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Executive summary

Public policy, institutional design, and choices in public investment influence agricultural growth, poverty reduction, and stewardship of natural resources. Attainment of the System-Level Outcomes of CGIAR and the Sustainable Development Goals of the United Nations requires an environment that enables poor producers, consumers, and resource users to make decisions in their own and in the public’s interest. Returns to the portfolio of CGIAR as a whole are affected by the quality of policies and institutions. In many poor parts of the world, the environment impedes rather than enables development, resulting in persistent poverty, hunger, and deterioration of natural resources. The CGIAR Research Program (CRP) on Policies, Institutions, and Markets (PIM) provides targeted analysis to strengthen the evidentiary base for better policies, stronger institutions, and well-functioning markets.

PIM has completed a successful first phase. The recent independent evaluation of the program conducted under the auspices of the Independent Evaluation Arrangement of CGIAR concludes "that PIM has added sufficient value to the CGIAR’s research on policies, institutions, and markets to warrant the continuation of a CRP like PIM in the second round of CRPs [and] that the International Food Policy Research Institute (IFPRI) should continue to host the PIM Management Unit."

Africa south of the Sahara is the primary focus of the PIM program, with additional attention to South Asia, lagging areas of East Asia, and more modest engagement elsewhere. The key public goods resulting from PIM’s research are high-quality publications, new tools and methods, open-access datasets, improved design of development programs, options for policy reforms, and proposals to strengthen institutions. The users of these goods include researchers, development practitioners, funding agencies, governments at all levels, private sector firms, and the media. PIM maintains a strong focus on capacity development.

PIM achieves impact through four main pathways (at the global, national, and program or local levels, and through generation of research methods used more broadly within the relevant professions), as shown below.

*PIM’s impact pathways*

1. Global and regional policies and institutions
   - New insights and evidence that shift dominant perspectives on issues; agenda-setting
   - Assistance to developing country partners to participate in global processes

2. National policies and institutions
   - Response to specific demands of partners and clients; drawing on generalization of lessons from cross-country comparisons where relevant
   - Direct work with national governments and national research institutions to generate information useful to participants in policy processes (e.g., biosafety, social protection)

3. Program design and implementation; market innovations
   - Solution to market failures, assistance to programs to meet their objectives
   - Testing of innovations with NGOs, private sector and other implementation partners for direct uptake (e.g., value chains, insurance, asset transfers, community-based programs)

4. Research methods
   - New analytical tools and methods
   - Better analytical methods, metrics and evidence (e.g., innovative use of big data in policy analysis; remote sensing); new research methods and training in their applications to enhance capacity (e.g. value chain, gender)

PIM’s work is structured around six interrelated flagships.
Flagship 1 – Technological Innovation and Sustainable Intensification addresses prioritization of agricultural research, the institutional foundations for innovation, policies, including those in genetic resources, that promote or inhibit new science, and factors that determine the pace and extent of adoption of new technologies.

Flagship 2 – Inclusive Growth and Rural Transformation focuses on economic transformation in low- and middle-income countries, and particularly the implications for job creation for young men and women. Work within this flagship assists countries to track expenditures, analyze returns, benchmark their performance against other countries, and compare resulting growth and poverty reduction. A new line of research on the political economy of the policy process addresses the interface between science and policy.

Flagship 3 – Inclusive and Efficient Value Chains analyzes the changing international, regional, and local contexts for performance of agricultural markets, identifies interventions in value chains that increase efficiency and inclusion (particularly of poor and marginalized groups), and studies successful approaches to scaling up improvements in value chains.

Programs of social protection are primary instruments of resilience that complement interventions supporting growth. Flagship 4 – Social Protection Strategies and Programs studies how to improve the efficiency and broaden the scope of social protection programs. This flagship also addresses how sustainable provision of financial services to the poor (by improving access to credit, savings, money transfer, and agricultural insurance) can strengthen transfer programs and simultaneously reduce the need for them.

Flagship 5 – Governance of Natural Resources addresses the policy and institutional foundations for improved management of natural resources, both those held in common and those individually titled or held by households. Research evaluates the extent to which policy instruments and implementation lead to improved tenure security, and assesses governance mechanisms for inclusiveness and effectiveness in managing shared landscapes.

Structure of PIM’s flagships and clusters

During Phase 1, PIM has been recognized as a leader in rigorous gender research and development of tools and methods for this purpose; this leadership will be maintained in Phase 2. Gender continues to be mainstreamed throughout the PIM portfolio. In addition, Flagship 6 – Gender Equity and Agricultural Development designs tools and methods for broader application, establishes priorities within PIM’s
gender research agenda, and draws together separate research strands to form conclusions about how gender relations in aggregate affect agricultural productivity.

PIM fulfills its integrative functions within the CGIAR portfolio by assisting other CGIAR programs to identify synergies on policy and institutional matters, by developing common and shared messages on policy issues, by hosting communities of practice that draw together researchers working in other programs, and by representing CGIAR in selected global forums, such as the G20 discussions on agriculture and development. As noted in the recent external evaluation of PIM, the integrative function is constructive and an important element of risk management for the CGIAR system as a whole, since other programs do not have the breadth of vision on policy matters that is achieved under PIM.

Phase 2 of PIM builds on the successful first phase, and introduces several novel features. The tools for quantitative foresight modeling will be broadened to address additional quantitative outcomes (e.g., nutrition and poverty in addition to the present focus on hunger and resource use). The work on national policy will have a more explicit focus on jobs, especially for rural young people. The work on the political economy of the policy process (alternatively referred to as the science/policy interface) will be expanded in response to recommendations of the PIM evaluation, the Independent Science and Partnership Council, and the PIM Science Policy and Advisory Panel. The work on social protection and financial inclusion will examine bundling of products and services to explore implications for effectiveness. The gender work will examine the complexity of joint decisionmaking by men and women and implications for outcomes.

In Phase 2, linkages with the other CRPs will be strengthened and PIM will selectively deepen engagement with a limited number of external strategic partners.

PIM proposes a budget of $110 million in 2017, increasing gradually to $125 million in 2022, for a total of $695 million over the six years. The gender component of the PIM budget in 2017 is estimated at $20 million. Approximately 25 percent of PIM’s resources currently go to external partners, and this engagement is expected to continue.

PIM’s monitoring and evaluation system and approach to results-based management will continue the present practice of periodic ex-post evaluation of bodies of work, coupled with annual tracking of outputs and outcomes and indicators of the relevant Intermediate Development Outcomes (IDO) and Sub-IDOs. In addition, on a pilot basis, PIM management will calculate economic rates of return to streams of work within the program, both to address questions about the value of policy-oriented research and to develop new methods on this topic for the profession as a whole.
Note on the numbering of System-Level Outcomes (SLOs), Intermediate Development Outcomes (IDOs), and Sub-Intermediate Development Outcomes (Sub-IDO) used in this document

The numbering of the SRF IDOs and Sub-IDO used in this document reflects the system used by participants in the Cross CGIAR Research Program (CRP) Monitoring, Evaluation and Learning workshop held in Paris on June 30-July 2, 2015 to refer to the various components of the SRF results framework.

The first digit refers to the SLO, the second to the IDO, the third to the Sub-IDO. Numbers are given based on the order in which SLOs, IDOs, and Sub-IDOs appear in Figures 2 and 3 of the Strategy and Results Framework (SRF). Cross-cutting IDOs (Figure 3 of the SRF) are referenced with CC.

For example, Sub-IDO 1.3.2 is ‘Increased livelihood opportunities’, and Sub-IDO CC3.1.1 is ‘Increased capacity of beneficiaries to adopt research outputs’.

Please refer to Annex I for the complete numbering of SLOs, IDOs, and Sub-IDO.
Summary narrative

Overview – Why PIM?

Public policy and choices in public investment influence agricultural growth and poverty reduction (Johnston and Mellor 1961; Hayami and Ruttan 1971; Binswanger and von Braun 1991). Returns to investments in agricultural research depend on the policy environment in which they are undertaken (Alston et al. 1995, 1999, 2000; Anderson and Masters 2009; Evenson and Gollin 2003; Fan and Pardey 1997; Fan 2000; Fan et al. 2000). Fuglie and Rada (2013) find that eliminating policy distortions and institutional biases against agriculture and rural producers in Africa south of the Sahara would raise agricultural productivity approximately as much as would a doubling of investment of CGIAR in the subcontinent. At present, policies and institutions in many poor parts of the world are deficient, resulting in persistent poverty and hunger, rising obesity, and deteriorating natural resources. Moreover, food systems are transforming rapidly in both rich and poor regions due to urbanization, income growth, shifts in preferences, and falling costs of processing and trade. The new context occasions need for reform of policies and institutions to address changing circumstances. Research targeted toward key policy barriers or institutional bottlenecks at the national or regional level (such as export bans on staple foods) can achieve high leverage, since the number of people affected is large. A balanced CGIAR research portfolio must therefore include targeted analysis to strengthen the evidentiary base for better policies, stronger institutions, and well-functioning markets. The CGIAR Research Program (CRP) on Policies, Institutions, and Markets (PIM) provides leadership for this within CGIAR, and contributes to attainment of objectives of the development community more broadly, for example, the Sustainable Development Goals (SDGs).

PIM draws on a legacy of strong policy research and applications within CGIAR, and has completed a successful first phase. The recent independent evaluation of the program conducted under the auspices of the Independent Evaluation Arrangement of CGIAR concludes "that PIM has added sufficient value to the CGIAR's research on policies, institutions, and markets to warrant the continuation of a CRP like PIM in the second round of CRPs [and] that the International Food Policy Research Institute (IFPRI) should continue to host the PIM Management Unit." During the first phase, PIM achieved significant results in research and impact (see PIM's 2012–2013 report, 2013–2014 report, and 2014 report). IFPRI has provided strong leadership, as confirmed in the evaluation. The experience of the first phase of the program, together with the conclusions of the evaluation, has yielded numerous lessons relevant for the design of Phase 2, included in the sections of this document describing the PIM flagships. In transitioning to Phase 2, organic linkages with the other CRPs will be strengthened and formalized, as evidenced in Annex II.

PIM’s researchers contribute new knowledge, methods, and tools, and their work also clarifies the processes through which evidence influences policy outcomes. PIM is considered to be one of the global integrating (GI) programs, and fulfills its integrative role by representing CGIAR in selected international forums, convening communities of practice to develop and share rigorous research methods, and assisting other programs to identify synergies on policy and institutional matters, develop common and shared messages on policy issues, and prioritize activities. The key public goods resulting from PIM’s research are knowledge products embedded in high-quality publications; new tools and methods; open-access datasets; improved design of development programs; options for policy reforms; and proposals to strengthen institutions. The users of these goods include researchers, development practitioners, funding agencies, governments at all levels, private sector firms, and the media.

PIM’s work in Phase 2 will be defined and prioritized within a quantitative framework identifying countries and regions with high poverty headcounts, large poverty gaps, large numbers at risk of hunger and malnourishment, significant challenges in managing natural resources, and significant dependence on agriculture as a source of livelihoods. The poverty dimension of these multiple objectives is illustrated in Table 1 below. Of the slightly over 1 billion poor people in the world in 2015, 161 million are in East Asia, almost 400 million in South Asia, and 416 million in Africa south of the Sahara.

Many of Asia’s poor are not far from the $1.25/day poverty line. The poor in Africa south of the Sahara are both many and poorer than their Asian counterparts on average. Higher agricultural incomes alone are less
likely than in Asia to move them out of poverty, especially given continued rural population growth and reduction in farm size. Moreover, their ability to adopt new technologies is limited due to policy and institutional barriers, as well as poor allocation and execution of public spending. Social protection programs, particularly in response to disaster, are likely to be required in addition to investments needed to accelerate growth, since many of these countries are highly vulnerable to natural disaster and to adverse longer-term trends associated with climate change. Capacity to identify and implement the needed public policies is generally lower in Africa south of the Sahara than in East Asia or South Asia. CGIAR’s research may therefore have greater impact on poverty in Africa south of the Sahara through reducing the poverty gap and the poverty headcount, both of which are relevant for CGIAR’s objectives.

**Table 1. Distribution of population below $1.25 poverty line by region (millions), and top five countries within regions (figures refer to the most recent year for which data is available)**

<table>
<thead>
<tr>
<th>Sub-Saharan Africa</th>
<th>415.8</th>
<th>South Asia</th>
<th>399</th>
<th>East Asia &amp; Pacific</th>
<th>160.8</th>
<th>Latin America &amp; Caribbean</th>
<th>27.6</th>
<th>Europe &amp; Central Asia and Middle East &amp; North Africa</th>
<th>8.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>99.1</td>
<td>India</td>
<td>288.4</td>
<td>China</td>
<td>84.1</td>
<td>Brazil</td>
<td>8.9</td>
<td>Yemen, Rep.</td>
<td>2.0</td>
</tr>
<tr>
<td>Congo, Dem, Rep.</td>
<td>47.4</td>
<td>Bangladesh</td>
<td>65.4</td>
<td>Indonesia</td>
<td>39.5</td>
<td>Colombia</td>
<td>2.3</td>
<td>Egypt, Arab Rep.</td>
<td>1.3</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>32.0</td>
<td>Pakistan</td>
<td>22.1</td>
<td>Philippines</td>
<td>16.6</td>
<td>Guatemala</td>
<td>2.0</td>
<td>Iran, Islamic Rep.</td>
<td>1.0</td>
</tr>
<tr>
<td>Tanzania</td>
<td>27.9</td>
<td>Nepal</td>
<td>6.4</td>
<td>Vietnam</td>
<td>3.4</td>
<td>Venezuela, RB</td>
<td>1.8</td>
<td>Iraq</td>
<td>1.0</td>
</tr>
<tr>
<td>Madagascar</td>
<td>18.5</td>
<td>Sri Lanka</td>
<td>0.8</td>
<td>Lao PDR</td>
<td>2.1</td>
<td>Honduras</td>
<td>1.3</td>
<td>Morocco</td>
<td>0.8</td>
</tr>
</tbody>
</table>


In light of the above, Africa south of the Sahara is a primary focus of research for PIM, with additional attention to South Asia (where stunting remains very high) and lagging areas of East Asia, and more modest engagement elsewhere. More granular targeting for the full range of System Level Outcomes (SLOs) will be undertaken in developing the full proposal. Both global and local perspectives are needed; many of the poor and hungry in Africa south of the Sahara reside in coastal megacities, and their well-being is affected by developments in global food prices as well as achievements in domestic food production.

**PIM’s portfolio**

PIM’s work is structured around six interrelated flagships that reinforce the overall CGIAR portfolio, and jointly contribute to the three CGIAR SLOs:

- Flagship 1 – Technological Innovation and Sustainable Intensification
- Flagship 2 – Inclusive Growth and Rural Transformation
- Flagship 3 – Inclusive and Efficient Value Chains
- Flagship 4 – Social Protection Strategies and Programs
- Flagship 5 – Governance of Natural Resources
- Flagship 6 – Gender Equity and Agricultural Development

Interrelations among the flagships are addressed in brief in the paragraphs below. The flagships jointly address food systems, as well as their constituent parts. Flagship 1 takes a global systemic view of trends in production, consumption, resource use, climate, and technical innovation, and assesses how changes in one dimension of the system cascade throughout. Flagship 2 looks at the systemic interlinkage of sectors within national economies through computable general equilibrium (CGE) models and other tools to assess how policy and investment decisions will affect outcomes with regard to poverty, inclusion, and resource use. Flagship 3 focuses on systems of global and regional trade, and the performance of value chains as complex systems embedded within this larger context. Flagships 4, 5, and 6 address resilience, sustainability, and inclusiveness of systems, respectively.

Figure 1 presents the structure of PIM’s flagships and clusters of activities. More details about these can be found in later sections of this document.
The work in **Flagship 1 on Technological Innovation and Sustainable Intensification** acknowledges the centrality of agricultural innovation to income growth and food security for poor producers and consumers. Meeting the objectives of CGIAR and the SDGs depends on good prioritization of investments in agricultural research with regard to their impact on poverty, hunger, nutrition, and natural resources. Generation and release of new varieties and the diffusion of sustainable intensification practices (such as improved soil and water management) require supportive policies and regulations including the exchange, use and conservation of genetic resources. Maintaining adequate flows of investment into agricultural research requires data on volumes invested and analysis of returns to research. Modern tools for monitoring the performance of technologies provide valuable information to public officials and other decisionmakers in low-income countries for setting priorities. These topics are covered in Flagship 1. Novel elements include the enrichment of the tools for quantitative foresight modeling to tackle a wider set of questions, application of GIS technologies for targeting and tracking the geographic spread of adoption and mapping potential adaptation zones for scaling up, and political economy analysis to understand the constituencies for and against biotechnologies and policy options in genetic resources. Gender is addressed primarily through investigation of different constraints of men and women in adoption of technology and in accessing advice and information. Flagship 1 builds communities of practice within CGIAR, and links to other CRPs that undertake ex-ante and ex-post evaluations of technologies within their areas of focus.

Understanding the complexities of economic transformation in the 21st century, and particularly the implications for job creation for young men and women, is the topic of **Flagship 2 on Inclusive Growth and Rural Transformation**. The slowdown in global job creation means that many people who in the past would have exited rural areas will instead need to find opportunities on farms and in the rural service sector. CGIAR’s commitment to poverty reduction therefore requires understanding of how livelihood strategies for today’s rural poor are changing. Research clarifying new dimensions of transformation allows identification of entry points where policy reforms and decisions on public spending can make the process inclusive of the poor, marginalized, women, and young people. In addition to analysis of the process of transformation and intersectoral flows of resources, researchers under Flagship 2 track and evaluate the composition of budgets to help governments prioritize spending on needed public goods and services. Finally, decisions on policies and spending are made through processes for which evidence is but one input, and this flagship also addresses the political economy of the policy process—a new line of research that responds to the recommendation from the Independent Science and Partnership Council (ISPC), the Science Policy and Advisory Panel, and the external evaluation that PIM do more to address the interface between science and policy. The emphasis on employment and rural transformation, particularly employment of youth in Africa south of the Sahara, is also new. Gender is addressed through survey work identifying occupational choices.
of young men and women, and by analyzing how public spending benefits men and women differently. Flagship 2 will use evidence on successful innovations from other flagships to sharpen policy recommendations on transformation, and the team working on the political economy of policy processes will work with other flagships on specific topical areas, (e.g., on land tenure with Flagship 5).

Smallholders, even very poor ones, engage to varying degrees with markets. This is the topic of Flagship 3 on Inclusive and Efficient Value Chains. PIM’s work on value chains addresses the changing international, regional, and local contexts for performance of agricultural markets, including the role of transnational companies, the incorporation of poor producers into complex and demanding modern marketing arrangements, and the growing demand for processed products in low-income countries. Attention is accorded to analysis of trade, assessment of value chains at the national and local levels to identify weak points, and testing of interventions. Systematic analysis of the performance of value chains enables governments and private actors to prioritize remedial measures. PIM provides a common framework for specific studies of value chains undertaken by other CGIAR programs, for example, in the measurement of postharvest losses along the value chain and testing of cost-effective interventions to reduce them. A novel element is the application of techniques usually used for analysis of trade (measurement of distortions along the value chain) to prioritize interventions among commodities and along the chains. The flagship will also use a new method of classifying geographical zones according to their commercial potential in order to prioritize locations for interventions, and will launch a new line of research on scaling up. Analysis of labor participation along nodes of the value chain can clarify how men and women participate, and whether gender-based constraints affect opportunities and earnings. Work in Flagship 3 supports that of the first two flagships through the dependence of these on efficient marketing and inclusion of marginalized groups in commercial transactions, and in contributing to a comprehensive understanding of options for job creation. The new geographical priority-setting tool will also be used by Flagship 4 to understand to which areas the different social protection and financial instruments are best suited, and the potential of employment along value chains to allow people to graduate out of social safety net programs.

Even with new technologies and well-functioning value chains, many poor people will remain vulnerable. Safety nets and other measures of social protection will be needed, and this is the focus of Flagship 4 on Social Protection Strategies and Programs. The research seeks to understand how best to design programs in countries with sharp fiscal trade-offs between assistance to the vulnerable and investment in growth. Selection of instruments, targeting, cost-effectiveness, graduation, and complementarity with growth are primary topics for investigation. Financial inclusion can assist poor households to prepare for shocks through savings or rapid money transfers from relatives, and can also make public transfers faster and more efficient to manage. Novel work in this area explores the bundling of financial and other services to increase effectiveness, and testing mobile money-delivery mechanisms for social protection. The gendered nature of vulnerability, and instruments to address it, are major areas of focus. The work of Flagship 4 is linked with that of value chains (Flagship 3) and technology (Flagship 1), since some instruments of social protection can assist poor producers to participate more fully in markets or to adopt better technologies, and those relationships will be assessed.

Most rural livelihoods derive from use of natural resources. The poor are often unable fully to access or appropriate services of the ecosystems in which they live. Poorly defined rights and weak commitment to shared governance, in turn, lead to degradation of key resources and low provision of ecosystem services. Flagship 5 on Governance of Natural Resources addresses the policy and institutional foundations for improved management of natural resources, whether held in common or privately. Research evaluates the extent to which policy instruments and implementation lead to improved tenure security, and assesses governance mechanisms for inclusiveness and effectiveness in managing shared landscapes. Much of the work focuses on land, but rights to other resources, such as water, fish stocks, and forests, are also covered. A novel element of Flagship 5 is the assessment of power dynamics between and among groups, and how these condition outcomes. The rights of women and marginalized groups, their roles in stewardship of resources, and the contributions of natural resources to women’s livelihoods receive particular attention. Since tenure has strong implications for technology adoption and agricultural transformation, Flagship 5 has strong links to Flagships 1 and 2, through the role of natural resources in sustainable intensification and in livelihood strategies for the poor. Work on natural resource management is linked to that on social
protection: vulnerability often exacerbates resource degradation and, conversely, social protection programs that include labor-intensive public works can reverse degradation.

Women account for about 40 percent of the agricultural labor force in developing countries (FAO 2011; Kilic et al. 2015), but achieve lower yields and earnings on their farms and plots. Recent findings of the Living Standards Measurement Study—Integrated Surveys on Agriculture (LSMS–ISA) in several African countries identify lower returns to inputs among female farmers, suggesting that other factors in addition to the lack of access to inputs contribute to the productivity gap (Aguilar et al. 2015; Backiny-Yetna and McGee 2015; Kilic et al. 2015; Oseni et al. 2015; Slavchevska 2015). A fuller understanding of how gender affects productivity and how interventions that empower women could change these relationships requires more collection of sex-disaggregated data and new tools for analyzing these data. Each of the first five flagship addresses gender issues; Flagship 6 on Gender Equity and Agricultural Development designs tools and methods for broader application, establishes priorities within PIM’s gender research agenda, and draws together separate research strands to clarify implications for agricultural productivity. This flagship will innovate through focus on the interactions between men and women within productive systems at the household and farm level and along the value chain. Many of the tools and methods developed within Flagship 6 can be used to study marginalized groups in addition to their applications in gender analysis.

**PIM’s impact pathways**

*Figure 2. PIM’s impact pathways*

PIM’s four primary impact pathways contribute to many of CGIAR’s IDOs and Sub-IDOs (Annex I), and serve multiple clients at different scales (Figure 2). While some flagships emphasize certain pathways over others, each flagship employs two or more pathways in a complementary way to achieve outcomes at scale. For example, research in value chains not only leads to innovations for use by value chain actors (pathway 3) but supports global, regional, and national policy change to facilitate wider private investment in value chains and to scale up innovations (pathways 1 and 2). All PIM flagships invest in capacity strengthening (pathway 4) and contribute directly to IDO CC4.1 ‘National partners and beneficiaries enabled’. See the Flagship narratives sections of this document for more details on each flagship’s specific impact pathways and theories of change.

Many risks and uncertainties intervene between research outputs and policy outcomes, and the impact pathways as presented include a number of assumptions. Some of these assumptions are common to all CRPs, for example, political and social stability in the countries where the work takes place. Of particular importance for policy-oriented research is openness of policymakers to credible evidence as an input into
the decision process. To address the risk that research outputs will be excluded from the debate, PIM researchers review the political context and identify measures to increase inclusion of evidence in the process. In most cases, this involves the formation of partnerships with agents in the policy process; several examples are provided in the flagship narratives sections. Key partners for much of PIM’s research are national public servants, as well as international financial institutions (IFIs) and nongovernmental organizations (NGOs) that use PIM research in their own programs and influence global and national policies. PIM also supports the strengthening of capacity for policy analysis inside governmental departments and local academic institutions. PIM researchers engage with partners to communicate results and has had significant success in reaching wide audiences through reports, briefs, blogs, workshops, and conferences.

**Demand for PIM’s research and stakeholders’ commitment**

Much of PIM’s research is undertaken in response to specific requests of governments or partners, often through a triangular relationship involving client, donor, and PIM research teams. For example, parts of the IFPRI Country Strategy Support Programs in Bangladesh, Ethiopia, Ghana, Malawi, Nigeria, and Pakistan, are within PIM, and work programs are agreed jointly with the clients through periodic consultations. PIM researchers collaborate regularly with counterparts at the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), the Organisation for Economic Co-operation and Development (OECD), the World Bank, and the World Food Programme (WFP), in addition to bilateral aid agencies and NGOs that continually seek PIM’s analytical support. Many of the tools and methods created by PIM are developed at the request of agencies and governments and applied in their work.

Specific examples of demand for research that will continue into Phase 2 are noted below. The Forum for Agricultural Research in Africa (FARA) and the African Union (AU) have requested assistance with elaboration of implementation plans for the Science Agenda for African Agriculture (Flagship 1). FAO has asked PIM to develop rural employment diagnostic tools (Flagship 2). Governments of Ethiopia, Nigeria, Pakistan, and Yemen have requested assistance in developing datasets and country models to guide strategies for development and food security (Flagship 2). Unilever is collaborating with PIM researchers from the International Center for Tropical Agriculture (CIAT) on testing value chain interventions (Flagship 3). The G20 has called for IFPRI to expand its research on postharvest losses, and the work of PIM under Flagship 3 provides an opportunity for other Centers to contribute as well. The Economic Community of West African States (ECOWAS) and the Comprehensive Africa Agriculture Development Programme (CAADP) have solicited support from PIM on regional trade (Flagship 3) and agricultural technology platforms (Flagship 1) respectively. The WFP regularly requests assistance on design and evaluation of safety net interventions (Flagship 4). The Foundation for Ecological Security (FES) has requested advice on developing common property management arrangements in India (Flagship 5). USAID and the US Government’s Feed the Future initiative work regularly with the team that developed and tested the Women’s Empowerment in Agriculture Index (WEAI) (Flagship 6). PIM researchers interact regularly with the many members of the Global Forum for Agricultural Research (GFAR) network, including national agricultural research systems (NARS), subregional organizations (SROs), farmer organizations, civil society organizations (CSOs), regional political organizations, and others.

**PIM’s comparative advantage**

PIM works closely with a wide range of official and nongovernmental partners, and, as a program of CGIAR, is recognized and valued for independence and objectivity. Many universities, research institutes, think tanks, and consulting firms have skills to undertake research on policies, institutions, and markets, but they do not enjoy the long-term relationship with clients accorded to CGIAR programs.

Within CGIAR, PIM gathers a critical mass of scientists with expertise in policy analysis. Many of the researchers supported by PIM are recognized as leaders in their fields (see CVs in Annex VI). The lead center, IFPRI, is recognized as a global leader of research in several disciplines. According to the ratings developed by Information about Research Papers in Economics (RePEc), IFPRI ranks first in the field of agricultural economics (together with the World Bank), and seventh in the field of development economics.
PIM is known for high-quality quantitative work, and is able to combine quantitative and qualitative analysis effectively through application of mixed methods, as recognized in its gender research. Economics as a discipline is prominent throughout the portfolio, but the CVs of core team members (Annex VI) show inclusion of biophysical scientists, geographers, sociologists, anthropologists, and lawyers. Few other providers of policy-oriented research can call on the technical depth of CGIAR in the biophysical sciences related to agriculture. Thus PIM has a rare advantage in linking insights from social science with those of biological and physical sciences.

