" (Takeshima 2016); *Agricultural Economics*.

- The paper aims to fill in a 'knowledge gap' on how agricultural transformation often accompanies the increase in returns to scale. The authors test whether hiring in tractor services has increase returns to scale in agriculture at the household level in Nepal Terai, which has undergone rapid growth in tractor use through custom-hiring services. The authors find that hiring in tractor services significantly increased the returns to scale in agricultural production by about 0.2 - 0.3 among farm households not owning tractors. Findings are robust under various alternative specifications
- The estimations of production functions by tractor hiring status among non-tractor-owners include a variable of adult female family labor. There is no discussion of the result.

Activity 161 (IFPRI-DSGD): Youth employment in African agriculture: patterns, prospects and policies

Deliverables have some gender analysis. Each paper accounts for gender in regressions and models, and presents a range of gender analysis along with data.

"The Effect of Land Inheritance on Youth Employment and Migration Decisions: Evidence from Rural Ethiopia" (Kosec et al. 2016); IFPRI Discussion Paper

- This paper incorporates gender analysis. There is a variable for gender in the regression as well as some accompanying analysis in the text. In the context of Ethiopia, the paper asks: How does the amount of land youth expect to inherit affect their migration and employment decisions? The authors estimate a household fixed-effects model and exploit exogenous variation in the timing of land redistributions to overcome endogenous household decisions about how much land to

bequeath to descendants. They find that larger expected land inheritances significantly lower the likelihood of long-distance permanent migration and of permanent migration to urban areas. Inheriting more land is also associated with a significantly higher likelihood of employment in agriculture and a lower likelihood of employment in the nonagricultural sector. The decision to attend school is unaffected. These results appear to be most heavily driven by males and by the older half of our youth sample. Overall, the results suggest that inheritance strongly influences the spatial location and strategic employment decisions of youth.

"Cities and the rural transformation: A spatial analysis of rural youth livelihoods in Ghana" (Diao et al. 2017); IFPRI Discussion Paper

- The paper analyzes rural livelihoods in Ghana, using household level analyses. It considers female headed households as well as those households headed by youth.

"Labor adaptation to climate variability in Eastern Africa" (Dou et al. 2016); IFPRI Discussion Paper

- Some mention of women and gender, but more limited gender analysis. In the introduction, the authors acknowledge that the existence of labor markets segmented by location or gender (such as domestic or security work) suggest that adaptation may vary by worker location and sex. The sample is stratified by gender and small or large household asset wealth as proxied by landowning to explore how households or individuals adapt. Variables are created on individuals' occupation and migration outcomes over time, education, gender, age, and household location and landholdings. Descriptive statistics show that in both rural and urban areas, wage markets and schools are dominated by men, whereas the majority of unemployed people are women. The sharpest geographic distinction is in migration; in urban areas migration is equally split by gender, while only 40 percent of rural migrants are female. No further analysis is included with these statements.

Activity 96 (IFPRI-DSGD): Updating Social Accounting Matrices

A few deliverables, in the form of datasets, are listed as having some gender analysis, although links for these could not be obtained. The activity reports that the Nigeria and Bangladesh SAMs include sex-disaggregated data, but this could not be evaluated. None of the trainings or papers include gender analysis.

Datasets marked as having some gender analysis:

Four SAMs (Ethiopia, Nigeria, Ghana, Tanzania)

- A 2011 Social Accounting Matrix for Ethiopia: A Nexus Project SAM
- A 2013 Social Accounting Matrix for Ghana: A Nexus Project SAM
- A 2010 Social Accounting Matrix for Nigeria
- Comment: "The countries changed in response to project and country demands (see additional deliverables below)."

Three SAMs (Malawi, Uganda and Bangladesh)

- A 2014 Social Accounting Matrix for Malawi: A Nexus Project SAM
- A 2013 Social Accounting Matrix for Uganda: A Nexus Project SAM
- A 2010 Social Accounting Matrix for Bangladesh
- Comment: See above.

Activity 113 (IFPRI-DSGD): Demographic change, rural-urban migration, and China's agriculture and rural development

There are two papers with some gender analysis that are available in English; the remaining deliverables with gender analysis are in Chinese and could not be assessed. The papers control for gender in their regressions and include some commentary on women and findings related to gender, but do not include extensive gender analysis or hypotheses.

"Migration, local off-farm employment, and agricultural production efficiency: Evidence from China" (Yang, Wang et al. 2015) *Journal of Productivity Analysis*

- The paper studies the effect of local off-farm employment and migration on the technical efficiency of rural households' crop production using a five-year panel dataset from more than 2000 households in five Chinese provinces. The most consistent result that emerges from econometric analysis is that neither migration nor local off-farm employment has a negative effect on the technical efficiency of grain production, which does not support the widespread notion that vast-scale labor migration could negatively affect China's future food security.
- In regressions, they control for gender in the household variable regarding labor endowment, as well as share of female workers. There is limited inclusion of gender analysis throughout the paper. Women are mentioned in reference to the increased farm and domestic work experienced by left-behind family members. When discussing determinants of technological inefficiency, results show that neither the total number of working members nor the composition of labor (in terms of age or gender) has any significant effects on inefficiency. The paper raises and addresses concerns that migration can shift appropriate use of technology and change labor quality (from adult male members to female, child, and elderly members). Specifically, authors engage with the claim, shown through other empirical studies, that there is the shift from male agricultural labor to female labor due to migration. While authors do not necessarily comment on the impacts extra hours worked have on women, they do engage in discussions of farming efficiency, stating that results do not find any significant effect on efficiency due to participation of female members. Therefore, authors argue results do not support the concern about potential negative effects of shifting male labor to female labor affecting agricultural production efficiency.

"Will China's demographic transition exacerbate its income inequality?–CGE modeling with top-down microsimulation" (Wang, Chen et al. 2017); Journal of the Asia Pacific Economy

- The paper focuses on population aging; gender is not part of the framing of the paper. The authors, however, control for gender in estimations and some gender reference is included. The paper focuses on demographic transition due to population aging, and argues that this is an emerging trend throughout the developing world, and is especially acute in China.
- The paper acknowledges that to consider demographic transition, a number of changes need to be evaluated, including gender (others include urbanization and human capital). In the simulation, a gender dummy is used in wage regression and gender structure change is simulated based on World Population Prospects by the UN. The labor income function is defined independently across eight labor segments, which are classified by area, skill, and gender. The conclusion identifies the need for further research on specific demographic structure changes, including gender ratio shifts. Beyond inclusion into regressions and minimal reference to gender, no additional gender analysis is present.

Activity 160: Understanding Africa's recent growth: implications for economic transformation

One deliverable (with an output we received) has some gender analysis. The IFPRI Discussion Paper, "Cities and Rural Transformation: A Spatial Analysis of Rural Youth Livelihoods in Ghana" (Diao, Fang, et al. 2017), is discussed at more length in Activity 161 (IFPRI-DSGD).

In response to the Progress Report question about using primary or secondary sex-disaggregated data in 2016, the activity responded: "Yes. For Ghana and Tanzania secondary micro data (household and SMSE) we disaggregated the data and conducted analysis based on the gender of rural households and owners of small businesses." This suggests that only the sex of the household head is considered, not others living in the household.

Activity 180 (IFPRI-DSGD): Capacity building for STAARS program (Cornell University)

The deliverables have no gender analysis. In the Progress Report, the activity responded that there was no gender dimension to the research, providing the following explanation: "Research topics were proposed by the participating fellow and were competitively selected and matched with Cornell faculty based on multiple factors. Those selected did not happen to have a gender component. This entire program is a capacity building program. The three fellows were male, but we made an effort to support female applicants. Unfortunately, none of them were selected."

Flagship 3: Inclusive Value Chains and Efficient Trade

Cluster 3.1: National, regional, and global trade policies

Activity 126 (IFPRI-DSG) Food value chain upgrading for food safety in transforming food markets

Sex-disaggregated data was collected on changes in food value chains, family members, and their non-farming labor market participation. The data and questionnaires are only available in Chinese. From what could be assessed from documents received, there is no gender analysis. The activity reports that there is not a gender dimension to their work, stating: "No due to lack of necessary data. Maybe gender research will be targeted in the late research."

Activity 118: Measuring distortions along agricultural value chain- Flagship 3

There is one deliverable with gender analysis, entitled 'Gender differentiated indicators: dataset and technical note' that includes a paper and forum. It is unclear who attended the forum, although the content includes gender research. The paper incorporates gender analysis, and uses existing household surveys and secondary sex-disaggregated data. The surveys used ask for the gender of the head of the household but contain few questions on gender. The forum session reviewed existing and potential impacts of agricultural liberalization on gender inequalities through global and regional lenses.

"Agricultural Price Incentives: Towards Gender-differentiated Indicators" (Laborde & Lallemant 2016), IFPRI

- This paper uses data from the Uganda National Panel Survey (UNPS) from 2009/10 to demonstrate that gender specific Nominal Rate of Production (NRP) indicators can be computed and are relevant to assess the impacts of existing policies. The authors argue that due to various specialization patterns, policies that are gender neutral ex-ante can be gender biased ex-post. In the case of Uganda, the implicit and explicit taxation on export crops and livestock products, mainly managed by male farmers, leads to policies biased in favor of female smallholders who are less involved in export production. The paper focuses on the agricultural module of the surveys, and notes that, according to the survey, most households are headed by males. However, many households considered female led in 2009/10 had been designated male headed in 2005/06. This demonstrates a possible shift in the gender dynamics of headships of agricultural households in the past decade (UBoS, 2009).
- Authors use gender differentiated data for: who has the ownership/use rights to the parcel; who usually (mainly) works on the parcel; and who manages/controls the output for the parcel. Data also allowed a look at how labor hours are distributed by crop disaggregated by female and male labor, hired and familial labor. Authors argue that until now, literature and datasets monitoring the impact of agricultural and trade policies on agriculture initiatives and distortions have avoided tackling the issue from a gender perspective, and that specific impacts of farm policies on this group has not been properly studied.

