CGIAR

RESEARCH PROGRAM ON
Policies, Institutions, and Markets
Led by IFPRI

Annual Report 2015

Bioversity International
CIAT
CIFOR
CIMMYT International Maize and Wheat Improvement Center
Centro Internacional de la Papa (CIP) A member of the CGIAR Consortium
International Potato Center
ICARDA
ICRISAT Science with a human face

Photos (left to right): Benedikt von Loebell/World Economic Forum, James Morgan/Panos, Sven Torfinn/Panos, G. M. B. Akash/Panos.

IFPRI
IITA Research to Nourish Africa
ILRI International Livestock Research Institute
IRRI
IWMI International Water Management Institute
World Agroforestry Centre
WorldFish

TABLE OF CONTENTS

LIST OF ACRONYMS

A4NH: CGIAR Research Program on Agriculture for Nutrition and Health
AAS: CGIAR Research Program on Aquatic Agricultural Systems (Phase 1)
AFS: Agrifood system (CRP)
AgMIP: Agricultural Model Intercomparison and Improvement Project
AGRODEP: African Growth and Development Policy Modeling Consortium
ANGeL: Agriculture, Nutrition, and Gender Linkages project
APSIM: Agricultural Production Systems sIMulator software
ASARECA: Association for Strengthening Agricultural Research in Eastern and Central Africa
ASTI: Agricultural Science and Technology Indicators
AUC: African Union Commission
BRAC: Bangladesh Rural Advancement Committee
CAPRi: CGIAR Systemwide Program on Collective Action and Property Rights
CCAFS: CGIAR Research Program on Climate Change, Agriculture and Food Security
CIAT: International Center for Tropical Agriculture
CIMMYT: International Maize and Wheat Improvement Center
CIP: International Potato Center
CoP: community of practice
COP: Conference of Parties
CRP: CGIAR Research Program
CSISA: Cereal Systems Initiative for South Asia
CSSP: Country Strategy Support Program
DCL: Dryland Cereals and Legume Agrifood System
DFID: United Kingdom, Department for International Development
DSSAT: Decision Support System for Agrotechnology Transfer
EC: European Commission
EU: European Union
FAO: Food and Agriculture Organization of the United Nations
FAARM: Food and Agricultural Approaches to Reducing Malnutrition project
FARA: Forum for Agricultural Research in Africa
FES: Foundation for Ecological Security (India)
FSP: Feed the Future Innovation Lab for Food Security Policy project
FTA: CGIAR Research Program on Forests, Trees and Agroforestry
FTE: full-time equivalent
G20: Group of Twenty
GAAP: Gender, Agriculture, and Assets Project
GFRAS: Global Forum for Rural Advisory Services
GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit
GLRD: FAO's Gender and Land Rights Database
GM: genetically modified
GTAP: Global Trade Analysis Project
ICARDA: International Center for Agricultural Research in the Dry Areas
ICRAF: World Agroforestry Centre
ICRISAT: International Crops Research Institute for the Semi-Arid Tropics
IDO: intermediate development outcome
IFAD: International Fund for Agricultural Development
IFPRI: International Food Policy Research Institute
ILRI: International Livestock Research Institute
IMPACT: International Model for Policy Analysis of Agricultural Commodities and Trade

IRRI: International Rice Research Institute
ISPC: Independent Science and Partnership Council (of CGIAR)
IWMI: International Water Management Institute
M&E: monitoring and evaluation
MEAS: Modernizing Extension and Advisory Services
MEL: monitoring, evaluation and learning
MGNREGS: Mahatma Gandhi National Rural Employment Guarantee Scheme (India)
NBMA: National Biosafety Management Agency of Nigeria
NEDA: National Economic and Development Authority of the Philippines
NEPAD: New Partnership for Africa's Development
NGO: nongovernmental organization
NRP: nominal rate of protection
OECD: Organisation for Economic Co-operation and Development
PACS: payment for agrobiodiversity conservation
PARC: Pakistan Agricultural Research Council
PBS: Program for Biosafety Systems
PIM: CGIAR Research Program on Policies, Institutions, and Markets
PMCA: Participatory Market Chain Approach
PMU: Program Management Unit (of PIM)
Pro-WEAI: project-level Women's Empowerment in Agriculture Index
PSNP: Productive Safety Net Program (Ethiopia)
ReSAKSS: Regional Strategic Analysis and Knowledge Support System
RTB: CGIAR Research Program on Roots, Tubers and Bananas
SAM: Social Accounting Matrix
SNV: Netherlands Development Organisation
SPAP: Science and Policy Advisory Panel (of PIM)
SPEED: Statistics of Public Expenditure for Economic Development database
SPIA: Standing Panel on Impact Assessment (of CGIAR)
TRAIN: Targeting and Realigning Agriculture to Improve Nutrition project
TMRI: Transfer Modality Research Initiative project
TORs: terms of reference
UN: United Nations
UN-ESCWA: United Nations Economic and Social Commission for Western Asia
UNU: United Nations University
US: United States
USAID: United States Agency for International Development
USD: US dollars
VDSA: Village Dynamic Studies in South Asia
VFT: volunteer farmer trainer
W1-2: Window 1-2 of the CGIAR Fund
WEAI: Women's Empowerment in Agriculture Index
WFP: World Food Programme
WLE: CGIAR Research Program on Water, Land, and Ecosystems
WTO: World Trade Organization

A. Key Messages

Overview, and synthesis of progress and challenges

PIM researchers delivered a strong program in 2015, and many simultaneously contributed to design of the next phase of PIM for the period 2017-2022. 129 ISI journal articles were published in 2015. Specific accomplishments include *inter alia* advances in foresight modeling (with significant investment in training), deepening of work on seed systems and the regulatory framework for innovation, updated data on investment in agricultural research, a book on youth employment in Africa south of the Sahara, launch (jointly with FAO) of the Technical Platform on the Measurement and Reduction of Food Loss and Waste, new work on social protection in Bangladesh, a book on economics of land degradation, and new findings on gender and land rights. Numerous events were (co)-organized or sponsored to disseminate research results, to facilitate dialogue with counterparts and implementing partners, and to build capacity of institutions and individuals.

The PIM management team focused its attention on:

- *Continued momentum for successful implementation of the extension (2015-2016) period:* Support for multi-center activities through communities of practice continued (especially on value chains, foresight modeling, and collective action and property rights), as did work to strengthen links with other CRPs and external partners. With support from the CGIAR gender network, a postdoctoral research fellow joined the PIM management unit to expand the work on gender.
- *Developing a strong proposal for Phase 2:* The PIM "extended team" meeting in November, joint with the annual meeting of the Science and Policy Advisory Panel (SPAP), provided an opportunity to reflect on findings of Phase 1 and plan for Phase 2. A wide array of PIM research and implementation partners contributed to the pre-proposal and proposal processes, through the PIM proposal development collaborative platform and other mechanisms.
- *Contributing to the CGIAR site integration process for Phase 2:* the PMU Senior Research Fellow attended three national consultations (Ethiopia, Nigeria, and Tanzania). Team members represented PIM in the consultations in Bangladesh, Nicaragua, and Vietnam, and in the regional consultations for MENA and East Asia.
- *Fulfilling PIM's fiduciary and programmatic responsibilities:* In 2015 the PIM team adopted a different approach to managing the uncertainty of funding through Window 1-2 of the CGIAR Fund (W1-2). Given the two year duration of the extension phase, participating Centers were encouraged to plan with a two year horizon, and to carry over unspent balances from 2015 to 2016. This approach allowed flexibility in the use of the 2015-2016 envelopes, and assisted participating Centers in managing their staffing adjustments. In addition, PIM management briefed two new Window 2 donors (DFID and Irish Aid) on the details of the program.
- *Implementing recommendations of the external program evaluation undertaken by the Independent Evaluation Arrangement:* The 2015 evaluation report found that PIM's work is relevant, of high quality, and should continue under the leadership of IFPRI. As described in the other sections of this report, several recommendations of the evaluation have been fully or partially addressed.
- *Interacting with the CGIAR Internal Audit Unit for implementation of the PIM audit*: The audit team commended the program's management overall, and recommended more attention to analysis of variance between budget and actual expenditures as well as performance management.

PIM made progress on Monitoring and Evaluation (M&E), with active participation in the CGIAR Monitoring, Evaluation, and Learning Community of Practice (MEL CoP) – including the working group on indicators – and the Evaluation CoP. A paper on best practice methods for assessing the impact of policy-oriented research was published, as well as an external impact assessment on social protection. Impact pathways were developed at the flagship level in preparation for Phase 2.

Two significant achievements/success stories

Influencing policies and regulations on seed systems

Noteworthy advances in work on the regulatory framework for seed systems and regulations pertaining to generation and multiplication of germplasm are presented below.

The Pakistan Country Strategy Support Program led by IFPRI provided evidence to support the Government of Pakistan's reforms of rules governing seed systems, biotechnology and biosafety, and plant breeders' rights, including rules that strengthen incentives for private-sector innovation in agriculture. A recent amendment to the Seed Act of 1976 extends recognition of the private sector's role in seed production and marketing, and the proposed Plant Breeder's Rights Bill aims to attract private investment in seed development.

South Africa's Department of Agriculture, Forestry and Fisheries, in collaboration with Bioversity International, has initiated the implementation of a national community seed bank strategy to support local communities to improve their traditional seed-saving practices. Women farmers play a key role in the management of community seed banks.

In 2015, research and capacity building of the Program for Biosafety Systems (PBS), facilitated by IFPRI and funded by USAID with cofinancing from PIM, contributed to influencing four outcomes:

- Passage into law of the Nigeria Biosafety bill, establishment of the National Biosafety Management Agency (NBMA), and development of regulations under the Biosafety Act.
- Regulatory reform to support commercial release of four GM maize products in Vietnam.
- Regulatory change to allow Tanzania's first confined field trial (drought-tolerant maize).
- Approval of Malawi's first confined field trial for a food crop (GM cowpea resistant to the Maruca, an insect that can lead to an 80% yield loss).

Changing the way projects take into account women's empowerment

The influence of the Women's Empowerment in Agriculture Index (WEAI) continued to expand in 2015. At least 55 external users, including universities, non-profit organizations, international organizations (FAO, IFAD, UN Women), and CGIAR Centers (CIMMYT, ILRI, and IWMI), have used the WEAI in 24 countries in Asia, Africa, and Latin America. Eleven doctoral students are using the WEAI as part of their dissertation work in Bangladesh, Brazil, Ethiopia, Ghana, Guatemala, India, Mexico, and Nepal. A shorter version of the WEAI (Abbreviated WEAI) was piloted, using cognitive testing to validate the questionnaire. In addition, three new projects in Bangladesh are using the WEAI in impact evaluations: two IFPRI impact evaluations – the Agriculture, Nutrition, and Gender Linkages (ANGeL) project in collaboration with the Bangladesh Ministry of Agriculture, and the Targeting and Realigning Agriculture to Improve Nutrition (TRAIN) project in collaboration with BRAC – as well as the BRAC Food and Agricultural Approaches to Reducing Malnutrition (FAARM) project in collaboration with Helen Keller International, the University of Heidelberg, and the Institute of Public Health, Germany. All three projects were selected to participate in the second phase of the Gender, Agriculture, and Assets (GAAP) Project, which will produce a project-level WEAI (Pro-WEAI). The Pro-WEAI is being developed under A4NH as an instrument more operationally flexible than the full WEAI for use in ten countries in Africa and Southeast Asia. It will build on the methodology, implementation, and research findings that emerged from the WEAI (supported by PIM) and from GAAP (supported by PIM until 2015, when it moved to A4NH).

Overall financial summary

In 2015 PIM received USD 17.4 million in W1-2 funding as per the CGIAR Financing Plan, which, added to the USD 4.7 million carryover from 2014 and to the W1-2 funding of USD 100K as part of the CGIAR gender

postdoctoral fellowship, provided an available total of USD 22.2 million. Financial records available as of April 2016 show W1-2 expenditure of USD 15.9 million, i.e. 72%. The observed burn rate reflects the new carryover policy and prudent management of the 2015 funding in light of significantly lower projected funding for 2016. Window 3 and bilateral expenditures are estimated at USD 65.2 million, representing 80% of the program.