PIM works with the agrifood system CGIAR Research Programs (AFS CRPs) to strengthen the quality of CGIAR policy research and encourage consistency of policy recommendations across CRPs. PIM is unique among programs of CGIAR in its breadth of coverage of commodities and technologies on issues related to policies and institutions. The communities of practice under several of PIM’s flagships provide forums for sharing of information and coordination of effort on common themes (see the positive comments on these communities of practice in the PIM evaluation). PIM’s contributions to a broad ‘Enabling environment’ (IDO CC3.1) and ‘Conducive agricultural policy environment’ (Sub-IDO CC3.1.3) support policy work in other CRPs that is more focused on the mandated areas of these CRPs, such as nutrition policy for the CRP on Agriculture for Nutrition and Health (A4NH) and climate change policy for the CRP on Climate Change, Agriculture and Food Security (CCAFS). Similarly, PIM outputs to strengthen the environment for value chain investment support specific value chain upgrades of the AFS CRPs and food safety improvements by A4NH.

An additional dimension of PIM’s comparative advantage can be seen in the many tools and methods addressing central challenges of rural development (e.g., general equilibrium models, value chain analysis, WEAI, and public expenditure accounting) developed or enriched during Phase 1.

**PIM’s partnerships – Strategic fit and relevance**

Partnerships are essential for PIM’s research to be of high quality and generate outcomes. PIM’s external evaluation found that more than 90 percent of PIM’s partners rated the quality of their relationship with PIM higher than partnerships with non-CGIAR organizations. Partners include the CGIAR Centers and CRPs; advanced research institutes and universities (e.g., University of Pretoria, Michigan State University (MSU), Purdue University, University of Florida, Wageningen University and Research Centre); NARS in low- and middle-income countries, such as the Agricultural Research Council of Nigeria, the Brazilian Agricultural Research Corporation (EMBRAPA), the Chinese Academy of Agricultural Sciences, and the Indian Council of Agricultural Research (ICAR); national governments in low- and middle-income countries; global organizations and IFIs (such as FAO, IFAD, OECD, the World Bank, WFP); development partners (including a range of bilateral aid agencies); nongovernmental and community organizations (Catholic Relief Services (CRS), Technoserve, World Vision International (WVI)); civil society (including farmer organizations); foundations; and the private sector. To facilitate further elaboration of joint work programs with CGIAR Centers and CRPs, PIM has developed a collaboration matrix (Annex II). See the Flagship sections for a description of the roles of partners within PIM.

In preparation of this pre-proposal, PIM has held preliminary consultations with representatives of research and implementation partners, including FAO, IFAD, OECD, the World Bank, and a number of members of the GFAR network, as well as the GFAR Secretariat, Alliance for a Green Revolution in Africa (AGRA), Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), Association of Southeast Asian Nations (ASEAN), CAADP, Concern Worldwide, FARA, ICAR, Inter-American Agency for Cooperation on Agriculture (IICA), Netherlands Development Organization (SNV), South Asian Association for Regional Cooperation (SAARC), Technoserve, Wageningen University and Research Centre (WUR), West and Central African Council for Agriculture Research and Development (CORAF), and WVI.

Building on the broad base of current relationships, PIM will selectively deepen engagement with partners in Phase 2, with several to be recognized as strategic partners. Strategic partners will share in management of PIM research (flagships or clusters of activities), provide expertise and connections with clients, and assist in mobilizing funding. Fruitful discussions are underway with MSU and WUR as potential strategic research partners, and others will be considered at the full proposal stage.
Capacity development

PIM will maintain a strong focus on capacity development in Phase 2. The program’s capacity development strategy is being further elaborated jointly with IFPRI to draw lessons from a recent external evaluation of the Lead Center’s past capacity development work. PIM will particularly focus on four of the nine components of the CGIAR Capacity Development Framework:

- **Design and delivery of innovative learning materials and approaches**: Please see section above on PIM’s comparative advantage in development of and training on new tools and methods.
- **Developing CRP and Center partnering capacities**: Please see the Overview section on PIM’s track record in leading communities of practice in quantitative foresight analysis and value chains. Additional attention will be accorded in Phase 2 to strengthening capacity in analysis of policy processes and technology adoption.
- **Institutional strengthening**: PIM will continue to strengthen analytical capacity of organizations and ministerial departments in partner countries and regions.
- **Organizational development**: PIM’s research in Flagship 1 helps partner agricultural research organizations improve management and lobby for funds. PIM’s investment in research on policies for agricultural S&T, genetic resources, and innovation will increase in Phase 2, in furtherance of the commitment of CGIAR to support implementation of the Science Agenda for African Agriculture.

Governance and leadership

The management of the program will involve the following bodies, with functions defined in approved terms of reference documents (ToRs):

- **IFPRI DG and Board**: The PIM Director reports to the IFPRI Director General (DG), and through him/her to the IFPRI Board, which retains responsibility for performance of the program.
- **Program Director**: The Program Director manages the Program Management Unit (PMU), chairs the Management Committee, and is accountable to the DG of the Lead Center and the Lead Center Board for all aspects of performance of the program.
- **Independent Steering Committee (ISC)**: The current Science and Policy Advisory Panel (SPAP) will be replaced by an Independent Steering Committee comprised of 8–11 eminent scientists and policy advisers, mostly from outside CGIAR and representing relevant constituencies.¹
- **Management Committee (MC)**: Comprised of flagship leaders, selected representatives of participating Centers, and others (maximum of 12 people), the MC will assist the Director inter alia in developing the work program, overseeing its implementation, assuring adequate monitoring and evaluation (M&E), implementing the partnerships strategy, and raising funds.
- **Flagship and cluster leaders**: Flagship and cluster leaders will assist with development of detailed annual work programs, provide technical guidance for the quality of work, report on progress and budget execution, and track outcomes and impact. They will be selected prior to the launch of Phase 2 through a transparent process and according to the following criteria: seniority and excellence in their fields (assessed through record of high-impact Institute for Scientific Information (ISI) publications and evidence of contribution to policy and other PIM outcomes), demonstrated ability to raise funds and attract strong research and implementation partners, and managerial experience. PIM’s current flagship and cluster leaders have led the process of developing the pre-proposal, and their CVs are attached in Annex VI.
- **Program Management Unit**: A lean PMU will continue to handle all operational and administrative aspects of the program.
- **Consortium bodies**: PIM will report to and be guided by the relevant consortium bodies as per the guidelines to be established for the implementation of Phase 2.

A transparent process will be put in place for budget allocations, taking into account prospects for delivery and record of past delivery, quality of science, likelihood of impact, quality of partnerships, and rigor of M&E.

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¹ For an explanation of the composition of the ISC, see Management Response to the PIM evaluation.
Budget and value for money

PIM proposes a budget of $110 million in 2017, increasing gradually to $125 million in 2022, for a total of $695 million over the six years. The proposed amount for 2017 is modestly above the actual projected expenses of PIM for 2015 ($95 million), reflecting realism regarding capacity to deliver.

The dimensioning of PIM over the six-year horizon takes into account a likely increase in public investment in agriculture for development, to address rising concerns about employment and job creation and risks of higher food prices in the future. For agricultural and rural investment to happen quickly and successfully, governments and their development partners will require analytical partnership to assess priorities for intervention, identify complementary policy reforms, and rigorously monitor outcomes and impacts. These are a significant part of the PIM portfolio, and their relative weight will increase in the period 2017–2022. Hence the size of the program is justified by the projected trends in the sectoral composition of development finance.

The PIM budget is constructed and will be executed with the objective of showing value for money. The performance indicators matrix appended to this pre-proposal (Annex IV) will serve as the framework for M&E, with further disaggregation of indicators to be developed in the full proposal. PIM’s value for money can be assessed through two complementary approaches: (a) rate of return calculations; and (b) contribution toward meeting the targets of the strategy and results framework (SRF).

Measurement of returns to policy-oriented research raises difficult conceptual and technical issues. Because PIM, like other programs of CGIAR, draws funds through channels of development finance, it should strive to demonstrate the internal rate of return of 12 percent commonly applied to development projects. Scenarios of benefits required for PIM to deliver this rate of return are under development. On a pilot basis, selected elements of the program, for which benefits can be quantified and contribution assessed, will be evaluated for economic and financial rates of return, as is done in development project finance.

Rate of return analysis is difficult for the parts of the PIM portfolio producing global public goods. Moreover, targets of CGIAR for poverty reduction, nutrition and health, and natural resource management are expressed as physical measures, rather than as rates of return. Success according to the two standards (physical and financial) will usually be complementary, and not necessarily fully overlapping. Both approaches are therefore useful.

PIM’s approach to results-based management involves:

- tracking of delivery of expenditure and outputs of activities as per design and contract;
- tracking of all research and development outcomes using an ‘outcome narrative’ template;
- strengthening the “third-party” evidence base of these outcomes through additional M&E investments of each flagship;
- for a subset of verifiable outcomes, commissioning external evaluations of PIM’s influence;
- from a subset of verifiable outcomes influenced by PIM, investing in impact assessment studies (internal and external), using best quantitative and qualitative practices;
- for selected research investments, calculating internal rates of return; and
- sharing methods and results of the monitoring, evaluation and impact studies.

Sessions during the program’s semi-annual meetings will be dedicated to review of progress towards outcomes to facilitate adjustment of activities as needed.

An indicative allocation of the $110 million among flagship in 2017 is shown in Table 2. Table 2 also shows areas and amounts of co-investment that PIM will provide. The concept of co-investment used in this pre-proposal reflects design of joint work programs by PIM and other CRPs, with each CRP funding its own share. PIM Management projects that approximately one-third of Window 1-2 funds will be implemented through co-investment agreements with other CRPs; further elaboration of co-investment and detailed joint work programs will be presented in the full proposal.

The budget is constructed with the assumption that $40 million will be available to PIM through Window 1-2 funds in 2017 (as per the guidance from the Consortium Office that Window 1-2 should constitute about 40 percent of program funds), and $70 million mobilized through bilateral and Window 3 grants. The
proportions of bilateral funding and Window 1-2 funding will vary among flagships, but efforts will be made to increase the bilateral cofinancing for activities that have in the past mostly relied on Window 1-2 funds.

The 2017 budget (Table 2) is unevenly distributed across flagships; some flagships have an implied budget for the six-year period above the maximum indicated in the ‘Guidance for the pre-proposals’ document. PIM Management believes the amounts are warranted by the agenda to be addressed. For instance, the size of Flagship 1 is justified by the increase in demand for the foresight work, reflected in the high amount of bilateral/Window 3 funding projected to be available for this work, and the expansion of each of the flagship’s three clusters compared to Phase 1. Both Flagship 1 and Flagship 3 already host well-developed communities of practice, and these will continue to grow. The extent to which the execution of the program will follow the budget design described in Table 2 will depend on the actual amount and distribution of the bilateral/Window 3 funds that will be raised. In addition, relative amounts for the flagships may change in the course of the six years; budget adjustments will be made as collaboration with other CRPs evolves.

The PIM PMU will remain lean, and require a budget of $2.5 million in 2017 (with modest adjustment in subsequent years) to cover operations and meetings of the management and advisory units. Additional expenses outside of the flagships and shown under the management rubric cover M&E ($1.5 million annually), and cross-cutting partnerships and capacity building activities that support investments in these topics in each of the flagships ($1 million annually).

The gender component of the PIM budget includes both the entire Flagship 6 budget ($5 million in 2017), and gender budgets within each of the other flagships, estimated to represent 15 percent of these budgets or $15 million in 2017, for a total of $20 million in 2017 and $131 million over the six-year period, as reflected in Annex IV. Each flagship also includes budgets for capacity building, as well as oversight of research.

In Phase 1, approximately 25 percent of PIM’s resources went to external partners, largely research partners, through contractual commitments of participating Centers. This approach has worked well, and PIM management proposes to retain it. In much of PIM’s work with implementation partners, the analytical contribution of the CRP is a very small share of an overall investment of as much as several hundred million dollars. Under these circumstances the information requested in the ‘Guidance for the pre-proposals’ document regarding ‘share of partnership that is self-funded and co-funded’ is not applicable.

Table 2. Indicative 2017 budgets by flagship, and planned co-investment with other CRPs

<table>
<thead>
<tr>
<th>Flagship</th>
<th>2017 budget ($ million)</th>
<th>Planned co-investment with other CRPs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>W1-2</td>
</tr>
<tr>
<td>Flagship 1</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>Flagship 2</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>Flagship 3</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>Flagship 4</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Flagship 5</td>
<td>15</td>
<td>4.5</td>
</tr>
<tr>
<td>Flagship 6</td>
<td>5</td>
<td>2.5</td>
</tr>
<tr>
<td>PMU</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>110</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>
Gender summary

Gender research in PIM

All PIM flagships include relevant aspects of gender research. Flagship 6, Gender Equity and Agricultural Development, integrates gender research across flagships, develops and applies tools and methods for work with sex-disaggregated data, and assists in setting priorities for gender research across the PIM portfolio, and more generally within CGIAR.

Learning from Phase 1

In Phase 2, PIM’s gender work will be coordinated by the new Flagship 6. Phase 1 research—as exemplified by the book Gender in Agriculture: Closing the Knowledge Gap, the result of a collaboration between FAO and IFPRI—emphasized methods and data for gender analysis in agriculture, gender disparities in access to and control over assets and inputs, gender and markets beyond the farm, and gender dimensions of policy processes and outcomes. The paragraphs below illustrate the integration of gender lessons into the work of Flagships 1 through 5. For use of lessons learned within the new Flagship 6, please refer to the section Flagship 6 – Gender Equity and Agricultural Development.

Within Flagship 1 (Cluster 1.2 on Agricultural S&T, Genetic Resources and Innovation), the Agricultural Science and Technology Indicators (ASTI) project provides one of the only sources of sex-disaggregated data on staffing of the agricultural research effort in developing countries. On average, less than one-quarter of agricultural researchers in developing countries are women, and they are generally concentrated at lower levels (Beintema 2014).

During Phase 1, work on technology adoption (Cluster 1.3) showed that Volunteer Farmer Trainers (VFTs) can be effective in reducing the gender gap in access to information (Franzel et al. forthcoming). In Phase 2, gender and technology adoption will be a key topic within Cluster 1.3.

Flagship 2, Inclusive Growth and Rural Transformation, focuses on job creation for young men and women, and addresses the factors that affect occupational choice. The work identifies systemic barriers (e.g., in access to land, finance, and information) that constrain livelihood strategies, and examines how these are different for young men and young women. This flagship also investigates the differential impacts of public expenditures on heterogeneous groups of men and women, the degree of inclusion of diverse stakeholders, including women, in the design and advocacy of policies, and methods to lift barriers to their involvement.

Research conducted through the Gender, Agriculture, and Assets (GAAP) project offers important lessons from eight agricultural interventions that promoted high value agriculture with commercial engagement and utilization of assets. Researchers found that the projects effectively included women and increased production, income, and household assets, but that specific measures were required to assure that within the household women retained the intended control over assets (Johnson et al. 2015; Quisumbing et al. 2015). Flagship 3 on Inclusive and Efficient Value Chains builds on this body of research to identify interventions that can increase gender equity in control of assets and in opportunities for employment along value chains. In addition, this flagship will further develop tools for gender analysis in value chains, building on work already underway and positioning gender work strongly in the activities of the value chain hubs.

Flagship 4 on Social Protection Programs and Strategies studies how social protection programs assist women and men, change intrahousehold dynamics, and include gender in targeting and choice of instruments for delivery. Previous research has demonstrated that social protection programs can be an effective mechanism for increasing women’s control over decisions across a range of domains (de Brauw et al. 2014; Ahmed et al. 2014). Furthermore, research suggests that financial products designed to allow
women to save, borrow, and insure are essential to strengthening their roles as producers and broadening their opportunities (Fletschner and Kenney 2014). Work under this flagship addresses an array of financial products, and takes into account the preferences and constraints of both women and men.

Flagship 5 on Governance of Natural Resources explores pathways to strengthen the tenure security of particular groups, especially women, drawing on assessments of promising innovations. For example, research conducted by IFPRI demonstrates that putting women’s names and photos on land certificates in Ethiopia can contribute to their tenure security and investment in land, provided that women know about these provisions (Kumar and Quisumbing 2015). Community-based legal assistance is an innovative approach to ensuring that women understand and are able to act on their rights to land (Behrman et al. 2013; Billings et al. 2014). This work builds upon existing research suggesting that enhancing women’s roles can open new opportunities for institutional change (Ratner and Smith 2014), and that empowering women requires not only legal recognition of women’s rights to resources, but also changes in local social norms (Sunderland et al. 2014; Mukasa et al. 2012; Mairena et al. 2012; Bose 2011).

Throughout the PIM portfolio, in Phase 2 new emphasis will be placed on the jointness of men’s and women’s actions in securing their livelihoods, while recognizing the importance of individual agency. Researchers will continue to examine men’s and women’s individual roles, but will also explore the extent to which they work together in different domains. This will require development of new tools and analytical approaches.

**Operationalization of gender**

Researchers are asked during the design stage to determine whether gender is relevant to the activity. Activities for which gender is relevant are classified qualitatively according to the extent to which they incorporate gender (significant or lesser emphasis). This typology facilitates monitoring of gender dimensions of the program (see below).

The leader of Flagship 6 will serve as Gender Coordinator for the entire PIM portfolio. With assistance from an Associate Research Fellow and a Senior Research Assistant on gender, the Gender Coordinator will ensure that gender issues are addressed where relevant in all flagships, and that there is coherence and communication across the various activities with a gender dimension. In addition, the gender team will provide guidance and feedback on gender research questions and methods, thereby building the capacity of researchers to conduct rigorous gender analysis.

**Tracking of progress – Monitoring and Evaluation**

The Program Management Unit monitors gender work across the portfolio by collecting indicators of progress in the annual activity progress reports (see Table 3). In response to recommendations from the PIM external evaluation team, self-reporting by researchers will be augmented by selective verification. The indicators will reflect the proportion of activities which are collecting or analyzing sex-disaggregated data, and using the findings to reduce identified gender inequities or to explicitly target women and/or girls. This information will also help to identify areas of the portfolio that may need increased attention from the gender team to address methodological issues.

A subset of PIM outcomes will be assessed to determine the role of gender analysis in achievement of outcomes. This work will start modestly, and expand over time. In addition, selected impact evaluations will be conducted to measure the effect of various interventions on relevant gender gaps. These impact evaluations will usually be undertaken in partnership with the implementation partners funding and administering the projects.
### Table 3. PIM gender Monitoring and Evaluation framework

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

Flagship 1: Technological Innovation and Sustainable Intensification

1. Justification for the flagship – Issues to be addressed, and why they are important

Flagship 1 addresses prioritization of agricultural research, the institutional foundations for innovation, and factors that determine the pace and extent of adoption of new technologies. The work is intended to promote decisions by those who manage innovation systems (or components thereof) that lead to accelerated technical change, high returns to innovation, and consideration of environmental trade-offs associated with technology options. Cluster 1.1 on Foresight Modeling contributes quantitative input into the complex process of setting priorities among competing research interests. Cluster 1.2 on Agricultural S&T, Genetic Resources and Innovation tracks and analyzes expenditures on research, and assesses the policy environment for innovation. Cluster 1.3 on Enabling Adoption of Technology addresses factors facilitating adoption and innovative methods to measure adoption.

Long-term challenges and short-term financial constraints make evidence-based prioritization of research and investments critical. Research in Cluster 1.1 – Foresight Modeling, develops and applies improved foresight modeling tools and interpretive capacity to ex-ante assessment of alternative agricultural technologies, policies, and investments. The constructed scenarios take into account climate change and other challenges in order to inform priorities for research and for promotion of adoption. The results of the alternative scenarios are assessed for impacts on prices, food security, nutrition and health, and natural resources, including potential trade-offs. Insights gleaned from this analysis can inform decisionmaking on selection of technologies for development within CGIAR and NARS, and signal policy reforms that will be needed to complement development and release of new technologies.

Cluster 1.2 – Agricultural S&T, Genetic Resources and Innovation, highlights features of the policy environment, institutional architecture, and organizational arrangements that provide effective incentives for innovation. Development strategies rarely give these topics the attention they need, which manifests in the slow growth of expenditures and weak capacity observed in many low-income developing countries (Beintema et al. 2012). Assessments of research capacity undertaken in Phase 1 reveal an aging scientific workforce in many low-income countries, a paucity of female scientists, and insufficient managerial skills to handle the growing complexity in research organization. Regulatory issues, particularly in the areas of biotechnology in Africa south of the Sahara, North Africa, and South Asia (Spielman et al. 2014) and genetic resources have important implications for efficiency, safety, and equity. Cluster 1.2 develops evidence to understand incentives that move scientific research forward, take products to market, and foster innovation (Kelemework et al. 2015).

Cluster 1.3 – Enabling Adoption of Technology, contributes to adoption at scale of technologies and management practices developed by CGIAR and its partners through: (a) strengthening our understanding of patterns of adoption, performance of technologies, and welfare impacts; (b) clarifying constraints to adoption and impact; and (c) designing innovative policies, dissemination approaches, and incentives that accelerate sustained technology adoption at scale. The cluster will build on a nascent community of practice established in Phase 1 of PIM and drawing together researchers working in the different CRPs. This community of practice will be further developed during Phase 2, with development of new sources of data (particularly on the geo-spatial dispersion of technologies), and conducting research on priority cross-cutting themes through co-investment with other CRPs (for example, the influence of age and gender on adoption, building on work in Phase 1).

2. Demand for this research – Who will use it, and to do what

The results of the foresight work will be used by CGIAR (CGIAR Centers, CRPs, ISPC, CGIAR donors), multilateral development banks, national and regional partners, development practitioners, and the private sector to inform their decisions regarding research, policies, investments, and advocacy. The scientific community (e.g. members of the Agricultural Model Intercomparison and Improvement Project,
or AgMIP) and the private sector (e.g., Lloyds, Croplife International) use the results and data in a broad range of applications for policy analysis, projection of trends in trade, projections of food prices under different assumptions, and for considering the implications of resource constraints.

The outputs of the agricultural science, technology, generic resources and innovation (ST&I) policy research will be used by NARS; ministries; regional associations such as FARA, Central Asia and the Caucasus Association on Agricultural Research Institutions (CACAARI), Asia-Pacific Association of Agricultural Research Institutions (APAARI), CORAF, and regional initiatives (Science Agenda for African Agriculture); global networks (CGIAR, GFAR); industry associations, such as the National Seed Association of India; private firms, such as Pioneer/Dupont, Advanta in India, and Western Seed Company in Kenya; farmer associations and CSOs; and donors (traditional supporters of ST&I policy research such as the World Bank, USAID, the Department for International Development (DfID), European Commission (EC), the Bill & Melinda Gates Foundation (BMGF), as well as newer donors and philanthropists) to advocate for increased public and private spending on agricultural research.

CGIAR and other research partners (e.g. ASARECA, ICAR) will use improved methods and tools to increase the quality and quantity of their impact assessments, and thereby strengthen and focus their advocacy for increased funding of their research. Research organizations and development partners that support them will use the work on adoption of technology to target release of new technologies, identify complementary policy interventions, and design investments to support adoption. Development organizations, governments, and the private sector will use results on scaling up of innovations to improve their effectiveness in diffusion of technology.

3. Theory of change and impact pathways

Flagship 1 contributes mainly to IDO 1.4 ‘Increased productivity’, but also to the cross-cutting IDO CC3.1 ‘Enabling environment improved’ and Sub-IDO CC4.1 ‘Enhanced institutional capacity of partner research organizations’. Figure 3 highlights the main pathways from outputs to outcomes and IDOs at the flagship level. The paragraphs below provide more details at the cluster level, both on the specific outcomes envisaged, and on how the team works with partners toward effective pathways.

Cluster 1.1 – Foresight Modeling

Specific outcomes are:
- Increased capacity in foresight analysis among partner research organizations.
- More use of foresight modeling across CGIAR and in other organizations.
- More informed decisionmaking on investments in agricultural research.

The impact pathway for foresight analysis within CGIAR works through involvement of scientists from participating Centers in the community of practice, and through informing leaders and managers at the CRP, Center, and Consortium levels about progress in the work. Impact outside CGIAR is achieved through good working relationships with the global modeling community, and sharing of tools and datasets. Several partners have attended PIM training courses in the use of the tools; training will continue and expand during Phase 2.

Cluster 1.2 – Agricultural S&T, Genetic Resources and Innovation

Specific outcomes are:
- Increased investment in agricultural research in developing countries
- Evidence-based policy dialogue to lift the policy and regulatory barriers to technology innovation including the use, exchange and conservation of genetic resources.
- Expansion of new technologies, including biotechnology, under conducive regulatory frameworks in countries that currently lack them.

Cluster 1.2 undertakes cross-country analyses of investment in agricultural R&D (e.g., the ASTI work). National and regional policymakers, as well as international financial institutions, are key clients for this work. The team has established linkages to support the capacity development components of the Science
Agenda for Agriculture in Africa, in collaboration with FARA. Researchers work closely with national policymakers and policy influencers to support reforms in the regulatory environment to promote agricultural innovation. Biotechnology is a particularly contentious issue in many countries, and the team maintains an objective advisory role to support public debates.

Cluster 1.3 - Enabling Adoption of Technology

Specific outcomes are:

- Improved capacity in measuring adoption and impact of technology among partner organizations.
- Use of innovations to facilitate wide dissemination and adoption of technology.
- More conducive policy environment for technology adoption.

Cluster 3.3 works closely with the extension networks, NGOs, the private sector, and governments to test and scale up innovations. PIM uses its partnership with the Global Forum of Rural Advisory Services and its regional members to disseminate best practice methods on extension. Researchers have also formed strong links with NGOs and public extension departments at the national level to pilot and assess innovative approaches. The cluster also works closely with other CRPs, SROs, and NARS to develop and implement methods to track adoption and impact of technology. In Phase 1, PIM started a community of practice among CGIAR centers to address common challenges around technology adoption; this will be strengthened in Phase 2 in collaboration with the Standing Panel on Impact Assessment (SPIA). Policy outcomes will focus on CGIAR countries of collaboration. PIM will use models that work in each context, drawing from experiences of IFPRI’s Country Strategy Support Programs (CSSPs), MSU’s approaches under the USAID Food Security Policy Lab, and those used by other CGIAR centers.

Figure 3. Impact pathways for Flagship 1

4. Research questions and outputs

Cluster 1.1 – Foresight Modeling

Key research questions for Cluster 1.1 include the following:
• What technologies and combinations of technologies offer the highest potential to reduce hunger and/or alleviate resource constraints under agroecological, market, and climatic conditions expected in the decades up to 2050?
• Which existing technologies should be emphasized, and which promising ones should be fast-tracked for development in light of their projected impact on poverty, hunger, nutrition, and natural resources?
• What policy measures are needed to facilitate full returns to the technologies with highest potential?

The team will continue to work on extensions of and improvements to the modeling framework, capacity strengthening, and engagement with decisionmakers. Analysis of livestock, fish, and land use will be strengthened. The partial equilibrium International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) will be linked with a CGE model to better analyze the employment, welfare, and poverty implications of changes in technologies, policies, and investments. Linkage with analysis at the household, farm, and landscape levels will be explored. The team will improve analysis of nutrition, climate-smart agriculture, and natural resource management, including assessing the potential trade-offs between productivity, resilience to climate change, and natural resource outcomes. Consistent with feedback from other CRPs in Phase 1 and with the new CRP portfolio structure in Phase 2, a new line of research will focus on improving analysis of agrifood systems by characterizing these systems in such ways that they can be integrated into the modeling work, just as individual commodities are integrated at present. In addition, the team will explore links with qualitative and participatory foresight approaches (including with GFAR and other stakeholders).

Cluster 1.2 – Agricultural S&T, Genetic Resources and Innovation

Key research questions within this cluster include:
• How much are governments and the private sector investing in agricultural research and development, and how are these investments affecting agricultural productivity growth?
• How do alternative institutional and organizational designs accelerate the development of new products and services?
• How do policy and regulatory regimes either promote or impede the rate of innovation in agriculture and particularly application of innovation in low and middle-income countries?
• What are the effects of genetic resources policies on scientific collaboration and innovation, access to genetic resources and on release of new varieties and breeds?
• What are the main factors that private investors consider before investing in research and development?

The cluster effects change by combining research with capacity strengthening in assessment of options and priorities for research and regulatory reform, and through investing in communications and partnerships that influence outcomes. A specific focus of application of the work will be the partnership with African institutions charged with implementation of the Science Agenda for African Agriculture, and attention will be accorded to agricultural technology systems in other regions as well.