Description of forum: 'Discussing challenges and opportunities to address gender inequalities in agricultural value chains during the 2016 WTO Public Forum', September 29, 2016

- This forum focused on issues of globalization and inclusiveness, especially regarding the role of women. The session reviewed existing and potential impacts of agricultural liberalization on gender inequalities through global and regional lenses. Examples were discussed in terms of private and public governance, with regional focuses on Latin America, Africa south of the Sahara, and South Asia. Session speakers drew conclusions regarding the right policy mix of border

policies and domestic gender-sensitive interventions to guarantee inclusive international agricultural value chains. Three of the session's presentations were provided:

- "Grasping the fruits of agricultural trade liberalization: opportunities and challenges for Women" – Laborde
    - This session looks at the complexity of agricultural value chains, different products and roles for women, understanding biases, different outcomes due to different environments, and discriminates between market failures and policy failures. The presentation looks at the role of women in the agricultural value chain, and at gender inequalities at the production stage. A large share of the labor force is women but women are disadvantaged (in production, asset ownership, in control of productive inputs, in nature of extension services), leading to consequences of lower productivity for women farmers due to lower access to inputs and human capital. The presentation discusses the lesser policy support women experience, and notes that men are mostly responsible for sales and profit accumulation through cash crops. The presenter asks: how do we make international trade more inclusive? Laborde then states there is a need to increase women's participation in international trade, to increase their payoff from international trade, and argues addressing gender negotiations in agricultural value chains is important. The presentation engages with the Women's Empowerment in Agricultural Index. Farm and trade policy impacts are considered, and the presenter illustrates policy effects on output prices, input prices and access, and prices of assets.
- "Inclusive international agricultural value chains: the case of coffee in Ethiopia" – Minten
    - This presentation looks at gender and agriculture, gender and coffee, and the potential of certification. Focusing on Ethiopia the presentation notes: women are the majority of agricultural labor in rural communities; women's access to resources and community participation are usually mediated through men, either fathers or husbands; and when women have their own access to income, they are more likely than men to spend it on the betterment of their families. Higher empowerment of women is linked to better nutrition, as shown by the WEAI for Ethiopia. Percentage of plots managed by men is higher than plots managed by women (across crop categories). While women are responsible to farm the plot, they rarely independently make decisions on what to grow. For coffee, men are involved with most of the production activities and women mainly engage in harvesting and post-harvest activities. In discussing the potential of certification, the presenter argues a desired impact for sustainability standards is sometimes gender equality.
- "Accounting for gender-related structures of agricultural value chains" – Bernard
    - The presenter argues that understanding supply responses to trade opportunities requires an understanding of micro-level structures of value chains. Bernard looks at gender aspects of value chain structures with examples from Sub-Saharan Africa. Graphs show women farmers in SSA consistently produce less per hectare than their male counterparts (data from the World Bank). Reasons for this include differential access to labor, inputs, and information, as well as differential socio-economic returns from agriculture (potential disincentive to effort and investment). Women may value different types of incentives than men, and women's spending may be designated differently.

Activity 162 (IFPRI-MTID): Analysis of global and regional trade policy agreements and unilateral trade policy reforms

One paper aims to project how full trade liberalization will affect poverty, and if it will affect men and women differently. The paper acknowledges that we not only need to look at the household level, but within the household, which is crucial for gender analysis. Materials are missing for the other deliverable with gender analysis, and the activity is currently reviewing literature on how economic research has treated the issue of gender-based labor allocation decisions.

"Assessing the impact of the Full Trade Liberalization on poverty by gender," (Bouet & Laborde)

- This working paper studies the potential impact of full trade liberalization on poverty by gender in an effort to understand its effects on gender inequality. The authors use a dynamic multi-country-multi-sector Computable General Equilibrium model (MIRAGRODEP) to evaluate this potential impact.
- In the version of the paper reviewed, it appears that the only data that was available was at the level of the sex of the household head. So the comparison is on the impacts on male and female headed households, not men and women.

Activity 163 (IFPRI-MTID) Coping with price volatility: trade policy options versus domestic interventions

There is no gender analysis in this activity.

Activity 164 (IFPRI-MTID) Global value chains for biofuels: challenges and opportunities

Initial statement from Program: 'As indicated during the mid-year reporting, after the work done in 2015, and due to the budget cut in 2016 affecting cluster 3.1, this activity was merged in 2016 with Activity 162.' After inquiring for a follow up, the following explanation was obtained: "Due to budget cuts in PIM, activity 164 was dropped. One output was kept and merged in another activity but it has no specific gender implications."

Cluster 3.2: Tools for assessing value chains

Activity 142 (Bioversity): A multicenter learning and scaling initiative for enhancing PIM value chain tools and improving smallholder participation with a gender lens

This activity has a strong gender focus, adding a gender lens to the 5 Capital model.

"Piloting 5Capitals-G: a gender-responsive tool for assessing poverty impacts of value chain development" (Stoian, et al. 2016)

- "An article on the CGIAR website (Stoian, et al. 2016), outlines training conducted and the purpose of 5Capital-G. The tool was designed for gender responsive research in relation to value chain development, to increase the depth of analysis and build capacity for gender-equitable solutions for eliminating poverty. This tool was created from the awareness that the original version of 5Capital needed a better understanding of the gender-differentiated access to and control over assets. 5-Capitals-G looks inside the household and enterprise to explore access, ownership, and decision-making on livelihood and business assets among men and women. In the creation of the tools, the researchers express that there should be mixed teams of men and women to collect gender-differentiated data, and that tools need to be adjusted for context analysis, enterprise assets, and household surveys. The 5Capitals methodology is designed for joint learning among

multiple stakeholders; it uses an asset-based approach for assessing poverty impacts of value chain development at levels of smallholder household and the enterprises that link them with processors and buyers. The pilot phase of the methodology, started mid-2016 in Guatemala, India, and Peru. To prepare the launch of the methodology called 5Capitals-G, field researchers from three parts of India were trained in a workshop in April 2016.

"Testing a gender-responsive prototype tool for assessing poverty impacts of value chain development (5Capital-G)" (Bioversity, USAID India 2016)

- This paper was developed for a training workshop and focused on a prototype version of 5Capitals-G to be field tested in Karnataka, Madhya Pradesh and possibly Tamil Nadu. The training involved 20 participants with equal involvement of men and women. The participants were field staff and PhD/MSc students who will supervise implementing tool application in the field. The training focused on context analysis, enterprise assessment, and household assessment, and were also helped to build awareness of the roles women play and what resources are important for them. One of the three specific objectives of the training workshop has to do with gender: "Participants embrace the importance of a gender focus and are enabled to collect and analyze gender-differentiated data." The training described an asset based approach to value chain development and the importance of applying a gender lens to identifying the access to and control over assets at both the household and enterprise level. In addition to incorporating gender into the framing of the household, researchers were conscious of the gender of the interviewer, how that can shape the interview process, as well as how the perceptions of interviewees can differ by gender. Interview trainings were conducted so participants could see that perceptions of men and women can differ within the same household, for example, with decision-making. While participants considered themselves as having limited knowledge on gender and social inclusion, after the training they perceived themselves as mostly knowledgeable about gender and social inclusion
- Additional insight on 5Capital-G is gained from additional sources, including "5Capital-G - Guidance for Context Analysis" and 5Capital-G generic questionnaires for enterprise and household assessment. The Context Analysis note outlines the goal of the approach is to gain a better understanding of the context in which a given VDC is envisioned or has evolved and identify contextual factor that could have influenced asset building at the household and enterprise levels. Key areas considered for context analysis include: Political-legal and overall institutional context; Macro-economic environment and market trends; Biophysical environment; and Gender-specific context issues. When conceptualizing the gender-specific context issues, a number of factors are considered including policies, laws, regulations, governance, social inclusion by the public and private sector, cultural norms and values, and general trends in the area. The "5Capitals-G Generic questionnaire for enterprise assessment" is geared towards keeping track of the gender of people in various positions in staff, as well as asking questions about gender and social inclusion strategies, business strategy, skill development, and leadership. Questions are also asked about women's participation on at various levels of staff currently and over time, and changes and trends since the start of the initiative. Alternatively, the "5Capitals-G Generic questionnaire for household assessment" focuses on the household and gender. Section 1 involves male and female adults interviewed jointly where applicable, and includes questions on household composition, and gender, livelihood activities, income sources, and ownership. Section 2 in the gender specific household interview conducted separately with men and women, and involves gender and a number of topics: labor investment, time constraints, trade-off of men and women, access to capacity building, access to services, and involvement of decision making within a number of

household spheres. While the results of this context-specific approach and the use of questionnaires cannot yet be seen, assessment is underway and the resources bode well for the level of gender analysis yielded by collected data and accompanying conclusions.

"Value chain development for rural poverty reduction: A reality check and a warning" (Stoian et al. 2016), book chapter

- Only a few references are made to gender. The paper focuses on value-chain development (VCD) as a viable alternative to reducing poverty and a way to take advantage of market opportunities that builds trust among value chain participants. Gender equity is included as a possible target of 'pro-poor' VCD that targets marginalized actors and generates social benefits. It is also briefly mentioned that gender may be part of possible trade-offs when looking at the complexity of the rural poor in VCD.

Activity 142 (CIAT): A multicenter learning and scaling initiative for enhancing PIM value chain tools and improving smallholder participation with a gender lens

The main output of this activity is the tool described in "LINK Methodology Version 2.0 - Gender Responsive Manuel" (Lundy et al. 2016). The LINK Methodology 2.0 consciously conceptualizes gender in the theory and tools offered in the document, and gender is considered in terms of barriers, experience, and possibilities for improving outputs. Currently, the feedback from the test version piloted through VECO Mesoamerica (VECOMA) in four case studies in Honduras and Nicaragua is being analyzed. Initial results suggest that the tools allow gender concerns to be brought to light in ways previously not possible.

"LINK Methodology Version 2.0 - Gender Responsive Manuel" (Lundy et al. 2016)

- LINK Methodology 2.0 offers tools to better identify barriers and opportunities for men and women to participate in producer organizations, access to information, participation in decision making, and access to capacity building.
- LINK is a gender responsive manual looking at women's access to markets, business models, and men and women's participation in the value chain; a test version was piloted through VECO Mesoamerica (VECOMA). Although the LINK Methodology focuses on inclusion of women and men smallholders in business models, it pays particular attention to women's economic empowerment.

"Promoting business models that benefit women and men farmers: CIAT pilots LINK methodology with gender lens" (Gumucio 2016), CIAT blog post

- This blog post briefly discusses the LINK methodology and the test version piloted. The test version was piloted through VECO Mesoamerica (VECOMA) in four cases in Honduras and Nicaragua with support from FAO. While results are being analyzed, initial results suggest the adopted tools allow gender concerns to be brought to light in new ways. Because of the new tools, users in all four cases could disaggregate participation in value chain nodes by gender and take note of leadership positions held by men and women in the business model. In Honduras, through the cocoa producer organization Aprosacao, they found that women and youth need to be more included in the business model. They also found that women and children were more involved with harvest and post-harvest activity, and that women's contributions are non-remunerated. In Nicaragua, the vegetable producer organization COPRAHOR observed that women were more concentrated in processing work, rather than in production node activities. The organization's recently developed gender policy could change this. Cocoa producer organization La Campesina, in Nicaragua, noted with regards to its business model that there

tended to be more gender equitable representation of women and men among employees in the post-harvest node. Women's participation in the organization's directive board was low, but men and women were seen to participate more equitably as technicians.

Activity 142 (ICRAF): A multicenter learning and scaling initiative for enhancing PIM value chain tools and improving smallholder participation with a gender lens

Due to delayed schedules, there are outputs marked as having significant gender analysis that are still currently in progress and therefore could not assessed. The book chapter does not include gender analysis.

"Changing Asset Endowments and Smallholder Participation in Higher-Value Markets: Evidence from Certified-Coffee Producers in Nicaragua" (Donovan et al. 2016), Book chapter

- This chapter focuses on the coffee market and discusses the coffee crisis in Central America and other coffee-producing regions, the consensus that specialty coffee markets would improve prospects for smallholders, and the connection between poverty reduction and assets to higher-value markets. The household is the unit of analysis and there is little discussion of gender.