B. Impact Pathway and Intermediate Development Outcomes (IDOs)

PIM researchers use four primary pathways translating research outputs to policy outcomes:

- *Influencing global agendas and policies, via major outputs and reports, participation in global events, and long-term partnerships with development organizations* (most closely aligned with the Intermediate Development Outcome (IDO) "Enabling environment improved.") In 2015, researchers supported by PIM contributed to the debate on the Sustainable Development Goals (food loss and waste, land degradation), and the WTO (elimination of export subsidies), G20 (initiative on postharvest losses), and European Commission (Economic Partner Agreements trade negotiations, biofuel policies) processes. FAO's State of Food and Agriculture 2015 report draws on PIM findings on social protection. IFAD, OECD, the World Bank, and the World Food Programme used PIM research to inform design of their programs in 2015.

- *Supporting regional and national policy making in response to specific requests or through development of analytical tools and datasets for national researchers.* PIM supported the sustained engagement of IFPRI's Country Strategy Support Programs (CSSPs) with government counterparts in Bangladesh, Ethiopia, Ghana, Malawi, Nigeria, and Pakistan, as well as engagement of other Centers with national and local counterparts (mainly in support of the IDO "Enabling environment improved.") Achievements in 2015 include contributions to reform of innovation systems and changes in fertilizer subsidies in Pakistan, findings on drivers of change in farm size in Ghana, and analysis to support the design of Ethiopia's Second Growth and Transformation Plan. Researchers supported by PIM contributed to national-level policy and regulatory changes on seed and germplasm in Malawi, Nigeria, Tanzania, and Vietnam, as noted above (IDO on Increased productivity), and to regional processes such as the African Land Policy Initiative.

- *Designing and piloting innovations for direct use by boundary partners, including private firms, farmer organizations, and NGOs.* PIM worked with partners in the private sector on topics related to seed systems, extension, value chains, and insurance. PIM also worked with NGOs to improve delivery mechanisms of safety nets (World Food Programme in Bangladesh), to test value chain interventions (ALTAGRO, CARE, VECO…), and to validate improved arrangements for natural resource tenure and governance (Foundation for Ecological Security, Collaborating for Resilience approach) among others. Outcomes achieved through this impact pathway contribute to a number of IDOs, including "Enhanced smallholder market access," "Improved diets for poor and vulnerable people," and "Enhanced benefits from ecosystem goods and services".

- *Enhancing the quality of research via communities of practice and capacity building* (most closely aligned with the IDO "National partners and beneficiaries enabled.") The PIM-led communities of practice (foresight, value chains, collective action and property rights) continued to be active, and PIM organized a gender write-shop attended by representatives of several CGIAR Research Programs, reflecting PIM's contribution to capacity development on gender research within CGIAR. PIM also invested in strengthening policy research capacities of national research institutions; examples include an IMPACT training for researchers from Central Asia, and a training on advanced techniques for impact assessment for the National Institute of Agricultural Economics and Policy Research of the Indian Council for Agricultural Research.

C. Progress along the Impact Pathway

C.1 Progress toward Outputs

Please see below descriptions of a selection from among the 129 ISI journal publications, 75 databases, and other outputs (co)-produced by PIM in 2015.

Flagship 1 – Technological Innovation and Sustainable Intensification

The foresight modeling team produced biophysical databases on promising maize and wheat technologies (CIMMYT), cropping calendars and cropping intensity for rice in Asia (IRRI), and datasets showing the impacts of agroforestry/soil management options on yields (ICRAF). The team made progress in modeling of fish, livestock, and land use in IMPACT 3. Researchers at ICRISAT improved the DSSAT model for pearl millet, and researchers at ICRAF improved the APSIM model for agroforestry. CIP contributed advances in modeling of pests and diseases. Ex ante analysis of promising technologies for cassava, groundnut, maize, potato, rice, sorghum, soybean, and wheat was completed. PIM and the Grain Legumes program joined efforts to release a platform to visualize and compare the results of different climate scenarios and adaptation strategies on groundnut productivity in Andhra Pradesh, India. A beta version of the IMPACT 3 web tool was also released (IFPRI). The CGIAR foresight modeling community of practice now includes all 15 CGIAR Centers, and collaboration with AgMIP continues. The team produced six ISI publications, seven databases, and three book chapters.

A joint study by IFPRI, PIM, and CCAFS in the Philippines found that reducing expenditures on rice subsidies and redirecting funds to agricultural research and development and rural infrastructure would generate large economic benefits. The same study found that policies facilitating adaptation to climate change are also needed, including development of real-time weather information systems, improved agricultural extension, and a stronger seed industry to facilitate adoption of new varieties. During the Policy Forum organized by the National Economic and Development Authority (NEDA) and IFPRI in Manila, the Socio-Economic Planning Secretary and NEDA Director-General emphasized that the modeling results will be used to guide the development of appropriate investment policies in the Medium Term Philippines Development Plan and National Climate Change Action Plan.

The Agricultural Science and Technology Indicators (ASTI) team launched a new website with easy-to-use tools for viewing, comparing, and downloading key data and information on agricultural research and development.

Together with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the MEAS USAID-funded INGENAES program, PIM provided funding for the development by the Global Forum for Rural Advisory Services of a collection of good practice notes that garnered 11,263 downloads in 2015.

Flagship 2 – Agricultural Growth and Transformation at the National Level

Following a recommendation from the external evaluation to engage more actively with users of the Social Accounting Matrices (SAMs), researchers supported by PIM led the creation of an informal consortium of international organizations that conduct SAM-based modeling (currently including IFPRI, FAO, IFAD, the European Commission Joint Research Centre - Institute for Prospective Technological Studies, and UNU-WIDER, with expressions of interest from the World Bank and GTAP - Purdue University to join). Three new SAMs (Bangladesh, Kyrgyzstan, and Pakistan) were developed.

A book on macroeconomics, agriculture, and food security was released. A special issue on public investment in and for agriculture of the *European Journal of Development Research* came out in July 2015. The work

provides new insights on the effects of different types of public spending, with updated assessments of returns. The third edition of the SPEED database was viewed online over a thousand times in 2015.

Findings of an IFPRI-PIM team on transformation in Africa were cited in the Economist. Recognition of the quality of Flagship 2 publications is illustrated by the receipt of the Elsevier Atlas Award by Alejandro Nin-Pratt (IFPRI) for his article on transformation in Africa, and inclusion of the IFPRI article "Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?" in a virtual issue of the *American Journal of Agricultural Economics* showcasing "ten recent articles that have pushed the frontiers of empirical development economics." The Kyrgyzstan Spatial tool launched in April 2015 was featured as a cutting-edge top technology in the Aid & International Development Forum report "Solutions that Save Lives in Humanitarian Response and Disaster Relief."

The PIM Director served on the organizing committee for The MasterCard Foundation's Young Africa Works Summit. IFPRI published, jointly with UNU-WIDER, a book on African youth and the persistence of marginalization.

Flagship 3 – Inclusive Value Chains and Efficient Trade

The trade team supported preparations for the 10th Ministerial conference of the WTO in Nairobi, with work on export subsidies, consistency of domestic storage policies and international trade rules, and new approaches to increasing market access. In addition, a new version of the MIRAGE-Biof model was produced, including improvements on coverage of livestock, land-use decisions, and carbon markets for agriculture.

Application of the methodology to measure Nominal Rates of Protection (NRP) is in use to measure the impact of policies on agricultural incentives in value chains in India (rapeseeds, groundnuts, ethanol, molasses, sugar, and sugarcane), Nigeria (maize, palm oil, cocoa, beans, cocoa powder), and Tanzania (maize, cashew nuts, groundnuts).

Almost nineteen thousand people (researchers, development practitioners, farmers, private sector users) visited the tools4valuechains portal in 2015. Of the three regional value chain hubs launched in 2015 in Peru, Senegal and Ethiopia, the Latin America and Caribbean Hub made the strongest start, with activities through the Learning Alliance of Peru (Alianza de Aprendizaje Perú) involving approximately twenty national partners.

PIM contributed to the launch of the Technical Platform on the Measurement and Reduction of Food Loss and Waste, a joint undertaking of IFPRI and FAO at the request of the G20 summit in Turkey. CIP presented findings of a study on postharvest losses in the potato value chains in Peru at a technical meeting organized by FAO and the Inter-American Institute for Cooperation on Agriculture in November 2015.

An evaluation of five years of implementation of a poverty-sensitive scorecard system in El Salvador, Guatemala, Honduras, and Nicaragua showed that projects selected through this method perform better than controls. The methodology, the findings of the pilot program, and the evaluation results were widely disseminated across audiences in El Salvador, Guatemala, Honduras, Nicaragua, and Peru.

In 2015 researchers supported by PIM contributed to the project "Transforming Markets for High-Value Agricultural Commodities in Indonesia: Promoting Efficiency and Inclusiveness" funded by the Australian Centre for International Agricultural Research. The research findings were published in a special issue of the *Bulletin for Indonesian Economic Studies* and in the *American Journal of Agricultural Economics*.

The Food Security Portals for Africa south of the Sahara and for Latin America and the Caribbean were launched by IFPRI to bring relevant information to policy makers facing food crises. In addition, researchers

from IFPRI joined with colleagues at the African Fertilizer and Agribusiness Partnership to discuss findings of research on African and global fertilizer markets ten years after the 2006 Abuja Fertilizer Summit.

Flagship 4 – Improved Social Protection for Vulnerable Populations

The evaluation by IFPRI of the impact of Phase 3 of Ethiopia's Productive Safety Net Programme (PSNP) found that the program improved household food security and dietary diversity in the highlands regions. In these regions, public works' transfers reduced distressed asset sales, and increased the value of livestock holdings for the poorest 20 percent of households. The evaluation found no evidence that the PSNP public works program improved agricultural productivity. No impact of the PSNP on household food security or livestock holdings was observed in the lowland regions of Afar and Somali, suggesting that social protection programs serving pastoral communities may require a different design than those serving settled farming areas.

Upon request from the Government of Bangladesh and the World Food Programme, and with USAID funding, the IFPRI Bangladesh Policy Research and Strategy Support Program team evaluated a social protection program aimed at enhancing resilience to natural disasters and effects of climate change. The evaluation shows that the program has positive impacts on consumption, assets, agricultural productivity, and non-farm employment.

To mark the culmination of a collaborative research project investigating the targeting, implementation, and impact of India's Mahatma Gandhi National Rural Employment Guarantee Scheme (the largest public works project in the world), an IFPRI-PIM team together with the Indira Gandhi Institute of Development Research and Cornell University organized a policy workshop titled "Implementation of MGNREGS in India: A Review of Impacts for Future Learning" in New Delhi in June 2015.

Researchers at IFPRI contributed two background papers on the impact of social protection on food security and on assets to the 2015 FAO State of Food and Agriculture (SOFA) Report, "*Social Protection and Agriculture: Breaking the Cycle of Rural Poverty."* Papers on the impacts of Brazil's Bolsa Família conditional cash transfer program on schooling and household labor supply were published. Research also included cross-country analysis of methods for measuring women's decision making.

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

The book "Community seed banks: origins, evolution and prospects" produced by Bioversity International with financial support from GIZ and PIM reviews evolution, successes, failures, challenges, and prospects of community seed banks. The IFPRI book "Economics of land degradation and improvement – A global assessment for sustainable development" launched at a policy seminar in December 2015 has already been downloaded 38,000 times, and contributed to the debate on land degradation, including the process around the 15th Sustainable Development Goal. ICRISAT organized the symposium "Enabling Adoption of Water and Energy Efficient Technologies in Agriculture – Constraints, Opportunities, Strategies and Policies," the outputs of which are expected to influence the revision of India's Prime Minister's Agricultural Irrigation Scheme ("Pradhan Mantri Krishi Sinchayee Yojana.")

The Collective Action and Property Rights (CAPRi) program contributed to sessions at the Global Landscapes Forum and at the International Association for the Study of the Commons biennial conference. A "Tenure box" framework for examining property rights (in terms of both the rights-holder and the bundles of rights that they hold) was presented at the World Bank Conference on Land and Poverty. To enhance outreach and capacity building at the grassroots level, CAPRi is co-hosting a Leland Fellow with the Foundation for Ecological Security (FES) in India.