The work of this cluster focuses on three activities: (a) the collection, analysis, and communication of internationally comparable data on agricultural R&D investment, capacity, and productivity growth, led by ASTI; (b) the improvement of national capacity to develop and implement regulatory regimes for new technology, expanding the present work of the Program on Biosafety Systems (PBS) beyond biotechnology; and (c) analysis of incentive mechanisms such as intellectual property rights and technology transfer policies, policies on cultivar improvement and seed systems, genetic resource conservation, and science policy processes (in collaboration with Cluster 2.3). Particular emphasis is placed on policies related to cultivar improvement and seed markets, biosafety and biotechnology, genetic resources, and longer-horizon investments in science—nanotechnology and synthetic biology, for instance—that are being explored throughout CGIAR and by the advanced research institutes with which it partners.
Outputs of this cluster include the continued and expanded data series on investment in agricultural research under ASTI, lessons of experience in regulatory reform, guides to diagnostic review of the incentive environment for agricultural innovation at the national level, and policy and regulatory options for improved governance of the use, exchange and conservation of genetic resources.

Cluster 1.3 – Enabling Adoption of Technology

This cluster addresses the following questions:

- What are the key constraints to adoption of improved agricultural technologies, and which types of households are excluded from intensification processes?
- To what extent does the adoption of agricultural technologies, one at a time or in combination, enable smallholders to exit poverty?
- What are the most cost-effective types of interventions to facilitate dissemination of technology and induce higher rates of adoption?

As technology adoption and impact are relevant to almost all CRPs, this cluster’s contribution is focused on cross-cutting issues, emphasizing: (a) methods and tools (e.g., quantitative and qualitative impact evaluation); (b) empirical evidence on issues common to different commodities and technologies (technology adoption at scale, the role of gender and youth, extension and advisory services, innovative dissemination approaches such as information and communications technologies (ICTs), market-based incentives such as weather insurance or credit services); and (c) learning networks (e.g., the development of a CGIAR/NARS community of practice).

The ex-ante analysis is intended to facilitate successful release of new technologies, and target them toward geographies and users able to adopt them rapidly with good results. In order to accomplish this, the research team will examine selected recent cases of rapid adoption to understand the approaches employed and the factors that led to success. In partnership with the AFS CRPs (and through them with NARS), the strategies and approaches will be tested with technologies selected by the AFS CRPs. Among the technologies likely to be considered are integrated soil fertility management, precision agriculture, heat tolerance, drought tolerance, and mechanization. The ex-post analysis will focus on impact assessment and monitoring of returns throughout the adoption cycle. This will yield a compendium of quantitative and qualitative methods for impact studies that will be shared within CGIAR and with NARS partners. In addition, a number of synthesis studies will be undertaken on cross-cutting themes such as gender and technology adoption, impact of integrated agricultural interventions, and age and technology adoption.

5. Geographical focus

Foresight modeling includes attention to global, regional, and national scales. Specific regions and countries will be identified for focus in terms of capacity building, analysis and engagement with regional and national partners, as well as sub-national partners in selected countries. The practice followed in Phase 1 of sequentially improving the representation of countries within the aggregate modeling suite as countries express interest, offer partnership, and as resources become available, will be continued in Phase 2. Countries with national level work underway include India, Philippines, Tunisia, and countries in Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan).

Cluster 1.2 works mainly at global and national levels. ASTI works in five South Asian countries, and close to 40 countries in Africa south of the Sahara. National work on biosafety regulations and policies in Asia is planned for Bangladesh, India, Indonesia, Pakistan, Philippines, Thailand, and Vietnam; in Africa south of the Sahara work is planned for Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Nigeria, South Africa, Tanzania, Uganda, and Zambia. In the North Africa region, Egypt, Morocco, and Tunisia will be considered.

Cluster 1.3 will focus on countries in which a number of CRPs are collaborating (likely to include Bangladesh, Ethiopia, Ghana, India, Kenya, Malawi, Nigeria, Tanzania, and Uganda), but will also draw lessons from other countries.
6. Learning from Phase 1

Thirteen Centers currently participate in the Global Futures and Strategic Foresight (GFSF) project. The remaining two Centers, AfricaRice and the Centre for International Forestry Research (CIFOR), are likely to join. In Phase 1, GFSF and its AgMIP partners improved the modeling tools and strengthened capacity strengthening. In Phase 2, the team will take into account lessons on: (a) the need to draw on the expertise of multiple disciplines (e.g., plant breeders and biophysical scientists in addition to economists); and (b) the need to work at multiple scales (e.g., crop/technology-specific analyses to inform priority-setting at the Center/CRP level; at the national level to address needs of NARS; at the CGIAR level in line with interests to provide evidence into system level priority-setting; and at continental level to support the Science Agenda for African Agriculture).

Work conducted by PBS, ASTI, and IFPRI’s wider program on ST&I has demonstrated the importance of national and regional partnerships as well as multidimensional communication strategies. While substantive progress has been made in bringing regulatory issues to decision points in countries as varied as Malawi, Nigeria, Pakistan, Philippines, Tanzania, Uganda, and Vietnam, more work needs to be done through key boundary partners engaged in national processes.

With regard to Cluster 1.3, the following lessons learned in Phase 1 will inform the work in Phase 2: (a) Formal extension systems as they currently function are inadequate to solve information constraints limiting dissemination of agricultural technology, and the use of complementary methods such as VFTs and ICTs can be effective in accomplishing specific goals, especially in reducing the gender gap in access to information; (b) Methods for tracking adoption and assessing its impact are deficient in NARS, especially when addressing complex systems and interlinked effects; (c) Constraints to adoption of technology are varied and context-specific, and thus not always readily amenable to generalization.

7. Gender and youth

Attention to gender and youth in Flagship 1 will be deepened in Phase 2. One of the more challenging areas for inclusion of gender and youth is global foresight modeling. Methods include linking to country CGE models with disaggregated labor market data, and drawing on household-level analysis to explore implications of new technologies and other scenarios on women’s and youth labor and income.

Cluster 1.2 will continue to conduct research on the gender dimensions of agricultural ST&I by building on prior work (Beintema 2014); additional work on the gender dimensions of ST&I will be explored through cross-country and technology-specific studies where appropriate. ASTI will continue to focus on issues related to the aging scientific workforce in developing countries, and has recently expanded its indicator base to include information on the scientific disciplines of staff to facilitate more detailed demographic analysis.

Research on gender and extension methods in Phase 1 shows that the use of pluralistic extension methods can enhance the involvement of women in extension. The link between gender and technology adoption was addressed in a modest way under GAAP in Phase 1. This work will be strengthened in Phase 2, and pursued with a concurrent focus on age. The inter-CRP community of practice on technology adoption decided in 2015 to focus on age; the emphasis on gender and age in Phase 2 will thus build on an existing foundation.

8. Comparative advantage

Through the GFSF project, PIM has invested significantly in improving quantitative foresight modeling tools and building a CGIAR community of practice. PIM participates actively in AgMIP, which brings together the world’s leading research institutions in global economic modeling of agriculture. PIM is thus uniquely positioned to bring together the expertise of the global economic modeling community and the economic and biophysical expertise of CGIAR.

PIM’s comparative advantage in agricultural ST&I policy research stems from past investment under ASTI, and from PIM’s position as a policy-oriented research program within a larger organization devoted to agricultural science. ASTI is generally recognized as the leading repository of data and analysis on investment
in agricultural research for development, building on a history of capacity building with developing country organizations. Research on agricultural science policy also builds from a strong tradition at IFPRI including genetic resources policy. The field of science policy is highly politicized, but PIM, as a program of CGIAR, is understood to work with a high degree of objectivity.

PIM's comparative advantage in Cluster 1.3 is around development of methods, coordination of empirical work on cross-cutting topics, and sharing of these within and beyond CGIAR. The further development of the community of practice established in Phase 1 will complement work funded by the SPIA with similar objectives, and coordination with SPIA is already established.

9. Collaboration within CGIAR

The three clusters within Flagship 1 interact with each other. The work of Cluster 1.1 will help identify priority technologies and commodities for focus under Cluster 1.3. Conversely, the outputs of Cluster 1.3 will be used by Cluster 1.1 to develop realistic adoption scenarios and quantitative projections of rates of adoption for the modeling. Interactions between Cluster 1.2 and Cluster 1.3 will help identify policy barriers to rapid adoption of promising technologies, and develop options to reduce them.

Flagship 1 also complements other flagships in the PIM program, for example, through clarifying the importance of technical dynamism and growth in total factor productivity as an input into inclusive transformation (Flagship 2), through interaction between efficient marketing and high returns to development of technology (Flagship 3), through delineation of the limits to growth in addressing vulnerability, and hence the need for safety nets (Flagship 4), and through clarifying implications of alternative technologies for stress on natural resources, and role of ownership and use of resources for adoption of technology (Flagship 5). Flagship 1 will use the tools for gender analysis developed under Flagship 6, and provide examples of the impact of gender barriers on generation and adoption of technology.

The three clusters complement and support technology research undertaken by the AFS CRPs, as can be seen in Figure 4. As noted in the section on budget in the Summary narrative, Flagship 1 provides opportunities for co-investment with the AFS CRPs in foresight analysis, genetic resources and regulatory policies, and adoption of technology. Consultations have been held with each of the AFS CRPs, and initial steps to design complementary programs and share the cost are underway. More detailed work programs showing specific linkages and itemizing shared costs will be included in the full proposal.

Figure 4. Complementarity between PIM’s Flagship 1 and the AFS CRPs
In addition to work with the AFS CRPs, Flagship 1 (particularly Cluster 1.2) will interact with the networks and communities of practice in existence and under development in CGIAR, for example, the Legal Intellectual Property Network and the coordination platform on conservation of genetic resources.

The relationships between Cluster 1.3 and other CRPs have been presented in Section 8.

10. External partnerships

Collaboration on foresight research with WUR, the University of Florida, the Potsdam Institute for Climate Impact Research (PIK), the International Institute for Applied Systems Analysis (IIASA) and other AgMIP partners, Oxford University, the Korea Rural Economic Institute, and OECD will be maintained and/or deepened. The foresight team will explore partnerships with selected regional groups and NARS, ISPC, GFAR, and Regional Strategic Analysis and Knowledge Support System/Africa Union. Work with Lloyds on risk and extreme events is expected to continue. Private sector collaboration is also pursued through membership in the Center for Integrated Modeling of Sustainable Agriculture & Nutrition Security (CIMSANS).

Research partnerships under Cluster 1.2 with GFAR, FARA, APAARI, and other regional, sub-regional, and national organizations to track investments and capacity in agricultural research and technology and disseminate results will be strengthened. ASTI has a network of national focal points, often employed with NARS.

Discussions for joint work on adoption of technology are underway with WUR (Global Yield Gap Atlas and N2Africa projects) and MSU, as are perspectives of collaboration with the team at University of Illinois leading the Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES) project. The PIM team is in the process of reaching out to the Agriculture Technology Adoption Initiative (ATAI). Among implementation partners, close collaboration with ASARECA and CORAF will continue, and more efforts will be made to involve other regional and major NARS in learning networks and capacity building activities. The collaboration with WVI will be formalized, and discussions are underway with SNV and Concern Worldwide on collaboration for testing of scaling up methods and ex-post impact assessment.

11. Capacity development

Development of capacities of individuals and organizations is a key aspect of Flagship 1. The foresight team holds in-depth training workshops for colleagues within CGIAR and in partner organizations several times per year. This training will increasingly focus on national and regional partners, as applications of the modeling suite in national and regional settings increases. The work of ASTI assists national counterparts to lobby with Ministries of Finance for adequate funding. This will be enhanced in Phase 2, with better tools for technology tracking to show returns to research, both through examples of success and calculations of rates of return. Much of the PBS work aims to develop capacity of national counterparts to write constructive regulations, advocate for passage, and monitor enforcement. Finally, the PIM team will significantly increase its investment in training in impact assessment, of particular relevance to NARS charged with demonstrating outcomes from new technologies. Such a training has taken place with ICAR in May 2015, and a collaborative capacity strengthening activity is ongoing with ASARECA.

12. Integration between Window 1-2 and bilateral/Window 3 funding

The two major bilateral/Window 3 donors for this flagship have been BMGF and USAID. With regard to the foresight modeling work, integration of Window 1-2 funds from PIM (and to a lesser degree from CCAFS) with bilateral/Window 3 funds from BMGF in Phase 1 has been seamless. Funding from BMGF extends through September, 2016, and continuation of cofinancing with BMGF and other partners after that date will be explored.

BMGF is the main cofinancer of ASTI. As the initial intent of the project was data collection, PIM’s Window 1-2 funds have been used to allow more analysis of the data. USAID is the main funder of PBS, and only modest Window 1-2 funding has been added in Phase 1. The intent of this funding was to increase awareness of the work within CGIAR, and strengthen collaboration with the commodity CRPs. Additional bilateral funding for the broader agenda on ST&I policy will be sought for Phase 2. USAID and BMGF are also funding the Cereal Systems Initiative for South Asia project, a multicenter initiative with policy and economic components under Cluster 1.3.
Flagship 2: Inclusive Growth and Rural Transformation

1. Justification for the flagship – Issues to be addressed, and why they are important

Agriculture has historically played a central role in economic transformation during the early stages of development. Most of the poor in developing countries depend on agriculture for a large part of their livelihoods, and the sector has strong growth linkages to non-agricultural activities, particularly to the rural nonfarm economy. Today, however, a confluence of economic and demographic shifts are altering the landscape in which agriculture and the rural nonfarm economy operate, challenging traditional thinking about the sector’s role in development. For instance, rapid urbanization not only expands demand for food, but also alters diets and consumer preferences in favor of diversified high-value products with value-added from processing. While this may create new job opportunities for farmers and agro-processers, it also opens space for imports to displace local production. Large-scale commercial land acquisitions by foreign and domestic investors may create jobs in rural areas, but also limit smallholders’ access to land, with particular implications for young people. Many countries in Africa south of the Sahara and South Asia are now struggling to create jobs for rural residents, especially young people, and tensions between generations over access to natural resources are rising. Finally, the service sector contributes more to growth and poverty reduction now than in the past, and links between agriculture and services are important.

This flagship will assess how recent patterns of economic transformation affect the future of agriculture and prospects for reduction of rural poverty and inequality in the developing world. It aims to highlight opportunities for inclusive rural growth and transformation across different country contexts, and to identify policies, public investments and other interventions that are effective and feasible. Management of public expenditure is integral to successful transformation. Most low-income countries have severe fiscal constraints, as well as a backlog of deficits in public goods and services essential for rural transformation. Many also lack adequate data on actual expenditures and effectiveness of spending. For that reason, attention to expenditure is included in this flagship. Decisions about spending, like other major policy decisions, result from a complex interplay of competing interests mediated through the political process. Evidence about what would constitute good policy outcomes (in terms of poverty reduction, food security, and environmental stewardship) can contribute to debate, but rarely decides it. Understanding the key actors, their objectives, the timing and sequence of decisions, and the rules of conduct can provide insight into how research can best inform policy decisions. This flagship therefore also addresses the political economy of the policy process, by examining case studies that are of particular importance to the work of CGIAR.

Employment is explicitly included as an IDO in the CGIAR SRF (IDO 1.3 ‘Increased incomes and employment’). Cluster 2.1 – Job Creation and Inclusive Growth aims to strengthen the CGIAR’s knowledge base and research capacity to contribute to this IDO. Interactions with international partners, including the FAO’s Decent Rural Employment Team, the World Bank’s Jobs Team, and IFAD’s Strategy and Knowledge Department, indicate active interest to partner on topics addressing the job prospects of young women and men. A number of CRPs plan a focus on youth employment issues. PIM’s particular contribution is on strengthening the empirical knowledge about occupational choice of young people, and on clarifying the systemic barriers that limit their options. PIM’s work is complementary to that of other partners and programs that emphasize pilot projects for inclusion. Opportunities for co-investment will be explored.

Public investment in and for agriculture, and appropriate prioritization among competing needs, are critical for development. Public investment decisions underpin attainment of each of the SLOs of CGIAR. Countries managing structural transformation in the 21st century face very sharp fiscal tradeoffs, and a challenging environment for official development assistance (ODA). They can afford few mistakes in budget allocation and execution, and careful tracking of expenditures and returns is essential. The findings inter alia on sustained and strong returns to investment in agricultural research in Africa (Lynam et al. forthcoming), as opposed to mixed or weak impact of expenditures for agricultural subsidies (Jayne
and Rashid 2013), provide an evidentiary base for the complex political economy of budgeting. **Cluster 2.2 – Public Investments for Inclusive Transformation** assists countries to track expenditures, analyze returns, benchmark their performance against other countries, and compare resulting growth and poverty reduction. The work of this cluster thus contributes evidence to the discussions between sectoral ministries and ministries of finance.

Evidence is only one input into complex and highly politicized policy processes. **Cluster 2.3 – Political Economy of the Policy Process** aims to bridge the interface between science and policy by analyzing agricultural policy processes and the political economy dynamics that characterize them. This work will provide guidance on how the interests of stakeholders, policy narratives and discourses, institutional structures, and administrative and technical capacity influence outcomes and opportunities for impact. This line of research is expanding within PIM relative to Phase 1, reflecting a strong demand by CGIAR and other partners and advice from PIM’s SPAP, the PIM external evaluation team, and the ISPC (in comments on the PIM proposal for the 2015–2016 period).

2. **Demand for this research – Who will use it, and to do what**

Work of Flagship 2 is relevant to a number of end-users. Ministries of agriculture, finance, and planning already use this work in program design and decisions about expenditure. Regional and continental entities, such as the African SROs and the AU, will use the findings for operational work and advocacy. Authorities in Central Asia are very concerned about youth employment as opportunities to migrate to Russia for employment diminish, and they seek understanding of alternative scenarios of structural transformation. International organizations such as FAO, the World Bank, and IFAD have jobs and structural transformation high on their agendas.

Many tools developed under Phase 1 of PIM will be further improved in Phase 2. Among those most appreciated by partners are the social accounting matrices (SAMs), the economywide country CGE models, the approaches to measuring economic transformation through growth decompositions, the SPEED (Statistics of Public Expenditure for Economic Development) database, and the Kaleidoscope Model (KM) of policy change (Resnick et al. 2015). For instance, FAO’s Monitoring and Analyzing Food and Agricultural Policies (MAFAP) program is particularly interested in further development of SAMs and SPEED to improve the monitoring and evaluation of agricultural policies as part of their support to CAADP. Several donors (DfID, FAO, USAID, World Bank) have expressed interest in better tools for analysis of political economy issues applicable to their operational programs.

The research is also relevant to the private sector, civil society actors, and NGOs. Efforts to promote agricultural modernization and rural employment often involve private sector investments in mechanization, agro-input distribution, out-grower schemes, credit arrangements, and vocational education programs. Chambers of commerce, farmer organizations, and labor unions benefit from greater engagement with governments on issues of mutual interest. PIM researchers actively seek to engage with private partners. For example, during Phase 1 PIM managed several very successful study tours for Ghanaian stakeholders with Indian and Chinese counterparts, including from the private sector, to explore models of mechanization relevant to Ghana. In Phase 2, PIM will continue to develop opportunities to include the private sector in the work of Flagship 2.

3. **Theory of change and impact pathways**

As illustrated in Figure 5, Flagship 2 contributes mainly to IDO 1.3 ‘Increased incomes and employment’ and the cross-cutting IDO CC3.1 ‘Enabling environment improved’.
Figure 5. Impact pathways for Flagship 2

The specific outcomes of the flagship are:

Cluster 2.1 – Job Creation and Inclusive Growth
- Evidence-based strategies for inclusive growth and rural job creation are developed by national governments and supporting international organizations.
- Increased prominence of practical measures to spur opportunities for young people as part of national development strategies, and improved design and monitoring of investment projects and programs addressing inclusion and youth.

Cluster 2.2 – Public Investments for Inclusive Transformation
- Improved policies and public expenditure allocations resulting in more inclusive livelihood outcomes for the poor and marginalized in rural areas.
- Increased use of research tools and databases by national policy researchers to conduct quantitative and qualitative analyses of the impacts of policies on growth, income, and employment.

Cluster 2.3 – Political Economy of the Policy Process
- Increased use of research evidence in national policies and public expenditure decisions affecting agricultural growth and rural transformation.

The flagship reaches the Sub-IDOs and IDOs at the national level through three main output-to-outcome pathways: input into global discourse on agricultural growth and structural transformation, and its role in meeting the SDGs and the SLOs (Figure 5, left); response to requests from national policy makers to assist in developing evidence and options for specific policy reforms (Figure 5, middle); and training in the use of the tools and methods developed (Figure 5, right). With regard to the first pathway, as noted above many of the IFIs now have structural transformation and its implications for employment high on their agendas; PIM’s current work in this area is visible, and has receptive audiences among those investing in agriculture and rural development. Topics exemplifying the second pathway emerge through ongoing partnership with client countries and their development partners, and often require just-in-time responses based on up-to-date tools and data, together with the establishment of a team of researchers.
working in-country alongside counterparts in government agencies. The third pathway includes maintenance of the existing tools and development of new tools (needed to deliver the analyses that policymakers need, thereby linking with the second pathway), and frequent training of national counterparts (for instance, training courses on the use of SAMs and CGE models will continue in Phase 2 to meet the demand of various country governments).

4. Research questions and outputs

Cluster 2.1: Job Creation and Inclusive Growth

The cluster is structured around three research questions:

- What determines the pace, nature, and outcomes of inclusive rural and agricultural growth and transformation?
- What interventions (by both the public and private sectors) are most effective at fostering resilient livelihoods and job creation in rural areas, particularly for poor smallholders, landless workers, women, and the youth?
- Which analytical tools do governments need in order to formulate policies and strategies that better reflect rural transformation processes and the employment needs of the rural poor?

Stronger economic growth in many developing countries has renewed interest in research on productivity growth in agriculture, but less attention has been paid to the issues around inclusiveness. Agricultural modernization has historically had winners and losers, and numerous among the latter are poor smallholders, landless workers, women, and young people. Research in this cluster will identify the constraints and opportunities for promoting inclusive rural transformation. Major drivers shaping employment opportunities in rural areas include urbanization, globalization, and evolving rural-urban linkages (i.e. via infrastructure, information technology, and changes in the food system). This cluster will adopt a comparative country analysis approach, focusing on how these drivers create opportunities and challenges for agricultural modernization and rural transformation.

Rural entrepreneurship, including commercial farming, agro-processing, and rural services, creates jobs. Analysis of where young people are working, and factors that contribute to their success, will help governments design interventions to assist them. The rural nonfarm economy is included in this cluster in light of its importance for jobs and income generation. Research will focus on access to land and finance, as well as innovative ways to compensate for skills deficits on the part of young adults poorly served by the low quality of rural schools. To date, most efforts to create rural employment have focused on skills gaps, but addressing skills alone does not resolve the other systemic barriers.

IFPRI’s long-standing contributions to the field of economywide modeling and methods of measuring economic transformation through growth decompositions will be supplemented by development of new diagnostic tools assessing rural employment requested by FAO (McMillan & Rodrik 2011). These tools will be relevant to other CRPs and CGIAR Centers as they assess the employment effects of new technologies, mechanization, water and natural resource use, and changes in food systems. Discussions are underway with UNICEF to evaluate a number of programs, including those for youth development. Linkages between opportunities for adolescents (especially girls) and nutrition and income will be explored, as will complementarity between social protection and livelihood strategies for the very poor. Discussions with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) are underway to explore the relevance of the Village Dynamics in South Asia (VDSA) data to the key research questions on structural transformation for South Asia.

Cluster 2.2: Public Investments for Inclusive Transformation

Cluster 2.2 addresses the question: How can governments best allocate public spending to foster inclusive growth and sustainable agricultural transformation?

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2 Productivity growth was the focus of several research projects in Phase 1 of PIM. See, for example, McMillan and Heady 2014.
3 Research on youth in African agriculture started in the second half of Phase 1 of PIM. The Flagship’s core team is well established in this area. See, for example, Resnick and Thurlow 2015.
Governments allocate resources between competing demands and across sectors, and need evidence on which investments work best for reducing poverty and spurring sustainable transformation. Due to the ultimate goal of rural poverty reduction and the contributions of many sectors to this aim, this cluster will encompass analysis of spending more broadly rather than in agriculture narrowly defined. For example, investment in rural electrification and transport infrastructure may contribute more to inclusive transformation and job creation than some types of agricultural spending. The research will also seek to identify promising institutional arrangements and reforms that can increase the responsiveness of public investments to the needs and priorities of women and men in rural areas.

Many studies evaluate single programs and investments, but few methods have heretofore been available to help governments manage trade-offs and prioritize among investments. In Phase 2 this cluster will improve and expand upon the prioritization methodologies developed in Phase 1 (Pauw and Thurlow 2015). A key novel research area is the assessment of returns to public resources invested in different packages and amounts, which makes use of improved public expenditure data and analytical methods. The evaluation report of CAADP recommended that future models incorporate expenditure data from SPEED (Diao et al. 2012). FAO’s MAFAP team has expressed interest to partner in the work of this cluster, noting that prioritization of public spending is the most frequently requested area for technical assistance from African ministries of agriculture.

Cluster 2.3: Political Economy of the Policy Process

This cluster will develop tools for analysis of the political economy of policy processes, and apply them to understand how policies important for attainment of the SLOs and SDGs are made, and how public administration reforms influence the extent to which scientific evidence is used in policy processes. Discussion is underway with other CRPs to select policies important for achievement of outcomes under those programs that would be good candidates for analysis of the corresponding policy processes. Four issues that have surfaced to date are youth employment, budget allocations (especially to agricultural research), land tenure reform, and reform of public administration. If these are selected following upon further consultation, analysis would proceed along the lines described below:

- **Youth employment**: Following upon work of Cluster 2.1 that identifies policies important for enhancing opportunities for young people, work under this cluster will examine cases in which important policy reforms were passed or not, and draw out lessons for how researchers, CSOs or other champions for reforms may improve their advocacy. The policies may not be directly related to youth employment; for example, policies on investment in agricultural research and/or the functioning of land rental markets do not have youth employment as their primary objectives, but they exercise great influence over the opportunities for young people.
- **Public investment, particularly in agricultural research**: Work in Cluster 1.2 highlights wide dispersion in public investment in agricultural research. Given the consistent finding that agricultural research has high rates of return and delivers benefits to the poor, what explains the willingness of some countries to invest and the absence of such willingness in others?
- **Land tenure reform**: Land tenure reform is widely recognized as essential for achieving inclusive rural transformation. Little is known about why some governments are more receptive to reforming tenure, what policy goals they aim to achieve through the reforms, and why they have chosen different modalities for strengthening and/or redistributing land rights. The research will also examine the extent to which a relatively significant body of research on land tenure and its effects on agricultural productivity has influenced reforms, and what opportunities exist to enhance the uptake of these results in emerging reform processes.
- **Public administration reform**: Improving capacity for agricultural policy design and implementation requires that skilled and competent public servants be recruited and retained. Several governments have attempted to improve administration of agricultural programs through the creation of independent agricultural agencies, presidential delivery units, and devolved agricultural ministries. Research on this topic will examine why governments have elected to deviate from the received model of ministerial operation, how the different models affect policy
formulation and implementation, and how they can be strengthened to deliver better services for rural communities and farmers.

Other processes worthy of analysis might include subsidy policy, regulation of biotechnology and seed systems, water pricing, land-use conversion, “fat taxes” and related policies for diet and health, biofuel mandates, and many others. In conformity with the integrative mandate of PIM, this cluster will be open to co-investment and collaboration with other CRPs seeking to understand policy processes important to the success of their programs.

If interest is sufficient, this cluster could manage a community of practice for research on the policy process. The community of practice would explore and develop a variety of approaches, such as for example the Kaleidoscope Model of Policy Change, to provide a framework for identifying a subset of hypotheses about the necessary and sufficient conditions that drive change in different elements of the policy process (Resnick et al. 2015). A number of tools can test the KM hypotheses, including policy chronologies, policy mapping that identifies responsibilities and flows of information among key actors, stakeholder inventories, and circle of influence graphics that align stakeholder preferences with their degree of influence over decisionmakers. These tools can be combined with others used across CGIAR, such as policy network analysis, power mapping, and gender-based class analysis.

5. Geographical focus

Since all regions have countries that are late transformers and currently face significant challenges, inclusive structural transformation and youth employment are of interest throughout the world. Resource and capacity constraints are likely to limit the number of countries in which in-depth analysis and policy support can take place. Within these limitations, priority will be given to a set of countries in which a number of CRPs are collaborating and coordinating geographically. A preliminary set of such countries is likely to include Bangladesh, Ethiopia, Ghana, Nigeria, and Tanzania. Results of the research will be of interest in other regions, such as the Middle East and North Africa, where concerns about youth unemployment are also high.

6. Learning from Phase 1

This section highlights the main lessons learned in Phase 1, and how the team will build on those in Phase 2.