Activity 142 (CIP): A multicenter learning and scaling initiative for enhancing PIM value chain tools and improving smallholder participation with a gender lens

Activity 142 (CIP) includes significant gender analysis within its work and produced outputs ranging from engendered business planning for crops, gender situational analysis in value chains and post-harvest innovations, and a prototype for integrating gender into a participatory value chain.

"Review and Validation of Gender Strategies for the Sweetpotato and Cassava Sub-projects and Training in Engendered Business Planning" (Mayanja et al. 2016).

- This is a report of a workshop that presented training, tools, and studies that all included gender analysis, as well as had a session to unpack the concept of 'gender.' As a training exercise, it seems to incorporate gender in a multitude of ways, and encourage participants to see how gender shapes opportunities and constraints in a way to help move toward strategies and solutions. The workshop centered around a project, 'Expanding Utilization of Roots, Tubers and Banana and Reducing Their Postharvest Losses' (RTB-ENDURE), a three- year project in Uganda. The goals of the project are to contribute to improved food security and income for RTB-producing communities in East Africa, including producers and stakeholders along the value chain. The Gender Action Plan (GAP) developed for the project guides gender mainstreaming in the project activities, and utilizes gender situational analysis of the sweet potato and cassava value chains. Such analysis was conducted to understand determinants of adoption of postharvest technologies, gendered opportunities and constraints farmers and traders face that may deter participation in the market, and also focuses on validation of gender responsive analytical tools to improve the Participatory Market Chain Approach.

"Technical Report Gender Situational Analysis of the Banana Value Chain in Western Uganda and Strategies for Gender Equity in Postharvest Innovations" (Mayanja et al. 2016).

- In validating the gender responsive PMCA tools implemented in Uganda, different gender situational analysis reports are available under each subproject deliverable. This one demonstrates how gender analysis can be included in the study of post harvest losses, argues for gender incorporation into proposed strategies, and overall, demonstrates how gender analysis can be carried out even if a crop is considered a 'male crop.' The paper describes gendered constraints at length, for farmers and traders, and explores how post harvest losses are

unnecessarily high for bananas. Solutions to mitigate risk involve low interest loans, but it is questioned that women have the same access and benefits to these as men. The goal of this project is to reduce postharvest losses and promote project differentiation in the cooking banana chain thorough upgrading storage, transport, and marketing systems. The study seeks to understand factors limiting men's and women's use of proposed technology and factors preventing them from taking advantage of emerging marketing opportunities; gender based strategies will be created to overcome these challenges.

"Gender Situational Analysis of the Cassava Value Chain in Western Uganda and Strategies for Gender Equity in Postharvest Innovations" (Mayanja et al. 2016)

- Another of the four sub-projects of the RTB-ENDURE project implemented in Uganda is described in this paper, which provides a strategy for gender mainstreaming into the 'Extending the Shelf-life of Fresh Cassava Roots for Increased Incomes and Postharvest Loss Reduction' project. Similar to the above paper, the purpose of this strategy is to ensure men and women both benefit from interventions for reducing postharvest losses, while promoting projects and marketing innovations in the cassava value chain. The approach and gender analysis present is similar to the content of the previous paper on bananas. There are three issues addressed by the gender strategy presented: limited access to quality disease free planting material, poor agricultural practices (GAPs) in production and processing leading to low productivity, and limited linkages to reliable markets. Each issue is broken down into activity, gender responsive, gender transformation, relevance, who is responsible, and a proposed timeline. The study demonstrates the gender division of roles in cassava production, post-harvest practices, marketing, and constraints to meet market demands. The paper highlights existing inequalities and power relations along gender lines in farming households that could deter proposed postharvest innovations.

"Gender Situational Analysis of the Sweetpotato Value Chain in Central and Eastern Uganda and Strategies for Gender Equity in Postharvest Innovations" (Mudege et al. 2016).

- This paper provides a strategy for gender mainstreaming into the 'Improving the Utilization of Sweetpotato and other Root and Tuber Crops Residues for Pig Feeds,' another part of the RTB-ENDURE project in Uganda. The strategy also focuses on reducing post harvest losses and promoting production and marketing innovations. The paper argues that the link between gender relations and the division of roles in sweetpotato production, postharvest utilization, and livestock rearing may influence the ability of men and women to adopt and utilize certain technologies. In addition, the division of labor and ownership may affect gendered benefits from production and marketing of dual-purpose sweetpotato. Women are involved in the majority of production activities, including the most labour-intensive ones. Additionally, there are health implications for women engaged in pig farming and in sweetpotato farming, such as disease and lack of protective gear. Women highlighted the lack of sweetpotato markets and low prices as a constraint in sweetpotato production. Due to the limited knowledge of women, they relied on middlemen or traders to sell their sweetpotato. There is a need for skill and knowledge development among sweetpotato farmers and pig farmer to enhance their access to markets, as well as a need for money investment. Technology dissemination and adoption need to take into consideration the resources of women may need to access the technology in terms of knowledge, finance, and time.

"Prototype Guide for Integrating Gender into Participatory Market Chain Approach" (Mayanja et al. 2016)

- This guide was created through the support of CGIAR Research Program on Roots, Tubers, and Bananas (RTB) and on Policy and Institution and Market (PIM) to enable south-south learning

between colleagues in Africa and Latin America and among field practitioners engaged in integrating gender into value chain approaches, tools, and interventions. The prototype includes tools, workshop training materials and schedules, and examples of tool applications. The guide seeks to build understandings on gender issues into value chain interventions and to enhance the capacities of PMCA's facilitators to apply gender-sensitive strategies for equitable opportunities for men and women to access to and benefit from the PMCA intervention. The tools are undergoing a series of field tests in 2016-2017 in Africa and Latin America.

- Five gender tools are included for analysis and planning within the guide. Tool 1 is the 'Gender-sensitive Impact Filter' and is used to provide rapid qualitative evaluation of expected impacts that different market opportunities have on poverty, society, environment. This tool looks at possible impacts of market opportunities to involve women in market chain activities and decision-making, and to generate income-generating opportunities and access to resources and capacity building for women and men. Tool 2 is the 'Gender Organizational Assessment of Partner Organizations' and consists of a survey questionnaire that analyzes the perspective of public and private institutions and stakeholders that influences or supports PMCA intervention. Analysis focuses on gender awareness and knowledge of the gender context, as well as gender responsiveness of the institutions. After conducting the interview, the PMCA facilitator can decide if the interviewed organization can be a potential partner in ensuring gender-based constraints are addressed and if there is a need for some capacity building in gender mainstreaming. Tool 3, 'Gender-Sensitive Value Chain Mapping,' enables users to record information on power and roles of men and women actors along the market chain and reveals existing gender issues that stunt market chain development. This tool provides insight on what actions and strategies may support the development of gender-responsive innovations. Tool 4, 'Gender-Based Constraints Analysis and Planning,' allows for a deeper understanding and identification of gender-based constraints and strategies to address them by looking at their consequences for actors and the sector. Tool 5 is a 'Risk and Benefit Analysis,' a participatory assessment tool used to quickly evaluate the effect that implementing a business opportunity has on female and male chain actors considering relevant dimensions such as amount of work, income, social position and/or market position. It is noted that interviewers should be familiar with gender concepts to successfully carry out these tools.

Activity 149 (ICRAF): Exploring local food networks in Peru—a base for tool development and joint learning

A number of deliverables are marked by the activity as having significant gender focus, but due to delayed schedules and outputs in progress, the deliverables were not available for assessment.

Activity 144 (CIAT): Virtual Hubs: R4D platforms for impact in value chains

The outputs marked as having some gender analysis were not available for analysis. Capacity building does not seem to include gender analysis in workshop content. The Progress Report states: "No, the specific gender aspects of LINK as a tool are included in Activity 142. Gender at the level of at regional learning alliance has limited relevance given the focus on building partner capacity and identifying learning questions. Within each of the learning questions, gender remains highly relevant but less so at the regional platform level." A blog post output listed, "Promoting business models that benefit women and men farmers: CIAT pilots LINK methodology with gender lens" (Gumucio 2016) was previously discussed in Activity 142 (CIAT).

Activity 144 (ILRI): Virtual Hubs: R4D platforms for impact in value chains

The deliverables have no stated gender analysis. There are outputs under revision, but it is unclear when they will be finished and if they include gender analysis. The preliminary report, “East and Southern Africa regional Value Chain hub -- Stakeholder capacity needs assessment” is marked as having no gender analysis but there is some reference to gender that holds the opportunity to possibly incorporate gender analysis in the future. The regional hub is working to engage stakeholders in a learning process that promotes value chain development. There is minimal mention of gender, but the capacity to analyze gender, at least minimally, is present through a few targeted questions in the questionnaires. Gender is stated in a longer list of issues to be addressed in monitoring and evaluation, and it is stated that through coding, researchers can look at perceptions of gender by the respondents.

Activity 144 (CIP): Virtual Hubs: R4D platforms for impact in value chains

Also listed: Activity 182: Monitoring and Evaluation System of the Regional Hub

The activity states that it facilitates network formation, capacity building, and collaboration to promote and disseminate value chain related approaches. In the Progress Report, the activity listed a number of priorities in the work plan for 2016, including “Exchange experience on Inclusive value chain approach, including Gender tools for Value Chain Development.” One deliverable, State of the Art about an interaction and literature review on value chain and climate change approaches, is in Spanish so could not be fully assessed at this time; however, an initial review yielded a few statements about gender, women’s roles in agriculture, and constraints. In the Progress Report the activity stated: "Through the Hub we are informing about the need to integrate gender in the VC approaches and promoting some tools such as The Prototype Guide for Integrating Gender into Participatory Market Chain Approach.” “The Prototype Guide for Integrating Gender into Participatory Market Chain Approach” was presented in several meetings such as the Gender Research & Integrated Training Workshop at Pennsylvania State University in June 2016. Information on the Prototype can be found in Activity 142 (CIP). The VC Hub and some value chain approaches, including the Value chain gender tools, were presented in several meetings in Latin America.

Activity 147 (Bioversity): Conceptual tool: value chains as complex systems

The deliverables available for analysis did not have gender analysis. There is a journal article currently in progress that is marked as having some gender analysis. The activity responded to say that most of the papers have been submitted to JADEE and passed the first review, and the article with gender analysis is forthcoming. A look through links provided confirms that no gender analysis is present.

Activity 147 (ICRAF): Conceptual tool: value chains as complex systems

The two deliverables both have no gender analysis, and the activity states there is no gender dimension to the research.

Activity 147 (ICRISAT): Conceptual tool: value chains as complex systems

This project seems to be linked with 147 (Bioversity). It appears that that information applies to both programs (the document is marked as Bioversity but on the program sheet ICRISAT is listed). There is one document labelled "ICRISAT outcome" that includes deliverables from 2015, specifically "Women's Crop Tool for Gendered Assessment of Control in Smallholder Agricultural Production."