Cross-cutting activities

Following the 2014 workshop co-sponsored by PIM, IFPRI, and the Standing Panel on Impact Assessment (SPIA) of the ISPC, PIM published a paper on best practice methods in impact assessment of policy-oriented research including recommendations of actions that researchers can undertake at different stages of the research process in order to improve assessment of outcomes and impacts.

C.2 Progress toward the Achievement of Research Outcomes and IDOs

Flagship 1 – Technological Innovation and Sustainable Intensification

In 2015, the PIM foresight results continued to inform the work of key stakeholders. Within CGIAR, the team presented recent findings to the ISPC, and model results were used by the RTB, Livestock, and DCL programs for prioritization. Users outside CGIAR include other leading global research groups through AgMIP, as well as the Bill & Melinda Gates Foundation and USAID.

A PIM team working with the Pakistan Agricultural Research Council (PARC) and the University of Agriculture Faisalabad as part of IFPRI's Pakistan Strategy Support Program contributed to strengthening the agricultural research system and developing a reform agenda focused on agricultural science and technology in Pakistan. The growing recognition of PARC's role by government stakeholders was reflected in its increased 2015-2016 budget allocation. In Nepal, drawing on research conducted by IFPRI under the umbrella of CSISA and RESAKSS-Asia, researchers made recommendations at the National Seed Summit, and provided inputs into draft guidelines for implementation of the newly approved Seed Regulation 2069.

ICRAF's research and dissemination activities related to the Volunteer Farmer Trainer (VFT) approach, funded jointly by PIM, FTA, and CCAFS, have resulted in widespread uptake of the approach in Rwanda (by 21 organizations including 16 dairy cooperatives, two food crop cooperatives, two government organizations, and one NGO), Kenya (by 20 dairy cooperatives and one farmers' federation), and Uganda (numbers of adopting organizations yet unknown).

Flagship 2 – Agricultural Growth and Transformation at the National Level

Known examples of the use of Social Accounting Matrices (SAMs) in 2015 include: design of the Second Growth and Transformation Plan by Ethiopia's Economic Policy Analysis Unit; implementation of a FAO study on Malawi's exchange rate policy and its implications for agriculture; evaluation by FAO of the effects of deforestation and other land-use changes in Zambia; and evaluation by Pakistan's Planning Commission and the IFPRI Pakistan Strategy Support Program of the country's national energy strategy.

In 2015, Arab Spatial and its country platforms (Iraq, Palestine, and Yemen Spatials) were used by the Arab Forum for Environment and Development, UN-ESCWA, and the European Union Institute for Security Studies, among others.

Public officials from Nigeria, Ghana, Ethiopia, and Kenya who participated in the PIM-supported South-South knowledge exchange on mechanization in Bangladesh expressed appreciation for the exposure, and a new understanding of the respective roles that the private and public sectors can play in importation of machinery and provision of mechanized services.

Flagship 3 – Inclusive Value Chains and Efficient Trade

The IFPRI trade team evaluated the impact on West African and Southern African countries of the EU Economic Partnership Agreements, and found modest and mixed impacts on these countries. Final agreements together

with the conclusions of IFPRI's impact assessment have been submitted to the EU legislative bodies for the final vote (April 2015).

The Government of Malawi used results of a study on the soya export sector undertaken by the IFPRI Malawi Strategy Support Program team for assessment of the Control of Goods Act, which complicates exportation and is under consideration for amendment.

PIM-supported value chain tools such as 5Capitals (a tool for assessing the poverty impacts of value chain development produced by ICRAF and Bioversity International), LINK (a guide on inclusive business models involving smallholders developed by CIAT), and the Participatory Market Chain Analysis (developed by CIP) continue to be widely used by NGOs, public agencies, and private firms. Fairtrade Africa has applied 5Capitals to build a baseline for impact assessment of Fairtrade cocoa in West Africa. The Peruvian National Institute of Agricultural Innovation used 5Capitals to explore improved marketing of the camu-camu fruit. The NGO Lutheran World Relief is working with ICRAF to apply 5Capitals to assist smallholders in Peru's fast growing cocoa sector. Catholic Relief Services, VECO and Heifer International selected LINK to form part of their toolkits for use in market access projects in more than 40 countries. LINK is used as an evaluation tool for a large Public Private Partnership project between the Ministry of Agriculture and Rural Development and the World Bank in Colombia. Unilever adopted LINK as the in-house procurement guide and tool kit for smallholder value chains.

Flagship 4 – Improved Social Protection for Vulnerable Populations

IFPRI-PIM and the World Food Programme (WFP) jointly carried out the "Transfer Modality Research Initiative (TMRI)" project from 2012-2014 to determine what combination of transfers and communication about nutrition brings the greatest benefits for ultra-poor women in rural Bangladesh. WFP, USAID, and the Ministry of Agriculture of Bangladesh are using results of the study for program design.

FAO used PIM research as an input to the State of Food and Agriculture 2015 report on agriculture and social protection. Twenty references to IFPRI's work on social protection appear in the bibliography. Among the significant findings featured in the report is the message that joint, coordinated, and/or aligned social protection and agricultural programs are likely to be more effective in helping poor households move out of poverty in a sustainable manner than separate programs.

After a pilot rollout in 2014 with funding from PIM and the Inter-American Development Bank, an innovative index-based insurance product for the horticultural sector in southern Uruguay was made widely available to smallholder farmers in 2015 by the insurance company Banco de Seguros del Estado, with support from the Uruguayan Ministry of Agriculture. The experience with this insurance product is being evaluated for lessons it may offer for producers and insurance providers in poorer parts of Latin America and elsewhere.

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

The Ethiopian Ministry of Agriculture drew on results of IFPRI's work on land tenure to modify the design of the DFID-funded Land Investment for Transformation (LIFT) program.

The Peruvian government invited researchers from Bioversity International to support the implementation of a scaled-up scheme for payment for agrobiodiversity conservation (PACS) for quinoa and amaranth.

Led by WorldFish and supported by PIM, AAS, and CAPRi among others, the Collaborating for Resilience approach was used with fishing communities in Uganda and Zambia, resulting in greater consensus in governance of shared resources within the communities, and better ability to draw public funds for investment and service delivery.

C.3 Progress toward Impact

IFPRI's five-year investment in analysis of land-use change associated with the biofuel policies of the European Union resulted in reduction of the biofuel mandate to 7% from the prior level of 10%, with clear recognition that the evidence provided by the IFPRI-PIM team contributed to this change. The reform will reduce CO_2 emission by 13 million tons by 2020 due to avoided land-use change in developing countries, with an estimated 800,000 hectares of cropland saved annually from conversion to biofuel production

The 10th Ministerial conference of the WTO in Nairobi in December 2015 achieved agreement on elimination of export subsidies, one of the few successes in agricultural trade negotiations in recent years. IFPRI's inputs to the process, informed by continuous modeling supported by PIM, contributed to this outcome, which is expected to boost agricultural investments (both private and public) in low-income countries by 0.5 percent annually. PIM's research specifically contributed to two decisions included in the Nairobi package: the Ministerial Decision on Public Stockholding for Food Security Purposes (WT/MIN(15)/44), and the Ministerial Decision on a Special Safeguard Mechanism for Developing Countries (WT/MIN(15)/43).

A 2015 review of social protection research at IFPRI commissioned by IFPRI and PIM pointed to several areas in which this body of research (350 IFPRI research products, including 67 peer-reviewed journal articles in the period 2000-2012) has had impact. The work has contributed to adjustments in social protection programs, with improved targeting, reduced costs, and increased benefits to poor households in Bangladesh, Brazil, Ethiopia, and Mexico, and has been used by the World Food Programme, the World Bank, and other development agencies. The Ethiopian Productive Safety Net Program provides benefits to more than 7 million people (World Bank Report), and WFP's cash and voucher transfers benefit more than 8 million people (WFP Report).

D. Gender Research Achievements

Selected achievements

The Women's Empowerment in Agriculture Index (WEAI), featured as a success story in Section A above, was analyzed and adapted by numerous external users. Analysis of the WEAI continues to result in important empirical findings on the relationship between women's empowerment and child nutrition, as well as adjustments in the index to enhance its operational applications.

FAO's Gender and Land Rights Database (GLRD) is a key source of information for policy makers and advocates of gender equality in land rights. PIM partnered with the GLRD team to adapt PIM's framework for measuring gender gaps in control over land to the requirements of national statistical systems and the Sustainable Development Goals. Two joint FAO/IFPRI-PIM publications (a technical note and an infographic) explain these recent developments. PIM research on gender inequalities in land rights indicators in Asia, which found that gender inequalities in landholdings within the household increase as households accumulate land, also contributed to the updated GLRD's indicators of women and men's control over land.

In order to build the capacity of agricultural researchers to conduct rigorous gender analyses and translate their research findings into recommendations, PIM and the Journal of Gender, Agriculture and Food Security co-hosted a write-shop. This event resulted in a two-part special issue of the journal focused on gender and policies, markets, and institutions; its first part, released in October 2015, featured the research of write-shop participants from CIAT, CIMMYT, and CIP.

In collaboration with CIMMYT and A4NH, Maize, and HumidTropics, PIM's gender postdoctoral research fellow is conducting research examining the influence of women's empowerment on the adoption of improved maize varieties using data from the CIMMYT/IFPRI Adoption Pathways project in Ethiopia, Kenya, and Tanzania. Initial results suggest that the likelihood that households grow an improved maize variety increases when adoption decisions are made jointly by men and women in the household.

Bioversity International, CIAT, CIP, and ICRAF worked together to apply a gender lens to three PIM tools for value chain analysis: 5Capitals – a tool for assessing the poverty impacts of value chain development (ICRAF and Bioversity International), LINK – a guide on inclusive business models involving smallholders (CIAT) (currently being field-tested in collaboration with the NGO VECO), and the Participatory Market Chain Analysis – PMCA (CIP). CIP scientists and project managers as well as bilateral project partners in Bolivia, Ecuador, and Peru are using the gender-responsive PMCA to design the gender components of projects with IFAD, the Andean Community of Nations, and NGOs (CARE, ALTAGRO). FARA's toolkit for gender mainstreaming in agribusiness incubation also features the PMCA. In December 2015, as part of the RTB project "Expanding Utilization of Roots, Tubers and Bananas and Reducing their Postharvest Losses" (RTB-ENDURE) and with support from PIM, CIP organized a workshop with project partners and beneficiaries to impart skills and tools and devise strategies for mitigating gender-based constraints in value chain interventions.

Success and challenges in mainstreaming gender research

Based on the indicators for gender mainstreaming defined in Annex 2 of the template for the annual reporting of CRPs, PIM **exceeds the requirements** established by the Consortium Office, as explained in the table below.