- The impact from the type of research conducted in Flagship 2 is greatest when working directly with national governments. Examples from Phase 1 include research on Malawi’s Farm Input Subsidy Program, Tanzania’s maize export ban, Ethiopia’s Second Growth and Transformation Plan, and mechanization in Ghana. In this configuration, research results can be quickly communicated to governments, and research teams can be active in supporting policy dialogue. Presence and relevance do not necessarily confer predictive power over the timing or direction of outcomes of highly politicized policy debates.
- Achieving impact requires transferring tools and databases to users in-country and among international partners, not just conveying research results. In Phase 1, PIM worked with governments to develop SAMs for 15 countries, many of which were used to evaluate major national policies. Transfer and training of partners will continue in Phase 2, and expand in response to demand.
- Accounting issues associated with measuring agricultural public spending are complex, and require detailed work on national accounts. PIM’s work on public expenditures in Phase 1 made good progress in understanding and organizing this complexity in ways that facilitate cross-country comparison (Mogues and Benin 2012; Mogues et al. 2015; Mogues and do Rosario 2015). This work will continue under Phase 2. For several large countries with federal systems, subnational data are required to obtain a full picture, and the team will explore feasibility of working at this level.
- Research on the political economy of policy change proposed in Cluster 2.3 was not included in the first phase of PIM. PIM’s external evaluation and the ISPC highlighted this area of research
as fundamental for successful application of CGIAR’s policy research. The core team is skilled and experienced in this work, and ready to begin implementation (Birner and Resnick 2010; Resnick and Birner 2009).

7. Gender and youth

The flagship contributes significantly to the understanding of opportunities and constraints of women and the young people, as well as to identifying policies and programs that lead to more inclusive growth and job creation. Identifying systemic barriers to creation of jobs for young men and women is one of the main research objectives of Cluster 2.1. One main outcome of the cluster directly concerns the ability of young people to make decisions about farm and nonfarm employment opportunities given their aspirations and access to resources, such as land. Cluster 2.2 aims to examine the differential impacts of public expenditures on different groups of people, including men, women, and youth. Cluster 2.3 explicitly focuses on the degree of inclusion (or exclusion) of certain groups of stakeholders, including women and youth, in the design and advocacy of policies, and identifies ways of removing barriers to their participation.

8. Comparative advantage

CGIAR has a comparative advantage in understanding the potential of agriculture to create jobs and the underlying conditions necessary for this to happen. Within CGIAR, PIM has a comparative advantage in identifying systemic constraints through analysis of the changing process of transformation, economywide modeling, and analysis of public expenditure across sectors. PIM’s work in this area can complement attention that AFS CRPs give to youth employment specifically within the farming systems that they influence most directly. PIM’s analytical work on systemic constraints also complements and supports the operational engagement on youth employment issues of the major implementation partners, such as IFIs and NGOs. Organizations active in this area include AGRA, the African Development Bank, FAO, IFAD, the MasterCard Foundation, and the World Bank. PIM has ongoing discussions with each.

Effective analysis of the impact of public spending on development outcomes requires high quality expenditure data, which are very time consuming to assemble and put in a common framework. The SPEED dataset, maintained and improved by IFPRI with support from PIM, is a highly valued resource for this purpose, which gives PIM a comparative advantage in analysis. The International Monetary Fund (IMF) also collects public expenditure data, but not with the level of sectoral disaggregation needed for research on structural transformation and effectiveness of expenditure. The World Bank has maintained an effort on agricultural spending with support of the BMGF for several years, and PIM has collaborated with this team.

IFPRI’s CSSPs have developed long-term partnerships with national governments in several countries, including those likely to collaborate with CGIAR, and provide a useful entry point for the broader Flagship 2 research agenda to achieve impact.

PIM has a strong interdisciplinary team of researchers able to do innovative work on the policy process. PIM’s comparative advantage in research in this area is in sharing of tools, methodologies, and rigorous analytical frameworks. In addition, PIM has the convening power to facilitate a community of practice if interest warrants.

9. Collaboration within CGIAR

Within PIM, findings of the foresight modeling work have implications for public expenditures that can be drawn out jointly by the Cluster 1.1 and Flagship 2 teams. Similarly, analysis of the policy process is relevant to the issues associated with science policy (Cluster 1.2), and the latter would be good subjects of inquiry for teams engaged in the former. Job creation along the value chain (Flagship 3) is an important input into structural transformation. Flagship 2 also links with Flagship 4, in identifying livelihood strategies and interventions for the vulnerable (in addition to safety nets) that contribute to inclusive transformation and reduction of poverty. Land tenure issues addressed in Flagship 5 are in some settings important
constraints to youth employment and to structural transformation. Finally, the tools for gender analysis developed under Flagship 6 are very relevant for understanding how men and women participate separately and jointly in processes of agricultural and rural transformation.

More broadly within CGIAR, a number of AFS CRPs have expressed intent to examine rural-urban linkages. PIM encourages these CRPs to explore tools available within PIM, especially the country-specific SAMs and CGE models, before they invest in alternatives. PIM researchers and those of other CRPs can work together to adapt the models as needed for applications within the AFS CRPs. The GI CRPs have interest in applications of policy process research; discussions are underway with A4NH, the CGIAR Research Program on Water, Land, and Ecosystems (WLE), and CCAFS. CIFOR has expressed interest to contribute to Cluster 2.3 on policy processes.

10. External partnerships

Confirmed research partners outside CGIAR include FAO, the World Bank, and MSU. Three FAO teams (Rural Employment Team, MAFAP, and governance and policy team) have expressed interest to partner with the PIM team. Researchers in Clusters 2.1 and 2.2 have been working with the World Bank in Phase 1 on transformation, migration, and public investment. This partnership will continue in Phase 2 with the following Global Practices and cross-cutting solution areas of the World Bank: Agriculture; Poverty; Social, Urban, Rural and Resilience; and Jobs. The African Center of Economic Transformation (ACET) in Ghana and the Future Agricultures Consortium (FAC) in the UK are other potential partners for continued work. IFPRI and ACET have an ongoing research activity on agricultural transformation, and the FAC has a long-standing interest in the political economy of agricultural policy. MSU and IFPRI, together with the University of Pretoria, have a five-year Food Security Policy (FSP) project (2013–2018). This project falls within the US Government’s Feed the Future Program, and seeks to promote inclusive agricultural growth on and off the farm, improved nutritional outcomes, and enhanced livelihood resilience through better policy.

Conclusions of the work of Flagship 2 will be reflected in operational programs of FAO, IFAD, USAID, the World Bank, WVI, and other implementation organizations.

11. Capacity development

Researchers under Flagship 2 provide regular training in construction and use of SAMs, economywide country CGE models, approaches to measuring economic transformation through growth decompositions, the SPEED database of public expenditures, and the KM of policy change (see Section 2). These efforts will continue during Phase 2.

12. Integration between Window 1-2 and bilateral/Window 3 funding

In Phase 1, Flagship 2 has the largest amount of bilateral/Window 3 funding of all PIM flagships, largely because it houses the bilaterally funded CSSPs led by IFPRI. A high level of donor support for the CSSPs is expected to be maintained in the future. The work programs agreed with governments under the CSSPs cover a wide range of topics that fall within flagships of PIM. In Phase 2, the elements of the CSSPs will be assigned to the flagships with which they are thematically aligned, both to achieve synergy of subject matter and to better balance the size of the flagships.

Several grants from DfID have been secured for research on economic transformation in Africa and development of approaches to measuring transformation. Discussions are underway regarding possible additional funding for the work of Cluster 2.1. Discussions have been initiated with the World Bank, USAID, and the Swiss Development Cooperation for continued work on public expenditures (Cluster 2.2). Joint fundraising for work on youth employment is planned with the FAO’s Rural Employment Team. Research on rural transformation and political economy of the policy process is a key component of the FSP project funded by USAID through September 2018.
Flagship 3: Inclusive and Efficient Value Chains

1. Justification for the flagship – Issues to be addressed, and why they are important

This flagship encompasses three clusters of activities. Cluster 3.1, Enabling Value Chains, focuses on diagnostic assessments of (a) the global trading system, (b) regional trade, (c) national market systems, (d) the domestic policy environment pertaining to value chains, (e) specific commodity value chains within national systems, and (f) nodes along the chains. Cluster 3.2, Strengthening Value Chains, identifies interventions in value chains that increase efficiency and inclusion, particularly of poor and marginalized groups. Cluster 3.3, Upgrading of Value Chains at Scale, investigates how to make prioritized interventions to scale, recognizing the importance of context and the need for 'best fit' scaling strategies.

The work in Cluster 3.1 – Enabling Value Chains addresses the domestic and international policy environment that enables actors in value chains to operate efficiently. The cluster provides a macroeconomic and transversal (across countries, sectors, and commodities) analytical framework in which value chains function (Diaz-Bonilla 2015). Trade policy and market access are critical to the operation of value chains (Stephenson 2013). For example, the World Economic Forum’s Enabling Trade Index has four conditions that affect performance of global value chains: market access, border administration, infrastructure, and the operating environment. This cluster aims to increase the returns to the work of CGIAR and partners by analyzing and improving key features of the policy environment (public and private) that affect value chain innovation at present and could jeopardize potential future gains. Analysis of developments in global and regional trade, including negotiated trade agreements, facilitates understanding of shifts in competitiveness and comparative advantage that will affect the pace of adoption of new technologies and prospects for poor producers and consumers. In addition to trade, value chains are affected by agricultural policies and other policies that shape the enabling environment, for example, exchange rate, competition, tax, energy, environmental regulation, and social protection policies. Cluster 3.1 will apply a set of common tools across value chains and countries to measure the overall effects of different policies on the level of incentives and on the implicit taxation of producers. The cluster will also use models to capture the linkages and leakages at the international, regional, subnational, and sectoral levels to assess coherence of policies, institutional arrangements, and mechanisms that affect the performance of value chains.

Building upon the diagnostic work in Cluster 3.1, as well as experiences in Phase 1, work under Cluster 3.2 – Strengthening Value Chains will identify priority interventions to strengthen value chains, and rigorously test these interventions, for example, through randomized controlled trials and other state-of-the-art impact evaluation methods. The work will assist policymakers, service providers, and private firms in identifying leverage points in the value chain where interventions and investments can have high impact in terms of incomes, poverty, agricultural innovation, and efficiency. This cluster seeks new insights into the cost-effectiveness of specific interventions in reducing market failures within value chains, and takes into account current market dynamics, such as rising food safety standards, prevalence of informal markets, reforms driven by consumer demand, and increased roles of farmer groups and producer associations. The team will draw on insights from contract design, mechanism design, and industrial organization theory to diversify risk, reduce market failures, improve the design of interventions, and promote inclusion. Work on prioritization will seek to identify the nodes of the value chain most amenable to intervention in the specific political, legal, and institutional context. The work will also provide insights into the extent to which strengthening of value chains can meet other objectives in addition to poverty reduction and inclusion, such as enhancing biodiversity, and when complementary instruments are needed for achieving these goals.

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4 For a general discussion on the relevance of the enabling environment for agriculture, see Diaz-Bonilla et al. 2014.
5 The value of having an aggregated measure of distortions, as the Nominal Rate of Assistance, is well illustrated by Fuglie and Rada (2011). Without such indicator, econometric analysis of the evolution of agricultural productivity and technological adoption in the African case will be strongly mis-specified.
Cluster 3.3 – Upgrading of Value Chains at Scale focuses on the identification of best-bet options for scaling innovations. Although many pilot interventions have been designed and tested, relatively little is known about the comparative effectiveness of scaling mechanisms for value chain interventions that benefit smallholder households or low-income consumers (especially poor women, men, and youth).\(^6\) Cluster 3.3 will identify a typology of scaling mechanisms, review forms of cost sharing between public and private actors, test and evaluate scaling models, and assess these models’ cost-effectiveness, rates of return, and impact on poverty. The cluster will also connect research results with policymakers and the policy process to facilitate adoption of successful interventions at scale. Regional value chain hubs will provide opportunities for testing scaling mechanisms, and serve as platforms for collaboration with the AFS CRPs and external partners (see below).

2. Demand for this research – Who will use it, and to do what

Current PIM work is utilized by national policymakers, value chain actors, financial institutions (such as banks and cooperatives) and other service providers, and donors. Organizations such as the Asian Development Bank, CAADP, ECOWAS, the EC, the European Parliament, IFAD, USAID, the US Congress, and the World Bank, as well as national parliaments in developing countries, governments and executive agencies, and trade negotiation bodies will continue to access and apply evidence generated under Flagship 3.

PIM’s research on prioritization, scaling, and impact assessment will also inform nongovernmental organizations that focus on advocacy, policy dialogue, and market development and provide services to value chain actors. Examples of such organizations include the European Centre for Development Policy Management (ECDPM), CRS, and Technoserve, as well as the private sector, international organizations, and investors. Private sector networks such as the World Economic Forum’s (WEF) New Vision for Agriculture, the Sustainable Agriculture Initiative (SAI) Platform, the Sustainable Food Lab (SFL), the Roundtable on Sustainable Biomaterials (as well as a variety of other roundtables on different commodities, for example those set up by the World Wildlife Fund (WWF)), and the Seas of Change initiative all convene private sector actors globally and in specific geographies to improve sustainability and inclusion. The program will engage with these networks to document and share experiences.

Within CGIAR, the current commodity CRPs use the tools and methods developed by PIM under Phase 1, and the AFS CRPs are expected to continue to do so. For example, PIM’s Flagship 3 links with the CGIAR Research Program on Forests, Trees and Agroforestry (FTA)’s flagship on governance, investments, and value chains. While the work of PIM will focus on improving efficiency and inclusiveness across a number of value chains, FTA’s flagship focuses on understanding the dynamics of value chains specifically for oil palm, cocoa, and coffee, some of the largest and fastest growing commodity subsectors. CGIAR scientists from the AFS CRPs will draw on PIM’s research to understand the opportunities and necessary partnerships for interventions in particular value chains, and to evaluate the impacts of interventions on poverty. In CGIAR countries of collaboration, PIM will actively engage with interested AFS CRP scientists and partners to identify scaling mechanisms suited to the specific technologies and countries and effective in reducing poverty under the specific circumstances. Efforts will also be made to understand how better to inform relevant policy processes with evidence about the performance on value chains.

3. Theory of change and impact pathways

Flagship 3 contributes most strongly to three IDOs under SLO 1 on poverty reduction (IDO 1.2 ‘Enhanced smallholder market access’, IDO 1.3 ‘Increased incomes and employment’, and IDO 1.4 ‘Increased

\(^6\) Several policy briefs and guides for scaling up have been produced using case studies on successful scaling up interventions. However, these products are, for the most part, not based on concrete empirical/systematic evidence. See Binswanger and Aiyar 2003; Cooley and Kohl 2005; Desai 2007; Jonasova and Cooke 2012; Linn 2012; Hartmann and Linn 2009; World Bank 2005.
productivity’), while contributing significantly to IDO CC3.1 ‘Enabling environment improved’. Strengthened and inclusive value chains will also have more indirect effects, such as on resilience and nutrition. Figure 6 focuses on the most direct contributions.

**Figure 6. Impact pathways for Flagship 3**

The specific outcomes for the flagship are:

**Cluster 3.1 – Enabling Value Chains**

- Representatives of developing countries well informed to represent their interest in trade negotiations related to agriculture.
- Improved capacity of researchers and partner research and development organizations to undertake value chain policy analyses.
- Use of evidence on the efficiency and distributional impacts of trade, environmental, and energy policies by policymakers.
- Improved policies at global, regional, and national level on prioritized value chains to reduce market barriers and inefficiencies.

**Cluster 3.2 – Strengthening Value Chains**

- Innovations in measuring and reducing value chain losses and waste applied.
- Interventions and investments in selected value chains adopted by the private sector and development organizations and supported by governments.

**Cluster 3.3 – Upgrading of Value Chains at Scale**

- Scaling models used by public and private sector agents to achieve greater development impact in priority countries/regions.
- Increased investment from multiple sources to support inclusive and sustainable agricultural commercialization.
• More effective income generation and capture by producers through prioritization of value chain interventions and targeted public and private investment options.

The flagship aims to achieve these outcomes through interdependent pathways, recognizing the synergies between improving the policy environment and scaling up the use of beneficial value chain innovations. The flagship engages with policymakers at global, regional, and national levels to identify welfare losses due to inefficient policies, and works alongside other partners (e.g., OECD, ECOWAS) to analyze alternative options and present these findings. Members of the PIM team have a well-established track record in using a variety of trade and other models for this purpose, and are often invited to provide analytical support to policy processes (e.g., the World Trade Organization (WTO)). Along a second pathway, PIM’s researchers work with value chain actors who directly implement change and can potentially scale up innovations. PIM research to evaluate value chain innovations is conducted in collaboration with these client groups. For example, the partners provide information on key challenges and potential solutions that researchers can then use in the design of evaluations. The scope of the collaboration includes strengthening the technical competency of implementation partners and monitoring the performance of the innovations used. These partnerships shorten the outcome pathway for localized outcomes. Due to the needed emphasis on reaching impact at scale, Cluster 3 was formulated by the research team to intensify research attention beyond localized successes, which abound in the CGIAR and in development organizations. One innovation already launched in the first phase is the establishment of regional value chain hubs, which aim to more proactively disseminate knowledge on innovations, forge partnerships among key stakeholders, and build capacity. These hubs are expected to provide closer links to other mechanisms and platforms at local levels, for example, innovation platforms. As the hubs gain experience, more emphasis will be placed on developing relationships with national policymakers and establishing public-private arrangements to achieve impacts at scale in CGIAR countries of collaboration and other selected priority countries.

Underpinning all of these efforts, PIM researchers also strengthen the capacity of colleagues within and beyond CGIAR to use improved value chain research methods and tools, thus amplifying the reach of the program. As noted elsewhere, PIM has made important investments to help develop a cadre of young modelers and analysts under the African Growth and Development Policy Modeling Consortium (AGRODEP) program, and these types of investments will continue in Phase 2.

4. Research questions and outputs

Cluster 3.1 – Enabling Value Chains

Cluster 3.1 addresses the following research questions:

• How do changes in trade policies or institutions affect poor producers and consumers in different locations?
• How efficient are value chains when compared across commodities and across countries?
• What are the existing, or new, policy and institutional challenges that could jeopardize or facilitate the potential gains of future value chain innovations?

The outputs are as follows:

• Modeling innovations (especially CGE modeling) to capture spatial, technological (using detailed farm surveys), and social (gender, demographic) heterogeneity relevant for the environment in which value chain actors operate.
• Identification of the distributional effects of changes in value chains from trade reforms, technological innovations, or other shocks on the most vulnerable groups in a society.
• Tools for developing countries to analyze macroeconomic policies and their interactions with the agricultural sector and identify best practices for an enabling environment for value chains.
• Identification of market efficiency, distortions and barriers, and strategies to reduce them.
• Measurement of inclusiveness of value chains in terms of job creation and options for livelihood opportunities for women, young people, and marginalized groups.
Cluster 3.2 – Strengthening Value Chains

Cluster 3.2 addresses the following research questions:

- What are the leverage points with highest impact for upgrading value chains?
- How are benefits of interventions distributed?
- Which interventions in specific value chains are most cost-effective and create new opportunities for poor producers, women, young people, and marginalized groups?
- How can losses across the value chain and waste be reduced?

The outputs are as follows:

- Spatial typologies of value chains to assist in targeting interventions (Torero 2014).
- Understanding of the policies needed to change the distribution of benefits along value chains to make them more inclusive and profitable for farmers, women, and young people.
- Tools to measure losses, risk, and market failures along value chains, and analysis of costs and effectiveness of interventions to reduce them.
- Ranking of losses across value chains and along nodes to prioritize intervention points, and policy recommendation to minimize food waste.
- Compendium of tested best practices for value chains, including collective action, contract farming, and market information.7
- Guidance for impact evaluation targeted at investors committed to improve the environmental and social performance of agrifood value chains.

Cluster 3.3 – Upgrading of Value Chains at Scale

This cluster supports both methodological research and scaling implementation through communication and capacity building of implementation partners. It addresses the following research questions:

- How can interventions tested and found useful in pilots be applied more widely to achieve impacts at a larger scale?
- Which scaling models and mechanisms are particularly effective, and how can they be replicated in or adjusted to different contexts?

The outputs are as follows:

- Methods and tools developed to identify effective leverage points for scaling up approaches.
- Mechanisms to define the most effective scaling approaches for interventions under specific conditions, including decision-support tools, comparative assessments, common evaluation frameworks, and methods to assess cost-effectiveness, sustainability, and poverty impacts.
- Expanded value chain platforms (hubs) in priority geographies to provide insights and facilitate shared learning as well as increase synergies and outcomes.
- Tailored public and private partnership models and mechanisms.
- Innovative capacity development on value chains relevant to both CGIAR and non-CGIAR partners.

5. Geographical focus

Flagship 3 works in an integrated manner across the range of global to national levels. In addition to global trade analysis, regional dimensions emphasize CGIAR countries of collaboration. They include

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7 For example we will look at best practices and innovative contract farming designs together with the private sector (see http://private.tools4valuechains.org/tool/contract-farming), and innovations in rural producer organizations to improve the lives of smallholder farmers by strengthening the capacities of farmer groups.
those in Africa south of the Sahara (for example, the Regional Economic Communities such as ECOWAS), South and Southeast Asia, and Latin America. The work on specific value chain innovations will likely be concentrated around the locations of the value chain hubs in Eastern and Southern Africa (hub located in Ethiopia with activities in Kenya, Tanzania, and Uganda), Western Africa (virtual hub in Senegal, with additional activities in Nigeria and Ghana), and Latin America (hub in Peru, with activities in the Andean countries, Honduras, and Nicaragua). The locations of the hubs make them relevant to most of the countries selected for geographic collaboration of CRPs. Potential additional regions and countries, depending upon CGIAR consultations, include South Asia (Bangladesh, India, and Nepal), Southeast Asia (Cambodia, Myanmar, and Vietnam), Latin America (Bolivia, Colombia, Ecuador, Guatemala, Haiti, and Mexico), and North Africa (Morocco and Tunisia).

6. Learning from Phase 1

The work proposed under Flagship 3 has a strong foundation in Phase 1, with several lessons learned from both substantive findings and impact pathways. Phase 1 research demonstrated the consequences in developing countries of particular trade (Bouet and Laborde 2010; Jean et al. 2011) and biofuel (Laborde 2011) policies, such as indirect land-use change (ILUC) associated with biofuels. The CGE modeling (MIRAGE) work on ILUC associated with biofuels expansion has had a significant impact on European policies, confirming that policies originating in developed economies have major implications for developing countries' prospects. Interest in regional trade agreements (e.g., from CAADP) and their impacts on developing countries has also increased, and this will be given greater attention in Phase 2. Work in Phase 1 under the activity ‘Measuring Distortions along Value Chains’ has contributed to convening of major international organizations engaged in this task, and has yielded valuable methodological insights informing the work in Phase 2. It has allowed us to distinguish between policy incentives and other distortions along a value chain for a wide range of developing countries (in Africa, Asia, and Latin America) (Anderson et al. 2006). The work has led to improved computation of nominal rates of protection (NRPs) for a wide range of commodities in many countries, allowing for more nuanced modeling and more informed policy dialogue through implementation partners.

Cluster 3.2 builds upon previous work conducted to test methodologies and evaluate specific value chain interventions, including the development of gender-responsive tools for assessment of value chains. In light of outputs from PIM in Phase 1 the Agricultural Ministerial meeting of the G20 in Turkey on May 7–8, 2015, endorsed creation of a platform on postharvest losses by IFPRI and FAO. Further development of multistakeholder platforms for joint learning and development of tools will draw on analysis completed in Phase 1 (Anderson et al. 2006).

Proposed activities under Cluster 3.3 build on the lesson learned in Phase 1 that knowledge should guide interventions and that rigorous testing should precede scaling. The assessment by members of the value chains community of practice of various options for achieving greater scale for their work resulted in the decision to create three pilot hubs for outreach. As noted in the external evaluation of PIM, the hubs show promise, and will be monitored to assess their performance. Through continued joint work of participating Centers to develop tools for value chains, to assess learning alliances and other approaches for scaling, and to strengthen linkages to wider policy debates, the work of Phase 1 will have impact at a greater scale in Phase 2.

7. Gender and youth

Demography and gender issues contribute to the enabling environment on the demand and supply sides of markets for food, and through the labor market. Cluster 3.1 will explore gender-specific implications of agricultural distortions, trade patterns, and macroeconomic policies. Under Cluster 3.2, tools have been developed in Phase 1 for gender-sensitive assessment of value chains, including methods to diagnose segregation in employment and in control of assets. The tools have been used to design interventions

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targeting men and women separately, and tested in randomized field experiments. These tools can be adapted to examine segregation of other identifiable groups, such as youth and specific ethnic groups, and can reveal potential and actual differences in income or other outcomes resulting from exclusion.

A more rigorous understanding of where women and young people are employed in the different nodes along the value chains will lead to more inclusive structural transformation, and contribute to Flagship 2. The value chain hubs are critical for scaling this work, and the communities of practice around them will be integral to designing and testing tools with a gender focus (such as participatory market chain approach (PMCA), LINK, and 5Capitals). This work will also assist the AFS CRPs in assessing the gender implications of improvements in their focus on commodities and farming systems, and lead to more inclusion of smallholders with particular emphasis on women.

8. Comparative advantage

Work on value chains is spread broadly throughout the CGIAR portfolio. PIM’s comparative advantage lies in looking across the AFS portfolio to answer questions relevant to several commodities. In addition, PIM links the analysis of value chains to the larger framework of macroeconomic incentives and trade rules. PIM’s combination of macroeconomic analysis and attention to sectoral and commodity-specific policies gives the program an ability unique within CGIAR to assess interlinkage of policies and discern their aggregate impacts. The MIRAGE CGE modeling framework is acknowledged in the PIM evaluation to offer unique capacity to show the impact of complex interactions and test options for policy reform.

Flagship 3 serves an integrative function by facilitating interactions within CGIAR through twice-yearly meetings of the value chains community of practice. PIM also addresses issues common to many value chains. PIM has a comparative advantage in coordination on such topics.

Since researchers working within Flagship 3 are well linked with biological scientists within the Centers, they are able to examine how technical change in one node flows along the value chain. This strength is heightened by the physical presence of CGIAR on the ground, and a history of linkages with national partners. PIM researchers have strong connections with partners from governments, the private sector, civil society, and bilateral funders, and these connections are helpful for achieving impact at scale. PIM’s modeling capacity can be used to capture the impact of value chain interventions at scale on core indicators of the SLOs. The PIM team has an established record of contribution to policy processes linked to value chains at the global, regional, and national levels, and of effective capacity building (for example, through the AGRODEP network). Work has already begun with the hubs to scale up interventions in Africa and Latin America.

9. Collaboration within CGIAR

The contribution of PIM to the work of CGIAR on value chains consists of: (a) diagnosing features of the policy and institutional environment that undermine value chains or are needed to improve their performance; (b) applying new tools and methods to identify which problems (both in the environment and in the value chains) warrant priority attention; (c) designing and rigorously testing interventions to address identified problems; and (d) promoting scaling up. PIM will work collaboratively with the AFS CRPs as they apply and adapt the approaches to technologies and settings within their areas of emphasis. PIM and the AFS CRPs will share results and experience through the community of practice.

PIM will also work on issues common across commodities, such as losses across the value chain and food waste, increased access to financial and other services, and innovative designs of contract farming and innovations in rural producer organizations to strengthen the capacities of farmer groups.

PIM’s work on value chains during Phase 1 has gained visibility within CGIAR through successive PIM extended team meetings, the efforts of PIM focal points at a number of CGIAR Centers, and creation of the Tools4value chains portal. Work on trade in Cluster 3.1 provides insights into the impact of trade regimes and regulations on subsectors of the agricultural economy, with attendant consequences for
livelihoods of smallholders and vulnerable populations. PIM’s work on trade is made available to AFS CRPs by providing selected indicators at the value chain, country, or regional level as well as ex-ante analysis of trade reform.

Under Cluster 3.2, participation from other Centers through the community of practice will continue, as will the engagement with commodity CRPs as they transition to AFS CRPs. Work with A4NH on nutrition will grow. Work on postharvest losses is of particular interest to the CGIAR Research Program on Roots, Tubers and Bananas (RTB), the CGIAR Research Programs on Rice, Fish, Maize, and other AFS CRPs.

Cluster 3.3 has an explicit focus on collaboration with other CRPs through the regional hubs. Discussions with RTB are well advanced regarding co-investment on impact assessment and scaling up, and discussions with other CRPs are underway.