Activity 171 (CIAT): Monitoring and Evaluation of the uptake of the LINK guide for inclusive business models

In the Progress Report, the activity stated that there is no gender dimension to their outputs: “No, the gender aspect of LINK is covered in Activity 142.” There is one deliverable marked as having gender analysis, but the case studies (a second set of LINK case studies from Central America and Peru) were not

available for assessment. Links were provided to blogs that show potential for the tools to be used by organizations/projects that focus on women, such as Heifer International, an international development organization using LINK with their project Rural Women on the Road to Prosperity. Heifer has supported the implementation of LINK by using adult education methods that cater to the many groups consisting of women who live in rural areas and belong to indigenous groups, as is the case in Guatemala.

Activity 65 (IFPRI-MTID): Tools4valuechains web clearinghouse maintenance

The activity states in the Progress Report that there is no gender dimension to the research: "No, since our activities focused on collecting tools and trainings. We have some gender-related tools." This is an effort to gather tools, including gender related tools such as WEAI, rather than create research output.

Activity 144 (IFPRI-MTID): Virtual Hubs: R4D platforms for impact in value chains

The activity incorporates gender analysis significantly into their capacity building events and training courses. The virtual hub for Value Chain Analysis in West Africa, through AGRODEP, conducted three capacity building events for member of the AGRODEP Value Chain Analysis Network. The reports of the capacity building events are to be finalized in 2017, but initial information shows the significant gender content of the trainings, especially in the training course on Tools for Value Chain Analysis.

"AGRODEP Impact Evaluation Workshop, held in Washington, DC on March 7-8 2016"

- 10 AGRODEP members (7 men and 3 women) presented their papers. Papers on fertilizer and input subsidies, ICT use in agricultural markets, and farm programs were among the topics of papers presented. Only the titles of presentations were available, but only one presentation appears to focus on women or gender dynamics, "Female Labor Participation and Large-scale Land Investments: Insights from National and Regional Surveys in Tanzania" (Osabuohien 2016).

"Training course on Tools for Value Chain Analysis"

- This course significantly included gender into its content. Twelve AGRODEP members (9 men and 3 women) attended the two-part course in Dakar, Senegal from March 29 to April 1, 2016. The first part of the course was the Women's Empowerment in Agriculture Index (WEAI) taught by Hazel Malapit and the second part of the course was Introduction to the Participatory Market Chain Approach (PMCA) taught by Sarah Mayanja. The second course included a range of topics, including gender-sensitive value chain analysis. The first course has a complete gender focus, and provides participants with an introduction to the WEAI. Videos of Hazel Malapit's presentations of gender, value chains, and WEAI are available online through AGRODEP.

"Training course on Losses Along Food Value Chains," Accra. This course included twelve AGRODEP members (11 men and 1 woman). Although the papers and presentations are not available, the information provided indicates there is no inclusion of gendered content in the training. The training course provided participants with an understanding of key concepts and issues related to food loss and waste along value chains and methodological approaches employed in its measurement.

AGRODEP working papers. Of the 13 papers produced, most do not include gender analysis or reference to women.

- "Does an Inorganic Fertilizer Subsidy Promote the Use of Organic Fertilizers in Nigeria? (Alabi et al. 2016) uses a gender dummy variable in analysis and questionnaires record gender but there is no gender analysis.
- "The Welfare Effects of ICTs in Agricultural Markets: A Case of Selected Countries in East Africa (Kamande & Nafula 2016) examines the welfare effects of information and

communication technologies (ICTs) on both farmers and traders in Rwanda and Kenya. Both countries have ICT portals linked to agriculture-- E-soko in Rwanda and Kenya Agricultural Commodity Exchange (KACE) in Kenya. Results show that ICTs have negative welfare effects on farmers, but all changes are insignificant at the 95 percent level of confidence, making it difficult to make a conclusive statement regarding the effects of ICTs on producer welfare. The samples used in the study for farmers and traders include both genders. Both samples have more female than male farmers (67.5% female for E-soko users and 62.1 % female for KACE users), while there are more male traders using E-soko (52.5 percent) and more female traders using KACE users. No text or gender analysis accompanies these findings.

Activity 179 (IFPRI-MTID): Re-organizing dairy value chains in Indonesia

The deliverables are marked as having some or no gender analysis. At the time of assessment, we did not have the deliverables marked as having gender analysis to assess. In the Progress Report, the activity states the following in reference to its gender dimension: "Yes, the developments under scope may affect gender roles in farming. We record both male respectively female cooperative membership and farm labor." The project proposal underway is listed as 'Effects of intervention on female cooperative membership and farm labor.'

Cluster 3.3: Interventions to improve value chains

Activity 146 (ICRAF): Economic analysis of post-harvest losses of agroforestry tree products

The deliverables are both marked as having some gender analysis on the Progress Report, but the weblinks for them were not available. From the description of capacity building given, there does not appear to be a gender dimension (no link was provided). The activity collected sex-disaggregated data, as described in the Progress Report: "Data collection procedure ensured that women and girls were part of the sample. For a total 20 safou wholesalers and 50 retailers that were identified and interviewed, 20% and 83% respectively were women. For producers, only 4% were women. Total post-harvest losses along the value chain was estimated to be about 21% distributed as follows: producers 11.20%, wholesalers, 5.30% and retailers 4.6%. As a majority of women are into retail activities they consequently incur less losses compared to men who are more into production and wholesale."

Activity 146 (IITA): Measuring post-harvest losses in the Cassava Value chain in Nigeria

The deliverables are labeled as having some gender analysis by the activity, although most of those deliverables are in progress and therefore could not be assessed. The activity states in the Progress Report that they collected sex-disaggregated data and ensured both men and women value chain actors were interviewed. In the Progress Report the activity stated that they have data on female cassava processors and other segments of the value chain, specifying: "The small-scale processing of cassava is a female dominated activity. Therefore, most of our respondents in this segment of the value chain are female. We also interviewed male processors." Deliverables are forthcoming. The technical paper produced includes some information on the different roles of men and women in the supply chain, but extensive gender analysis was not conducted.

"Assessment of cassava post-harvest losses along value chain in southwestern Nigeria" (Abdoulaye et al. 2017), Technical Report PIM

- The main objective of this research is to assess post-harvest losses at different nodes along the value chain using two scenarios in Nigeria. The households interviewed were mainly male-headed and most of them were married. A few of the findings are gender related. The labor supply for

processing from men was higher than labor supply from women in the study communities. In terms of equipment, women had the highest accessibility in all equipment and highest ownership share of Fryer and Sieve. Women dominate local processing (96.9%), as processing has largely been women's job in the study region. For small-medium scale processing level, the proportion of men and women that were interviewed was the same. None of the transporters was female. There is some discussion of women in the paper, but analysis on these observations is not provided in full. There is data with relevance to gender and some inclusion of the role of men and women at the different nodes of the value chain, which can lead to further gender analysis in future papers.

Activity 146 (CIP): A general framework to evaluate the extent and sources of postharvest losses in developing countries

The activity states that there is no gender dimension to their work, giving the following explanation: "The objective of the study was to quantify and characterize the nature of post-harvest losses across the potato value chain in Peru and Ecuador. For this purpose, a set of surveys to measure the extent of food losses was designed with colleagues at IFPRI. The methodology considered the losses both at pre-harvest and post-harvest stages considering the concept of food losses analysis across the value chain." A look through the links provided confirms there is no gender analysis present. There are a number of deliverables forthcoming, although it is unclear if any will include gender analysis. Some of the datasets keep track of the gender of the informant.

At initial reporting, before the Progress Report, deliverables were projected to have some/significant gender analysis and tools developed for assessing losses were projected to disaggregated by gender to assess differences in losses at different chain nodes. It is unclear if this data will be represented in the deliverables currently underway.

Activity 146 (ICRISAT): Measuring Post-Harvest Losses of Select Pulses in South Asia and Africa: Options for Remediation

The activity states that there is a gender dimension to the research conducted, as groundnut is regarded as a 'women's crop' in the region and postharvest operations are mostly handled by women. Sex-disaggregated data was collected on labor use in the agricultural production systems of chickpea and pigeon pea; however, the data had not been analyzed. The activity reported it tried to create gender balance in capacity building endeavors. As there was no information available on the content of the trainings, it is unclear if they included gender analysis.

The two papers included in the deliverable folder do not have significant gender analysis and it does not appear gender was considered when analyzing the household.

Activity 146 (ILRI): A general framework to evaluate the extent and sources of postharvest losses in developing countries

The deliverables all have no gender analysis. From the time of initial reporting to the Progress Report, the anticipated amount of gender analysis decreased (initially the activity was projected to have deliverables with some and significant gender analysis). The activity stated in the Progress Report that no gender analysis was conducted, "As we mainly focus on ruminant value chain, there was no gender dimension to the research. The gender dimension could be incorporated if there exist an additional funding opportunity to conduct more fieldworks in other countries." The activity acknowledges that including 'gender aspects' would be helpful in understanding post-production losses, and there appears to be scope to incorporate gender analysis in the future now that the methodology is in implementation stages.

Activity 146 (Worldfish): Evaluating the extent and sources of fish post-harvest losses

The deliverable in the WorldFish folder, entitled "Assessing Dagaa Losses in Tanzania: Pilot testing a methodology" (2016), does not include gender analysis but includes a few brief references to women, such as with acknowledgement that the majority of processors are female, who buy dagaa (fresh) from fishers and dry them at landing sites. The study adapted a set of 3 questionnaires developed by PIM to use for different stages of the chain (one for fishermen and women, one for processors, and one for traders/retailers). The activity states: "Sex-disaggregated data will be collected where possible. This may relate to postharvest losses at specific nodes in the chain, or incurred by men and women playing different roles." The questionnaires ask if the fisher is male and female, and if the head/proprietor is male or female for both dagaa processors and wholesalers. The questionnaires do not include questions directed at understanding gender dynamics. There was a peer reviewed paper not available at the time of assessment.

Activity 146 (ICARDA): A general framework to evaluate the extent and sources of postharvest losses in developing countries

While the deliverables are listed as having significant gender analysis, we do not have enough of their deliverables to assess if significant gender analysis is incorporated into the activity's work. The activity stated in the Progress Report that they collected nationally representative sex-disaggregated data based on the instrument developed by IFPRI for its global research project: "The data were collected from randomly selected male and female headed households with an instrument designed to capture gender differentials along the teff value chain. "We have generated sex-disaggregated data that will be used to show gender differentials in post-harvest management of teff." In response to inquiries about outputs forthcoming and gender analysis, the activity stated that the national survey found that marketing decisions are made jointly by household members in rural Ethiopia in more than 60% of cases, but that physical participation in markets is the responsibility of men. Additionally, they related that as the household is the unit of analysis and sample respondents are selected randomly, not every variable is sex-disaggregated.

"Reality of Food Losses: A New Measurement Methodology" (Delgado et al. 2017),

- This paper does not appear to incorporate gender analysis. There are a few references to women within the paper. In discussion of Peru, Ecuador, and Honduras, the authors state that a majority of farmers are men, but there is no clear gender pattern in food loss across countries. Being a male farmer tends to correlate with a decrease in bean loss, but in Guatemala it increases maize loss. No gender effect is detected in other commodity chains. Additionally, the majority of processors in Peru and Ecuador are male, while in Honduras and Guatemala the majority of processors are female. No additional gender analysis accompanies these statements; however maybe future papers will incorporate more gender analysis.