Gender inequality targets defined	
Sex-disaggregated social data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations	Many PIM projects collect and analyze sex-disaggregated data in order to identify gender-related constraints. For example, in 2015, researchers developed tools to identify constraints to women's involvement in and ability to benefit from value chains. In addition, the 2015 paper "Managing risk with insurance and savings: experimental evidence for male and female farm managers in the Sahel" with IFPRI-PIM authors identified that women farm managers were less likely to purchase agricultural insurance, and more likely to invest in savings for emergencies. The authors hypothesize that this is a result of additional risks that women face that are associated with fertility and childcare. The Women's Empowerment in Agriculture Index (WEAI) is also used to diagnose key constraints to women's and men's empowerment.
The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main target populations relevant to its expected outcomes (IDOs)	PIM contributed to a review of indicators on gender, assets, and decision making in agriculture, which will be used to help standardize the indicators of gender inequality collected and reported across CGIAR. Several PIM projects collect baseline data on key dimensions of gender inequality, including gender differences in agricultural research staffing in developing countries and access to agricultural training, men's and women's migration patterns and their implications for agriculture, constraints to women's involvement in value chains, the gender dimensions of social protection programs and insurance products, and gender-based differences in tenure security and decision making over resources. PIM also contributed to the collection of WEAI baseline data in 19 countries for USAID's Feed the Future project. In addition, several PIM projects have analyzed existing data on gender inequalities. For example, a paper published in Agricultural Economics establishes the evidence base on gender inequalities in landownership across Asia. Finally, PIM is working with the World Bank and the International Rescue Committee to improve collection of data on men's and women's control over assets, time use, and agency.
CRP targets changes in levels of gender inequality to which the CRP is contributing or plans to contribute, with related numbers of men and women beneficiaries in main target populations	As indicated in Table D of the PIM Phase 2 proposal Performance Indicators Matrix, PIM has defined several milestones regarding the uptake of PIM gender research methods and guidelines and the use of PIM research on interventions for empowering women. PIM also commit to targets for the percentage of flagship products and tools which include gender analysis (see Annex 1 and 1a, indicators 2, 3, 5, 6, 19, 20).
Institutional architecture for integration of gender is in place	
CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORs and funds allocated to support their interaction.	Cheryl Doss, a Senior Lecturer at Yale University, continues to serve as PIM's Gender Lead, and is a member of the PIM Management Committee. She is supported by an Associate Research Fellow and a Senior Research Assistant in the PIM Program Management Unit.
Procedures defined to report use of available diagnostic or baseline knowledge on gender routinely for assessment of the gender equality implications of the CRP's flagship research products as per the Gender Strategy	Since 2015, PIM's annual activity progress reports collect information on: the proportion of activities collecting sex-disaggregated data, as a percentage of activities collecting primary data; the percentage of activities analyzing sex-disaggregated data; and the proportion of activities using findings to reduce identified gender inequities or to explicitly target women, girls, or both.

CRP M&E system has a protocol for tracking progress on integration of gender in research	The Program Management Unit monitors gender work across the portfolio by collecting indicators of progress in the annual activity progress reports. In addition to the information above, researchers are asked during the research design stage to determine whether gender is relevant to the proposed research. If gender is not relevant, they are asked why. If gender is relevant, they are asked to classify the extent to which each deliverable will incorporate gender.
A CRP plan approved for capacity development in gender analysis	PIM is collaborating with the CGIAR Gender and Agriculture Research Network to build the capacity of CGIAR researchers to conduct gender analysis. For example, throughout 2015 researchers regularly updated the Engendering Data blog to share new approaches to collecting and analyzing sex-disaggregated data. In 2016 PIM is conducting a webinar on the standards for collecting sex-disaggregated data for gender analysis developed by PIM and endorsed by the Consortium Office, and hosting a workshop on "Advanced techniques for incorporating gender in research design, data collection, and analysis for economists and other social scientists," designed for quantitative scientists across CGIAR who are not gender specialists. An IFPRI-PIM paper on qualitative methods for gender research was completed in 2015, and will be issued as an IFPRI discussion paper in 2016. See the PIM Phase 2 proposal for more details on PIM's plans for capacity development in gender analysis from 2017-2022.
The CRP uses feedback provided by its M&E system to improve its integration of gender into research	In response to the recommendation from the PIM external evaluation that PIM validate the claims that the activity proposals and progress reports make in relation to gender, new components were included in the PIM gender monitoring system in 2015. For activities that have no gender focus, the PMU now requests information on the reason for this lack of gender focus in order to better understand the logic and/or constraints. In addition, by asking activity leaders to report the level of gender focus of each deliverable, the PMU can verify self-reported information by assessing each deliverable. Given the time-consuming nature of this exercise, this validation will be conducted for a subset of activities each year. Monitoring how gender is addressed across the PIM projects highlighted the need for increased collaboration within CGIAR on identifying overarching gender research questions and standardizing methods, without losing context specificity. The CGIAR Collaborative Platform for Research on Gender hosted by PIM in Phase 2 will play a key role in addressing these issues.

E. Partnerships for Research and Impact

In 2015, researchers supported by PIM maintained strong partnerships within and outside CGIAR. The foresight community of practice includes all Centers, and has links across all CRPs. Other CRPs provide data to PIM (for example in 2015 Dryland Cereals provided experimental trial data for pearl millets from different locations in Asia and Africa for crop model calibration), and use the PIM results – for example in 2015 the PIM results informed the CCAFS-led regional scenario exercises and follow-up policy dialogues in Africa, Asia and Latin America, and were used by RTB, DCL, and Livestock for priority-setting in preparation of their Phase 2 proposals. PIM and Livestock & Fish co-invested on foresight activities related to fish, and PIM's foresight work informed CCAFS's activities in Vietnam. During Phase 2, co-investment with other CRPs in the foresight modeling effort will increase. PIM will fund overall coordination and the maintenance of the modeling tools, while the Agrifood Systems (AFS) CRPs will fund applications specific to their mandates. Interactions with CRPs in 2015 have laid the ground for this shift.

PIM's convening role as an integrating CRP translates into leadership of several communities of practice (for example, foresight and value chains), and also facilitates increased collaboration between separate research communities. In 2015 IWMI's contribution to the foresight effort resulted in increased collaboration between

researchers engaged in food security and hydrogeologists on groundwater's role in food security, and an IWMI researcher was invited to give a keynote presentation at the World Food Center's Global Conference on Water Policy for Food Security.

The PIM research on Volunteer Farmer Trainers and Rural Resource Centers benefits from complementary involvement of two other CRPs: FTA and CCAFS. Extension staff usually have insufficient skills in agroforestry; hence the need for alternative systems such as VFTs for agroforestry practices – and FTA's interest. CCAFS is exploring the effectiveness of volunteer farmer trainers and rural resource centers in promoting climate-smart agriculture at low cost. PIM's funding supports systematic assessments of these innovative extension approaches for various types of crops and in different geographies.

In partnership with the African Union Commission (AUC), the Forum for Agricultural Research in Africa, and the CGIAR Consortium Office, PIM helped facilitate the first meeting of the Steering Committee of the AUC-CGIAR partnership (in July in Addis Ababa), and supported the organization of a round table and panel (involving AUC/NEPAD, CCAFS, IFPRI-PIM, the Global Forum on Agricultural Research, the CGIAR Consortium, and the World Bank) on "Technologies for Impact" to demonstrate the applications of the Virtual Information Platform at the Global Forum for Innovations in Agriculture.

Three regional value chain hubs were established in 2015 to connect research, development, and policy actors in learning about ways to strengthen the efficiency and inclusiveness of value chains. As recommended in the PIM evaluation, PIM provided support for each of these initiatives, and will monitor their performance. The hub for Latin America has made the strongest start. The hubs represent a joint effort between several Centers: ILRI hosts the hub in Ethiopia; CIP hosts the hub in Peru; CIAT supports the design and monitoring of the hubs, and facilitates expansion of coverage of the hubs to Central America; IFPRI contributes to prioritization and methods development, maintains the tools4valuechains portal, and builds research capacity. These four Centers, together with Bioversity International, ICARDA, ICRAF, ICRISAT, IITA, and WorldFish, participate in the PIM value chains program of work to develop tools and contribute to collaborative empirical analyses. Many NGOs (including Catholic Relief Services, Oxfam, SNV, Technoserve, and World Vision International) test and implement the PIM value chains tools. For example, in 2015 a strong national partnership developed around the value chain hub in Peru with the Alianz Aprendizaje Peru (a learning alliance of 10 NGO and private-sector organizations). Unilever and the Mosaic Company are also accessing information generated by PIM and applying it in their interactions with producers.

PIM's effort on postharvest losses is closely linked to the work of the AFS CRPs on value chains. For instance, the contribution of ICRISAT to that effort, centered on postharvest losses in groundnut in Malawi, uses study sites from Grain Legumes, and the results will feed into value chain interventions developed by this CRP.

F. Capacity Building

PIM supported a number of capacity-building events in 2015. The Modernizing Extension and Advisory Services (MEAS) project, CSISA, and IFPRI organized the learning event "Strengthening Agricultural Research, Extension, and Input Markets in South Asia: Evidence from Regional and Global Practice." The USAID-funded Food Security Program (FSP, a joint activity of IFPRI, Michigan State University, and the University of Pretoria), hosted a workshop on "Strengthening Policy Systems through Communications and Advocacy" for members of Myanmar's Food Security Working Group. This training used the kaleidoscope model of political economy developed by IFPRI, which PIM's future line of work on policy processes will build on in Phase 2. CIAT organized a training on the LINK methodology in Vietnam; as part of this session, participants used LINK to map value chains and their related business models, assess their inclusivity, and design interventions to make them more inclusive and sustainable.

The foresight team invested significantly in training and outreach during 2015. Several training workshops were held, including: "Crop Modeling under Uncertain Climate" – CIMMYT; workshop for CIAT staff and the Latin American Foundation for Irrigated Rice – CIAT; "Cropping System Models: Application in Land Resource Management" – ICRISAT; training session on gridded-style crop modeling – ICRISAT; IMPACT training focused on fish for WorldFish – IFPRI; IMPACT training for policy makers and researchers from Central Asia – IFPRI in collaboration with the Eurasian Center for Food Security and the World Bank. Researchers presented at a number of policy workshops and other occasions aimed at increasing the use of the foresight tools by various stakeholders. For example, the team leader presented at the International Science and Partnership Council (ISPC) on prioritization within CGIAR. Other seminars for dissemination of findings included a session at the Global Landscapes Forum at the COP21 climate negotiations (IFPRI), an IFPRI Policy Seminar, a workshop to define groundwater and wheat scenarios in Tunisia and Jordan (ICARDA), and interactions with the Learning Alliance of Peru (CIP).

Staff of the Rwandan Ministry of Agriculture benefited from a two-week training organized by IFPRI on conducting CGE modelling for agricultural policy analysis; and staff of the Institute of Statistical, Social and Economic Research of Ghana and of Ghana's Statistical Services were trained in building Social Accounting Matrices

As a result of IFPRI's capacity-building activities, ASARECA's Monitoring and Evaluation Unit adopted the use of a new data collection method using mobile devices and a survey app developed for spatially tracking adoption and diffusion of technologies.

The American University of Beirut approached the Arab Spatial team to include a spatial tool for Lebanon in the curriculum for the first, newly created, Diploma on Food Security in the region.

The Village Dynamic Studies in South Asia (VDSA) databases maintained by ICRISAT continue to be widely used by students and researchers. As of January 2016, a total of 1,210 unique users from 45 countries of Asia, Africa, Europe, and North America have downloaded the newly released VDSA data, including 519 students (337 with PhDs) from more than 200 universities/institutes around the world. 583 researchers from India and 61 from Bangladesh have been downloading the data on a regular basis.

In 2015, AGRODEP's membership gained 43 new members (16 female and 27 male). The total membership is now 183, from 27 African countries. Thirteen African researchers were selected to become members of the AGRODEP Value Chain Analysis Network through AGRODEP's special round of membership extension focused on value chain analysis which was launched in February 2015. Twelve African researchers participated in the AGRODEP training on agricultural distortions and value chains.

G. Risk Management

Risk management in 2015 focused on the following areas:

Long-term planning: Uncertainty regarding Window 1-2 amounts limits the ability to plan long-term research efforts.
Mitigating measure: The PMU reacted to the prospect of significantly reduced W1-2 funding in 2016 by allowing participating Centers to carry over funds from 2015 to 2016 to provide more flexibility in the use of the 2015-2016 envelopes.

Quality assurance for PIM-branded products: PIM faces a reputational risk due to the difficulty in tracking all PIM products and applying common standards of quality control across products.

Mitigating measure: In 2015, the PMU continued to promote the use of the PIM Branding and Acknowledgment Guidelines, and worked together with the IFPRI Knowledge Management team to add the PIM "tag" to the metadata for the PIM publications for which it had been omitted due to lack of acknowledgement of PIM. In 2015, PIM also initiated discussions with CCAFS regarding adaption of the CCAFS planning and reporting tool, which should facilitate tracking and branding of the PIM outputs in Phase 2. PIM management encourages quality assurance by emphasizing the importance of ISI publications (and their peer-review processes). Quality management for products that are not peer-reviewed remains a challenge.