10. External partnerships

Key external partners are provisionally listed below:

- Agricultural Incentives Consortium (PIM-FAO-MAFAP-OECD)
- International organizations: International Finance Corporation (IFC), IFAD, World Bank, WTO
- French National Institute for Agricultural Research (INRA), Natural Resources Institute, University of Roma Tre, Penn State University, Purdue University, WUR
- International NGOs: inter alia CRS, ECDPM, International Centre for Trade and Sustainable Development (ICTSD), International Institute for Sustainable Development (IISD), SNV, Technoserve, WVI
- Regional development banks
- Private sector companies and platforms: Mosaicco, Novozymes, SAI Platform, Seas of Change, SFL, WEF’s New Vision in Agriculture (Grow Africa, Grow Asia & Grow Latin America)

11. Capacity development

This flagship has a strong record on capacity development. Much of the research on trade is done collaboratively with developing country partners, and is used to inform their representatives in the WTO negotiations. The tools and methods for value chain analysis are accessible on tools4valuechains.org, and several training sessions have been held to demonstrate their use. The value chains team works closely with AGRODEP (e.g., the training session for AGRODEP members in Senegal in September, 2015, on the topic of agricultural distortions and value chains). The value chain hubs will offer training in use of the tools. The Ag-Incentives.org website will include a comprehensive database of measurements for agricultural distortions, which can be used by policymakers and analysts for monitoring these distortions, and allowing for better policy design.

12. Integration between Window 1-2 and bilateral/Window 3 funding

The flagship’s current main bilateral/Window 3 funders include the French Development Agency (AFD), BMGF, DfID, the EC, the Hewlett Foundation, the Inter-American Development Bank, USAID, and the World Bank. This funding mainly supports the work of Cluster 3.1 on trade and measurement of distortions.

Donors’ interest in research on strengthening value chains, making them more inclusive, and scaling up interventions, is strong. Discussions are underway with Cargill, the MasterCard Foundation, the Rabobank Group, the Syngenta Foundation, and others to augment funding for this work.
1. Justification for the flagship – Issues to be addressed, and why they are important

Reducing poverty and improving food and nutrition security are two of the three highest level objectives (SLOs) for CGIAR research. Although agreement is widespread that growth—from agriculture and other sectors—is important for achieving both, not all of the poor are able to share in growth, especially in the short- and medium-term. Moreover, even when growth is robust and broadly inclusive, shocks can push people into episodic poverty and deprivation. Shocks associated with volatility of food prices, drought, flood, and disease are frequent and affect increasing numbers of poor people as population grows in vulnerable and marginal areas. Governments and organizations committed to poverty reduction have accordingly increased attention to resilience and management of shocks. Programs of social protection—including outreach with innovative financial instruments—are primary instruments of resilience to complement interventions supporting growth. Evidence shows that social protection programs often lead to substantial poverty alleviation, and prevention of poverty. Fiszbein et al. (2013) estimate that social protection programs are currently preventing 150 million people from falling into poverty. Moreover, social protection research under PIM enhances the work of each of the other five flagships by, for example, reducing the downside risk associated with trying new technologies, building natural capital through labor-intensive public works, reducing the mining of natural resources in times of stress, augmenting social capital by keeping children in school long enough to prepare them for jobs requiring new skills, and addressing nutritional needs of women and children. Social protection is thus a core element of the PIM program, and one that supports the other flagships of PIM and the AFS CRPs, particularly in their attention to sustainability of food systems for the very vulnerable.

In light of accumulating evidence on the efficacy of long-standing social protection programs in Latin America, governments of Africa south of the Sahara and South Asia have begun to introduce similar programs. Large-scale social protection programs operate in Ethiopia and South Africa, and many other African countries have introduced smaller programs, particularly after the financial crisis in 2008. The governments of Bangladesh and India run a variety of large social protection programs. The contribution of social protection to poverty reduction has been substantial in South Asia, but small in Africa south of the Sahara, in part reflecting differences in spending on social protection.

The increased interest in social protection in countries with a backlog of needed public investment in agriculture presents policymakers with difficult trade-offs. In Africa south of the Sahara in particular, research exploring how to enhance complementarity between social protection and agricultural growth is in high demand. Much of the PIM portfolio supports research on agricultural growth and inclusive rural transformation. Flagship 4 is designed to step in when growth is not enough, that is, when instruments of social protection are needed to mitigate risk, protect against hunger, and prevent the erosion of human, financial, and natural capital resulting from widespread destitution.

Cluster 4.1 – Social Protection Delivery and Outcomes proposes to study how to improve the efficiency and expand the scope of social protection programs by: (a) improving on program modalities and designs; and (b) linking transfers in cash and food to complementary investments in nutrition information, agriculture, financial inclusion, skills training, and employment. A recent article in Science showed broad impacts on consumption, food security, assets, income, and mental health from multifaceted social protection programs in six countries that link cash transfers to other investments (Banerjee et al. 2015). In addition, countries newly committing to social protection programs are keen to know how they can best limit the fiscal costs of these program, given budgetary needs in other sectors. Such concerns have brought attention to the issue of graduation, which is of particular interest in Africa south of the Sahara. These are also topics addressed in Cluster 4.1.

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Cluster 4.2 – Financial Inclusion and Services for the Poor aims to expand sustainable provision of financial services to the poor by improving access to credit, savings, and agricultural insurance, both separately and in conjunction with transfer programs. Access of individuals and households to financial services carries many benefits pursued under other flagships of PIM and throughout the CGIAR portfolio, such as more rapid adoption of new technologies, better adaptation to climate change, participation in value chains, diversification of livelihood strategies, reduced extraction of natural capital (cutting forests, mining soil, etc.), and gender equity if women have access. When local governments and administrators of social protection programs themselves have improved access to financial services, interventions targeting the poor can be implemented at lower transaction costs, thereby reaching more beneficiaries. Despite the manifest benefits of financial inclusion, market failures in many dimensions limit participation. Financial institutions lack information to distinguish good clients from risky ones, and hence err on the side of exclusion. Poor clients make small transactions, and are therefore expensive to serve. Actuarial data are rarely complete enough to limit risk premia to affordable ranges. Research on financial inclusion is needed to understand which services are of highest value to poor clients, how they can be offered affordably, how to bundle financial services with other interventions, and whether different excluded groups require different services and products. A number of technical innovations in financial services, and particularly those drawing on ICTs, make this a dynamic field with many new approaches to explore.

2. Demand for this research – Who will use it, and to do what

PIM’s research on social protection is well linked with an array of users in the humanitarian and development community, national governments, private firms, and academic circles. These categories of users will remain the same in Phase 2, but the composition within categories will change, with addition of new countries and partners. Examples include:

- **Policymakers**: PIM researchers are engaged on topics of social protection with high-level policymakers in Bangladesh, Brazil, Ecuador, Ethiopia, India, Mali, South Africa, and Uganda. The primary interest of policymakers is in advice on design of programs, and better understanding of how to increase their impacts and make them more efficient and cost-effective. Results of studies are used in design and revision of programs. For example, the Ethiopian Productive Safety Nets Program benefited from a 10-year series of biennial surveys of beneficiaries, undertaken jointly by researchers from IFPRI and the Federal Ministry, with adjustments introduced into the program after each review. In the area of financial inclusion, many governments have a history of intervention in financial markets to benefit the poor, and many interventions have failed. Research identifying ways that the private sector can lead such interventions in partnership with public investments (e.g., simple instruments of weather insurance sold by private companies once weather stations are improved and more densely located) is of interest in many national settings. Under Phase 1 of PIM, the Government of Uruguay sought assistance from an IFPRI/PIM team in exploring the level of subsidy for crop insurance required to secure a target level of uptake by farmers, and successful public-private commercial pilots are now being implemented and expanded.

- **Private sector, United Nations (UN) agencies, and NGOs**: Financial institutions (including but not limited to microfinance institutions) will benefit from studies assessing the likely uptake of different financial products by poor people who are not yet clients. Similarly, UN agencies (WFP, FAO, UNICEF) and large NGOs (WVI, Save the Children, Helen Keller International) that provide social protection or offer financial services on a noncommercial basis will be able to apply findings relevant to their work. PIM has already established working relations with many of these organizations.

- **Local governments and administrators of social protection programs**: Research from this cluster will provide additional and more flexible funding options for local governments and social protection programs, to make their interventions more responsive to economic downturns and regional covariate risks. They will also be interested to apply findings about more efficient delivery channels for monetary transfers.
• **Research and academic community:** Past PIM research under Flagship 4 has led to a large number of peer-reviewed publications. The contribution of PIM and IFPRI to the professional field was confirmed in the recent external review of IFPRI’s social protection research at IFPRI (Nelson et al. 2015). This gives PIM researchers a voice within the research community and at conferences to influence professional debates about social protection, livelihood strategies for the poor, and financial inclusion.

3. **Theory of change and impact pathways**

In focusing on poor and vulnerable groups that require assistance beyond agricultural interventions, this flagship is the only one within PIM which contributes to IDO 1.1 ‘Increased resilience of the poor to climate change and other shocks’ and IDO 2.1 ‘Improved diets for poor and vulnerable groups’.

The main outcomes of the flagship are:

**Cluster 4.1 – Social Protection Delivery and Outcomes**

- Improved knowledge of social protection options and their benefits among key decisionmakers.
- Improved social protection innovations are used by government and NGO implementers.
- Research results are used in formulation and revisions of social protection policies and strategies.
- Numbers of targeted people covered by improved social protection programs increase.

**Cluster 4.2 – Financial Inclusion and Services for the Poor**

- Improved financial and insurance products are being promoted by the private sector and other actors.
- Increasing numbers of farmers and other rural people and institutions are using new financial and insurance products.

**Figure 7. Impact pathways for Flagship 4**

[Diagram showing impact pathways with nodes such as 'Increased resilience of the poor to climate change and other shocks (IDO 1.1)', 'Conducive environment for managing shocks and vulnerability (Sub-ID 3.1.4)', 'Improved diets for poor and vulnerable people (IDO 2.1)', 'Better outcomes for women, men, boys and girls from social protection, including increased access to diverse nutrient rich foods (Sub-ID 2.1.2)', etc.]
The flagship contributes to these outcomes by supporting the current momentum in developing countries to establish and strengthen social protection programs and expand finance and insurance access for the poor. As described in Figure 7, a first impact pathway is through supporting decisions at the national level. Social protection research is grounded in countries where policymakers have an interest in improving safety net programs. PIM researchers establish close communications with national governments, and have learned that frequent updating of findings and discussion of implications with government counterparts is important in ensuring that findings will inform decisions. A second pathway is through influencing donors, funding agencies, and international organizations active in social protection programs in developing countries. An example is the collaborative testing of delivery mechanisms with WFP, which used the results to shape its own implementation modalities. The third pathway focuses on developing financial and insurance products that are attractive to the private sector as well as different types of farmers, including the poor and women. Attractive products for testing are identified through discussions with both potential suppliers (e.g., businesses) and demanders (e.g., different types of producers).

4. Research questions and outputs

Cluster 4.1 – Social Protection Delivery and Outcomes

This cluster addresses three main research questions:

- How should social protection be bundled with complementary interventions to increase effectiveness?
- Which new approaches to delivery and targeting work best?
- How much should be spent on social protection versus other expenditures towards poverty reduction?

Research to address the first question looks at ways to expand the impact of social protection programs and improve their cost-effectiveness by tailoring conditionalities and by identifying effective complementary programs to achieve targeted outcomes—a "transfers plus" model. These complementary programs focus on four major areas:

- **Behavior change communication for dietary diversity and nutrition**: Recent PIM research in Bangladesh suggests that nutrition impacts from cash transfers can be enhanced when linked to relevant behavior change communication. New research will explore how to enhance and scale up results in Ethiopia and Mali.
- **Agriculture**: A recent FAO report (2013) documents potential synergies between social protection interventions and agricultural programs. Productive safety net programs like the Ethiopian program provide a general model, but much remains to be learned about the productive dimensions complementary to social protection, and many other strategies are possible. The productive dimensions are often linked to graduation, and a number of issues related to graduation will be explored.
- **Financial inclusion**: This research will explore linking cash and food transfers to credit and savings products, including through mobile money platforms (in conjunction with Cluster 4.2).
- **Skills training and entrepreneurship**: Recent research shows that adolescents have better school and marriage outcomes with transfers (Baird et al. 2011), and other evidence suggests that transfers via mobile money linked to adult literacy programs may improve outcomes from skills training (Aker et al. 2012; Aker et al. 2014). However, the evidence on skills training programs in general suggests that impacts are often weak (Blattman and Rallston 2015). Research will explore how to improve skills and labor productivity for social protection beneficiaries. Skills are particularly important for young people in light of the increasing importance of livelihoods relying both on part-time farming and on rural nonfarm work. Thus this work is related to the emphasis on youth employment in PIM during Phase 2 (Flagship 2).

The rationale for addressing the second question is that new modalities for delivery of social protection and improved targeting can improve efficiency and enhance impacts. Research in Phase 1 assessed the
relative impact of transfer modalities (cash, food, or vouchers) in a series of studies in five countries (Bangladesh, Ecuador, Niger, Uganda, Yemen). In Phase 2, this research will emphasize two areas:

- Previous PIM-supported research delineated situations when cash was more effective and when food deliveries worked better for relieving hunger. New research will further develop these results, offer guidance on application, and explore blended cash and food transfers.
- Mobile money offers a new delivery strategy for transfers that could be used to increase savings and promote financial literacy. This new area of research will investigate innovations for integrating mobile money with social protection to improve impacts for the poor.

Work to address the third question will explore targeting strategies to improve impact and strengthen the fiscal basis for social protection. This work will be undertaken together with that of Flagship 2 on public expenditure, to look at trade-offs in public spending when both social protection and agricultural public goods and services must find space in budgets.

If resources permit, research on urban social protection is envisaged within this cluster. The urban poor represent a large and increasing share of the poor in developing countries, and rural and urban populations are increasingly blended. The urban poor face many challenges, and their high mobility often thins their social networks. As was demonstrated in 2008–2009, they can readily take to the streets and become a political force for price controls, export restrictions, and other policies that are detrimental to agricultural growth. Proposed research would examine issues specific to safety nets in urban areas, including targeting strategies to serve the urban poor, mobility and portability of urban social protection transfers, and governance of transfers and spillover effects. This work would complement the growing interest in other CRPs to better understand rural-urban linkages.

Cluster 4.2 – Financial Inclusion and Services for the Poor

Cluster 4.2 addresses the following research questions:

- What financial products do the poor value most, and how can they be designed to trigger wide uptake?
- What are appropriate roles for the public and private sectors in promoting sustainable financial inclusion for the poor?

In Phase 1, the work of this cluster was limited to insurance and focused on understanding the insurance products most suitable for smallholder farmers, as well as the factors that explain uptake. This important research will continue in Phase 2, with a continued emphasis on weather-based insurance in collaboration with CCAFS. However, in Phase 2, the scope will expand in two dimensions. First, to explore complementarity between financial services and social protection, a wider array of financial products will be considered. Second, the role of geography, and specifically regional heterogeneity in commercial potential, will be assessed, with development of tools and models for targeting financial products to different contextual situations across regions and countries. A particular geographical focus of this research will be in areas with commercial potential but few financial service providers, which offer large scope for research impact.

5. Geographical focus

The primary focus for research under Flagship 4 will be in Africa south of the Sahara and South Asia, given interest in social protection, the poverty gap, and prevalence of malnutrition in these two regions. Work will be undertaken in Latin America on a case by case basis if it can yield further comparative lessons. Work is currently underway in Bangladesh, Ethiopia, and Mali, and planned in Burkina Faso, India, and Senegal. The choice of Bangladesh is justified by deep integration with USAID, WFP, and the Government of Bangladesh through the IFPRI Office in Dhaka. In Ethiopia, IFPRI has a long-standing research presence, with deep integration with the government on social protection and poverty alleviation strategies. The social protection agenda in Ethiopia is well developed but far from exhausted, and work
in this country is expected to continue in Phase 2. The World Bank has identified work on urban social protection in Ethiopia as a priority.

6. Learning from Phase 1

Some lessons learned in Phase 1 are presented in Table 4.

**Table 4. Lessons learned from Phase 1**

<table>
<thead>
<tr>
<th>Key areas of focus in Phase 1</th>
<th>Lessons for Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation of the Productive Safety Net Program (PSNP), Ethiopia</td>
<td>This research demonstrated the potential for social protection to work in Africa, as the Ethiopia PSNP reduced the hungry season for beneficiaries by 1.3 months and increased livestock holdings. Phase 2 will provide more evidence on effectiveness of social protection in Africa.</td>
</tr>
<tr>
<td>Five-country (Bangladesh, Ecuador, Niger, Uganda, Yemen) study of the relative effectiveness of cash, food, and vouchers as transfer modalities for food security and asset accumulation</td>
<td>These studies showed relative impacts of food and cash transfers in social protection programs on consumption and food security in the five countries, and on intimate partner violence (Ecuador) and child cognitive development (Uganda). Phase 2 will seek similar cross-country evidence on programs complementary to social protection.</td>
</tr>
<tr>
<td>Transfer Modality Research Initiative (Bangladesh)</td>
<td>Preliminary results showed large complementary effects of cash transfer and nutrition trainings on child nutritional status. Phase 2 will study complementary nutrition programs.</td>
</tr>
<tr>
<td>Completion of social protection “legacy work” (Brazil, South Africa, Ecuador, general studies)</td>
<td>Substantial evidence on impacts of major social protection programs.</td>
</tr>
</tbody>
</table>

7. Gender and youth

Gender and the intrahousehold allocation of resources have been a major focus of the research under Flagship 4 in Phase 1; this focus will continue in Phase 2. Improving the impact of social protection and livelihood strategies on poverty and household food security and nutrition requires accounting for the unique roles that women play in household diets, provision of healthcare for children, and labor in agriculture, as well as how these are affected by socially determined relationships between women and men. Similarly, financial inclusion strategies that seek to reduce poverty and malnutrition will have to give serious attention to the different roles of, and control of resources by, women and men in the household. PIM research is deeply integrated with the team working on the WEAI and the new BMGF-funded GAAP2 project.

The intrahousehold survey work yielding information on gender and vulnerability is a valuable source of information about labor force participation, time use, and occupational choice of young people. Whether young people participate in social protection programs, and particularly in labor-intensive public works, will be examined, as will the question of impact of youth participation on future occupational experience.

8. Comparative advantage

Although a number of organizations study and implement programs in social protection, CGIAR has both a need and an advantage in this area. As argued above, target system-level outcomes on poverty and hunger reduction are not likely to be met without social protection to assist the chronically and episodically vulnerable. Because of the intimate linkages between social protection, risk mitigation, agricultural production, and stewardship of natural resources, CGIAR can bring a particular perspective to this work. Few other organizations that work on social protection have the technical perspectives to develop the
linkages with agriculture and natural resource management. Social protection research will contribute to the integrity and coherence of systems research within the AFS CRPs, since each of these programs includes livelihood systems associated with the farming systems, and social protection is an important element of livelihood systems of the very poor. Thus a modest level of attention to social protection belongs within the CGIAR portfolio, and PIM is a natural home for it.

The IFPRI team working on social protection is considered a leading research group and provider of impact evaluation services in this area, and brought this expertise into PIM in 2012. IFPRI researchers have studied social protection programs in 17 countries\(^1\), and have a strong reputation built on substantial experience in conducting rigorous impact evaluations of social protection programs, as noted in a recent external review of social protection research at IFPRI (Nelson et al. 2015).\(^2\) IFPRI’s past research includes influential evaluations of some of the world’s largest conditional cash transfer programs, among which PROGRESA in Mexico, Bolsa Familia in Brazil, the PNSP in Ethiopia, and the Child Support Grant in South Africa. PIM’s IFPRI team is one of only a few institutions with the experience and commitment to evaluate large social protection programs operating at scale.

Flagship 4 brings together work on social protection, nutrition, and gender. The PIM team has substantial strength in each of these, and ability to link both with nutritionists working at IFPRI under A4NH and with agronomists at ICRISAT, CIAT, and the International Potato Center (CIP). Research in 2014–2015 has begun to examine the impact of complementary social protection and nutrition programs in Bangladesh, Ethiopia, and Mali, and social protection linked to agriculture in Ethiopia and Niger. The ability to bring these together exemplifies a strength of CGIAR in addressing these issues. In addition, the IFPRI/PIM team brings in a proven record on developing innovative approaches to financial inclusion.

9. Collaboration within CGIAR

The work under Flagship 4 on coupling social protection with other agricultural interventions has links with Flagships 1, 2, and 3. Coordination with Flagship 2 will focus on the study of transfer programs linked to skills training, entrepreneurship, and youth employment. The tool developed in Flagship 3 for characterizing areas of countries according to their agricultural and commercial potential will be jointly utilized by Flagships 3 and 4 to prioritize intervention options. There will also be coordination with Flagship 6 in the assessment of the impacts of interventions on women, youth, and other social groups.

Discussion on collaboration with other CRPs and on contributions of Centers to Flagship 4 have been initiated, involving interactions with CIAT, ICRISAT, CIP, and Bioversity. During Phase 1, ICRISAT contributed work on social protection, with a focus on India’s large Mahatma Gandhi National Rural Employment Guarantee Act program. This work has been appreciated in India, and the team has been encouraged to seek wider publication in journals with an international audience. Continued attention to social protection in India under the new Food Security Act is planned in Phase 2, and discussions are underway to determine the composition of the team and methodological approaches. The flagship collaborates with A4NH on metrics and design of interventions targeting nutrition outcomes. Social protection is very important to the livelihood dimensions of the work on systems within the AFS CRPs. The new configuration of research on systems is still under development, and the role of social protection is not yet identified. Contributions of other Centers to PIM’s social protection work will be decided during elaboration of the full proposal, and with consideration of the staff skills and data resources the internal

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\(^1\) Brazil, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Haiti, Ethiopia, Ghana, Malawi, South Africa, Uganda, Bangladesh, India, China, Sri Lanka, and Turkey.

\(^2\) IFPRI’s research activities provided relevant, high-quality, evidence-based research on a wide range of topics related to social protection broadly, and contributed greatly to the body of knowledge regarding social protection and social safety nets […]. By mid-decade, the program was considered to have contributed to a global ‘evaluation culture’ with regards to social protection and safety net programming. In particular, IFPRI’s credible evidence-based impact evaluation of Mexico’s conditional cash transfer program, PROGRESA, served not only to help usher in the evaluation culture but it also served as a model for social protection policy and programming in other countries (Nelson et al. 2015, 6).
partners could bring. If the skill set within CGIAR is thin in this area, partnerships with external research organizations will be expanded to avoid over-concentration of the work program within IFPRI.

Interest in work on insurance in other CRPs is relatively active. The collaboration between PIM and CCAFS in this area established under Phase 1 will continue, and be implemented through co-investment. A number of AFS CRPs are also likely to propose to co-invest in this area.

10. External partnerships

On the research side, a key collaborator is the Centre for Social Protection, Institute for Development Studies. Key implementation partners include WFP and other UN agencies (FAO, UNICEF). IFPRI’s collaboration with WFP on social protection falls under the IFPRI-WFP memorandum of understanding. PIM has substantial experience conducting large-scale research projects with WFP on social protection. In several cases, PIM researchers have successfully broadened an existing collaboration with WFP to include collaboration and funding from UNICEF and the International Initiative for Impact Evaluation (3ie). Another important partner on social protection is DfID, with whom PIM researchers have undertaken substantial collaborations, including recently on mobile phone platforms. Discussions are underway with WVI (a major programmer of social protection interventions) to collaborate on intervention evaluations and ex-post impact assessments.

Cluster 4.2 partners also come from the private sector, among others Aon Benfield (a large Indian reinsurance company with important presence in South Asia) and RoboFlight, a private company researching remote sensing imagery technologies and applications to new financial products.

11. Capacity development

Because much of the research on social protection is based on rigorous impact evaluations, the team anticipates demand for capacity development on impact evaluation from partner governments, NGOs and, in some cases, donors. PIM researchers have substantial experience running capacity development workshops. Research under Flagship 4 is usually conducted jointly with national research partners.

12. Integration between Window 1-2 and bilateral/Window 3 funding

Current bilateral funding is provided by BMGF, DfID, USAID, WFP, and the World Bank. Discussions are underway with UNICEF and with the MasterCard Foundation about potential partnership and funding.
Flagship 5: Governance of Natural Resources

1. Justification for the flagship – Issues to be addressed, and why they are important

Tenure arrangements are recognized as key to effective management of natural resources. Beyond this very general understanding, however, too little is known about practical measures that work to reduce tenure insecurity and strengthen governance arrangements for women, youth, and marginalized small-scale producers (including fishers, livestock keepers, and forest-dependent people). Moreover, many studies look at tenure over individual resources, and in isolation from the commons and the production systems or ecosystem services at the landscape level. This limited perspective fails to recognize the ways in which tenure affects ecosystems and landscapes (for instance, grazing on common lands contributes to the value of livestock production, and common corridors for pollinators contribute to crop production and conservation of biological diversity). Tenure arrangements exist within ecological and political landscapes with power asymmetries; several levels of government, other local groups, and outside actors influence management of landscapes and represent distinct and often competing interests. This flagship addresses institutional arrangements for coordination of interests to benefit people and the resource base.

Many international initiatives have emerged to promote better land and resource governance in Africa south of the Sahara, Latin America, and Asia. These include the FAO-led process to develop the Voluntary Guidelines (VGs) on the Responsible Governance of Tenure, the African Union’s Land Policy Initiative (AU-LPI), and the World Bank’s Land Governance Assessment Framework. These efforts are motivated by increased pressure on tenure systems in Africa, Asia, and Latin America due to growing populations, migration, rising land values, and conflicts. Those holding land under customary systems that once provided sufficient tenure security are increasingly susceptible to loss of land. “Land grabs” at various scales raise concerns, including land acquisitions by international actors, by domestic elites, or by extended families confiscating land from widows. Those who rely on customary rights alone are often most disadvantaged and require formal recognition of these rights, but legal recognition does not always confer protection. Work within Cluster 5.1 – Enhancing Tenure Security examines mechanisms to enhance security in different contexts, and probes how differently assigned and protected rights contribute to productivity, livelihoods, equity, ecosystem services, and sustainable use of biological diversity. Trade-offs and complementarities between collective and individual tenure (now often viewed in isolation) are considered, as well as linkages between tenure of land and rights to water, trees, fisheries, genetic resources, and other natural resources. Interdisciplinary approaches drawing on social sciences, ecology, and legal studies are used to understand the functioning of property rights systems in different environmental contexts, their reforms, and outcomes. Work addresses the institutional arrangements at multiple levels and the shift of land governance from customary to statutory status. Research will continue the attention to women’s rights to land and resources accorded in Phase 1, and broaden this to encompass interests of youth, increased presence of large private holdings, and reasons for and implications of subdivision of holdings. Ethnicity and identity through occupation (fishers, pastoralists, and forest-dependent communities) will be addressed as factors affecting inclusion.

Holders of rights to resources are linked through interactions between services associated with their resources in ecosystems defined at the landscape level. For example, actions of those with land rights may affect the quality of water, thereby impinging on ability of holders of water rights and rights to fish stocks to exercise those rights. Ecosystems function at scales greater than the holdings of individual constituents, and coordination is required to secure shared benefits and to defend under-represented stakeholders. Both through protection of ecosystem services against natural hazards and fallback options for livelihoods, the commons provide important sources of resilience. Cluster 5.2 – Managing Shared Landscapes develops institutional solutions for challenges related to disparate interests of parties with overlapping rights. Institutional innovation can increase inclusion, tenure security, and levels of ecosystem services. Because of the need to bring together interested parties, much of the work entails engaging a range of actors in constructive dialogue, building the conditions for them to develop their own solutions, and empowering selected participants with capacity to monitor outcomes and results. Whereas
earlier research on this topic within PIM focused on strengthening local collective action initiatives, proposed work will also address interactions between local users and collective institutions, the state, and corporate investors. As new kinds of investment partnerships emerge, research can generate insights into arrangements that ensure strong economic returns, equitable distribution of benefits, and sustainable environmental outcomes. A range of instruments can be combined to secure desired outcomes: regulation (including land-use planning), economic incentives (such as taxes, subsidies, or payments for ecosystem services), and recognition or moral suasion, as well as a variety of formal and informal mechanisms of accountability. Measures that adjust power between and among participants to increase inclusion will be explored. The work is grounded in the theory of the commons and polycentric governance of natural resources, which is well developed but has not been applied systematically to compare experiences across multiple resource systems in low-income countries.