Activity 146 (IFPRI-MTID): A general framework to evaluate the extent and sources of postharvest losses in developing countries

The activity says, "The data collected for this activity has some gender information, but it is not possible to conduct a gender-disaggregated analysis. The main objective of our survey was to measure food losses across the value chain. While we planned to collect surveys for both men and women, an overwhelming majority of farm managers and other actors across the value chain is male. For example, in Guatemala 88% of farmers that grow beans are male. This prevented us from estimating any gender differentials in our research."

From the deliverables received, there is minimal inclusion of gender. Capacity building does not appear to have a gender analysis component; trainings focused on concepts and issues related to food loss and waste management. The 2016 Training course on "Losses Along Food Value Chains" focuses on loss and waste at different points of the supply chain (in production, post-production, processing, distribution, and consumption). The training course aims to provide information of concepts related to food loss and waste and methodological approaches to its measurement.

"Measuring Post-Harvest Losses at Farmgate in Malawi" (Ambler et al. 2016)

- This draft paper measures post-harvest losses on the farm in a 1200 household sample in Malawi among three crops (maize, soy, and groundnuts), using a detailed questionnaire designed to learn about losses during harvest and transport, processing, and storage. The study's research question and objectives do not include gender.
- The paper uses data collected from three waves of an ongoing randomized controlled trial in Malawi spanning 120 distinct farmer clubs, that evaluates the impact of capital transfers (in cash or in kind) and intensive agricultural extension. Interventions are conducted by the National Smallholder Farmers' Association of Malawi (NASFAM), the largest smallholder-owned organization in Malawi. The analysis controls for the gender of the NASFAM member, and whether the NASFAM member is reported as the household head. Results suggest that female NASFAM members are less likely to experience loss than male members, a result that is significant across crops and for soy.

Activity 168 (IFPRI-MTID): Applications of value chain tools in conjunction with measurement of distortions

The deliverables all have no gender analysis and the Progress Report states that there is no gender dimension to their research.

Activity 177 (ICARDA): Economic impact of market facilities in central highlands of Ethiopia

There are deliverables still underway, such as a final project report and a journal article, but in the deliverables received there is minimal reference to women. While the studies present important findings on the livestock sector and technical efficiency, as well as agricultural technologies, since analysis was conducted at the household level there is no gender analysis present. The activity provided the following description about collected data: "We have collected sex disaggregated data from 786 randomly selected male and female headed households within 5 kms radius of 16 markets. . . There was no any explicit targeting of girls and/or women in this study as the unit of analysis of the household. The sex disaggregation of the data was done for each of the key variables in the instrument once the household was identified. . . We have comprehensive sex-disaggregated data on small ruminant management and marketing from a representative sample of poor small ruminant keepers in the central highlands of Ethiopia."

"Economic impact of market facilities in central highlands of Ethiopia: Menz- Gishe"

- The questionnaire identifies the gender of the respondent but does not include additional questions relevant for gender analysis.

"Impact of access to Livestock Services on Technical Efficiency of Small-Ruminant Production in Ethiopia (Kassie et al. 2017)

- This presentation included no gender analysis. It does compare male and female headed households.

"Measuring impact of access to livestock services on technical efficiency of small-ruminant production in rural Ethiopia" (Kassie, Rischkowsky et al.)

- Analysis is at the household level only.

"Evidence Based Assessment of Scalability of Agricultural Technologies: The case of improved food legumes and small ruminant market sheds" (Kassie, Thorne, et al.).

- This paper presents evidence-based assessment of scalability of two different agricultural technologies: improved food legume varieties and market sheds for small ruminants. Most of the analysis is conducted at the household level, although there are a few mentions of gender and intra-household dynamics. The results indicate that adoption of improved food legume varieties has a positive and significant impact on income. Households with productive labor force obtain better treatment effects while households with more economically dependents women receive lower effects from adoption of improved food legume varieties.

Flagship 4: Improved Social Protection for Vulnerable Populations

Cluster 4.1 Safety Nets: design and performance

Activity 69 (IFPRI-PHND): Expanding the impact of social protection

The activity incorporates significant gender analysis into its research on infant and young child nutrition (IYCN) knowledge and intimate partner violence. IFPRI researchers received the World Bank Group/SVRI Award for Innovations to Prevent Gender-Based Violence, granted to conduct research on the impact of various types of transfer modalities on intimate partner violence (IPV) in Bangladesh. This research is still ongoing, although the activity produced an output on IPV in Ecuador. The activity collected sex-disaggregated data in a number of countries in 2016: the midline survey for the evaluation of Mali government's "Jigisemejiri" national cash transfer program was conducted; the baseline survey for the UNICEF Integrated Nutrition and Social Cash Transfer (IN-SCT) Program in Oromia and SNNPR, Ethiopia; and the PSNP4 baseline survey in Ethiopia included distinct male and female survey instruments. Outputs related to this data, and the research on IPV in Bangladesh, are forthcoming. Enumerator training for the midline round of the evaluation of the Jigisemejiri national cash transfer program included training on how to administer sensitive questions on women's status and experience with IPV, emphasizing the need to guarantee confidentiality and interview women alone. A number of presentations and a workshop were conducted in 2016; their objectives were to cover topics such as nutrition, social protection programs, and school feeding programs. Some reference to women is present but none of the presentations focus specifically on women or incorporate gender analysis.

A number of papers in this activity cover topics related to women, girls, and gender relations within the household. The level of gender analysis ranges but the focus on issues relating to gender is consistent throughout. Each are discussed below. Some papers incorporating a gender lens are still in progress.

"Adolescent girls' infant and young child nutrition knowledge levels and sources differ among rural and urban samples in Bangladesh" (Hoddinott et al. 2016), Maternal & Child Nutrition

- This paper looks at conveying infant and young child nutrition (IYCN) knowledge to adolescent girls in time to ensure the wellbeing of their children. In Bangladesh, the short time period between marriage and first birth allows little time after marriage to provide information on correct IYCN practices. The objectives of the paper are twofold: to document adolescent girls' knowledge of IYCN practices in both rural and urban settings; and to examine the determinants of knowledge of adolescent girls, such as if knowledge is associated with the adolescent girl herself, characteristics of the household, or exposure to sources of information such as from the media or schooling.
- The results indicate that efforts to improve adolescent girls' knowledge of IYCN indirectly, through mothers in the same household, have modestly positive effects. Improving adolescent girls' IYC knowledge may require information and messaging specifically directed towards them, and varied approaches need to be used in rural and urban areas due to different sources of information available.

"A conditional cash transfer program in the Philippines reduces severe stunting"

(Kandpal et al. 2016), Journal of Nutrition

- The paper focuses on the effects of a conditional cash transfer (CCT) program on anthropometric measurements in children. While there is reference to women's participation in the program, the focus is on the effectiveness of the CCT in reducing the stunting of children. The paper concludes

that Pantawid is one of few CCT programs worldwide that significantly reduced severe stunting in children aged 6–36 months, changes in key parenting practices, including children's intake of protein-rich foods and care-seeking behavior.

- The surveys included a number of questions about women, particularly in their role as mothers. While there is much discussion of women there is no analysis of gender issues.

"The effect of cash, vouchers, and food transfers on intimate partner violence: Evidence from a randomized experiment in northern Ecuador" (Hidrobo et al. 2016) published by American Economic Journal: Applied Economics

- This study has both gender and intrahousehold analyses. It uses data from a randomized experiment conducted in 2011 in Northern Ecuador to evaluate whether cash, vouchers, and food transfers targeted to women, and intended to reduce poverty and food insecurity among the urban poor, also impact intimate partner violence (IPV). While consequences of IPV are documented, the evidence offers no consensus on what policies and programs effectively reduce IPV. The authors find that transfers decrease the probability that women experience controlling behaviors and physical and/or sexual violence by 6 to 7 percentage points (or approximately a 19% to 30% decrease). This effect does not vary significantly by treatment modality, suggesting that violence is not being used to forcefully extract resources. Authors explore potential mechanisms through which transfers decrease violence and find evidence that: transfers change expenditure patterns, indicating changes in intra-household bargaining; increase time spent on household chores by both husband and wife which may signal increased marital cohesion; and reduced poverty which likely reduces poverty-related stress and conflict.
- Results provide evidence that transfers not only have the potential to decrease multiple forms of IPV in the short-term, but also that cash is just as effective as in-kind transfers in decreasing IPV.

"The way to a man's heart is through his stomach? A mixed methods study on causal mechanisms through which cash and in-kind food transfers decreased intimate partner violence" (Buller et al. 2016) BMC Public Health

- This paper uses mixed methods to analyze the pathways that the CCT discussed above follows to reduce IPV. To address the gap in understanding the pathways that lead to this reduction, authors used a mixed methods research design to examine the impact of a cash, food and food voucher program run by the World Food Programme (WFP) on the household dynamics and IPV risk of women in northern Ecuador. In-depth interviews (IDIs) with women and focus group discussions (FGDs) with both men and women were used. Authors found common triggers of IPV include jealousy, financial strain and men's alcohol consumption. Reducing conflict over money and financial stress are some of the ways transfers helped reduce IPV.
- While there is the potential for transfers to be extracted forcefully from women, there are no qualitative reports of male partners doing so or using the transfer for something other than food. Men and women felt that regardless of who received the money, women would likely control it because of traditional gender norms putting shopping and food preparation in 'woman's domain.' The focus of the program on nutrition and food security aligned the transfers with existing gendered expectations in the community. As authors suggest, policy makers and program implementers need to think strategically about program objectives and whether they are implementing programs that are gender transformative. Doing so may involve incorporating a gender lens from the design stage and complementing transfers with activities that support a change in gender-related attitudes and expectations.

"The impact of conditional cash transfer programs on indigenous households in Latin America: Evidence from PROGRESA in Mexico" (Quiñones et al. 2016), IFPRI Discussion Paper

- This paper addresses concerns that the indigenous poor may not benefit from CCTs as much as the nonindigenous poor due to cultural and geographic factors. The authors analyse PROGRESA (Programa de Educación, Salud, y Alimenación), an approach to poverty alleviation in Mexico beginning in 1998.
- The paper's objective does not explicitly have a gender focus. However, the study's analysis incorporates data on women in multiple ways. All impacts on child health and schooling were disaggregated by sex and by the educational attainment of the child's mother. Throughout analysis, authors defined an individual as being indigenous if the "main female" in the individual's household was reported to speak an indigenous language in the November 1997 data. Health and education indicators referred primarily to children so the main female's definition of indigenous carried over to children. This decision was made in the context of PROGRESA, as the mother was the official transfer recipient and therefore more likely to make decisions related to fulfilling conditions and investing in the child's health and education. The largest decreases in sickness rates are for nonindigenous females. In terms of schooling for children, impacts on secondary school entry among the nonindigenous children were more narrowly driven by girls, while impacts on the indigenous children were driven by both boys and girls (the differences in impacts were statistically significant). The "main female's" education did not appear to affect schooling impacts on the nonindigenous beneficiaries but did appear to affect some dimensions of schooling impacts on the indigenous beneficiaries. Among the indigenous sample, program impacts on school participation and absenteeism were stronger in households where the main female had some education. An explanation proposed by authors for this discrepancy is that language barriers create difficulty in engaging with children's schools.