Knowledge of execution of participating Centers' budgets: CRP management does not have access to real-time data on burn rates and deliverables.
Mitigating measure: PIM management worked closely with the IFPRI Finance unit to monitor the use of the IFPRI funds, and interacted with the other participating Centers to obtain estimates of spending at several points during the year in order to adjust priorities and detect issues of pace and quality of delivery as early as possible. Delays in financial reporting reduce scope for application of mitigating measures in this area.

Tracking impact, and establishing indicators and targets for results: PIM seeks to set ambitious goals for policy reform and institutional change, but recognizes a need for realism in what can be achieved and in the time frame required for impact. Researchers are encouraged to be modest in claiming attribution for observed progress, and to emphasize documenting contribution to progress. There is nonetheless a high risk that researchers supported by PIM establish unrealistic targets, claim credit that belongs to other actors in the policy process, or fail adequately to track and report on contributions to outcomes.
Mitigating measure: In 2015, PIM published a paper on best practice methods in impact assessment of policy-oriented research. In addition, the PMU actively participated in the CGIAR Monitoring, Evaluation, and Learning Community of Practice (MEL CoP) – including the working group on indicators – and the Evaluation CoP, developed a reporting module to collect PIM outcome stories, and invested in collection of evidence related to PIM outcomes in the areas of extension, value chains, social protection, and common property management.

H. Lessons Learned

Implementation of the PIM program in 2015 has yielded useful lessons, some of which are summarized below.

- The process of developing and signing Program Participant Agreements is much too cumbersome for partners with low levels of engagement in the program. In Phase 2, simpler contracts will be designed for these partners.
- We observed limitations in the ability of participating Centers' Focal Points to ensure coordination of inputs and connectivity of their Centers with PIM outside their own areas of expertise. As a consequence, in Phase 2 we will design a different coordination model at the flagship level, building on the successful communities of practice already functioning in PIM.
- Skills in policy-oriented research within CGIAR are uneven, and some participating Centers experienced difficulties delivering high quality products in accordance with commitments. Where CGIAR requires research results in areas within PIM's mandate but skills within the system other than in the Lead Center are thin, PIM management will encourage an expanded role for advanced research organizations outside CGIAR, particularly organizations in the developing world that have capacity to contribute to the program.
- In spite of efforts to make the TORs of people fulfilling key roles in the program (e.g., flagship leaders, Focal Points) explicit, the program's external evaluation notes that some areas of responsibilities are not specified clearly enough. In addition, in some cases the lack of dedicated support for flagship leaders creates issues in delivery (especially related to the reporting process requirements). To address both points, in Phase 2 the expansion of the role of flagship leaders will be accompanied by precise TORs, and each flagship leader will be assisted by a part-time program manager for coordinating inputs

from the Centers, reporting on flagship-level progress and budget execution, and tracking outcomes and impact.

- The lack of an online system to monitor outputs and outcomes creates difficulties in tracking and reporting on the program's achievements. In 2016, PIM is joining with CCAFS, A4NH, and WLE to develop a common online planning and reporting platform for Phase 2.
- The 2014 activity reports showed that principal investigators did not sufficiently track outreach components and gather evidence of initial use of outputs by target clients. PIM started to strengthen this component in 2015 through discussions with flagship and cluster leaders and update of activity report templates, and improvements are visible in the 2015 activity reports. PIM management will use early lessons from this approach to provide guidance to teams for mainstreaming tracking of these components into all projects in Phase 2.
- Management of the Window 3/bilateral portfolio continues to be a challenge, and significant attention needs to be given to this matter in 2016 to ensure improvements at the beginning of Phase 2. Among the processes and procedures that need to be established or improved are: sharing information on bilateral/W3 projects between the participating Centers (including the Lead Center) and PIM; systematically assessing projects at the proposal stage to see how well they fit with PIM's flagships and clusters; sharing information about these projects among the members of the PIM team; and capturing the outputs and outcomes of these projects in PIM's M&E framework.
- One can never communicate too much about CRP branding. Only repeated messages and encouragements to researchers are effective for ensuring that all PIM deliverables include a proper acknowledgement of the program.
- In light of recent W1-2 funding cuts, increased efforts will be devoted to joint resource mobilization with participating Centers.

ANNEXES

Annex 0: Estimated Numbers of PIM staff

	FTE male	FTE female	FTE total
Senior researcher or Director	37.8	10.2	48.0
Research Fellow or equivalent	39.9	16.6	56.5
Post-doc	4.3	6.2	10.5
Support staff	66.1	64.6	130.7
Total	**148.1**	**97.6**	**245.7**

Note: These numbers have been estimated by Center Focal Points. Most researchers work on several CRPs and on other activities, and the accuracy of these data is not guaranteed. If these data will be required in the future reporting, a common framework for measurement should be established.

Annex 1: CRP Indicators of Progress, with Glossary and Targets

CRPs concerned by this indicator	Indicator	Deviation narrative (if actual is more than 10% away from target)	Comment and explanations	2012		2013		2014		2015		2016
				Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
All	1. Number of flagship "products" produced by CRP		See Annex 1a.	0	0	0	5	10	13	10	10	10
All	2. % of flagship products produced that have explicit target of women farmers/NRM managers		See Annex 1a.	0	0	0	60%	60%	67%	50%	60%	50%

CRPs concerned by this indicator	Indicator	Deviation narrative (if actual is more than 10% away from target)	Comment and explanations	2012		2013		2014		2015		2016
				Target	Actual	Target	Target	Target	Actual	Target	Actual	Target
All	3. % of flagship products produced that have been assessed for likely gender-disaggregated impact		See Annex 1a.	0	0	55%	80%	80%	83%	50%	80%	50%
All	4. Number of ”tools” produced by CRP		See Annex 1a.	0	0	1	10	9	13	10	15	15

CRPs concerned by this indicator	Indicator	Deviation narrative (if actual is more than 10% away from target)	Comment and explanations	2012		2013		2014		2015		2016
				Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
All	5. % of tools that have an explicit target of women farmers		See Annex 1a.	0	0	60%	30%	33%	46%	30%	43%	30%
All	6. % of tools assessed for likely gender-disaggregated impact		See Annex 1a.	0	0	55%	60%	66%	62%	60%	50%	50%
All	7. Number of open access databases maintained by CRP	See Annex 1a.	See Annex 1a.	0	89	TBD	125	135	91	80	75	70
All	8. Total number of users of these open access databases	See Annex 1a.	See Annex 1a.	NA	652,275	NA	2,679,057	3,000,000	55,000	50,000	449,311	75,000*
All	9. Number of publications in ISI journals produced by CRP		See Annex 1a.	NA	105	200	97	100	98	90	129	90

* The value of this indicator is difficult to predict; it is not clear that a target is useful.

CRPs concerned by this indicator	Indicator	Deviation narrative (if actual is more than 10% away from target)	Comment and explanations	2012		2013		2014		2015		2016
				Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
1,2,3, 4, 6	10. Number of strategic value chains analyzed by CRP		See Annex 1a.	NA	16	16	13	16	57	40	58	40
1,5,6,7	11. Number of targeted agro-ecosystems analysed/characterised by CRP											
1,5,6,7	12. Estimated population of above-mentioned agro-ecosystems											
All	13. Number of trainees in short-term programs facilitated by CRP (male)	See Annex 1a.	See Annex 1a.			15,000	11,049	15,000	6,079	6,000	5,515	5,500
All	14. Number of trainees in short-term programs facilitated by CRP (female)	See Annex 1a.	See Annex 1a.			3,000	5,422	3,000	3,370	3,000	3,831	3,500
All	15. Number of trainees in long-term programs facilitated by CRP (male)		Number of Master's and PhD's not available.			110	199	110	203	100	66	70

CRPs concerned by this indicator	Indicator	Deviation narrative (if actual is more than 10% away from target)	Comment and explanations	2012		2013		2014		2015		2016
				Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
All	16. Number of trainees in long-term programs facilitated by CRP (female)		Number of Master's and PhD's not available.			120	129	120	110	100	69	70
1,5,6,7	17. Number of multi-stakeholder R4D innovation platforms established for the targeted agro-ecosystems by the CRPs											
All	18. Number of technologies/NRM practices under research in the CRP (Phase I)		See Annex 1a.		159	20	0	17	39	30	69	30
All	19. % of technologies under research that have an explicit target of women farmers		See Annex 1a.		0	0	0	0	5%	5%	23%	15%

CRPs concerned by this indicator	Indicator	Deviation narrative (if actual is more than 10% away from target)	Comment and explanations	2012		2013		2014		2015		2016
				Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
All	20. % of technologies that have been assessed for likely gender-disaggregated impact		See Annex 1a.			55%	0	55%	10%	10%	38%	20%
1,5,6,7	21 Number of agro-ecosystems for which CRP has identified feasible approaches for improving ecosystem services and for establishing positive incentives for farmers to improve ecosystem functions as per the CRP's recommendations		See Annex 1a.									
1,5,6,7	22. Number of people who will potentially benefit from plans, once finalised, for the scaling up of strategies											

CRPs concerned by this indicator	Indicator	Deviation narrative (if actual is more than 10% away from target)	Comment and explanations	2012		2013		2014		2015		2016
				Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
All, except 2	23. Number of technologies /NRM practices field tested (phase II)											
1,5,6,7	24. Number of agro-ecosystems for which innovations (technologies, policies, practices, integrative approaches) and options for improvement at system level have been developed and are being field tested (Phase II)											
1,5,6,7	25. % of above innovations/approaches/options that are targeted at decreasing inequality between men and women											

CRPs concerned by this indicator	Indicator	Deviation narrative (if actual is more than 10% away from target)	Comment and explanations	2012		2013		2014		2015		2016
				Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
1,5,6,7	26. Number of published research outputs from CRP utilised in targeted agro-ecosystems											
All, except 2	27.Number of technologies/NRM practices released by public and private sector partners globally (phase III)											
All	28. Numbers of Policies/ Regulations/ Administrative Procedures Analyzed (Stage 1)		See Annex 1a.	50	34	35	51	50	153	50	35	35
All	29. Number of policies / regulations / administrative procedures drafted and presented for public/stakeholder consultation (Stage 2)		See Annex 1a.	0	10	10	0	2	11	2	15	3

CRPs concerned by this indicator	Indicator	Deviation narrative (if actual is more than 10% away from target)	Comment and explanations	2012		2013		2014		2015		2016
				Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
All	30. Number of policies / regulations / administrative procedures presented for legislation (Stage 3)		See Annex 1a.	10	15	8	3	5	11	3	2	3
All	31. Number of policies / regulations / administrative procedures prepared passed/approved (Stage 4)		See Annex 1a.	0	NA	7	0	3	6	3	10	3
All	32. Number of policies / regulations / administrative procedures passed for which implementation has begun (Stage 5)		See Annex 1a.	5	6	6	1	1	8	3	6	3
All	33. Number of hectares under improved technologies or management practices as a result of CRP research		See Annex 1a.		NA	NA	N/A	NA	NA	NA	NA	NA

CRPs concerned by this indicator	Indicator	Deviation narrative (if actual is more than 10% away from target)	Comment and explanations	2012		2013		2014		2015		2016
				Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
All	34. Number of farmers and others who have applied new technologies or management practices as a result of CRP research		See Annex 1a.		NA	NA	N/A	NA	NA	NA	NA	NA

Annex 1a: Additional Documentation regarding Indicators 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 18, 28, 29, 30, 31, 32

Indicator 1

List of PIM flagship products:

1. Book "Knowledge driven Development: Private extension and global lessons"
2. Collection of articles and briefs related to the Volunteer Farmer Trainer (VFT) approach in Kenya, Rwanda, and Uganda
3. Special issue of *European Journal of Development Research* on public investment in and for agriculture
4. Book "African youth and the persistence of marginalization"
5. Book "Macroeconomics, agriculture, and food security: A guide to policy analysis in developing countries"
6. Book "Economics of land degradation and improvement - A global assessment for sustainable development"
7. Special issue of *Journal of Gender, Agriculture and Food Security* on gender and policies, markets, and institutions (Part 1)
8. Joint FAO/IFPRI-PIM publications on gender and land statistics (technical note and infographic)
9. Report "Workshop on best practice methods for assessing the impact of policy-oriented research: Summary and recommendations for the CGIAR"
10. Report "Ex post impact assessment review of IFPRI's research program on social protection, 2000–2012"

Indicators 2 and 3

Given that the PIM flagship products are publications and did not include the implementation of programs, it is not possible for them to have an explicit target of women farmers or natural resource managers. Thus, we interpreted Indicator 2 as "focuses on women farmers or natural resource managers".