2. Demand for this research – Who will use it, and to do what

Other CRPs, notably WLE, FTA, Fish, CCAFS, and Livestock, will apply and adapt the tools and methods developed. Many of the pilot projects under these programs and the efforts to scale up risk failure if tenure arrangements and landscape-level institutions are not aligned with objectives of the interventions. Readily applicable diagnostic tools can help identify risks, and past research and case studies can offer options for solutions. Action research under these CRPs will also inform other programs through the community of practice and knowledge portal housed in Cluster 5.2 (see below).

NGOs and CSOs, including indigenous organizations such as the Mesoamerican Alliance of Peoples and Forests, the Federation of Community Forestry Users Nepal, FES, and other members of the International Land Coalition (ILC) (a coalition of civil society and intergovernmental organizations promoting land rights for the poor), will use the evidence generated in this flagship to strengthen tenure or resolve conflicts over natural resources. They will also use the materials generated to develop the capacities of communities for collective action and negotiation with other interested claimants. Lessons will be applied in global action networks such as the Rights and Resources Initiative, The Access Initiative (the world’s largest network dedicated to ensuring that citizens have the right and ability to influence decisions about the natural resources that sustain their communities), and the International Alliance of Indigenous and Tribal Peoples of Tropical Forests and its members. Private sector and public-private platforms (such as the Consumer Good Forum and the Tropical Forests Alliance 2020) that promote sustainable production of tropical commodities, including palm oil, sugar, soy, beef, and pulp and paper, will use knowledge generated by this flagship to shape community engagement policies and standards.

The AU-LPI will be able to use the methods developed for monitoring and evaluation of the impact of land tenure reforms, creating greater accountability of governments, especially in the 10 countries that are part of their pilot initiative (which are also likely to be countries of CGIAR collaboration). Relations with the AU-LPI were established during Phase 1 of PIM and will be continued.

Governments in selected countries at national and subnational level, especially inter-ministerial taskforces or multistakeholder platforms addressing tenure and natural resource use, will use the research for implementing tenure reforms.

FAO, IFAD, the World Bank, bilateral donors (e.g., DFID, GIZ, USAID), and NGOs involved in implementation of the VGs on the Responsible Governance of Tenure and the Principles for Responsible Agricultural Investment will apply and promote tested approaches for strengthening tenure, especially of the commons, in design of programs that they support.

3. Theory of change and impact pathways

Flagship 5 is the only PIM flagship with a primary contribution to SLO3 on improved natural resources systems and ecosystem services. Flagship 5 also contributes to productivity and gender equality.
Specific outcomes for each of the two clusters are the following:

Cluster 5.1 – Enhancing Tenure Security

- Partners (including AU-LPI, ILC, the Rights and Resources Initiative, organizations representing indigenous land rights such as Asian Indigenous Peoples Pact, Indigenous Peoples Alliance of the Archipelago (AMAN) in Indonesia, NGOs, and private sector investors and companies seeking to engage constructively with communities) are strengthened with tools and methods to monitor progress on tenure security, especially women's tenure rights and common property rights.
- Practical measures to strengthen tenure security, including for women and youth, are used and promoted by partner organizations, leading to improved tenure security and access to natural resources for small and vulnerable landholders.
- Governments are aware of the costs of tenure insecurity, able to prioritize actions, and use research results in policy discussions.
- Increased capacity of researchers in partner organizations to conduct tenure research.
- Increased effectiveness of regional and global action networks working to strengthen tenure security (including ILC, AU-LPI, Access Initiative).

Cluster 5.2 – Managing Shared Landscapes

- Documented cases where improved governance interventions are applied by landscape stakeholders, and compilation of outcomes in each, including increased voice of women and youth.
- Better understanding of relationships between alternative natural resource governance arrangements and environmental management and socioeconomic outcomes.
- Increased capacity of researchers in partner organizations to conduct research on governance of natural resources.
• Increased effectiveness of regional and global action networks working to strengthen resource governance and accountability (including ILC, AU-LPI, Access Initiative).

These outcomes require research results to reach three main groups shown in Figure 8: national governments, which make land and natural resource policies; NGOs and CSOs, which are active in the field working with communities and individuals to help manage natural resources and support rights; and international organizations, which shape these efforts through funding (e.g., the World Bank) or information dissemination and advocacy (e.g., ILC). PIM has established long-term relationships with each of these groups.

4. Research questions and outputs

Within the scope of Flagship 5 described above, the specific focus of the two clusters is presented below.

Cluster 5.1 – Enhancing Tenure Security

This cluster addresses the following research questions:

• How is tenure over resources threatened, and which threats matter most within specific contexts?
• What mechanisms can best address the threats of highest priority, to strengthen rights of those who hold land under customary tenure? How do mechanisms differ according to the client group (e.g., the poor, women, youth, forest dwellers, fishers, livestock keepers, and farmers)?
• How can more secure tenure serve sustainable intensification of production, social equity, and economic empowerment in rural areas? How can secure and transparently assigned rights augment the flow of ecosystem services from land and other resources?
• How can the interests of vulnerable groups be best represented in tenure policy and rural investment decisions?
• What are the best indicators and methods that different types of organizations can use to assess tenure security at relevant scales and create accountability for implementation of reforms?

Key outputs are the following:

• Tools and methods for diagnosis, monitoring, and evaluation of tenure systems and reforms. These will improve on existing methods that focus on either collective or household or individual property rights, but not the interactions among these types of rights; and on existing methods for intrahousehold analysis that focus on male and female heads of households, and not on youth or the elderly (e.g. widows). Innovative approaches incorporating self-reporting on tenure security (including "perceived" tenure security) by citizens will be combined with surveys and official statistics.
• Evidence on sources of tenure insecurity and prioritization according to the magnitude of impact on development outcomes.
• Identification of potentially scalable solutions to strengthen tenure security, and of the settings to which these are adapted. This will draw on action research, as well as impact assessment of policy reforms and implementation (e.g. REDD+, community-based legal assistance).
• Key messages packaged for advocacy on a global scale.

Cluster 5.2 – Managing Shared Landscapes

This cluster addresses the following research questions:

• How can the interests and knowledge of different actors (including for instance local residents and investors) sharing a common landscape be identified and reconciled in ways that better secure the rights and livelihoods of women, youth, and other poor and vulnerable groups? Which structures are best suited to provide equitable representation of different agents? How can these structures interact constructively to resolve issues and develop sustainable management of landscapes that support the interests of women, youth, and smallholders?
• What support from external parties is useful to mediate the represented interests and inform negotiations among interested parties? What role should external parties play in monitoring implementation of agreed solutions?

Key outputs are the following:
• Community of practice and knowledge portal: This cluster will compile and contribute to refining existing tools and methods, for example, use of experimental games for community-based collective action, approaches to multistakeholder dialogue and to engagement with private investors and companies.
• Tested solutions to challenges of coordination for shared governance. Examples of successful interaction between and among individuals, CSOs, governments, and the private sector will be compiled and made available for wider dissemination.
• Evidence on the impacts (positive and negative) of changing governance arrangements on access, use, and productivity of natural resources, provision of ecosystem services, biological diversity, and the distribution of benefits for poor resource-dependent people, including women.
• Key messages packaged for advocacy on a global scale.

5. Geographical focus

Issues related to management of natural resources are important in all regions of the developing world, but this flagship will prioritize Africa south of the Sahara. The commitment of AU member countries to securing tenure, particularly for women, and the request from the AU for CGIAR assistance in support of the LPI provide a valuable opportunity to ensure that PIM’s research has impact. Within the region, preference will be given to countries that are both among the 10 pilot countries of the AU initiative and in the list of countries for CGIAR collaboration. Likely candidates are: (a) Ethiopia, where IFPRI, CIFOR, and the International Livestock Research Institute (ILRI) have already supported land-related research activities; (b) Tanzania, where ILRI (through ILC’s Rangelands Initiative) is working with the Ministry of Livestock and Fisheries Development and the National Land Use Planning Commission on identifying innovations for improving implementation of land policy and legislation in rangelands; and (c) Burkina Faso, Ghana, Mali, Niger, and Senegal, where ICRISAT, the World Agroforestry Center (ICRAF), and CIFOR has been conducting research on tenure and technology adoption or natural resource management.

Flagship 5 will continue ongoing work in India, where millions of landless and near-landless rural men and women depend on common property for water, fodder, fuel, medicines, and other resources, and where reforms such as the Forest Rights Act and other policies on the commons have the potential to affect 15 percent of the country’s geographical area. In Indonesia, researchers will build on CIFOR’s work, especially with AMAN. Other countries will be identified based on expressed interest from the countries and co-location of research with AFS CRPs, notably FTA (Indonesia), Livestock (Kenya, Cameroon), and Fish (Bangladesh, Zambia, Cambodia). Although work in Latin America and Central Asia is not prioritized, participation in global networks will provide opportunities to share experience with representatives from these regions.

6. Learning from Phase 1

This flagship draws on a rich history of interdisciplinary empirical research, conducted under PIM and CAPRI by CIFOR, ICRAF, WorldFish, ILRI, Bioversity, and other partners during Phase 1 and before. Key lessons include:

• On tenure: Studies from Ethiopia, Mozambique, and Nigeria show the need for pragmatic and context-specific approaches to land policy and governance interventions to improve tenure security for the poor and vulnerable groups (such as women and migrants) (Hagos 2012; Hagos et al. 2014; Hagos and Holden 2013). Assistance from NGOs or community-based legal assistance is often required for implementation of reforms to help women or the poor (Behrman
et al. 2013). Though promising in many settings, formalizing property rights is a complicated and costly process, with many risks to smallholders, including the risk of elite capture of land and forests; it often fails to take account of the rights of the multitude of users who derive seasonal, supplementary, or gap-filling livelihood benefits from commonly used forests (Jagger et al. 2014).

- **On conflict**: Some interventions can reduce conflict caused by overlapping claims. ICRAF’s Rapid Land Tenure Assessment for Identifying the Nature of Land Tenure Conflicts (RaTA) and WorldFish’s Collaborating for Resilience approach have proved useful in managing resource-based conflicts, building trust among diverse stakeholders in landscapes, and catalyzing regulatory and policy innovation (Galudra et al. 2010; Ratner et al. 2014).

- **On gender**: Measures such as putting women’s names and photos on land certificates in Ethiopia can contribute to security and investment in land if women know about them (Kumar and Quisumbing 2015). Recognition in law of women’s rights to land, forests, and other resources is useful, but full empowerment requires changes in local social norms (Sunderland et al. 2014). Attention to women’s voices and decisionmaking roles in multistakeholder dialogues can shift the goals of collective action towards more equitable distribution of benefits from management actions and investments (Ratner et al. 2011).

- **On investment**: Recognition of local land rights and guarantees of smallholder access to “green” value chains are key elements of zero-deforestation pledges, and show the importance of negotiations between stakeholders (Pacheco 2012; Rist et al. 2010).

- **On asymmetry of power**: ICRAF, CIFOR, and WorldFish have found that multistakeholder processes build trust, diminish power asymmetries, and better align divergent interests in ways that can yield more equitable outcomes for resource policy and institutional reform. Disadvantaged groups need support and assistance to engage effectively in key forums (Leimona 2015; German et al. 2011; Ratner et al. 2014).

### 7. Gender and youth

Interests of women and youth are fundamental in all components of this flagship. Cluster 5.1 contributes directly to Sub-IDO CC2.1.1 ‘Gender-equitable control of productive assets and resources’. Research in this cluster will address intergenerational challenges; the governance work under Cluster 5.2 will contribute to Sub-IDO CC2.1.3 ‘Improved capacity of women and young people to participate in decision making’, particularly in decisions related to natural resources (Figure 8). The work within Flagship 5 will examines trade-offs among objectives and mechanisms to manage them. For example, providing youth with secure rights to land may require compensation and alternative income streams for widows. Balancing competing needs through negotiation, market transactions, and combinations of the two is a major topic of inquiry in the flagship.

### 8. Comparative advantage

Many organizations engage in research on land tenure, and PIM collaborates with major contributors, such as FAO and the World Bank. CGIAR has a comparative advantage in looking at tenure across resources, and at trade-offs and complementarities between the different resources and resource users. Through the CGIAR Program on Collective Action and Property Rights (CAPRi), CGIAR also has a historic comparative advantage in attention to common property. During Phase 1 of PIM, the work of CAPRi continued to focus on how state policies interact with social institutions, and how the two of these affect the outcomes for women and marginalized groups (e.g. pastoralists, fishers). With augmented focus on titling and administration of statutory land in Africa south of the Sahara, PIM increased attention to these issues, with the result that the portfolio is now roughly balanced between common property issues and those associated with individual or household property, with particular attention to intrahousehold distribution of rights. Few research organizations look in detail at both types of property, and this becomes an advantage of PIM at a time of heightened concern about the interrelation between the two types, especially for ecosystem services. Through interaction with other flagships, Flagship 5 researchers are able to position land and other resource issues within the context of technological innovation, employment creation, commercialization, and resilience. PIM benefits from CAPRi’s long
engagement on land and resource issues and solid relationships with key partners, such as AU-LPI, ILC, FAO VGs, the Global Land Tool Network (GLTN), many NGOs, and the International Association for the Study of the Commons.

9. Collaboration within CGIAR

Work of Cluster 5.1 is closely linked to that of Flagship 2, through the impact of land tenure and functioning of land markets (including rental) on inclusive transformation (Cluster 2.1), as well as the contribution to the body of knowledge on the political economy of policy change (Cluster 2.3). Cluster 5.1 also connects with Cluster 1.3 on tenure dimensions that affect adoption of technology.

The outputs of Cluster 5.1 will inform the research of other CRPs, for which technological outcomes depend upon tenure security. Adoption of new technologies requires access to land and water, hence tenure issues affect all the AFS CRPs. The CAPRi framework (Meinzen-Dick et al. 2002) has identified issues of tenure security and collective action to be particularly relevant for technologies and practices with long time horizons and large spatial scales, so the strongest linkages are with FTA, Fish, and Livestock. Tenure and landscape governance are also of relevance to WLE and CCAFS. While other CRPs will implement interventions on the ground, this flagship will develop methods and tools to be used by them, as well as draw lessons from other CRPs’ results, to be shared across the system. Teams from WLE, PIM, and FTA worked and met together periodically in Phase 1, and this collaboration will be retained and deepened in Phase 2 through co-investment, for which discussions are underway. The CCAFS flagships have established multistakeholder platforms for management of resources in Burkina Faso, Ghana, Mali, and Senegal, and these platforms can be used for scaling up the results of PIM’s Flagship 5. CCAFS is also supporting research on collective action institutions for "climate-smart" natural resource management in two sites in Uganda and Tanzania. Cluster 5.1 will work with Fish’s Flagship 4 (Gender Equitable Resilient Livelihoods) on research addressing women’s access to land and other resources for aquatic agricultural livelihoods and entrepreneurship, and with FTA’s Cluster 6.4 (Adaptive Landscape Institutions) and Flagship 5 (Sustainable and Inclusive Global Value Chains). Work with WLE will involve similar complementary work with the WLE Core Theme on Gender and Inclusive Growth in the WLE focal regions of Mekong, Volta, Nile, and Ganges basins. Discussions are underway with other CRPs, notably Livestock, because of the importance of tenure for rangeland management and intensification of livestock feeding systems. IFPRI, CIFOR, ICRAF, Bioversity, WorldFish, International Water Management Institute, ILRI, ICRISAT, and the International Center for Research on Dry Areas all have ongoing research on tenure and/or governance of natural resources, and plan to participate in Flagship 5.

Cluster 5.2 builds on current research under PIM, FTA, WLE, the CGIAR Research Programs on Aquatic Agricultural Systems and on Dryland Systems that addresses coordination and conflict issues in managing shared landscapes. The cluster incorporates and expands work of FTA on payments for and valuation of ecosystem services. In Phase 2, Cluster 5.2 collaboration will particularly focus on CRPs dealing with major resource systems challenged by multiple uses and competition, including fisheries, forests, rangelands, and ecosystem services (e.g., water and pollution) from multifunctional landscapes. PIM’s Cluster 5.2 will work with Fish’s Flagship 3 (Sustaining Fish Production Systems) on research addressing governance of small-scale fisheries, and Fish’s Flagship 4 (Gender Equitable Resilient Livelihoods), with FTA’s flagship on Adaptive Landscape Institutions, and with WLE’s Flagship 2 Land and Water Solutions for Sustainable Intensification in the WLE focal basins and dryland areas in South Asia and North Africa.

10. External partnerships

This flagship builds on strong partnerships with several leading regional and global action networks working to strengthen tenure security and resource governance with a focus on poor and marginalized users. These will likely include ILC, AU-LPI, Rights and Resources Initiative, the Access Initiative, and the Tropical Forest Alliance 2020. The team will also work with FAO on implementation of the VGs, and
numerous NGOs such as Oxfam, FES, and Landcare. Stronger links will be explored with the Institute for Poverty, Land and Agrarian Studies (PLAAS) and the FAC, and, through the GFAR Secretariat, with national agricultural research centers and farmer organizations in the CGIAR collaboration countries.

11. Capacity development

This flagship will develop capacity of local communities, research partners, policymakers, and other users as an integral part of most activities, as well as through specific training programs.

Training on tools developed within the flagship will be made available to NGOs and community-based organizations, government agencies, NARS, SROs, and private investors. Flagship 5 will continue CAPRI’s capacity development activities, including providing a series of key modular trainings to partners, ranging from applied training of villagers through FES to online courses on the commons through the International Association for the Study of the Commons. The CAPRI toolkit will be updated and expanded as new lessons and thinking emerge from research findings. As part of the knowledge portal in Cluster 5.2, we will provide various seminars, webinars, videos, and practitioners’ guides.

The team also contributes to building capacity of partners, including national research organizations, by engaging them in the research process, and accompanying them through multistakeholder negotiations and other events.

The contribution of Flagship 5 to several Africa-wide initiatives (through ILC, as well as ongoing engagement in the establishment of the AU-LPI Network of Excellence on Land Governance in Africa) also develops partners’ capacity to understand and analyze land-related issues in Africa south of the Sahara, and strengthens researchers’ understanding of policy processes.

12. Integration between Window 1-2 and bilateral/ Window 3 funding

Major donors funding current CGIAR research on natural resource tenure and resource governance include DfID, GIZ, IFAD, the International Development Research Centre (IDRC), the Netherlands, Norway, the Swedish International Development Cooperation Agency (SIDA), USAID, and the World Bank. All of these have expressed interest in various aspects of tenure security. For example, USAID has expressed an interest in working with IFPRI to develop standardized indicators of women’s land rights to be tested with the WEAI. IFAD has expressed interest in supporting further work by ILRI in implementing land policy and legislation in rangelands in Tanzania. Other possible funders include Omidyar Network and the Packard Foundation. Working with the Global Donor Platform on Land will be important not only to increase funding, but also to ensure that the findings of this research affect the donors’ programming.
Flagship 6: Gender Equity and Agricultural Development

1. Justification for the flagship – Issues to be addressed, and why they are important

Barriers to opportunities based on gender at any level diminish the welfare of women (and often men as well), and heighten poverty, malnourishment, and resource degradation. Gender research is accordingly given prominence in the CGIAR portfolio and, in Phase 1, PIM has been recognized as a leader in rigorous gender research and development of tools and methods for this purpose. PIM’s leadership will be maintained in Phase 2. Gender will continue to be mainstreamed throughout the PIM portfolio. The strategic and cross-cutting gender theme formerly housed within the management budget line will be transferred to Flagship 6, and its level of investment will increase. Flagship 6 will establish priorities for gender research within PIM, integrate gender issues across the PIM flagships (e.g., synthesizing results on barriers to women or youth in access to technologies (Flagship 1), value chains (Flagship 3), and natural resources (Flagship 5)), undertake selected studies on topics not addressed within the other flagships, and develop tools and methods. Researchers engaged in Flagship 6 will be active participants in the collaboration platform on gender, as they have participated in the CGIAR Gender Network during Phase 1. This flagship will contribute to the cross-cutting IDO CC2.1 ‘Equity and inclusion achieved’.

Cluster 6.1 – Gender and Agricultural Productivity will take an integrative lens across the flagships to examine selected under-researched topics on the role of gender in fostering or impeding productivity growth, and the distributional implications of such growth. Cluster 6.2 – Methods and Tools for Sex-disaggregated Data and Gender Analysis will continue efforts well-advanced in Phase 1 in the area of methods for collection of sex-disaggregated data and analysis.

2. Demand for this research – Who will use it, and to do what

CGIAR is committed to support the SDG on gender equality and empowerment of women and girls. A number of development partners and governments have used results of PIM research, as have NGOs, the research community, and private firms (e.g., the Ethiopian Agricultural Transformation Agency (ATA), CARE-Bangladesh, the Central Statistical Agency of Ethiopia, FAO, HarvestPlus, Land O’Lakes, and USAID). For example, the analysis of the WEAI in Bangladesh showed that disempowerment was most acute in the domain of leadership and resources. This finding was cited by USAID in subsequent program design of the Women’s Empowerment Activity in Bangladesh. The fact that the WEAI was collected in a nationally representative survey enabled the IFPRI-PIM team to address the question posed by the Prime Minister as to why malnutrition was worse in some of the wealthier areas of Bangladesh—these are the areas in which women are most disempowered. Data for the WEAI will be collected every few years in all 19 Feed the Future focus countries and will help guide USAID programming. In other applications, as a result of participation in GAAP, CARE-Bangladesh implemented a pilot community-based intervention to increase men’s support for women in their dairy and domestic responsibilities and to reduce domestic violence. GAAP also contributed to the development of a corporate gender strategy for Land O’Lakes worldwide.

PIM’s guidance note on procedures for collection of sex-disaggregated data has been endorsed by CGIAR. Collaboration with the Central Statistical Agency has resulted in modifications of analysis of the Ethiopian census survey to facilitate better gender analysis. FAO used PIM’s work on gender and control over land to restructure the statistics presented in the Gender and Land Rights Database, and will encourage countries undertaking an agricultural census to compile and report these indicators. In Phase 2, PIM will continue to aim for wide application of research results.

3. Theory of change and impact pathways

Flagship 6 will contribute principally to the cross-cutting IDO CC2.1 ‘Equity and inclusion achieved’. In doing so, it will have knock-on effects on a large number of other IDOs contributing to CGIAR’s SLOs.
For example, past research of FAO (2011) and the World Bank (2011) finds that reducing gender gaps increases productivity (IDO 1.4) and improves diets for poor and vulnerable people (IDO 2.1). Analyses of the WEAI also highlight linkages between women’s empowerment and increased productivity and food security (Alkire et al. 2013; Sraboni et al. 2014; Malapit and Quisumbing 2014; Malapit et al. 2013). Gender analysis within PIM shared through the collaboration platform will help other flagships achieve their outcomes, such as ‘Enhanced smallholder market access’ (IDO 1.2) and ‘Enhanced benefits from ecosystem goods and services’ (IDO 3.2). To keep Figure 9 simple, we show only the main linkages to IDO CC2.1.

Figure 9. Impact pathways for Flagship 6

The specific outcomes of this flagship are:

Cluster 6.1 – Gender and Agricultural Productivity

- Agriculture and gender-focused strategies and policies are informed by improved evidence on the role of gender in agriculture and rural development.
- Agriculture and gender-focused programs use tested interventions that promote inclusion of men and women and empower disadvantaged groups, leading to reduced gender inequalities.

Cluster 6.2 – Methods and Tools for Sex-disaggregated Data and Gender Analysis

- Improved capacity of researchers within the CGIAR and in partner organizations in gender research.
- Monitoring and evaluation systems of research and development organizations use indicators and other tools tested by researchers for sex-disaggregated information.

Two distinct pathways are depicted in Figure 9. One of them (right side) reflects the contribution of empirical research within the flagship. Research will focus on identifying and overcoming gender barriers
in agricultural production. It will coordinate studies and support related studies in other flagships, and draw synthetic lessons. It will also develop metrics and other tools that development programs and others may directly use. The second pathway (left side) focuses on improving gender research methods, so that other researchers will generate more high-quality gender studies. The first pathway is expected to lead to actionable results more quickly than the capacity strengthening one, but both are intended to provide evidence that is incorporated into interventions, policies, and programs in order to increase gender equity.

The first pathway builds on the already strong partnerships that PIM has developed with potential users of the information, including major funding agencies, international organizations, and NGOs. PIM has been hosting informal gatherings with these groups to assess major knowledge gaps, has worked hand in hand in project contexts (e.g., Feed the Future), and has responded to many requests for support. PIM also actively disseminates information through high-quality publications and briefs, and through other media such as the EnGendering Data blog. The capacity strengthening pathway is based on the excellent track record of PIM in Phase 1 in both methods development and training of researchers, as evidenced by methods and guidelines produced, training sessions organized, and a strong role in gender research networking within CGIAR. All CGIAR centers participate in PIM, which facilitates the reach that the PIM team can have in dissemination of methods for gender research.

4. Research questions and outputs

Cluster 6.1 – Gender and Agricultural Productivity

Cluster 6.1 provides empirical evidence to address the following research questions:

- How do different drivers of agricultural transformation affect gendered roles in agriculture?
- How do access to inputs, resources, and other factors affect productivity of men and women?
- How can interventions improve empowerment of women and agricultural outcomes for women and families?

There is strong evidence that women who farm have less access to and control over land, inputs, labor, and information than do men. While some studies have suggested that women farm as productively as men when given the same level of access to resources (Quisumbing 1996), other studies suggest that women receive lower returns to land and other inputs even when they have access (Aguilar et al. 2015; Backiny-Yetna and McGee 2015; Kilic et al. 2015; Oseni et al. 2015; Slavchevska 2015). These issues warrant further investigation, and have strong implications for program design. Researchers will reach across the PIM flagships to explore types of technologies adopted, suitability of complementary public investments, presence of unaccounted natural capital in the production process, and other factors that could reduce the unexplained residual difference between men’s and women’s productivity in farming.

Part of the conundrum may relate to inadequate inclusion of contributions that men and women make jointly to productive processes reported to be under primary management by either the male or female farmer. In recent years attention of the research community has shifted away from the unitary model of the agricultural household towards a focus on the individual within the household. This perspective has the advantage of revealing the preferences, agency, and actions of individual household members, but it obscures important interactions between men and women within the household. Most households have elements of individual control, ownership, and decisionmaking, and elements of "jointness." Analyzing the role of gender in agricultural productivity requires new tools and methods to capture jointness in production, and to understand its extent in different contexts. PIM’s gender team will explore these topics during Phase 2.

Key outputs are the following:

- Identification of priority gender research gaps for PIM and CGIAR.
- Options for reducing gender inequality in agricultural strategies.
- Options for program design and policy reforms that reflect findings on barriers to women’s productivity.
This research will support the design of policy and program interventions that promote the inclusion of both women and men in the transition from less to more commercial engagement, while ensuring that women individually, or jointly with men, retain control of income and other assets.

PIM’s gender team will work with researchers in Cluster 1.3 on Enabling Adoption of Technology and Cluster 3.2 on Strengthening Value Chains to clarify the implications of gender for adoption of technology (including mechanization) and the efficiency and inclusiveness of value chains. Work on mechanization, both in production and processing, has been particularly sparse, but is important for transformation, and has strong gender dimensions (Peterman et al. 2014). The focus of Cluster 6.1 on integrative dimensions of gender and agricultural productivity will be relevant to Flagship 2 on structural transformation, since the ability of agriculture to create new jobs will depend greatly on the pace of productivity growth and resulting competitiveness in relation to imports. Flagship 6 will also work with Flagship 5 to understand how to enhance inclusion in access to productive assets and natural resources.

Cluster 6.2 – Methods and Tools for Sex-disaggregated Data and Gender Analysis

Cluster 6.2 provides evidence on the value of improved methods for collecting and analyzing sex-disaggregated data.

Research conducted within the first phase of PIM reviewed the existing sex-disaggregated data on landownership and management in Africa and Asia, finding not only large gender gaps, but also substantial discrepancies in the way indicators are reported (Doss et al. 2014; Kieran et al. forthcoming). FAO’s Gender and Land Rights Database has adopted PIM’s conceptual framework and indicators of these gaps. PIM’s work in this area will continue as part of a consortium of partners convened by FAO and UN Women to inform future collection of standardized data on women’s land tenure.

This cluster will build on the team’s extensive experience with quantitative surveys and mixed methods approaches, and will also test innovative approaches for collecting sex-disaggregated data, such as participatory methods and use of ICT. Knowledge of what, whom, and how to ask can save time and money in data collection. This work will involve experiments with survey and questionnaire design and implementation in collaboration with the World Bank and the International Rescue Committee, as well as analysis of existing datasets to identify what can be learned with existing approaches. Attention will be accorded to heterogeneity regarding age, marital and socioeconomic status, religion, location, and other characteristics. The research team will also strengthen methods for analysis of sex-disaggregated data.