"Leveraging social protection programs for improved nutrition: Summary of evidence prepared for the global forum on nutrition-sensitive social protection programs 2015" (Alderman 2016), Evidence Review No. 1, World Bank

- This paper is part of a series created to capture evidence and next steps related to the Global Forum on Nutrition-Sensitive Social Protection Programs, held in Moscow in 2015. This background paper served as a springboard for discussion at the Forum, and represents the synthesis of evidence from references and program evaluations. The focus of the paper is on social protection programs and nutrition, with conceptual pathways discussed such as increasing labor through cash transfers and labor programs, providing subsidies and price supports, and addressing preferences and behaviors. The paper concludes that social protection transfers tend to increase the household budget devoted to food and highlights evidence that transfers can change diet composition and quality, but that effects on nutrition are unclear and vary by country. There is no overarching gender lens, however there are mentions of maternal nutrition and discussion of men and women having different patterns of investment with transfers.

Activity 173 (IFPRI-PHND): Assessing policy impact of social protection research

In the Progress Report the activity stated there is not a gender dimension to the activity. There is one output designated as having some gender analysis, a review on the policy impact of social protection research, but the note is only 30% completed.

Cluster 4.2 Insurance for the poor

Activity 63 (IFPRI-MTID) Innovative insurance products for the rural sector – Flagship 4

The paper on willingness to pay for agricultural insurance comparing men and women in Bangladesh includes significant gender analysis. The findings illustrate that the willingness to pay does not differ between men and women, despite women's limited involvement in agricultural decision-making. The "CSI India Baseline Household Questionnaire" reflects the collection of sex-disaggregated data on income, hired and family labor, and decision making over land.

"Microinsurance Decisions: Gendered Evidence from Rural Bangladesh" (Clark & Kumar 2016), Gender, Technology, and Development

- This paper compares willingness to pay for agricultural insurance among men and women and analyses whether differences are related to women's involvement in agricultural decision-making. Gender is incorporated into the research questions and objectives. The study uses an experimental design where men and women played games that involved making decisions about whether to purchase insurance. Women were just as likely as men to purchase insurance.

"CSI India Baseline Household Questionnaire – July/August 2016**"**

- The questionnaire does include some sex-disaggregated data including information on who mainly decides what to do with the plot; if men and women were hired for labor or if men and women in the family labored for crop production; if income source received in-kind or if livestock is consumed by the main farmer, all male household members, and/or all other female household members; and about asset ownership.

Flagship 5: Property Rights Regimes for Management of Natural Resources and Assets

Cluster 5.1: Water and land policies

Activity 172 (IFPRI-MTID) Strengthening evidence of outcomes in natural resource governance

No documentation on this activity available.

Activity 175 (CIFOR) CGIAR Gender Postdoctoral Fellowship

Each deliverable has significant gender analysis. The Research Protocol document, corresponding poster, and surveys incorporate gender into research objectives. Primary sex-disaggregated data was collected from more than 2000 households as part of a CIFOR project funded by DFID in 2014-2016, and sex-disaggregated data was collected on labor, land activities, and decision-making.

Research Protocol: "Gendering inclusive green growth in the Southern Agricultural Growth Corridor of Tanzania (SAGCOT)" (Gallagher 2016)

- This document outlines research plans and outputs for a project that significantly utilizes gender analysis. The project focuses on analyzing gendered access to agro-investments and pathways for aligning inclusion with the vision of development for The Southern Agricultural Growth Corridor of Tanzania (SAGCOT), a product of public-private partnerships. SAGCOT is financing new investments of over 350,000 hectares. The SAGCOT Investment Blueprint (2011) promises that Tanzania will promote inclusive business models that engage smallholders, and the Green Growth Investment Framework for SAGCOT (Scherr et al. 2013) further strategizes the government's commitment to social inclusion and climate-smart development. Gallagher argues that the frameworks overlook the ways SAGCOT can model development pathways to safeguard women's resource access and household food security while promoting gender-inclusive green growth. The research analyzes the social, economic, and institutional factors which affect gendered access to these agro-investments, and proposes productive avenues for encouraging socially-inclusive development in SAGCOT. This research will provide evidence to support multi-stakeholder planning and recommendations for gender-inclusive strategies for moving forward.

Community Profile Survey

- Records the name, sex, and position within the community of the respondent. The survey asks about different ethnic and religious groups in the community, associations present (including women's associations), and services available- such as 'how many school-aged boys/girls attend public primary and secondary school' and how many men and women have cell phones. Questions on land ownership and use are at the community level, although questions are relevant for gender analysis, such as questions on if land is distributed through inheritance and marriage practices, if women are recognized as private property owners, if the system is the same for women as it is for men, what happens upon death/absence of the spouse, and if it is usual for women to access and cultivate land independently or if this is done jointly with their husband or male relative. Other sections cover topics such as investment, crisis, and development challenges. In the section on investment, questions are asked about how many women participated in meetings on contract negotiation, if it's usual for women to speak at such meetings, and if not, how do they voice their opinions.

Household Survey

- The household survey records the 'type' of household interviewed, marking it as male and female adult, male adult only, female adult only, or child/children only. The survey tracks household member characteristics, including occupancy and education for father and mother. Sections are included on labor and land assets, including questions on location, use, crops, and former tenure. Questions are included such as whose name is on the legal document, and if it is not individually owned then who controls access. For agricultural inputs, equipment, and livestock, a question on how inputs are owned include possible responses such as individually, jointly, by the whole household, jointly in association, or other. Sections on household assets also ask if assets are owned individually, jointly, or by the whole household.

Intra-household Survey

- This survey includes many questions with a gendered focus and can be regarded as having the objective to collect gender data. One section asks about the roles of men, women, boys and girls in different activities and about the gender norms regarding these activities. Questions about access to inputs, services, and information directly address men and women in the question construction (example: "What are the main constraints faced by women and men in accessing seeds and seedlings?"). The section on access to markets also addresses women and men in each individual question. Questions on the intra-household economy ask about decision making and employment, income related to one's spouse, decisions on how to spend income, and who contributes to household expenses and education expenses. Responses in decision-making questions of the intra-household economy section allow varied responses such as alone, in consultation with, with permission of, or someone else makes the decision. The section on social networks and village actors asks questions relating to who people seek advice, support, and information from, and who is influential. Additionally, a specific gender-related question is included in this section: "Who do you trust/feel more free to report to for an matter related to agriculture and gender?" Questions also address investor relations, comfort speaking up in public, what is keeping households from expanding their tea plots, impacts of investor relations for both participating and nonparticipating households, and household wellbeing.

Gallagher, E. 2016. *Gendered Dimensions of large-scale and smallholder inclusive agricultural investments in Tanzania.* Poster presented at the CGIAR Gender and Agriculture Research Network Annual Meeting, CIAT, Oct 31-Nov 7, in Cali, Columbia.

- The poster reflects the research information presented in the Research Protocol, including case background, research objectives, and methods.

Activity 165 (IFPRI-EPTD): Scoping study on gendered-differentiated constraints to accessing water technologies in SSA

While the activity's journal article on gendered access, use of, and control over water technologies for SSA is incomplete and therefore could not be assessed, the second round of qualitative data generated by the activity was used as part of a comparative study under the Innovation Lab for Small-Scale Irrigation (ILSSI). The IFPRI discussion paper utilizing the qualitative data significantly incorporates gender analysis. The research paper currently underway includes analysis of the two rounds of sex-disaggregate focus groups discussions in the Mwanza region of Tanzania. In the Progress Report, the activity reported that the FGD protocol designed for this project was used as part of the Feed the Future Innovation Lab for Small-Scale Irrigation (ILSSI), with focus groups carried out in Ethiopia, Ghana, and Tanzania in 2016. In addition, a

gender and irrigation checklist was developed based on the main modules of the FGD protocol, and the activity is exploring options for piloting the checklist in the future.

Protocols used for data collection

- Focus Group Discussion Round 1 Protocol (8-12 men; 8-12 women)
    - Questions relating to gender: To explore existing community irrigation practices, a number of topics are touched upon including "Gender Roles and Responsibilities." Additionally, a question about decision making could yield gendered data: "In your household, who decides about whether or not to implement new technologies or practices?"
- Focus Group Discussion Round 2 Protocol
    - Each module includes questions relating to gender. In module 1 on understanding livelihood resources, there is a question on who is responsible for the activity. In module 2 on understanding household water use, questions are included on who collects water and who administers water. Module 3, irrigation practices, analyzes existing practices in the community and specifically asks about the different responsibilities of men, women, and children. Other questions about time and use of technology do not explicitly ask about gender, but they do ask: "Have there been development projects (not necessarily irrigation) from the government, NGOs, or other institutions that have changed the roles and responsibilities of men and women in the household and the community?" Module 4 on improvements to water technology does not include any questions specific to gender, although responses on expected benefits and risks could yield insights on gender. Module 5 on innovation and agricultural technology adoption includes questions on gender, asking who adopts technology, who in the household decides, and whether being a man or a woman affects access to irrigation technology.

"What Happens after Technology Adoption? Gendered Aspects of Small-Scale Irrigation Technologies in Ethiopia, Ghana, and Tanzania" (Theis, Lefore, Meinzen-Dick, & Bryan 2017); IFPRI Discussion Paper

- The paper is not directly an output of the activity, but the second round of qualitative data collected by this activity was used as part of this paper's comparative study. The paper engages with literature and empirical studies on gender and agricultural technologies and analyzes the gender implications of what happens after irrigation technologies are adopted. The study draws on qualitative data from Ethiopia, Ghana, and Tanzania, and develops a framework for examining the intra-household distribution of benefits from the adoption of small scale irrigation technology. The framework contributes to the conceptual and empirical exploration of jointness in control over technology by men and women. The analysis of data from the three countries show that the costs and benefits of technology adoption are not equally distributed across the household. And while one member of the household generally does not exclusively hold rights of use, management, *fructus*, and alienation, men are more likely to hold more of these rights as well as stronger claims to these rights.

Activity 44 (IFPRI-DSGD): What works to secure land tenure for women, youth and other vulnerable groups?

This activity includes gender analysis in a number of outputs, and each deliverable is discussed below.

"Decentralization Without Representation (or Mobility): Implications for Rural Public Service Delivery." (Kosec & Mogues 2016), Paper presented at the Annual Bank Conference on Development Economics 2016: Data and Development Economics (June 20-21st, 2016, Washington, DC).