Similarly, the PIM flagship products do not lend themselves to impact assessment, and thus it is not possible for them to be assessed for likely impact or gender-disaggregated impact. Thus, we interpreted Indicator 3 as "includes gender analysis".

Flagship product (see Indicator 1)	Has explicit target of women farmers/NRM (Indicator 2)	Has been assessed for likely gender-disaggregated impact (Indicator 3)
Book "Knowledge driven Development: Private extension and global lessons"	No	No
Collection of articles and briefs related to the Volunteer Farmer Trainer (VFT) approach in Kenya, Rwanda, and Uganda	Yes MEAS Technical Note synthesizes findings from national assessments of farmer-to-farmer extension programs in Cameroon, Kenya, and Malawi, finding that in Kenya and Malawi where governments have targets for the percentage of women employees, non-state actors generally adopt the same targets for lead farmers. Kenya: 33% of field staff and 44% of lead farmers are women. East Africa Dairy Development Project (EADD) in Uganda: 5% of profession staff and 33% of lead farmers are women. Malawi: 21% of government field staff and 44% of lead farmers working with national extension service are women. Men and women lead farmers trained approximately the same number of farmers, but women lead farmers trained more women.	Yes Good practice note 4 focuses on "Integrating Gender into Rural Advisory Services." Paper on "Assessing the Effectiveness of Volunteer Farmer Trainer Approach in Dissemination of Livestock Feed Technologies in Kenya vis-à-vis Other Information Sources" disaggregates results by sex and household type. Policy Brief on "Volunteer Farmer Trainers Support Improving Farming Practices in Uganda" identifies extent to which VFTs were reaching female and male farmers and describes innovative approaches to understand different needs of male and female farmers in Uganda, Kenya, Rwanda, and Tanzania. MEAS Technical Note assesses gender balance of farmer-to-farmer extension programs (staff and farmer trainers) in 3 countries.
Special issue of *European Journal of Development Research* on public investment in and for agriculture	No	No

Flagship product (see Indicator 1)	Has explicit target of women farmers/NRM (Indicator 2)	Has been assessed for likely gender-disaggregated impact (Indicator 3)
Book "African youth and the persistence of marginalization"	Yes The introduction highlights that studies on youth generally ignore women, despite the fact that they constitute the majority of Africa's youth and have slightly higher unemployment rates than young men. This book addresses young women's role among Africa's youth, to varying degrees in every chapter. Descriptions of the book on the IFPRI and UNU-WIDER websites include "gender" or "women" as keywords.	Yes Chapter 2 disaggregates male and female labor force participation rates and unemployment rates. Chapter 3 demonstrates that males are more likely to protest than females. Chapter 4 discusses the role of the Pentecostal faith in shifting gender roles and norms, the sexual and marital practices of young men and women and the gendered nature of HIV/AIDS, and young men and women's experiences of urban public space. Chapter 5 presents a gendered analysis of mining settlements in Tanzania, including discussions of family formation and gender differences in migration, childcare, and schooling. Chapter 6 discusses transformative work for women – and its role in achieving gender equity – as well as the expectations that women will focus on household food security and welfare, and the implications this may have for their interest and/or ability to engage in entrepreneurship. Chapter 7 describes a gender dimension of technical, vocational education, and training. Chapter 8 shows the proportion of men in the Labour Market Entry Survey and regressions control for sex of respondent.
Book "Macroeconomics, agriculture, and food security: A guide to policy analysis in developing countries"	No Although the book discusses the importance of women and infant nutrition programs, women's empowerment programs, and women's education for agricultural growth and productivity, food security, and poverty alleviation, it does not explicitly target or focus on women farmers or natural resource managers.	Yes The book discusses gender disaggregation of indicators of food insecurity, labor markets (unemployment, underemployment, and labor force participation), and in CGE models.
Book "Economics of land degradation and improvement - A global assessment for sustainable development"	Yes The introduction and the chapter on "Economics of Land Degradation in Sub-Saharan Africa" emphasize the need for women's tenure security, recommending long-term strategies for	Yes A study in Niger compares influence of endowments of family male and female labor on soil fertility management practices, finding that male labor increases adoption of purchased inputs.

Flagship product (see Indicator 1)	Has explicit target of women farmers/NRM (Indicator 2)	Has been assessed for likely gender-disaggregated impact (Indicator 3)
	improving women's access to land under customary tenure and establishing land markets as a short-term strategy for increasing women's access to land. Several studies ensure that women are represented in focus group discussions. A study in Ethiopia highlights women's lack of education and empowerment to control their own fertility as a major issue for land degradation and poverty.	A study in Senegal finds that plots managed by women are less likely to be sustainably managed, probably due to resource constraints faced by women. Note: Many of the studies also control for sex of household head in regression analysis, but we do not consider this gender analysis.
Special issue of *Journal of Gender, Agriculture and Food Security* on gender and policies, markets, and institutions (Part 1)	Yes	Yes
Joint FAO/IFPRI-PIM publications on gender and land statistics (technical note and infographic)	Yes	Yes

Flagship product (see Indicator 1)	Has explicit target of women farmers/NRM (Indicator 2)	Has been assessed for likely gender-disaggregated impact (Indicator 3)
Report "Workshop on best practice methods for assessing the impact of policy-oriented research: Summary and recommendations for the CGIAR"	No The report acknowledges that policies directed at specific segments of the population, such as women, may require the creation of new datasets, but women farmers and natural resource managers are not the focus of the report.	Yes The report discusses one study which tested the effects of prices, information, and availability of improved seed on adoption of improved seed in the DRC, stratified both by gender and market access. The report also acknowledges the difficulties of describing policy change in normative terms, such as more gender-equitable, noting that these types of assessments require more analytical effort, and occasionally a longer period of time before an evaluation can be conducted.
Report "Ex post impact assessment review of IFPRI's research program on social protection, 2000–2012"	Yes One of the main findings of the report, also featured in the PIM blog post and the brief about the report, is that a recent IFPRI evaluation of a World Bank-funded project in Bangladesh recommended a quota for female participants. Many of the transfer programs targeted women, especially mothers and pregnant women. An important goal of the PIM social protection research is to ensure that social protection programs meet the different needs of women, men, girls, and boys.	Yes Mexico's PROGRESA/Oportunidades conditional cash transfer program was assessed for its impact on women's status and intra-household relations.
% of flagship products:	**60%**	**80%**

Indicator 4

List of PIM tools:

1. IMPACT 3 web tool (beta version), and Report "The International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT): Model description for version 3"
2. Platform to visualize and compare the results of different climate scenarios and adaptation strategies on groundnut productivity in Andhra Pradesh, India
3. ASTI interactive tools for tracking agricultural R&D
4. Collection of good practice notes on extension
5. Kyrgystan Spatial (new), Arab Spatial (updated), Iraq Spatial (updated), Yemen spatial (updated)
6. SPEED database (third edition)
7. Collection of Social Accounting Matrices (updated)
8. Food Security Portal for Africa south of the Sahara (new), Food Security Portal for Latin America and the Caribbean (new), Food Security Portal for India (updated)
9. MIRAGRODEP (updated)
10. Website on measuring policy environment for agriculture (updated)
11. Tools4valuechains.org (updated)
12. Technical Platform on the Measurement and Reduction of Food Loss and Waste
13. Women's Empowerment in Agriculture Index (WEAI) (updated)
14. Engendering Data blog (updated)

Indicators 5 and 6

Given that the PIM tools did not include the implementation of programs, it is not possible for them to have an explicit target of women farmers or natural resource managers. Thus, we interpreted Indicator 2 as "focuses on women farmers or natural resource managers".

Similarly, the PIM tools do not lend themselves to impact assessment, and thus it is not possible for them to be assessed for likely impact or gender-disaggregated impact. Thus, we interpreted Indicator 3 as "includes gender analysis".

Tool (see Indicator 4)	Has an explicit target of women farmers/NRM (Indicator 5)	Has been assessed for likely gender-disaggregated impact (Indicator 6)
IMPACT 3 web tool (beta version), and Report "The International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT): Model description for version 3"	No	No Although the tool does not facilitate analysis of gender-disaggregated impact, it does use sex-disaggregated variables to calculate the percentage of undernourished children younger than five.
Platform to visualize and compare the results of different climate scenarios and adaptation strategies on groundnut productivity in Andhra Pradesh, India	No	No
ASTI interactive tools for tracking agricultural R&D	Yes The ASTI website states that "Gender balance in agricultural R&D is important, given that women researchers offer different insights and perspectives that can help research agencies more effectively address the unique and pressing challenges of female farmers."	Yes ASTI presents data on the gender balance in agricultural research and development for each country, and allows for comparisons of this data across countries.
Collection of good practice notes on extension	Yes Several of the good practice notes highlight the importance of targeting women as both providers and recipients of extension.	Yes Several of the good practice notes present gender analyses. In particular, Note 4 "Integrating Gender into Rural Advisory Services" reviews the impact of agricultural programs that targeted women, as compared to "gender blind" programs, finding that programs targeted to women improved the nutritional status of women and children and increased the gender equality of asset distribution.

Tool (see Indicator 4)	Has an explicit target of women farmers/NRM (Indicator 5)	Has been assessed for likely gender-disaggregated impact (Indicator 6)
Kyrgyzstan Spatial (new), Arab Spatial (updated), Iraq Spatial (updated), Yemen spatial (updated)	Yes A press release on Kyrgyzstan Spatial quotes the remarks of Dr. Kamiljon Akramov, Research Fellow and Leader of Central Asia Program, at the launch of the new platform. He stated, "Economic development plays an important role in achieving food and nutrition security, especially for young children and women." This focus is reflected in the data presented in the tools for Kygyzstan, Iraq, and Yemen, which includes information on reproductive health (breastfeeding, contraceptive use, antenatal care, access to health facilities) and maternity allowances.	Yes All Spatials include sex-disaggregated data on education.
Statistics of Public Expenditure for Economic Development (SPEED) database	No	No
Collection of Social Accounting Matrices (updated)	No	No The Bangladesh SAM, which utilizes sex-disaggregated labor data, has been completed and is now being documented for dissemination. It is not yet available online.
MIRAGRODEP (updated)	No	No
Website on measuring policy environment for agriculture (updated)	No	No
Tools4valuechains.org (updated)	Yes The Value Chain Knowledge Clearinghouse states that it "aims to help practitioners/researchers/specialists expand labor opportunities for women".	Yes The Knowledge Clearinghouse features six tools for gender analysis of value chains, including the Women's Empowerment in Agriculture Index (WEAI), a toolkit on collecting gender and assets data in qualitative and

Tool (see Indicator 4)	Has an explicit target of women farmers/NRM (Indicator 5)	Has been assessed for likely gender-disaggregated impact (Indicator 6)
		quantitative program evaluations from the Gender, Agriculture & Assets Project (GAAP), a toolkit on collecting gender and assets data, time use analysis, and working conditions/access to work, the Equality Index, a gender wage gap tool, and the Duncan Index.
Technical Platform on the Measurement and Reduction of Food Loss and Waste	No	No
Women's Empowerment in Agriculture Index (WEAI) (updated)	Yes	Yes
Food Security Portal for Africa south of the Sahara (new), Food Security Portal for Latin America and the Caribbean (new), Food Security Portal for India (updated)	No	Yes Nutrition country profiles disaggregate several health and nutrition indicators by sex, and present gender-related underlying determinants of nutrition. Various blog posts address the role of gender in food security.
Engendering Data blog (updated)	Yes	Yes
% of tools:	**43%**	**50%**

Indicator 7

The number of open-access databases we arrived at for 2015 is 75, within the 10% range of the target of 80. The scope of the PIM databases ranges from socio-economic survey data to spatial data on crop production systems, statistics on public expenditures, prices of commodities, and social accounting matrices.