Collaborators from numerous organizations, including CRS, Save the Children, USAID, and the World Bank, have highlighted the need for increased quality and quantity of data on time use in agriculture and other activities, and on gender dimensions of control over decisionmaking. In partnership with A4NH, PIM researchers will use the WEAI to identify good practices in these areas.

To improve methods of measuring women’s empowerment, and to enhance understanding of the relationship between women’s empowerment and agricultural productivity, refinement of the WEAI will continue. IFPRI has recently revised the WEAI questionnaire to integrate feedback from the baseline survey implementation in the Feed the Future Initiative, and has used cognitive testing in Bangladesh and Uganda to pilot and develop an improved version of the index. Availability of midline and endline data from the WEAI will allow continued testing of the validity of the tool. New applications will be explored, particularly in the realm of technology adoption and agricultural productivity.

The outputs of this cluster include:
- Open-access datasets.
- Innovative methodologies for gender analysis in the form of guidelines.
- Researchers trained in new methods for gender research.
5. Geographical focus

Work under Phase 1 focused on Bangladesh, India, Ethiopia, and elsewhere in East Africa. Since much of the work of the flagship that is country-specific will complement that of other flagships within PIM, the geographic focus will overlap that of other flagships. Countries of CGIAR collaboration will have priority in design of research for Phase 2. The work on development of tools and methods is global in relevance.

6. Learning from Phase 1

Findings from Phase 1 regarding women’s ownership of land (more common than commonly believed) and from a World Bank study on women’s share of farm labor (lower than commonly believed) reinforce the need to challenge widely held but loosely substantiated claims about gender (Doss et al. 2015; Kieran et al. forthcoming; Palacios-Lopez et al. 2015). Throughout Phase 1, the intent of PIM’s gender team has been to provide research products that stand up to the highest levels of professional scrutiny, and this approach will be maintained in the next phase. PIM will bring this perspective to the work on gender and agricultural productivity to challenge other areas of conventional beliefs.

The team’s interest in jointness derives in part from findings on joint ownership of land during Phase 1. Examination of available data on land registry in Africa and Asia shows a higher proportion of joint ownership than has heretofore been assumed (Doss et al. 2014). Recent evidence from Vietnam, southern Ethiopia, Uganda, and South Africa explores different aspects of joint titling of land, with intriguing but fragmented findings on productivity and empowerment (Newman et al. 2015; Holden and Bezu 2013; Jacobs and Kes 2014). Findings of GAAP are also relevant: HarvestPlus research conducted under GAAP found that, in parts of Uganda, the probability of adoption of orange-fleshed sweet potato was highest on parcels under joint control but where women took the lead in deciding which crops were grown, and lowest on parcels controlled solely by men (Gilligan et al. 2013). Joint titling of land is just one aspect of jointness, the implications of which are as yet not fully understood.

The project Enhancing Women’s Assets to Manage Risk under Climate Change: Potential for Group-Based Approaches undertaken during Phase 1 helped fill the evidence gap on how climate change differentially affects men and women, and how group-based approaches can improve resilience to climate change. This work will inform efforts to understand adoption of technology in Phase 2.

Research on the WEAI has enhanced understanding of how to measure women’s empowerment, and how empowerment affects maternal and child food and nutrition security in Bangladesh, Ghana, and Nepal (Sraboni et al. 2013; Malapit and Quisumbing 2014; Malapit et al. 2013). The WEAI has also helped researchers diagnose the key factors contributing to women’s disempowerment. Using large-sample data from 13 countries, the WEAI baseline report reveals that women’s empowerment in agriculture is most constrained by limited access to credit, excessive workloads, and low membership in groups (Malapit et al. 2014). Additional work during Phase 2 in coordination with the team on social protection and financial inclusion will probe demand for and access to other financial services besides credit.

As part of the International Maize and Wheat Improvement Center’s (CIMMYT) Adoption Pathways project, a study analyzing the effect of men’s and women’s risk preferences on technology adoption in Kenya found that, while husbands and wives within the same household and across the sample did not have significantly different risk preferences, women’s preferences were more correlated with seed choice than were men’s (Love et al. 2015). These findings will be explored further in conjunction with work of Cluster 1.3 on adoption of technology.

7. Gender and youth

All of this flagship’s outcomes are expected to benefit women and reduce gender disparities. This flagship will contribute to IDO CC2.1 ‘Equity and inclusion achieved’, and to the three ‘gender and youth’ Sub-IDOs, and will improve the ability to measure progress toward these goals accurately.
Emphasis will be placed on understanding who is excluded from participating and sharing in the benefits of agricultural development, as well as the reasons for and implications of exclusion. In some cases, gender may not be the determining factor of exclusion. Therefore, in addition to its focus on gender, Flagship 6 will examine ways in which gender intersects with other factors of social differentiation such as age, socioeconomic status, marital status, and ethnicity to shape outcomes.

The emphasis on youth will improve the quality of gender research. Disaggregation by age will provide a clearer and more actionable understanding of the importance of gender. For example, part of the unexplained residual in difference in productivity between men and women may derive from lack of control for age when many female farm operators are elderly. Youth issues, and the ways in which age and gender intersect, will be examined in all methodological innovations considered. Better data at the individual level will facilitate analysis of the involvement of young men and women in agriculture and in other sectors, and provide a more holistic understanding of how migration and wage employment opportunities affect agricultural production and gender equality. The focus on youth in this flagship will give special attention to young women.

8. Comparative advantage

PIM’s comparative advantage in gender analysis derives from the technical strength of staff working on the topics, the ability of the program to take an integrative view across flagships and CRPs, and the quality of partnerships. The strength of PIM’s gender work in Phase 1 has been confirmed by the external evaluation of PIM, and is reflected in the CVs of Flagship 6 core staff provided in Annex VI. During Phase 1, PIM made an integrative contribution through its support of the CGIAR Gender Network, convening and hosting several meetings of the network, and developing materials for use throughout the system, such as the guidelines for collecting sex-disaggregated data. PIM has also created EnGendering Data, a blog on collecting and analyzing sex-disaggregated data. Among the seven staff of the current PIM PMU, two are devoted full time to gender work in collaboration with PIM’s Gender Coordinator. The Gender Coordinator serves on PIM’s Management Committee. Finally, PIM’s strong partnerships on gender work with national and global research organizations, aid agencies, IFIs, NGOs, and foundations, such as ATA, FAO, the Oxford Poverty and Human Development Initiative, USAID, the World Bank, and WVI, represent another comparative advantage.

9. Collaboration within CGIAR

PIM will work with the gender coordination platform, providing active participation and support as needed. Co-investment with other CRPs has not been explored during this early design period, in part because informal coordination through the Gender Network is already in place. Scope exists for much stronger collaboration and development of a CGIAR-wide coordinated work program of gender research. PIM would support having the collaboration platform facilitate such a development. Should that come to pass, the work program within Flagship 6 will be adjusted to provide strong complementarity with the work of other CRPs through the common work program. PIM will collaborate with A4NH to improve measurement of gender indicators through the WEAI and other data collection efforts, with a focus on methodological experimentation to enhance the measurement of time use, individual and joint control over assets and decisions, and women’s agency.

10. External partnerships

In preparation of this pre-proposal, PIM has hosted discussions with collaborators from CRS, FAO, Landesa, Save the Children, USAID, the UN Foundation, and other organizations, to identify the most pressing needs for gender research, and the areas in which PIM could contribute most effectively.

PIM will partner with FAO on several projects focused on gender indicators in agriculture, including: (a) FAO’s Rural Livelihoods Monitor; (b) a modular survey instrument that uses agricultural plots as the unit
of analysis, and will collect sex-disaggregated data on ownership, management, and labor inputs for each plot; and (c) development of a set of gender indicators and guidelines to be collected by national statistics offices. PIM and FAO will work together to harmonize proposed gender indicators across a range of users, including national governments, international organizations, and CGIAR. This mutually beneficial partnership capitalizes on PIM’s expertise in developing indicators, and FAO’s ability to make recommendations to national statistical agencies.

PIM will also contribute to an effort on gender and land tenure convened by UN Women and FAO to galvanize commitments of national governments to improving women’s rights to land in the post-2015 era and in the proposed SDGs.

PIM plans to partner with various NGOs to measure the effect of agricultural interventions on women’s empowerment and on other development outcomes. This will yield insights into the impact of projects, and also test different methods of collecting sex-disaggregated data. Potential partners include Concern Worldwide, Oxfam, and WVI, among others.

11. Capacity development

A central component of this flagship is building the capacity of partners both within and outside of CGIAR to conduct rigorous gender research and translate research findings into program and policy recommendations that will promote gender equality. In addition to development of materials, tools, and training described above, PIM has supported the creation of the Journal of Gender, Agriculture and Food Security, the first issue of which appeared in March, 2015. A number of PIM’s core researchers serve on the journal’s editorial committee.

12. Integration between Window 1-2 and bilateral/Window 3

Window 1-2 funds and bilateral/Window 3 funds cofinance the gender work in PIM. Currently, the WEAI receives bilateral funding from USAID.
**References**


Beintema, N. 2014. “Enhancing Female Participation in Agricultural Research and Development: Rationale and Evidence.” In *Gender in Agriculture: Closing the Knowledge Gap*, edited by A.R.


List of acronyms

A4NH: CGIAR Research Program on Agriculture for Nutrition and Health
ACET: African Center of Economic Transformation
AFD: French Development Agency
AFS: agrifood system (CRP)
AgMIP: Agricultural Model Intercomparison and Improvement Project
AGRA: Alliance for a Green Revolution in Africa
AGRODEP: African Growth and Development Policy Modeling Consortium
AMAN: Indigenous Peoples Alliance of the Archipelago
APAARI: Asia-Pacific Association of Agricultural Research Institutions
ASARECA: Association for Strengthening Agricultural Research in Eastern and Central Africa
ASTI: Agricultural Science and Technology Indicators
ATA: Ethiopian Agricultural Transformation Agency
ATAI: Agricultural Technology Adoption Initiative
AU: African Union
AU-LPI: African Union Land Policy Initiative
BMGF: Bill & Melinda Gates Foundation
CAADP: Comprehensive African Agricultural Development Programme
CACAAIR: Central Asia and the Caucasus Association on Agricultural Research Institutions
CAPRi: CGIAR Systemwide Program on Collective Action and Property
CCAFS: CGIAR Research Program on Climate Change, Agriculture and Food Security
CGE: computable general equilibrium
CIAT: International Center for Tropical Agriculture
CIFOR: Centre for International Forestry Research
CIMMYT: International Maize and Wheat Improvement Center
CIMSANS: Center for Integrated Modeling of Sustainable Agriculture & Nutrition Security
CIP: International Potato Center
CORAF: West and Central African Council for Agriculture Research and Development
CRP: CGIAR Research Program
CSA: climate-smart agriculture
CSO: civil society organization
CRS: Catholic Relief Services
CSSP: Country Strategy Support Program
DCLAS: CGIAR Research Program on Dryland Cereals and Legumes Agri-Food Systems
DFID: Department for International Development (UK)
DG: Director General
EC: European Commission
ECDPM: European Centre for Development Policy Management
ECOWAS: Economic Community of West African States
EMBRAPA: Brazilian Agricultural Research Corporation
FAC: Future Agricultures Consortium
FAO: Food and Agriculture Organization of the United Nations
FARA: Forum for Agricultural Research in Africa
FES: Foundation for Ecological Security
FSP: Food Security Policy
FTA: CGIAR Research Program on Forests, Trees and Agroforestry
GAAP: Gender, Agriculture, and Assets Project
GFAR: Global Forum on Agricultural Research
GFSF: Global Futures and Strategic Foresight project
GI: global integrating (CRP)
GIS: geographic information systems
GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit
GLTN: Global Land Tool Network
ICAR: Indian Council of Agricultural Research
ICRAF: World Agroforestry Centre
ICRISAT: International Crops Research Institute for the Semi-Arid Tropics
ICT: information and communications technology
ICTSD: International Centre for Trade and Sustainable Development
IDO: intermediate development outcome
IDRC: International Development Research Centre
IFAD: International Fund for Agricultural Development
IFC: International Finance Corporation
IFI: International Financial Institution
IFPRI: International Food Policy Research Institute
IIASA: International Institute for Applied Systems Analysis
IICA: Inter-American Institute for Cooperation on Agriculture
IISD: International Institute for Sustainable Development
ILC: International Land Coalition
ILRI: International Livestock Research Institute
ILUC: indirect land use change
IMF: International Monetary Fund
IMPACT: International Model for Policy Analysis of Agricultural Commodities and Trade
INRA: French National Institute for Agricultural Research
ISC: Independent Steering Committee
ISI: Institute for Scientific Information
ISPC: Independent Science and Partnership Council (of CGIAR)
KM: Kaleidoscope Model
LPI: Land Policy Initiative
LSMS–ISA: Living Standards Measurement Study–Integrated Surveys on Agriculture
M&E: monitoring and evaluation
MAFAP: FAO’s Monitoring and Analyzing Food and Agricultural Policies program
MC: Management Committee
MSU: Michigan State University
NARS: national agricultural research system
NGO: nongovernmental organization
NRP: nominal rate of protection
ODA: official development assistance
OECD: Organisation for Economic Co-operation and Development
PBS: Program on Biosafety Systems
PIK: Potsdam Institute for Climate Impact Research
PIM: CGIAR Research Program on Policies, Institutions, and Markets
PLAAS: Institute for Poverty, Land and Agrarian Studies
PMCA: participatory market chain approach
PMU: Program Management Unit
PROGRESA: Mexico’s Program on Education, Health and Nutrition
PSNP: Ethiopian Productive Safety Net Program
RaTA: Rapid Land Tenure Assessment for Identifying the Nature of Land Tenure Conflicts
R&D: research and development
RePEc: Information about Research Papers in Economics
RTB: CGIAR Research Program on Roots, Tubers and Bananas
SAARC: South Asian Association for Regional Cooperation
SAI: Sustainable Agriculture Initiative Platform
SAM: social accounting matrix
SDG: Sustainable Development Goal
SFL: Sustainable Food Lab
SIDA: Swedish International Development Cooperation Agency
SLO: system-level outcome
SNV: Netherlands Development Organisation
SPAP: Science and Policy Advisory Panel
SPEED: Statistics of Public Expenditure for Economic Development database
SPIA: Standing Panel on Impact Assessment (of CGIAR)
SRF: strategy and results framework (of CGIAR)
SRO: sub-regional organization
ST&I: science, technology and innovation
UN: United Nations
UNICEF: United Nations Children’s Fund
USAID: United States Agency for International Development
VDSA: Village Dynamics in South Asia
VG: Voluntary Guidelines
VFT: volunteer farmer trainer
WEAI: Women’s Empowerment in Agriculture Index
WEF: World Economic Forum
WFP: World Food Programme
WLE: CGIAR Research Program on Water, Land, and Ecosystems
WTO: World Trade Organization
WUR: Wageningen University and Research centre
WVI: World Vision International
WWF: World Wildlife Fund
Annex I: Contribution of PIM to the CGIAR Results Framework

Only the most significant contributions are displayed. PIM contributes indirectly to most IDOs and Sub-IDOs; for instance all PIM flagships contribute, to a variable level, to the cross-cutting gender Sub-IDOs.

The numbers reflect the numbering system of SLOs, IDOs, and Sub-IDOs used by participants in the Cross CRP Monitoring, Evaluation and Learning workshop held in Paris on June 30–July 2, 2015, that we are using for convenience and brevity throughout this pre-proposal to refer to SLOs, IDOs, and Sub-IDOs.
Annex II: Collaboration matrix between PIM and other CRPs

Note: This matrix reflects discussions ongoing between PIM and other CRPs. Concrete commitments and amounts of co-investment will be determined during the development of the full proposals.

a) Collaboration between PIM and AFS CRPs

<table>
<thead>
<tr>
<th>PIM flagship/cluster</th>
<th>PIM’s contribution</th>
<th>Contribution expected from other CRPs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flagship 1: Technological Innovation and Sustainable Intensification</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster 1.1: Foresight Modeling</td>
<td>Global databases on agricultural production, nutrition, poverty, and drivers of change; IMPACT model improvement, trade-off analysis tools and other models to conduct foresight and related ex-ante analysis; foresight analyses of broad relevance to the system (drivers and outcomes); community of practice in foresight.</td>
<td>Co-investment in modeling expertise to improve data and models relevant to their commodities and investment to undertake foresight/ex-ante analyses related to their own commodity interests.</td>
</tr>
<tr>
<td>Cluster 1.2: Agricultural S&amp;T, Genetic Resources and Innovation</td>
<td>Policy options developed in African and Asian countries to advance biotechnology regulation; capacity building in biotechnology regulation implications for research; hub for coordinated research on seed system policy and implementation.</td>
<td>Co-investment in empirical studies of relevance to the AFS CRPs, e.g., seed system policy reforms.</td>
</tr>
<tr>
<td>Cluster 1.3: Enabling Adoption of Technology</td>
<td>Methods and tools for analyzing dissemination approaches, tracking adoption and measuring impacts from technologies; identification of priority technology adoption constraints in target countries; selected coordinated empirical studies of interest to the system (e.g., testing of ICT tools in dissemination, analyzing gender and technology adoption); community of practice in technology adoption.</td>
<td>Co-investment in collaborative studies on technology adoption and contributions of empirical evidence on dissemination and technology adoption in specific commodity areas towards syntheses. Development of specific methods and tools for studying technology adoption and impact peculiar to an individual commodity.</td>
</tr>
<tr>
<td>Flagship 2: Inclusive Growth and Rural Transformation</td>
<td>PIM's contribution</td>
<td>Contribution expected from other CRPs</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>--------------------</td>
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</tr>
<tr>
<td>Cluster 2.1: Job Creation and Inclusive Growth</td>
<td>Understanding of rural livelihood dynamics and growth prospects for agricultural and employment, including urban-rural linkages.</td>
<td></td>
</tr>
<tr>
<td>Cluster 2.2: Public Investments for Inclusive Transformation</td>
<td>Insights as to best allocations of public expenditures for improving agricultural and economic growth, to assist CRPs in their own policy recommendations.</td>
<td></td>
</tr>
<tr>
<td>Cluster 2.3: Political Economy of the Policy Process</td>
<td>Methods and tools for undertaking political economy and science-policy analyses. Investment in selected topical studies of relevance to the system (e.g., land tenure, job creation).</td>
<td>Investment in application of the methods to areas of particular interest to the commodities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flagship 3: Inclusive and Efficient Value Chains</th>
<th>PIM's contribution</th>
<th>Contribution expected from other CRPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 3.1: Enabling Value Chains</td>
<td>Level of NRPs and trade distortions for agricultural commodities in developed and developing countries. Analysis of endogenous trade policies as a reaction to increased weather volatility (for CCAFS). Role of international trade in achieving nutritional targets (indicators of reliance on world markets, contribution of international trade to food diversity).</td>
<td>Medium- and long-term climate predictions; analysis of increased weather variability (CCAFS). Nutritional data for different products and new varieties; role of food diversity and biodiversity in terms of health, consumer preferences, and productivity outcomes.</td>
</tr>
<tr>
<td>Cluster 3.2: Strengthening Value Chains</td>
<td>Methods and tools for analyzing value chain problems and testing innovations; prioritization of major value chain problems in key commodities; collaborative empirical studies on value chain problems common to the CGIAR (e.g., postharvest losses).</td>
<td>Co-investment to strengthen value chain research capacity. Development of value chain tools specific to certain commodities. Application of methods and tools to conduct value chain analyses (diagnostic and intervention testing) in mandated commodities.</td>
</tr>
<tr>
<td>Cluster 3.3: Upgrading of Value Chains at Scale</td>
<td>Regional hubs (West Africa, East Africa, Latin America, potentially one in Asia) for scaling up value chain innovations; models tested for scaling up value chain innovations.</td>
<td>Co-investment in hubs or other scaling up approaches (e.g. innovation platforms) to increase the use of value chain tools and innovations; cross value-chain analysis of scaling models; joint publications on scaling through value chains.</td>
</tr>
<tr>
<td><strong>Flagship 4: Social Protection Strategies and Programs</strong></td>
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</tr>
<tr>
<td><strong>Cluster 4.1: Social Protection Delivery and Outcomes</strong></td>
<td>Identification of options for combining social protection with agricultural development for impacting the very poor.</td>
<td>Inputs into designing tests of combined social protection and agricultural interventions for impacting the very poor.</td>
</tr>
<tr>
<td><strong>Cluster 4.2: Financial Inclusion and Services for the Poor</strong></td>
<td>Financial products (savings, credit, insurance) tested for application in target countries to strengthen adoption of AFS technologies.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Flagship 5: Governance of Natural Resources</strong></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cluster 5.1: Enhancing Tenure Security</strong></td>
<td>Tools for diagnosing specific tenure security constraints. Options tested for increasing tenure security over land and other resources, with an emphasis on women and vulnerable populations.</td>
<td></td>
</tr>
<tr>
<td><strong>Cluster 5.2: Managing Shared Landscapes</strong></td>
<td>Institutional options for inclusive decisionmaking around the governance of natural resources</td>
<td>Coordination with innovation platforms or other stakeholder platforms of the AFS CRPs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Flagship 6: Gender Equity and Agricultural Development</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cluster 6.1: Gender and Agricultural Productivity</strong></td>
<td>Diagnostic results on gender roles in agriculture and opportunities for empowerment of women. Innovations for empowering women in agriculture tested across different geographies and farming systems.</td>
<td>Investment in diagnosing gender roles and opportunities in specific AFS mandates areas. Investment in testing innovations for empowering women in AFS priority areas and sharing of results for syntheses.</td>
</tr>
<tr>
<td><strong>Cluster 6.2: Methods and Tools for Sex-disaggregated Data and Gender Analysis</strong></td>
<td>Development of tools and methods for sex-disaggregated study designs, data collection, and analysis (shared through gender platform). Develop a community of practice around gender research; sharing and capacity building on use of research methods.</td>
<td>Investment in gender capacity to engage in the community of practice and to apply methods to gender issues relevant to AFS priority areas.</td>
</tr>
</tbody>
</table>
**b) Collaboration between PIM and GI CRPs**

*Note: In the column ‘What PIM would like to offer’, only items additional to those mentioned in Table a) are mentioned.*

<table>
<thead>
<tr>
<th>PIM flagship/cluster</th>
<th>PIM’s contribution</th>
<th>Contribution expected from other CRPs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flagship 1: Technological Innovation and Sustainable Intensification</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster 1.1: Foresight Modeling</td>
<td>Food production scenarios under climate change with/without mitigation and adaptation measures for CCAFS. Nutritional outcome projections based on Baseline scenarios and with interventions (A4NH). Foresight analyses of broad relevance to the system (drivers and outcomes); community of practice in foresight (all GI CRPs).</td>
<td>Long-term climate predictions from CCAFS. Nutritional data and modeling support from A4NH. Data on surface and groundwater trends and land-use change scenarios from WLE.</td>
</tr>
<tr>
<td>Cluster 1.2: Agricultural S&amp;T, Genetic Resources and Innovation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster 1.3: Enabling Adoption of Technology</td>
<td>Methods and tools for analyzing dissemination approaches (CCAFS), tracking adoption and measuring impacts from technologies (CCAFS and WLE).</td>
<td>Investment in adoption and impact of CSA for synthesis. Co-invest in collaborative studies (e.g., gender and adoption of CSA) (CCAFS). Investment in adoption of improved land and water management practices for synthesis (WLE).</td>
</tr>
<tr>
<td><strong>Flagship 2: Inclusive Growth and Rural Transformation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster 2.1: Job Creation and Inclusive Growth</td>
<td>Understanding of rural livelihood dynamics and growth prospects for agriculture and employment, including urban-rural linkages (for WLE).</td>
<td></td>
</tr>
<tr>
<td>Cluster 2.2: Public Investments for Inclusive Transformation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster 2.3: Political Economy of the Policy Process</td>
<td>Methods and tools for undertaking political economy and science-policy analyses (CCAFS).</td>
<td>Political economy of climate change policy processes from CCAFS as inputs into synthetic work.</td>
</tr>
<tr>
<td><strong>PIM flagship/cluster</strong></td>
<td><strong>PIM's contribution</strong></td>
<td><strong>Contribution expected from other CRPs</strong></td>
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<tr>
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</tr>
<tr>
<td><strong>Flagship 3: Inclusive and Efficient Value Chains</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster 3.1: Enabling Value Chains</td>
<td>Estimates of postharvest losses/wastes and ex-ante studies of effects of interventions for A4NH.</td>
<td></td>
</tr>
<tr>
<td>Cluster 3.2: Strengthening Value Chains</td>
<td>Scope to test multi-value chain interventions and scaling mechanisms through value chain hubs.</td>
<td>Shared activities to test scaling mechanisms for nutritional and resilience outcomes through value chains ideally in collaboration with AFS CRPS (nutritionally sensitive value chains and climate-smart value chains).</td>
</tr>
<tr>
<td>Cluster 3.3: Upgrading of Value Chains at Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flagship 4: Social Protection Strategies and Programs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster 4.1: Social Protection Delivery and Outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster 4.2: Financial Inclusion and Services for the Poor</td>
<td>Weather-index-based insurance options tested for CCAFS.</td>
<td>Co-investment by CCAFS in weather-index-based insurance product testing to increase the coverage of the testing.</td>
</tr>
<tr>
<td><strong>Flagship 5: Governance of Natural Resources</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster 5.1: Enhancing Tenure Security</td>
<td>Tools for diagnosing specific tenure security constraints (WLE). Options tested for increasing tenure security over land and other resources, with an emphasis on women and vulnerable populations (WLE).</td>
<td>Effects of tenure security on investment in land and water practices and on resource degradation (WLE).</td>
</tr>
<tr>
<td>Cluster 5.2: Managing Shared Landscapes</td>
<td>Institutional options for inclusive decisionmaking around the governance of natural resources for WLE.</td>
<td>Implications of management options for landscape-based ecosystem services that require cooperation among farmers or stakeholders from WLE.</td>
</tr>
<tr>
<td>PIM flagship/cluster</td>
<td>PIM’s contribution</td>
<td>Contribution expected from other CRPs</td>
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</tr>
<tr>
<td><strong>Flagship 6: Gender Equity and Agricultural Development</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster 6.1: Gender and Agricultural Productivity</td>
<td></td>
<td>The effects of gender on investment in CSA (CCAFS) or water and land practices (WLE) for synthesis.</td>
</tr>
<tr>
<td>Cluster 6.2: Methods and Tools for Sex-disaggregated Data and Gender Analysis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Annex III: Table of target beneficiaries and target countries (2022)

<table>
<thead>
<tr>
<th>Results or outcomes</th>
<th>PIM flagship #</th>
<th>Target Sub-IDOs #</th>
<th>Total number of poor smallholders</th>
<th>Total number of other beneficiaries</th>
<th>Target countries</th>
<th>Comments</th>
<th>Key assumptions*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased productivity from improved targeting and dissemination practices</td>
<td>1</td>
<td>1.4.2</td>
<td>1 million</td>
<td>50,000 in agricultural services and markets</td>
<td>Bangladesh, Ethiopia, Ghana, India, Kenya, Malawi, Nigeria, Tanzania, Uganda, Vietnam</td>
<td>It is assumed that the outputs of PIM’s work will increase rates of adoption of a range of superior technologies and management practices by 20% above the counterfactual. 5 million farmers may be reached through AFS CRPs in 5 CGIAR countries of collaboration, and PIM's contribution will increase this number by an additional 1 million. Improved productivity will have knock-on effects on other agricultural service providers and output markets, estimated to be about 50,000 people.</td>
<td>Development partners continue to invest strongly in promotion of technologies.</td>
</tr>
<tr>
<td>Increased employment for the rural poor through targeted interventions</td>
<td>2</td>
<td>1.3.2</td>
<td>1 million</td>
<td>1 million</td>
<td>Bangladesh, Ethiopia, Ghana, Nigeria, Tanzania</td>
<td>Focus on Bangladesh and 4 African countries with large youth populations. 200,000 additional smallholder jobs and 200,000 additional other rural non-farm jobs from PIM research in each country.</td>
<td>Investment in job creation increases, especially in rural areas.</td>
</tr>
<tr>
<td>Value chains upgraded</td>
<td>3</td>
<td>1.2.1, 1.2.2, 1.3.3, 1.3.4</td>
<td>1 million, and up to 2 million with scaling up (direct and indirect beneficiaries)</td>
<td>100,000 other market actors affected directly or indirectly</td>
<td>Cambodia, Ethiopia, Ghana, Honduras, Guatemala, India, Kenya, Nicaragua, Nigeria, Peru, Senegal, Tanzania, Uganda, Vietnam. (other Asia countries to be selected through)</td>
<td>2 major value chains will be upgraded in each of the 10 priority countries jointly with AFS CRPs, with an estimated number of smallholders benefiting (directly and indirectly) of 50,000 per value chain, for a total of 1 million smallholders - with a potential to scale up to 2 million smallholders. In addition, it is estimated that 200,000 other value chain actors from the private sector will benefit from the increased market activity across all countries of intervention.</td>
<td>Development partners continue to invest strongly in value chain upgrading and reduction of losses across the value chain</td>
</tr>
<tr>
<td>Results or outcomes</td>
<td>PIM flagship #</td>
<td>Target Sub-IDs</td>
<td>Total number of poor smallholders</td>
<td>Total number of other beneficiaries</td>
<td>Target countries</td>
<td>Comments</td>
<td>Key assumptions*</td>
</tr>
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</tr>
<tr>
<td>Improved social protection programs</td>
<td>4</td>
<td>1.1.1</td>
<td>400,000</td>
<td>100,000</td>
<td>Bangladesh, Burkina Faso, Ethiopia, India, Mali, Senegal, Uganda</td>
<td>500,000 rural households are covered under social protection programs improved using PIM research results. These include smallholders (400,000) and rural landless households (100,000), distributed over a minimum of 3 countries. Of these beneficiaries, at least 50,000 will benefit from improved finance or insurance products tailored to the needs of the poor. The improved social protection benefits will in turn generate benefits for private sector actors (estimated to be 20,000 through increased expenditures.</td>
<td>Governments remain open to improving their existing social protection programs.</td>
</tr>
<tr>
<td>Improved governance of natural resources</td>
<td>5</td>
<td>3.2.1, 1.4.5</td>
<td>60,000 in better governed landscapes 1 million with improved security of resource tenure</td>
<td></td>
<td>Bangladesh, Burkina Faso, Cameroon, Ethiopia, Ghana, India, Kenya, Mali, Mozambique Niger, Nigeria, Tanzania, Zambia</td>
<td>Significant implementation of landscape governance research results should be achieved by development partners in 6 CGIAR countries of collaboration, with a reach of 100 villages per country in average. Assuming 100 households per village, all benefiting from improved natural resource governance, this gives 60,000 smallholders. In addition, the land tenure strengthening component is expected to have a significant impact through informing major reform processes on the African continent; it is assumed that this will reach 1 million households. There will be many other beneficiaries inside and outside affected landscapes since externalities from watershed protection, carbon sequestration and biodiversity conservation will be generated;</td>
<td>A key tenure reform initiative of the AUC influences policy action at national level.</td>
</tr>
</tbody>
</table>
however, these occur over the longer term, and may not be significant by 2022.