- The study focuses on the impacts of decentralization in a context of low inter-jurisdictional competition given limited population mobility and the absence of competition given a lack of democracy. The focus of the paper does not lend to extensive gender analysis, although the data does disaggregate concerns by gender. Authors analyze empirical results from rural Ethiopia, using a spatial regression discontinuity design, and show that decentralization strongly improves delivery of agricultural public services. While this priority of the government was addressed, there are limited impacts on drinking water services, on which the central government places lower priority but citizens place high priority. Regressions control for gender and data on the prioritization of concerns for areas of public service provision are disaggregated by gender. Of nine areas of service provision, drinking water was prioritized as the number one concern and priority for both men (35.2 % of men) and women (32.4 %).
- http://pubdocs.worldbank.org/en/953681466186380809/Kosec-Mogues-Ethiopia-Decentralization-2016-0322-final.pdf

"Perceived land tenure security and rural transformation: Empirical evidence from Ghana" (Ghebru et al. 2016), IFPRI Discussion Paper

- The main factors associated with farmers' perceived tenure security are assessed in this study using nationally representative household and plot level data from Ghana. The author's main outcome variable is the response to the question, "Could you leave the land empty for a period of several months without being worried about losing it?"
- The analysis finds that migrant farmers and female farmers in female-headed households and polygamous households are the most tenure insecure. Two surprising findings include perceived tenure insecurity is lower for female household heads when land is relatively abundant and that female plot holders have better perceived tenure security than male plot holders. The authors note that women in monogamous male-headed households rarely hold their own plots.

"Household perception and demand for better protection of land rights in Ethiopia" (Ghebru et al. 2016), ESSP Working Paper 83; IFPRI and Ethiopian Development Research Institute (EDRI)

- This paper analyzes factors that explain households' perceived tenure insecurity and the demand for new formalization of land rights in Ethiopia. Authors use data from the 2013 Agricultural Growth Program (AGP) survey of 7,500 households from high agricultural potential areas of Ethiopia. There is little discussion of gender.

"The effect of land inheritance on youth employment and migration decisions: Evidence from rural Ethiopia" (Kosec et al. 2016) IFPRI Discussion Paper

- This output was previously analyzed as an output of Activity 161 (IFPRI-DSGD), Flagship 2.

"Land rental market legal restrictions in Northern Ethiopia" (Holden & Ghebru 2016), Land Use Policy

- The objective of this study is to assess the de jure and de facto land market legal restrictions in the Tigray region in Ethiopia and the extent to which the new land rental restrictions are implemented. The restrictions were introduced in 2006 and state that not more than 50% of a farm can be rented out. All analysis is at the household level, comparing male and female headed households.

"Links between tenure security and food security in poor agrarian economies: Causal linkages and policy implications" (Holden et al. 2016), CLTS Working Paper, Centre for Land Tenure Studies Norwegian University of Life Sciences (CLTSUMB); Global Food Security

- In the working paper edition, there is no inclusion of gender analysis. In the Global Food Security Journal version, there is a section on the strengthening of women's land rights. The objective of the paper is to explore conceptual linkages between land tenure reforms, tenure security, and food security. The section on women's land rights points to the fact that while women tend to have weaker land rights than men, they are typically responsible for household food security. The authors argue that joint titling and joint land certification have been implemented in several countries-- such as Ethiopia, Peru, Vietnam, and Rwanda--as a way to enhance tenure security of women. The case studies show positive empowerment effects, women placing more emphasis on food security than husbands, the growing influence of women in crop choice and rental decisions, and women's improved access to land and inheritance rights.

"Review of empirical evidences on Land Registration and its Effects in Africa" (Ghebru 2016), Presentation at a plenary session on "Africa's Changing Farm Size Distribution – Land Grabs or Agricultural Transformation?" at the 5th International Conference of the African Association of Agricultural Economists, September 25th, 2016, Addis Ababa, Ethiopia.

- While this output is listed as having significant gender analysis, we did not have the paper or presentation.

"Synopsis: Household perception and demand for better protection of land rights in Ethiopia."

(Ghebru 2016), Research Note; IFPRI)

- This research note assesses factors that explain households' perceived land tenure insecurity and the demand for new formalization of land rights in Ethiopia. There is no inclusion of gender analysis, although the study states it explored associations between household characteristics and gender, among other factors.

"Validation workshop of the assessment report on needs and gaps of curricula on land governance" organized by the AU-LPI, July 26 – 28, 2016, Addis Ababa, Ethiopia.

- This output is the outcome of a newly launched partnership program between IFPRI and the AU-Land Policy Initiative (LPI) and a follow up action after the Activity Leader's participation in a workshop. The workshop does not appear to include gender analysis.

"Pilot study to track the implementation of the AU declaration on Land Issues and Challenges in 10 selected African countries" - implemented by a new partnership program launched between IFPRI and LPI (at UN-ECA)

- The project is expected to be officially launched in an inception workshop to be held in March 2017, Addis Ababa, Ethiopia and is marked as having 'significant gender analysis.'

Activity 176 (CIFOR): Analysis on the role of contextual factors in determining environmental outcomes of property regimes

There is no gender dimension to this activity. The activity provided the following explanation: "The review evaluated 31 studies examining property rights arrangements at the community level. Data were for the most part not disaggregated by gender."

Activity 154 (ICRISAT): Enabling Conditions for Adoption of Water and Energy Efficient Technologies in Agriculture – A Synthesis Review

One deliverable is listed by the activity as having some gender analysis, however the deliverable is not available for assessment.

Activity 181 (IFPRI-DSGD): Survey and collaborative research with MSU and Sokoine University on land dynamics and farmland distribution issues

No documentation on this activity could be found.

Cluster 5.2: Collective action, property rights (CAPRi)

Activity 166 (IFPRI-EPTD): Securing the commons

The activity states there is not a gender dimension to the research. The explanation provided is:

"We had intended to try to "genderize" the net mapping tool, by asking which of the organizations women dealt with. However, although we made every effort to ensure that women participated in the net mapping, they were generally unable to stay for the full time of the exercise because they are more time constrained. Therefore, we were not successful in identifying gender differences in access to different institutions."

There is one deliverable listed as having some gender analysis, the tools for net mapping adapted for NGOs to identify critical actors for managing the commons. This was an 'in person training' that is currently being written up as a tool kit, and there are no outputs available for assessment. While the CAPRi Sourcebook contains chapters with gender analysis, the activity states that the new chapters do not include any gender analysis and focus on coordinated governance of natural resources.

Activity 143 (Bioversity): Securing the commons

The activity states in the Progress Report that some of their work on farmers' rights involves considerations of how women and men differentially contribute to the conservation and sustainable use of agricultural biological diversity. The activity also reported that work in 2016-- focusing on publishing the farmers' rights book and participating in the international farmers' rights consultation-- built primarily on past research activities and outputs did not entail new gender research in 2016.

Farmers, crop varieties and farmers rights: Challenges in taxonomy and law (Halewood, Ed. 2016), Bioversity International, Rome, Italy.

- This output is attributed to both PIM and CCAFS. There is reference to women mainly in Carlo Fadda's chapter, "The farmer's role in creating new genetic diversity," which presents case studies to highlight the processes through which women and men farmers manage the diversity in their production systems. In a section on the role of women in creating agricultural diversity, the author presents case studies on women's increased role in agriculture, the relevance of women's roles in agriculture, and how women are active in the selection of seeds. The author argues that by using seeds and their capacity, women farmers can shape the diversity that meets their needs. Women are making informed decisions about what to do in their productive systems, despite pressure to adopt improved varieties. This chapter proposes solutions from the case studies to encourage partnerships, and cites information from China, as well as Ethiopia, Ecuador, and Uganda.

Bancos comunitarios de semillas: orígenes, evolución y perspectivas (Vernooy et al. Ed. 2016)

- This book, attributed to PIM and CCAFS, is published in Spanish, and therefore cannot be assessed at this time.

"Community seed banks: farmers' platform for crop conservation and improvement" (Tjikana et al. 2016), GAAN/GRAIN SA, [online] (South Africa)

- The authors argue there is a need for communities to safely conserve their seed, and shows through case studies how functional community seed banks could serve as coordinating centers for farmers and a variety of actors. Gender issues are not discussed.

"Networks and coalitions in the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture in Uganda" (Otieno 2016), Journal of Public Administration and Policy Research

- There is no gender analysis in the article. The article focuses on the gaps in implementation in Uganda of the International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGTFA). Authors provide insight into interactions between actors through social network analysis, and find that the linkages between actors are poor.

"South Africa implements a national strategy to support community seed banks" (Vernooy 2016), PIM Outcome Note

- This PIM Outcome Note discusses the work of South Africa's Department of Agriculture, Forestry and Fisheries, in collaboration with Bioversity International, to implement a national community seed bank strategy to support smallholders in preservation and multiplication practices for seeds of local importance. Traditional practices of maintaining indigenous biodiversity are currently threatened by climate and human activity. Women farmers are playing a key role in managing the pilot community seed banks. Two pilot community seed banks have been established in Gambu village in Limpopo province and the town of Sterkspruit in Eastern Cape province. Seed banks are managed by community members, and women farmers are playing a key role. A group of 40 women farmers manage and operate the Gumbu village community seed bank. The women say that the bank allows them to maintain a range of different crop species inherited from their parents, exchange seeds from different communities, and supply their household with food and extra cash.

"Sharing diversity: establishing and supporting community seedbanks in South Africa" (Tjikana 2016), Bioversity International

- This 'achievements brief,' attributed to both PIM and CCAFS, also discusses the work with South Africa's smallholder seed systems. Gender analysis is not incorporated; however, the role of women in the project is briefly highlighted.

"Safeguarding local crop knowledge: the use of community biodiversity registers" (Gomez Cesar et al. 2016)

- This technical brief, associated with PIM and CCAFS, does not incorporate gender analysis. The focus of the paper is on the erosion of biodiversity and projects that enable conservation and biodiversity. The use of biodiversity registers in Nepal and south Africa is discussed to reveal benefits and recommendations.

"Mobilizing diversity: establishment of the first two community seedbanks in South Africa's smallholder farming areas" (Vernooy 2016)

- This technical brief again focuses on South Africa smallholder seed systems and argues that they are coming under pressure due to drought, crop failure, difficult storage conditions, and poverty. Mention of the role of women farmers is again attached with the Gumbu community seedbank. Development of the community seedbanks was done with attention to local power and gender relations. The Gumbu community seedbank illustrates the role of women farmers in local conservation efforts and how such efforts hold potential for biodiversity and the ecological, social, and economic landscape.

"Realizing farmers' rights through community-based agricultural biodiversity management" (Clancy et al. 2016), Bioversity International, Rome, Italy.

- This brief was prepared by Bioversity International for delegates at the 2016 Global Consultation on Farmers' Rights to raise awareness among delegates and Contracting Parties to the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) about agricultural biodiversity. The brief discusses the importance of a community-based approach to the conservation and sustainable use of agricultural biodiversity, and argues it is crucial for realizing farmers' rights and empowering men and women smallholder farmers. The short brief does not present research specifically on women, but acknowledges the important role women play in agriculture biodiversity. Authors argue smallholder farmers and communities are at the helm of making better use of crop diversity, and state that farmers, with key roles by women, select, exchange, and improve seeds and crop varieties.

"Supporting community seedbanks to realize farmers' rights" (Clancy 2016), Bioversity International, Rome, Italy.

- This policy brief was also prepared by Bioversity International for delegates at the 2016 Global Consultation on Farmers' Rights to highlight the contribution community seedbanks can make to realize farmers' rights, enhancing crop security, and for local and global security. There is no inclusion of gender in the brief.