In the absence of guidance from the Consortium on what should be counted as an "open-access database", we asked activity leaders to report individual, self-standing, datasets that were publicly accessible online in 2015 (whether some contents was added to them or not in 2015). The value of this indicator is probably under-estimated. In the future it would be important for the Consortium to provide precise guidelines about estimating this indicator in order to ensure that numbers reported are consistent between CRPs.

Indicator 8

As for the previous indicator, we faced some challenges in estimating the value of this indicator. No guidance is provided about how to define the type of user to be considered (unique users? repeat users?) For some databases, numbers of users are not recorded, and only data on numbers of hits and/or page views is available. In order to avoid adding up apples and oranges, we interpreted the indicator as "number of unique users", and limited our count to databases for which this value is available; therefore, the value of this indicator is under-estimated. Even so, the 2015 value (449,311 unique users) is much higher than the target (50,000); this reflects the inclusion of 405,701 users of the database on prices of commodities on the new IFPRI Food Security Portal.

Indicator 9

The list of PIM 2015 ISI publications is available on the PIM website. Please note that this list includes articles printed on paper in 2015 and articles first made available online in 2015.

Indicator 10

List of value chains analyzed:

Country/region	Commodity/value chain component	Center
Various developing countries	Fish	WorldFish
South Asia	Pulses	ICRISAT
Southern Africa	Beef	ILRI
Bangladesh	Agricultural Insurance	IFPRI
Bolivia	Palm heart	Bioversity
Botswana	Beef	ILRI
Burkina Faso	Livestock	ILRI
Cameroon	Safou	ICRAF
Cameroon	Kola nuts	ICRAF
China	Dairy	IFPRI
China	Potato	IFPRI
Cote d'Ivoire	Cocoa	ICRAF
Ecuador	Potato	CIP
Ethiopia	Coffee	IFPRI
Ethiopia	Maize	IFPRI
Ethiopia	Barley	IFPRI
Ethiopia	Wheat	IFPRI
Ethiopia	Teff	ICARDA, IFPRI
Ethiopia	Tractor services	IFPRI, CIMMYT
Ethiopia	Fertilizer	IFPRI
Ghana	Cocoa	IFPRI
Ghana	Goat	IFPRI
Ghana	Maize	IFPRI
Ghana	Poultry	IFPRI
Ghana	Rice	IFPRI
Ghana	Soybean	IFPRI
Ghana	Tractor services	IFPRI, CIMMYT
Global	Biofuels	IFPRI
India	Oilseeds	IFPRI
India	Biofuels	IFPRI
Kenya	Sorghum beer	ICRISAT
Kenya	Dairy	ICRAF
Kenya	Tractor services	IFPRI, CIMMYT
Kyrgyzstan	Dairy	IFPRI
Malawi	Groundnut	ICRISAT, IFPRI
Malawi	Soya	IFPRI

Country/region	Commodity/value chain component	Center
Malawi	Maize	IFPRI
Malawi	Fertilizer	IFPRI
Mozambique	Goat	ILRI
Nepal	Ginger	IFPRI
Nigeria	Rice	IFPRI
Nigeria	Cocoa	IFPRI
Nigeria	Cassava	ICRISAT, IITA
Nigeria	Agricultural credit	IFPRI
Nigeria	Tractor services	IFPRI, CIMMYT
Peru	Camu camu	ICRAF
Peru	Potato	CIP
Senegal	Onion	IFPRI
Senegal	Livestock	ILRI
Somalia	Livestock	ILRI
Uganda	Potato	CIP
Uganda	Banana	CIP
Uganda	Sweetpotato	CIP
Uganda	Cassava	CIP
Uganda	Maize	IFPRI
Uganda	Beans	IFPRI
Uganda	Fertilizer	IFPRI
Uganda	Herbicides	IFPRI

Indicators 13-14

The total number of trainees in short term programs in 2015 is 9,346, which is higher than the target (9,000); with regards to sex-disaggregation, the number of female trainees (3,831) is higher than the target (3,000), whereas the number of male trainees (5,515) is lower than the target (6,000). This reflects an increased proportion of female trainees (40%) compared to 2014 (35%).

The totals provided do not include online trainings, which had a significant reach. For example, in 2015 there were 2,500 views of the English version and 1,400 views of the French version of the online GAMS training on “Analysis of global and regional trade policy agreements and unilateral trade policy reforms”.

In the few cases where the number of trainees disaggregated by sex was not available, we estimated these by using the average proportion of female/male across all other trainings (40% female, 60% male).

Trainings were provided in various subject matters, among which: foresight/crop/CGE modeling, data collection, value chain analysis methods, use of the Women’s Empowerment in Agriculture Index, statistical tools, policy analysis and communication, impact evaluation.

Indicators 15-16

The total number of trainees in long term programs in 2015 is 135, which is lower than the target (200). This reflects the fact that several activities which involved a large number of long term trainees came to an end in 2015. There are approximately as many female long term trainees as male long term trainees, which is a change compared to 2014 – when two thirds of long term trainees were men.

Indicator 18

List of technologies assessed:

A) Technologies/practices assessed as part of the foresight work (ex ante assessment using IMPACT and DSSAT) (17):

Crop	Trait	Center	Countries
Maize	Drought tolerance	CIMMYT	Angola, Benin, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Uganda, United Republic of Tanzania, Zambia, Zimbabwe
	Heat tolerance		Bangladesh, India, Nepal, Pakistan
Wheat	Drought tolerance	CIMMYT	Iran, Turkey
	Heat tolerance		India, Pakistan
	Drought and heat tolerance		Argentina, South Africa
Rice	Drought tolerance	IRRI	Bangladesh, Cambodia, India, Lao People's Democratic Republic, Nepal, Sri Lanka, Thailand
Potatoes	Drought tolerance Heat tolerance Drought and heat tolerance	CIP	Bangladesh, China, India, Kyrgyzstan, Nepal, Pakistan, Tajikistan, Uzbekistan, Vietnam
Sorghum	Drought tolerance	ICRISAT	Burkina Faso, Eritrea, Ethiopia, India, Mali, Nigeria, Sudan, United Republic of Tanzania
Groundnut	Drought tolerance Heat tolerance Drought and heat tolerance, high yield	ICRISAT	Burkina Faso, Ghana, India, Malawi, Mali, Myanmar, Niger, Nigeria, Uganda, United Republic of Tanzania, Vietnam
Cassava	Scenarios include impact of mealybug and control methods	CIAT	China, India, Indonesia, Lao People's Democratic Republic, Myanmar, Thailand

B) Other technologies/practices assessed (52):

Number of technologies	Country/region	Technology/practice
6	Ethiopia, Ghana, Malawi, Mali, Tanzania, Zambia	Sustainable intensification
2	East Africa	Quality protein maize adoption, climbing beans adoption
2	Sub-Saharan Africa	Water efficient technologies, energy efficient technologies
1	Sub-Saharan Africa	Water efficient technologies (gender angle)
2	Asia	Improved groundnut and chickpea adoption
1	Bangladesh	Agile potato
1	Bangladesh	Drought/stress tolerant rice
1	Bangladesh	Irrigation
2	Benin	Yam intensification, sweet potato intensification
1	Ethiopia	Soil and water conservation
1	Ethiopia	Mechanization
1	Ethiopia	Improved wheat seed and agronomic practices
1	Ghana	Improved maize varieties
1	Ghana	Integrated soil fertility management
1	Ghana	Mechanization
1	Ghana	Irrigation
1	Ghana	Pest management
2	India	Improved barley and lentil adoption
1	India	Laser land levelling
1	India	Hybrid rice
1	India	Hybrid pearl millet
1	India	Wheat variety turnover
1	Kenya	Fodder shrubs and other livestock feeds
1	Malawi	Crop-livestock intensification
1	Malawi	Insect-resilient cowpea
1	Malawi	Conservation agriculture
1	Malawi	Irrigation
1	Mali	Pest management
1	Nepal	Mechanization
1	Nigeria	Mechanization
2	Nigeria	Improved yam and cassava adoption
1	Nigeria	Rice intensification
1	Nigeria	Early maturing soybean adoption
1	Tanzania	Various natural resource management practices
1	Tunisia	Groundwater management

Number of technologies	Country/region	Technology/practice
1	Uganda	Fodder shrubs
1	Uganda	Improved seeds
2	Uganda	Rice and potato intensification
1	Vietnam	Community forest management
1	Zambia	Fertilizer trees

Total number of technologies: 69

Indicators 19-20

Number of technologies	Country	Technologies	Has an explicit target of women farmers/NRM (Indicator 19)	Has been assessed for likely gender-disaggregated impact (Indicator 20)
17		All technologies part of the ex ante assessment using IMPACT and DSSAT	No	No
6	Ethiopia, Ghana, Malawi, Mali, Tanzania, Zambia	Sustainable intensification (Africa RISING)	Yes The Africa RISING website states that "the overall purpose of Africa RISING is to provide pathways out of hunger and poverty for small holder families through sustainably intensified farming systems that sufficiently improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base." Participatory research methods include extensive consultation with farmers (particularly women) throughout project design and implementation. One of the program's development objectives focuses on decreasing the poverty and improving the nutrition of mothers.	Yes IFPRI is conducting the impact assessment of Africa RISING, which will include an evaluation of whether the program has achieved its gender-focused objectives. Numerous briefs, blogs, events, and reports focus on the role of gender in Africa RISING.
2	East Africa	Climbing beans adoption Quality protein maize adoption	No	Yes The technology tracking survey explicitly asks the gender of farmers who adopted the target technologies. Analysis not yet conducted.
2	Sub-Saharan Africa	Water efficient technologies Energy efficient technologies	No	No
1	Sub-Saharan Africa	Water technologies with gender angle	Yes	Yes
2	Asia	Improved groundnut and checkpea adoption	No	No

Number of technologies	Country	Technologies	Has an explicit target of women farmers/NRM (Indicator 19)	Has been assessed for likely gender-disaggregated impact (Indicator 20)
1	Bangladesh	Agile potato	No	Yes The researchers propose to collect gender-disaggregated data on labor demand for crop production, crop choice, variety choice, household consumption and expenditures, and crop use in the household or market. The data will be used to better calibrate the models and simulate the performance of the system.
1	Bangladesh	Drought/stress tolerant rice	No	Yes Book chapter on "Adoption of Stress-Tolerant Rice Varieties in Bangladesh" analyzes education and literacy levels of men and women in rice farm households. (It also reports that female-headed households are more likely to adopt CSISA varieties than other household types, although this is not considered gender analysis.)
1	Bangladesh	Irrigation	Yes Study based on series of focus group Discussions conducted with 60 women and 49 men. Paper focuses on understanding livelihood changes of men and women.	Yes Study analyzes gender differences in rankings of livelihood activities and perceptions of future water-related challenges.
2	Benin	Yam intensification Sweet potato intensification	No	Yes There is a strong assumption that yam-bean intensification systems have expected differential impacts on the nutrition status of most vulnerable household members (pregnant women and children under 5) due to the expected increase in protein and iron consumption that will contribute to reduce anemia. This study proposes to assess the heterogeneity of impacts, but has not yet collected data.
1	Ethiopia	Soil and water conservation	No	No

Number of technologies	Country	Technologies	Has an explicit target of women farmers/NRM (Indicator 19)	Has been assessed for likely gender-disaggregated impact (Indicator 20)
1	Ethiopia	Mechanization	No	No However, one research note points out that agricultural engineers in Bangladesh have designed and produced tools, such as maize shellers, that are especially beneficial to women farmers due to their involvement in post-harvest processing.
1	Ethiopia	Improved wheat seed and agronomic practices	Yes Because researchers wanted to ensure that women farmers were represented in the treatment group, women farmers make up 20% of the full package treatment group, but only 10% of the marketing only group and 8% of the control group.	Yes The study compares the effects of the intervention on the yields of women and men farmers.
1	Ghana	Improved maize varieties	No	No
1	Ghana	Integrated soil fertility management	No	No
1	Ghana	Mechanization	No	Yes Study on the “Impact of Ghana’s agricultural mechanization services center program” uses the farmer’s gender as an explanatory variable in model, and analyzes interactions between gender and membership as well as gender and full-time farmer status.
1	Ghana	Irrigation	Yes Discusses opportunity for those engaged in flood recession agriculture, and especially women, to profit from vegetable cultivation.	No
1	Ghana	Pest management	Yes Researchers intentionally selected participatory methods that make women’s roles as farmers more visible than other methods. These methods allowed them to work with women to document their perspectives, knowledge, and productive and reproductive activities.	Yes Study on “Mapping gendered pest management knowledge, practices, and pesticide exposure pathways” explores gender differences in farmers’ practices, perceptions, and knowledge of pesticides and other pest management practices in tomato growing regions of Ghana and Mali.

Number of technologies	Country	Technologies	Has an explicit target of women farmers/NRM (Indicator 19)	Has been assessed for likely gender-disaggregated impact (Indicator 20)
2	India	Improved barley cultivar adoption Improved lentil cultivar adoption	No	No
1	India	Laser land levelling	Yes In order to conduct a gendered analysis of social networks, the study interviewed 335 women in male-headed households who identified themselves as the primary female decision makers.	Yes A study conducted with the Gender, Agriculture, and Asset Project (GAAP) analyzed formation and composition of men's and women's social networks and how the gendered dimensions of information acquisition play a role in household decision making on adoption of laser land leveling practices.
1	India	Hybrid rice	No	No
1	India	Hybrid pearl millet	No	No
1	India	Wheat variety turnover	No	No
1	Kenya	Fodder shrubs and other livestock feeds	No The project did not specifically target women, but took their views into account.	Yes Collected sex-disaggregated data and compared uptake of feed technologies between men and women farmers. Also, looked at preferences of fodder technologies by men and women farmers in addition to differences in access to information between men and women farmers.
1	Malawi	Crop-livestock intensification	No	No However, another deliverable that is part of this project is a working paper (written in collaboration with a gender expert) that identifies the important "entry points" for gender that matter in the analysis of sustainable intensification, and points to useful literature and methodologies that can be built upon in further empirical work.
1	Malawi	Insect-resilient cowpea	No	No

Number of technologies	Country	Technologies	Has an explicit target of women farmers/NRM (Indicator 19)	Has been assessed for likely gender-disaggregated impact (Indicator 20)
1	Malawi	Conservation agriculture	No	Yes Presents summary statistics for households with positive vs. negative marginal willingness to pay to adopt conservation agriculture practices, including variables for the age and sex composition of households and the amount of male and female family and hired labor.
1	Malawi	Irrigation	Yes Book chapter hypothesizes that if irrigation is used to produce higher-value crops, this additional income may improve food security, and if women control a significant portion of this income, this is likely to result in additional nutritional benefits. The chapter also highlights that women and children – the two populations most vulnerable to malnutrition – are very susceptible to the effects of seasonality.	No
1	Mali	Pest management	Yes Researchers intentionally selected participatory methods that make women's roles as farmers more visible than other methods. These methods allowed them to work with women to document their perspectives, knowledge, and productive and reproductive activities.	Yes Study on "Mapping gendered pest management knowledge, practices, and pesticide exposure pathways" explores gender differences in farmers' practices, perceptions, and knowledge of pesticides and other pest management practices in tomato growing regions of Ghana and Mali.
1	Nepal	Mechanization	No	No (Disaggregates findings by gender of household head.)
1	Nigeria	Mechanization	No	Yes Study analyzes the relationship between men's and women's education status and their likelihood of adopting tractor services as well as tractor use intensity.

Number of technologies	Country	Technologies	Has an explicit target of women farmers/NRM (Indicator 19)	Has been assessed for likely gender-disaggregated impact (Indicator 20)
2	Nigeria	Improved yam adoption Improved cassava adoption	No	No However, the study does assess whether the gender of the household head influences decisions to plant pest- and disease-resistant crops to cushion climate change effects.
1	Nigeria	Rice intensification	No	Yes The study disaggregates results by the sex of the plot manager, finding that female plot managers were more likely to adopt urea deep placement (UDP) for rice production than male managers.
1	Nigeria	Early maturing soybean adoption	No	No
1	Tanzania	Various natural resource management practices	Yes Paper highlights importance of including both male and female perspectives in assessments of criteria and upgrading strategies for enhancing food security.	Yes One of the criteria for assessing upgrading strategies for food security was whether a strategy had positive influences on gender issues.
1	Tunisia	Groundwater management	No	No
1	Uganda	Fodder shrubs	No The project did not specifically target women, but took their views into account.	Yes Collected sex-disaggregated data and compared uptake of feed technologies between men and women farmers. Also, looked at preferences of fodder technologies by men and women farmers in addition to differences in access to information between men and women farmers.

Number of technologies	Country	Technologies	Has an explicit target of women farmers/NRM (Indicator 19)	Has been assessed for likely gender-disaggregated impact (Indicator 20)
1	Uganda	Improved seeds	No	Yes Baseline survey included modules on crop choice disaggregated by gender to allow researchers to study the role of gender in adoption of high-quality inputs. Study will measure whether the impact of the e-verification encouragement and price treatment arms vary by the gender of the primary agricultural decision maker.
2	Uganda	Rice and potato intensification	No	No Includes analysis of whether the gender of the household head influences adoption. Highlights that female headship is much more common in potato growing areas than in rice growing areas.
1	Vietnam	Community forest management	No	No
1	Zambia	Fertilizer trees	Yes Farmers' recruitment was based on willing participation for men and women through local project sensitization meetings, and consensus building exercises with extension officers knowledgeable on their areas of operation.	No
% of technologies:			**23%**	**38%**

Indicators 28-32

Act #	Activity/project title	Policy	Country	Stage	Number of policies
Flagship 1					
97	Global Futures and Strategic Foresight	National climate change adaptation policies and strategies	Philippines	2	1
	HarvestChoice	National agricultural investment plan	Tanzania	2	1
	Program for Biosafety Systems	National Biosafety Bill	Nigeria	4	1
	Program for Biosafety Systems	Release of genetically modified varieties of maize	Vietnam	5	1
	Program for Biosafety Systems	Biosafety regulations	Tanzania	2	1
	Program for Biosafety Systems	Biosafety legislation	Ghana	3	1
	Program for Biosafety Systems	National Biotechnology and Biosafety Bill	Uganda	3	1
	Program for Biosafety Systems	GM seed import procedures	Malawi	5	1
	Program for Biosafety Systems	GM cotton regulations	Malawi	1	1
	Program for Biosafety Systems	COMESA policy on biotechnology and biosafety	Eastern and Southern Africa	5	1
	Cereal System Intensification for South Asia	Seed policies and regulations	Nepal	2	1
	Cereal System Intensification for South Asia	Seed policies and regulations	Bangladesh, India	1	2
128	Evidence and outreach for strengthening advisory service and knowledge exchange functions	Extension policy	Malawi	1	1
	Pakistan Strategy Support Program and Act	Seed sector legislation	Pakistan	4	1
	Pakistan Strategy Support Program	Reforms of the Pakistan Agricultural Research Council and research system	Pakistan	4	1
Flagship 2					
37	Tracking and measuring policy and intervention impact at local level – a spatial tool	Food subsidies	Egypt	5	1
37	Tracking and measuring policy and intervention impact at local level – a spatial tool	National Food Security Strategy	Yemen	1	1
41	Improving within- and cross-country agricultural public expenditure metrics	Public expenditure allocations	Nigeria	4	1
	Pakistan Strategy Support Program	Fertilizer subsidies	Pakistan	4	1

Act #	Activity/project title	Policy	Country	Stage	Number of policies
	Malawi Strategy Support Program	Control of Goods Act	Malawi	2	1
	Malawi Strategy Support Program	OilSeeds Transformation Program	Malawi	2	1
	Ethiopia Strategy Support Program	Growth and Transformation Plan II	Ethiopia	4	1
	Ghana Strategy Support Program	Decentralization policies	Ghana	1	1
	Ghana Strategy Support Program	Fertilizer Subsidy Programme	Ghana	1	1
148	Mechanization and agricultural transformation: South-South learning and knowledge exchange	Mechanization policy	Ghana, Nigeria, Kenya, Ethiopia	1	4
Flagship 3					
162	Analysis of global and regional trade policy agreements and unilateral trade policy reforms	Export subsidies	161 WTO members	2	1
162	Analysis of global and regional trade policy agreements and unilateral trade policy reforms	Economic Partnership Agreement EU WA: Free Trade Agreement between the European Union and West Africa		1	1
162	Analysis of global and regional trade policy agreements and unilateral trade policy reforms	Economic Partnership Agreement EU SADC: Free Trade Agreement between the European Union and Southern African Development Community		1	1
162	Analysis of global and regional trade policy agreements and unilateral trade policy reforms	Impact of multilateral and regional trade liberalization on Senegal	Senegal	1	1
162	Analysis of global and regional trade policy agreements and unilateral trade policy reforms	Transatlantic Trade and Investment Partnership	Developing countries	1	1
164	Global value chains for biofuels: challenges and opportunities	EU biofuel policies	EU	4	1
163	Coping with price volatility: trade policy options vs domestic interventions	Food Security Bill	India	1	1
126	Food value chain upgrading for food safety in transforming food markets	Food safety regulations	China	2	1
149	Exploring local food networks in Peru—a base for tool development and joint learning	Review of policies and program effects on local food systems	Peru	1	1

Act #	Activity/project title	Policy	Country	Stage	Number of policies
	Improving the Effectiveness of Policies and Strategic Investments in the Fertilizer Supply Chain for some African Countries taking into account the Global and Country level Market Structure and Constraints	Fertilizer policies	Burundi, Ethiopia, Kenya, Malawi, Mozambique, Nigeria, Senegal, Zambia	1	8
Flagship 4					
63	Innovative insurance products for the rural sector	Ministry of agriculture policy on supporting crop weather insurance	Uruguay	4	1
63	Innovative insurance products for the rural sector	State Agricultural Insurance Programs	India	1	1
69	Expanding the impact of social protection	Productive Safety Net Program	Ethiopia	5	1
69	Expanding the impact of social protection	Bolsa Familia cash transfer program	Brazil	1	1
	Impact Evaluation of National Rural Employment Guarantee Scheme in India	Mahatma Gandhi National Rural Employment Guarantee Scheme	India	1	1
		Community-Based Conditional Cash Transfers	Tanzania	1	1
69	Expanding the impact of social protection	Safety nets programme	Bangladesh	2	1
Flagship 5					
143	Securing the commons	National community seed bank policy	South Africa	4	1
143	Securing the commons	International Treaty on Plant Genetic Resources for Food and Agriculture		5	1
143	Securing the commons	Linked district and national level natural resource conservation, agricultural extension, and rural development policies	Uganda, Tanzania	1	2
143	Securing the commons	Community Forest Management Policy	Vietnam, Indonesia	2	2
154	Synthesis review of impacts of water and energy policies on water use efficiency in farming - equity implications	Prime Minister's Agricultural Irrigation Scheme	India	2	1
143	Securing the commons	Fisheries resource management regulations	Cambodia	1	1
44	What works to secure land tenure for women, youth and other vulnerable groups?	Community Land Delimitation Program	Mozambique	2	1

Act #	Activity/project title	Policy	Country	Stage	Number of policies
44	What works to secure land tenure for women, youth and other vulnerable groups?	Land Policy Initiative (LPI)	Africa	1	1
44	What works to secure land tenure for women, youth and other vulnerable groups?	Land Governance Assessment Framework (LGAF)	Africa	1	1
44	What works to secure land tenure for women, youth and other vulnerable groups?	Land tenure reforms	Uganda	2	1
44	What works to secure land tenure for women, youth and other vulnerable groups?	Systematic Land Tenure Regularization program in Ondo state	Nigeria	1	1
44	What works to secure land tenure for women, youth and other vulnerable groups?	Low-cost Rural land certification program	Ethiopia	4	1
95	Strategic foresight of promising ICARDA's agricultural technologies and management systems	Water pricing	Jordan	2	1

Total: Stage 1: 35; Stage 2: 15; Stage 3: 2; Stage 4: 10; Stage 5: 6

Total across stages: 68, above the target of 61. Differences between targets and actual numbers by stage reflect the difficulty of predicting the progression of policies from one stage to the next.