Activity 143 (ICRAF): Securing the commons

This activity includes a few outputs with some gender analysis, although the main output - a case study report on Indonesia - is forthcoming. A discussion paper illustrates factors for 'effective engagement' in Indonesia. A discussion paper about what works to strengthen the commons in different sectors and contexts in Indonesia is also in progress.

The activity also produced supplemental and indirect outputs resulting from the case study and engagement with NGO and national partners in Indonesia. The activity helped design Decree No 4 issued by the Directorate General of Social Forestry and Environment Partnership (PSKL) that stipulates the Guidelines for Forest Tenurial Conflict Resolution. The activity's RaTA tool was used as basis on the design and development of this Decree, and ICRAF scientists served as policy and tenure experts during the process and worked alongside national NGOs. The Decree, and related teaching curriculum on conflict mediation, could not be accessed as they are not available in English.

"Practical Guidance for Using RaTA – AGATA – HuMA-WIN – and Gender Analysis Tools for Rapid Assessments of Tenurial Conflicts in Forest Areas" (Working Group on Forest-Land Tenure 2014)"

- The activity contributed to guidelines published by Working Group on Forest-Land Tenure that uses gender sensitive approaches during conflict meditation. The process and guidelines are

designed to ensure that women's voices and perceptions are not marginalized in the mediation process. The document is a technical manual and quick guide for how to use analytical tools in mapping tenure for program planning and conflict resolution in forest management in Indonesia. The handbook is meant for those who have participated in trainings on conflict mapping and want to conduct tenure conflict mapping related activities in forest areas, and provides example fields sheets and information on gender analysis. The section "What is Gender Analysis?" explains the basic concepts and discusses how to use a gender analysis framework. Questions are provided on power, governance, and permit procedures to assist in analyzing gender dynamics and conducting gender analysis in forest management.

Activity 156 (WorldFish): Comparative examination of different strands of work on natural resource access rights

Trainings through this activity included treatment of strategies to achieve gender equitable participation in multi-stakeholder dialogues on natural resource governance, and issues such as women's tenure security and inheritance rights. Women participated in trainings co-led with the International Land Coalition aimed to develop a shared understanding of principles for facilitating multi-stakeholder dialogue on natural resource governance. The activity stated that it contributed to a joint article synthesizing different strands of work on natural resource access rights under the CAPRi theme.

Concept Note: Strengthening Multi-Stakeholder Platforms for People-Centered Land Governance (International Land Coalition, Collaborating for Resilience, and PIM)

- ILC has set goals focused on people-centered land governance, with ILC's Strategy 2016-2021 placing multi-stakeholder engagement at the heart of its approach to achieving impact. ILC and Collaborating for Resilience are combining efforts to support more effective national multi-stakeholder land and natural resource governance mechanisms. The initiative aims to consolidate and increase effectiveness of the work of multi-stakeholder platforms on land by strengthening the capacity of NES facilitators and ILC members to accelerate progress towards shared goals of reforming and implementing policies and practices for people-centered land governance. The initiative will assess and document how the initiative contributes to the activity of multi-stakeholder platforms (MSPs) to achieve change in agendas, change in practices, and change in policies. Specific domains prioritized by the NES include recognition of indigenous people's land rights, women's rights of inheritance, and mechanisms to evaluate private sector investment. One of the guiding questions is, What strategies are most effective to ensure gender equity in representation and decision-making of the MSP? How does this affect success in advocating for gender justice in land governance? A number of outputs will be produced, such as an online learning space, guidance notes, training modules, and peer-reviewed research.

NES global learning workshop (24-28 October, Tirana - Albania); International Land Coalition, Collaborating for Resilience, and PIM

- The workshop co-led with International Land Coalition to provide training on multi-stakeholder dialogue for natural resource governance did not have any visible gender analysis from the agenda, although the activity does report that gender equitable participation in multi-stakeholder dialogue was discussed, as well as women's tenure security and inheritance rights.

"Addressing conflict through collective action in natural resource management" (Ratner, Meinzen-Dick et al.); Under review at *International Journal of the Commons*

- This is a revision and resubmission of earlier PIM/CAPRi supported research; there is gender analysis in this paper.

Activity 174 (Bioversity): Facilitating shared governance of common pool genetic resources and overcoming fragmented institutional landscapes through the upscaling of farmer conservation and sustainable use incentive mechanisms

The activity states in the Progress report that there is no gender dimension to the research. The following explanation was provided: "Although some field data collected for the Multiple Incentives project was sex-disaggregated, this did not constitute a major component of that project (unlike the broader PACS project work described in the Outcome Template). Thus, for the type of activities carried out during 2016 under this PIM activity, which were largely related to analyzing and influencing policy, as well as promoting uptake, the gender dimension of our broader research was not of particular relevance."

One deliverable is listed as having some gender analysis, the IAI journal article, "Can poor farmers' livelihoods be significantly improved by rewarding them for their provision of public good ecosystem services? Overcoming fragmented institutional and policy landscapes to facilitate participation in multiple incentive schemes." The paper is incomplete and could not be assessed.

Cross-Cutting: Gender

All of the activities under cross-cutting gender work are focused on gender analysis.

Activity 167: Women's Empowerment in Agriculture Index

Work on the Women's Empowerment in Agriculture Index all focuses on improving ways to measure empowerment and using the data to better understand relationships with empowerment.

"Using Cognitive Interviewing to Improve the Women's Empowerment in Agriculture Index Survey Instruments: Evidence from Bangladesh and Uganda," IFPRI Discussion Paper No. 564."

- The paper describes the cognitive interviews undertaken in Bangladesh and Uganda in 2014 as part of the second round of pilots intended to refine the WEAI. Implementers reported a number of problems when the WEAI was fielded in 19 countries. In the cognitive interviews, we asked detailed follow-up questions, such as, "Did you think that this question was difficult and if so, why," and "Can you explain this term to me in your own words?" The results were used to refine the questions for the Abbreviated WEAI (or A-WEAI).

Activity: Sex-disaggregated data and tools for gender analysis: Continued development of methods, partnerships in implementation

The papers, blogs, and webinars all focus on gender analysis. Two papers are part of a World Bank series on best **practices** in measurement for development, with a strong gender focus. Additional papers include issues of patterns of asset ownership, management and control by gender, efficiency in agricultural production and empowerment, and the relationship of empowerment and technology adoption.

"Measuring ownership, control, and use of assets" (finalized as a World Bank discussion paper in early 2017)

- Discusses best practices in collecting sex-disaggregated data on measuring ownership, control and use of assets.

"Measuring Time use in Development Settings", Presented at the Annual World Bank Conference on Development Economics: Data and Development Economics, Washington, DC, and (finalized as a World Bank discussion paper in early 2017)

- Discusses best practices in collecting and using time use data. Paper has a strong gender focus, with inclusion of best practices for collecting time use data on household productive work.

"Beyond Ownership: Tracking Progress on Women's Land Rights in Sub-Saharan Africa." Presented at World Bank Conference on Land and Poverty. FAO Global Strategy working paper.

- Analyzes the patterns of land ownership, management, and control over output in six African countries, with an emphasis on gender differences. Finds that while there is some overlap between these three indicators, they certainly do not completely overlap.

Engendering Data Blog. Six blog posts.

- All of the blog posts focus on issues of gender and data, ranging from women's land rights, data needs for gendered policy analysis, combining qual and quant analysis, to identifying women's crops.

Special issue of the Journal of Gender, Agriculture, and Food Security

- PIM sponsored a special issue of the journal, which was published in two issues. This is the second one, which had four papers focused on gender and agricultural production. The papers included: Gender dynamics in cassava leaves value chains; A crop of one's own? Women's experiences of cassava commercialization in Nigeria and Malawi; Smallholder milk market participation, dietary diversity and nutritional status among young children in Ethiopia; and Rural women's participation in producer organizations: An analysis of the barriers that women face and strategies to foster equitable and effective participation.

"Gender gaps in adopting agricultural technologies in East Africa," Presented at AAEA meetings in Boston in August.

- Analyzes who is adopting improved maize production technologies, comparing plots managed by men and those managed by women. Paper is currently under revision.

Webinars on Good practices in sex-disaggregated data collection. CGIAR Gender Network webinar and GAP webinars.

- Presents best practices in collecting sex-disaggregated data.

Workshop on gender and economics

- Three-day workshop for quantitative social scientists in the CGIAR to learn about including sex-disaggregated data and gender analysis in their work. Seventeen of the 19 participants were men.

Women's Empowerment in Agriculture: Implications for technical efficiency in rural Bangladesh, Accepted for publication in *Agricultural Economics.*

- This paper compares the levels of technical efficiency achieved on plots operated by household with different levels of gender disparities. Using plot-level data from the 2011-12 Bangladesh Integrated Household Survey and indicators from the WEAI, the paper estimates a stochastic frontier production function model, which includes women's empowerment in agriculture as an exogenous determinant of technical inefficiency. Lower gender gaps in empowerment are associated with higher levels of technical efficiency.

Identity, household work, and subjective well-being among rural women in Bangladesh. IFPRI Discussion paper and presented at the International Association for Feminist Economics Annual Conference, Galway, Ireland.

- Despite increases in women's employment, significant gender disparity exists in the time men and women spend on household and care work. Understanding how social expectations govern gender roles and contribute to this disparity is essential for designing policies that effectively promote a more equitable household division of labor. This paper analyses how a woman's identity may affect the trade-offs between the time she spends on household and care work and her well-being. Data from rural Bangladesh indicates that longer hours spent on household work are associated with lower levels of subjective well-being among women who disagree with patriarchal notions of gender roles, while the opposite is true for women who agree with patriarchal notions of gender roles.

Activity: Sex-disaggregated data and tools for gender analysis: empirical interrogation of gender myths

"Gender Impacts of Youth Migration on African Agricultural Households." Submitted to a special issue of *Journal of Development Studies* (and later accepted).

- Using panel data from Ethiopia and Malawi, this paper investigates how youth migration affects household labor, hired labor demand, and income, and whether these effects vary by migrant sex and destination. Labor shortages arise from the migration of a head's child. However, the migration of the head's sons produces a greater burden, particularly on female heads/spouses (in Ethiopia) and brothers (in Malawi). Gains from migration in the form of increased total net income justify the increased labor efforts in Ethiopia. Weaker evidence suggests households in Malawi substitute hired for migrant family labor at the expense of total household net income.

"Analysis of gender, headship, and the life-cycle: determinants of landownership in four Asian countries" - accepted for publication in Land Economics.

- Using nationally representative data from Bangladesh, Tajikistan, Timor-Leste, and Vietnam, this paper investigates which individual and household characteristics influence men's and women's landownership across and within households. Often neglected in household-level statistics, married women in all countries are landowners. Across different household structures, women own less land than men, and less land relative to the household average as household landholdings increase. Increasing gender inequality with household wealth cannot be consistently explained by an increasing share of household land devoted to crops. Findings support the need to strengthen women's land rights within marriage and to protect them should the marriage dissolve.

Cross-Cutting: Partnerships

Only one report was provided, for the activity on Partnerships with China. This was reported as having no gender research dimension.