<table>
<thead>
<tr>
<th>Results or outcomes</th>
<th>PIM flagship #</th>
<th>Target Sub-IDs</th>
<th>Total number of poor smallholders</th>
<th>Total number of other beneficiaries*</th>
<th>Target countries</th>
<th>Comments</th>
<th>Key assumptions**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced gender inequality in agriculture</td>
<td>6</td>
<td>CC2.1.1, CC2.1.3</td>
<td>1.1 million</td>
<td>TBD</td>
<td>Bangladesh, Ethiopia, Ghana, India, Uganda (other CGIAR countries of collaboration to be determined through consultative process)</td>
<td>Roughly 20% of PIM’s budget is geared towards enhancing gender outcomes (see section of this pre-proposal on value for money). Thus the gender reach is estimated by multiplying the numbers of smallholders reached through the other flagships by 20% (20% x (1 million + 1 million + 2 million + 400,000 + 1,060,000)), for a total of 1.1 million.</td>
<td>PIM research on gender has the same rate of success on outcomes as other PIM research.</td>
</tr>
<tr>
<td>Improved policy enabling environment</td>
<td>All</td>
<td>CC3.1.3</td>
<td>30,000,000</td>
<td>1,500,000</td>
<td>Bangladesh, Burkina Faso, Ethiopia, Ghana, India, Kenya, Malawi, Nigeria, Tanzania, Uganda</td>
<td>Assuming 5 million smallholders on average affected in each country of focus (varying from India, Nigeria and Bangladesh to the smaller countries). The size of the benefits will vary, but in all cases the results will assist these smallholders to exit poverty. In addition to smallholder farmers, a large number of other households whose livelihoods depend on agriculture will also benefit.</td>
<td>Significant policy reforms are undertaken in 6 populous CGIAR countries of collaboration, and implementation proceeds.</td>
</tr>
</tbody>
</table>

* We haven’t been able to estimate the number of all beneficiaries in a general equilibrium framework (e.g. consumers) but will be in a better position to do so when the geographical focus of the CGIAR and PIM is clarified following the country consultations and further discussions with CRPs.

** In addition to the assumptions indicated in the table, key assumptions that hold for all results are 1) absence of generalized conflict; 2) absence of severe drought; 3) availability of trend levels of ODA for agricultural development; 4) absence of generalized epidemic (e.g., Ebola).
Explanatory notes on Annex IV: Performance indicators matrix

First worksheet: Outcomes and budgets

In light of the discussions between CRPs and guidance from the CO on how to fill the "Expected performance outcomes" cells, we have opted to include a few very high-level outputs, as milestones, along with bonafide outcomes. Thus, for each flagship the set of targets includes some over which PIM has a high level of influence and some over which PIM as a lower level of influence.

We have added two columns to show the contribution of the outcomes to the SRF IDOs and Sub-IDOs. Only the most significant contributions are displayed. PIM contributes indirectly to most IDOs and Sub-IDOs; for instance all PIM flagships contribute, to a variable level, to the cross-cutting gender Sub-IDOs.

In most cases, quantification of outcomes is based on numbers of countries, as opposed to numbers of beneficiaries. This is mainly because the amounts of PIM investment in the CGIAR countries of collaboration have not yet been confirmed. We will provide more robust quantitative estimates in the full proposal. In the full proposal we will also provide gender-specific targets for Flagships 1 to 5, which are not yet specified.

Second worksheet: Contribution to 2022 targets

The second worksheet presents PIM’s approach on the topic of PIM’s contribution to the 2022 SLO targets set forth in Table 1 of the SRF. We selected 4 SLO targets to which PIM contributes the most (PIM research contributes to all targets indirectly, but those contributions are difficult to estimate and will be done for the full proposal following more clarity on the geographical focus of the CGIAR and PIM), explained PIM’s contribution to these targets, and quantified this contribution - distinguishing between contribution in CGIAR countries of collaboration and a more global contribution from global research or spillover.

This assessment of PIM’s contribution relies on the following assumptions:
- 2022 SLO targets are reasonable based on CGIAR’s budget, research scope and geographical reach;
- policy change is critical for targets to be met;
- PIM plays a leading role in informing policy change in CGIAR countries.
## Performance Indicators Matrix

### Overall contribution to 2022 Targets in 2016 - 2020 MP: See next spreadsheet

<table>
<thead>
<tr>
<th>Flagship 1: Technological Innovation and Sustainable Intensification</th>
<th>Expected Performance Outcomes (Quantified)</th>
<th>Budget Elements (US million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sub-IDO CC1.1: Improved forecasting of impacts of climate change and targeted technology development</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-IDO CC1.1.1: Enhanced institutional capacity of partner research organizations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-IDO CC1.1.2: Enhanced individual capacity in partner research organizations through training and exchange</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-IDO CC1.1.3: Increased capacity of partner organizations to innovate in agriculture research and policy environment</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Sub-IDO CC1.1.4: Closed yield gaps through improved agronomic and animal husbandry practices</strong></td>
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<tr>
<td><strong>Sub-IDO CC1.1.11: Conducive agricultural policy environment</strong></td>
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<tr>
<td><strong>Sub-IDO CC1.1.12: Enhanced institutional capacity of partner research organizations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-IDO CC1.1.13: Increased capacity for innovation in partner development organizations and in poor and vulnerable communities</strong></td>
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<tr>
<td><strong>Sub-IDO CC1.1.14: Increased conservation and use of genetic resources</strong></td>
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<tr>
<td><strong>Outcome 1.1 - Improved priority-setting of agricultural research for CGIAR regions</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Outcome 1.2 - Increased investment and capacity in national agricultural research institutions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 1.3 - Adoption of superior technologies and management practices</strong></td>
<td></td>
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<tr>
<td><strong>Outcome 2.1 - Improved capacity in agricultural and rural policy analysis at national level</strong></td>
<td></td>
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<tr>
<td><strong>Outcome 2.2 - Increased use of scientific evidence in agricultural policy decisions</strong></td>
<td></td>
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<tr>
<td><strong>Outcome 2.3 - Improved national policies and programs for agricultural growth, transformation and job creation</strong></td>
<td></td>
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<tr>
<td><strong>Outcome 2.4 - Increased rural livelihood opportunities</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>Outcome 3.1 - Improved capacity of partner research organizations in value chain analysis</strong></td>
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</tbody>
</table>

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</thead>
<tbody>
<tr>
<td><strong>Primary Sub-IDO</strong></td>
<td><strong>Secondary Sub-IDO(s)</strong></td>
<td><strong>Outcomes</strong></td>
<td><strong>Ongoing throughout enabling data collection and analysis are made available to CRPs and CGIAR centers</strong></td>
<td><strong>New models are used within CGIAR to help set priorities at country, CRP and Consortium level</strong></td>
<td><strong>Cross-cutting models are being developed and applied through the strategic and action plans</strong></td>
<td><strong>Large models at CRP level are used to help track key production and trade indicators in these strategies and action plans</strong></td>
</tr>
<tr>
<td><strong>Sub-IDO CC1.1 Enhanced institutional capacity of partner research organizations</strong></td>
<td><strong>Sub-IDO CC1.1.1: Enhanced institutional capacity of partner research organizations</strong></td>
<td><strong>Sub-IDO CC1.1.2: Enhanced individual capacity in partner research organizations through training and exchange</strong></td>
<td><strong>Sub-IDO CC1.1.3: Increased capacity for innovation in partner research organizations</strong></td>
<td><strong>Sub-IDO CC1.1.4: Closed yield gaps through improved agronomic and animal husbandry practices</strong></td>
<td><strong>Sub-IDO CC1.1.11: Conducive agricultural policy environment</strong></td>
<td><strong>Sub-IDO CC1.1.12: Enhanced institutional capacity of partner research organizations</strong></td>
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<tr>
<td><strong>Sub-IDO CC1.1.13 Increased capacity of partner organizations to innovate in agriculture research and policy environment</strong></td>
<td><strong>Sub-IDO CC1.1.14: Increased conservation and use of genetic resources</strong></td>
<td><strong>Sub-IDO CC1.1.11: Enhanced institutional capacity of partner research organizations</strong></td>
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<tr>
<td><strong>Sub-IDO CC1.1.13: Increased capacity for innovation in partner development organizations and in poor and vulnerable communities</strong></td>
<td><strong>Sub-IDO CC1.1.4: Closed yield gaps through improved agronomic and animal husbandry practices</strong></td>
<td><strong>Sub-IDO CC1.1.11: Enhanced institutional capacity of partner research organizations</strong></td>
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<td><strong>Sub-IDO CC1.1.12: Enhanced institutional capacity of partner research organizations</strong></td>
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<td><strong>Sub-IDO CC1.1.13: Increased capacity for innovation in partner development organizations and in poor and vulnerable communities</strong></td>
<td><strong>Sub-IDO CC1.1.4: Closed yield gaps through improved agronomic and animal husbandry practices</strong></td>
<td><strong>Sub-IDO CC1.1.11: Enhanced institutional capacity of partner research organizations</strong></td>
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<td></td>
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<tr>
<td><strong>Sub-IDO CC1.1.14: Increased conservation and use of genetic resources</strong></td>
<td><strong>Sub-IDO CC1.1.11: Conducive agricultural policy environment</strong></td>
<td><strong>Sub-IDO CC1.1.12: Enhanced institutional capacity of partner research organizations</strong></td>
<td><strong>Sub-IDO CC1.1.13: Increased capacity for innovation in partner development organizations and in poor and vulnerable communities</strong></td>
<td><strong>Sub-IDO CC1.1.14: Closed yield gaps through improved agronomic and animal husbandry practices</strong></td>
<td><strong>Sub-IDO CC1.1.11: Enhanced institutional capacity of partner research organizations</strong></td>
<td><strong>Sub-IDO CC1.1.12: Enhanced institutional capacity in partner research organizations through training and exchange</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date prepared: 12 août 2019</th>
<th><strong>2017 - 2022 Targets</strong></th>
<th><strong>Total dedicated to administrative/ Management</strong></th>
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<tbody>
<tr>
<td><strong>158</strong></td>
<td><strong>1.8</strong></td>
<td><strong>23.3</strong></td>
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<td><strong>38</strong></td>
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<td><strong>82</strong></td>
<td><strong>0.6</strong></td>
<td><strong>12.3</strong></td>
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<td><strong>15</strong></td>
<td><strong>1.1</strong></td>
<td><strong>28.5</strong></td>
</tr>
<tr>
<td><strong>57</strong></td>
<td><strong>0.5</strong></td>
<td><strong>8.8</strong></td>
</tr>
<tr>
<td><strong>19</strong></td>
<td><strong>0.5</strong></td>
<td><strong>2.5</strong></td>
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<tr>
<td><strong>57</strong></td>
<td><strong>0.5</strong></td>
<td><strong>8.8</strong></td>
</tr>
<tr>
<td><strong>57</strong></td>
<td><strong>0.5</strong></td>
<td><strong>8.8</strong></td>
</tr>
</tbody>
</table>

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**Budget Elements (US million $)**

- **Primary Sub-IDO**
- **Secondary Sub-IDO(s)**
- **Outcomes**

---

**Date prepared:** 12 aoû 2019

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**Flagship 2: Inclusive Growth and Rural Transformation**

<table>
<thead>
<tr>
<th><strong>Sub-IDO CC1.1</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enhanced institutional capacity of partner research organizations</strong></td>
</tr>
<tr>
<td><strong>Outcome 1.2 - Increased investment and capacity in national agricultural research institutions</strong></td>
</tr>
<tr>
<td><strong>Outcome 2.1 - Improved capacity in agricultural and rural policy analysis at national level</strong></td>
</tr>
<tr>
<td><strong>Outcome 2.2 - Increased use of scientific evidence in agricultural policy decisions</strong></td>
</tr>
<tr>
<td><strong>Outcome 2.3 - Improved national policies and programs for agricultural growth, transformation and job creation</strong></td>
</tr>
<tr>
<td><strong>Outcome 2.4 - Increased rural livelihood opportunities</strong></td>
</tr>
<tr>
<td><strong>Outcome 3.1 - Improved capacity of partner research organizations in value chain analysis</strong></td>
</tr>
</tbody>
</table>

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**Flagship 3: Inclusive and Efficient Value Chains**

<table>
<thead>
<tr>
<th><strong>Sub-IDO CC1.1</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enhanced institutional capacity of partner research organizations</strong></td>
</tr>
</tbody>
</table>

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**Overall contribution to 2022 Targets in 2016 - 2020 MP: See next spreadsheet**

---

**Outcomes**

1. **Improved priority-setting of agricultural research for CGIAR regions**
2. **Increased investment and capacity in national agricultural research institutions**
3. **Adoption of superior technologies and management practices**
4. **Improved capacity in agricultural and rural policy analysis at national level**
5. **Increased use of scientific evidence in agricultural policy decisions**
6. **Improved national policies and programs for agricultural growth, transformation and job creation**
7. **Increased rural livelihood opportunities**
8. **Improved capacity of partner research organizations in value chain analysis**
### Expected Performance Outcomes (Quantified)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Sub-IDO 3.1</td>
<td></td>
<td>Outcome 3.2 - National policies and regulations are more supportive of inclusive and efficient value chains</td>
<td>7.1</td>
<td>2.8</td>
<td>2.5</td>
<td>2.1</td>
<td>1.9</td>
<td>1.7</td>
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<tr>
<td>Sub-IDO 3.2</td>
<td></td>
<td>Outcome 3.3 - Value chains are upgraded</td>
<td>5.6</td>
<td>4.1</td>
<td>4.6</td>
<td>5.1</td>
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<tr>
<td>Sub-IDO 3.3</td>
<td></td>
<td>Outcome 3.4 - Improved income for producers from value chain innovations</td>
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<td>1.9</td>
<td>2.4</td>
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<td>3.4</td>
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<tr>
<td>Flagship 4: Social Protection Strategies and Programs</td>
<td></td>
<td>Outcome 4.1 - Improved social protection strategies and policies are adopted by implementing governments and NGOs</td>
<td>2.3</td>
<td>1.9</td>
<td>2.4</td>
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<tr>
<td>Flagship 5: Governance of Natural Resources</td>
<td></td>
<td>Outcome 5.1 - Increased capacity of beneficiary to adapt research outputs</td>
<td>3.3</td>
<td>2.9</td>
<td>3.4</td>
<td>3.9</td>
<td>4.4</td>
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<tr>
<td>Flagship 6: Gender Equity and Agricultural Development</td>
<td></td>
<td>Outcome 6.1 - Improved capacity and equitable management of natural resource</td>
<td>5.6</td>
<td>4.1</td>
<td>4.6</td>
<td>5.1</td>
<td>5.6</td>
<td>6.1</td>
<td>6.6</td>
</tr>
</tbody>
</table>

### Budget Elements (US million $)

<table>
<thead>
<tr>
<th>Expected Performance Outcomes (Quantified)</th>
<th>Budget Elements (US million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017 - 2022 Total</td>
<td>Total dedicated to tenure gender- responsiveness</td>
</tr>
<tr>
<td>5.1</td>
<td>0.5</td>
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<tr>
<td>0.5</td>
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<td>5</td>
<td>9.3</td>
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<td>10</td>
<td>13</td>
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<tr>
<td>19</td>
<td>4.4</td>
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<td>1.0</td>
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<tr>
<td>25</td>
<td>3.8</td>
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<td>56</td>
<td>14.2</td>
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<td>24</td>
<td>3.8</td>
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<tr>
<td>32</td>
<td>12.0</td>
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<tr>
<td>Primary Sub-IDO</td>
<td>Secondary Sub-IDO(s)</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Sub-IDO CC4.1.2</td>
<td>&quot;Enhanced individual capacity in partner research organizations through training and exchange&quot;</td>
</tr>
<tr>
<td>Sub-IDO CC2.1.1</td>
<td>&quot;Gender equitable control of productive assets and resources&quot;</td>
</tr>
<tr>
<td>Management</td>
<td></td>
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<tr>
<td>Monitoring and Evaluation</td>
<td></td>
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<tr>
<td>Partnerships and capacity building</td>
<td></td>
</tr>
<tr>
<td>CGIAR 2022 targets of most relevance to PIM</td>
<td>How PIM contributes</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>100 million more farm households have adopted improved varieties, breeds or trees and/or improved management practices (SLO1)</td>
<td>PIM will complement the efforts of the AFS CRPs to scale up technologies, providing an improved enabling environment and innovations to enhance information dissemination, targeting of technology and incentives for adoption. Through research on overcoming barriers to women, PIM will increase the level and inclusiveness of technology adoption. The enabling environment will focus on CGIAR countries of collaboration, while other research outputs are global in relevance.</td>
</tr>
<tr>
<td>30 million people, of which 50% are women, assisted to exit poverty (SLO1)</td>
<td>Same as for 1.1, plus: (1) value chain research helps to raise incomes from farming and other agricultural livelihoods, (2) PIM works to develop policies and programs that will assist in wider rural job creation, recognizing the limits of farm sizes for exiting poverty through farming, (3) PIM works on improving natural resource management and social protection programs for the very poor, recognizing the limitations of focusing on agriculture alone, (4) PIM works on reducing gender disparities so that women can share more equally in the increased benefits.</td>
</tr>
<tr>
<td>Improve the rate of yield increase for major food staples from current &lt; 1% to 1.2% - 1.5% per year (SLO2)</td>
<td>Other CRPs are responsible for developing CGIAR technologies that will lead to yield increases for major food staples. PIM will complement these efforts in two ways: (1) PIM’s research aims to contribute to an improved policy and institutional environment and to the use of improved innovations to enhance information dissemination, targeting of technology and incentives for adoption; and (2) PIM’s research helps to strengthen NARS, which in the longer run will lead to the development of higher yielding crop varieties. These will lead to increased adoption of improved varieties as well as other practices that promote productivity increase.</td>
</tr>
<tr>
<td>55 million hectares of degraded land area restored (SLO3)</td>
<td>Restoring degraded land at scale requires improving policies and institutions to set goals and align incentives for all stakeholders accordingly. PIM plays a coordinating role in diagnosing tenure and governance constraints and in evaluating solutions, and works with FTA and WLE on landscape governance issues and with additional CRPs on specific tenure issues. Restoring degraded land also takes place through improved adoption of sustainable land management practices, which is also promoted by PIM research.</td>
</tr>
</tbody>
</table>
Annex V: Planned PIM research in CGIAR countries of collaboration

- CRPII Title/Name: PIM

- List which countries this CRPII will be working with other CGIAR entities to carry out site integration, highlighting any of the site integration++ countries: see second spreadsheet

- Indicate any countries where the lead center or other participating centers of this CRPII is taking the lead in site integration: none for IFPRI. All centers will participate in PIM in Phase 2, so any center that is taking the lead in site integration will be a participating center of PIM.

- Demonstrate how this CRPII intends to work on site integration i.e steps already taken and those that will be taken? how does it intend to support/fund joint activities? See second spreadsheet for a short description of the topics that PIM plans to work on in the collaboration + and collaboration ++ countries.

PIM will participate in the consultative process with collaboration ++ countries, and continue to discuss collaboration with CRPs in the full list of collaboration countries. PIM’s detailed work program in these countries will respond to priorities expressed by the countries, requests from other CRPs, and results of PIM’s foresight and diagnostic research, drawing on the areas of emphasis within the PIM flagships and on the program’s comparative advantage within CGIAR. Therefore this information will be provided at a later stage.

- For the each of the countries this CRPII is involved in:
provide any early indication of any objectives, coordination mechanisms and joint activities anticipated in countries this CRPII is involved in site integration in what this CRPII expects to offer to site integration in these countries? E.g investment, staff, sites, platforms, etc See second spreadsheet for a short description of the topics that PIM plans to work on in the collaboration + and collaboration ++ countries.

In some countries, research has been undertaken in a demand-led collaborative model with host country governments; PIM will explore how that model can facilitate the policy research agenda for CGIAR in Phase 2. In addition, PIM has established regional value chain hubs (referenced in the second spreadsheet), which can serve as nodes for integration of value chain research across CRPs. Finally, PIM will continue to host several communities of practice which will facilitate the coordination of research across CRPs and centers.

PIM will participate in the consultative process with collaboration ++ countries, and continue to discuss collaboration with CRPs in the full list of collaboration countries. PIM’s detailed work program in these countries will respond to priorities expressed by the countries, requests from other CRPs, and results of PIM’s foresight and diagnostic research, drawing on the areas of emphasis within the PIM flagships and on the program’s comparative advantage within CGIAR. Therefore this information will be provided at a later stage.
## Annex V: Planned PIM research in CGIAR countries of collaboration

<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
<th>Flagship 1</th>
<th>Flagship 2</th>
<th>Flagship 3</th>
<th>Flagship 4</th>
<th>Flagship 5</th>
<th>Flagship 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>Collaboration ++</td>
<td>Biosafety regulations and policies (Cluster 1.2); Technology adoption (Cluster 1.3).</td>
<td>Inclusive structural transformation and youth employment (Cluster 2.1); Bangladesh Strategy Support Program (Cluster 2.1).</td>
<td>Measuring incentives (with FAO) (Cluster 3.1); Potential focus of research and upgrading of value chains (Clusters 3.2 and 3.3).</td>
<td>Social protection (Cluster 4.1); Complementary social protection and nutrition programs (with A4NH) (Cluster 4.1).</td>
<td>Governance and tenure (with Fish) (Cluster 5.1 and 5.2).</td>
<td>Applications of the WEAI (Clusters 6.1 and 6.2). CGIAR countries of collaboration ++ are a priority.</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>Collaboration +</td>
<td>Biosafety regulations (Cluster 1.2).</td>
<td></td>
<td>Social protection (Cluster 4.1).</td>
<td></td>
<td>Candidate for work on tenure security (with FTA, DCLAS, CCAFS) (Cluster 5.1).</td>
<td></td>
</tr>
<tr>
<td>Cameroon</td>
<td>Collaboration +</td>
<td></td>
<td></td>
<td></td>
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<td>Candidate for collaboration with Livestock (Cluster 5.2).</td>
<td></td>
</tr>
<tr>
<td>DRC</td>
<td>Collaboration +</td>
<td>Upgrading of value chains (with AFS CRPs) (Cluster 3.2).</td>
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<tr>
<td>Ethiopia</td>
<td>Collaboration ++</td>
<td>Biosafety regulations (Cluster 1.2); Technology adoption (Cluster 1.3).</td>
<td>Job creation and growth (Cluster 2.1); Ethiopian Strategy Support Program (Cluster 2.1); Public expenditure research (Cluster 2.2).</td>
<td>Measuring incentives (Cluster 3.1); Upgrading of value chains (Cluster 3.2); Value chain hub (Cluster 3.3).</td>
<td>Social protection implementation mechanisms (Cluster 4.1); Potential research on urban social protection (Cluster 4.1).</td>
<td>Candidate for work on tenure security (Cluster 5.1).</td>
<td>Empirical research on gender roles (Cluster 6.1). CGIAR countries of collaboration ++ are a priority.</td>
</tr>
<tr>
<td>Ghana</td>
<td>Collaboration +</td>
<td>Biosafety regulations (Cluster 1.2); Potential country for technology adoption (Cluster 1.3).</td>
<td>Growth and transformation (Cluster 2.1); Mechanization policy (Cluster 2.1); Ghana Strategy Support Program (Clusters 2.1.2.2 and 2.3).</td>
<td>Measuring incentives (with FAO) (Cluster 3.1); Upgrading of value chains (Cluster 3.2); Value chain activities through virtual hub in West Africa (Cluster 3.3).</td>
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<td>Candidate for work on tenure security (with FTA, DCLAS, CCAFS) (Cluster 5.1).</td>
<td>Empirical research on the WEAI (Clusters 6.1 and 6.2).</td>
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<td>India</td>
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<td>National level foresight research (Cluster 1.1); Biosafety regulations (Cluster 1.2); Potential country for technology adoption (Cluster 1.3).</td>
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<td>Measuring incentives (with World Bank) (Cluster 3.1); Potential focus of value chain research (Clusters 3.2 and 3.3).</td>
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<td>Kenya</td>
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<td>Biosafety regulations (Cluster 1.2); Potential country for technology adoption (Cluster 1.3).</td>
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<td>Measuring incentives (with FAO) (Cluster 3.1); Value chain research and activities through Ethiopia hub (Cluster 3.3).</td>
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<td></td>
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<tr>
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<td>Biosafety regulations (Cluster 1.2); Potential country for technology adoption (Cluster 1.3).</td>
<td>Malawi Strategy Support Program (Cluster 2.1)</td>
<td>Measuring incentives (with FAO) (Cluster 3.1).</td>
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<tr>
<td>Mali</td>
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<td>Measuring incentives (with FAO) (Cluster 3.1).</td>
<td>Social protection implementation mechanisms (Cluster 4.1).</td>
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<td>Mozambique</td>
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<td>Candidate for work on tenure security (Cluster 5.1).</td>
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<td>Nepal</td>
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<td>Potential focus of value chain research (Clusters 3.2 and 3.3).</td>
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<td>Empirical research on the WEAI (Clusters 6.1 and 6.2).</td>
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<tr>
<td>Nicaragua</td>
<td>++</td>
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<td>Value chain research and activities through Peru hub (Cluster 3.3).</td>
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<td>Niger</td>
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<td>Nigeria</td>
<td>Collaboration ++</td>
<td>Biosafety regulations (Cluster 1.2); Technology adoption (Cluster 1.3).</td>
<td>Growth and transformation (Cluster 2.1); Nigeria Country Strategy Support Program (Clusters 2.1, 2.2 and 2.3).</td>
<td>Measuring incentives (with FAO) (Cluster 3.1); Value chain activities through virtual hub in West Africa (Cluster 3.3).</td>
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<td>Candidate for work on tenure security (Cluster 5.1).</td>
<td>CGIAR countries of collaboration ++ are a priority.</td>
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<td>Tanzania</td>
<td>Collaboration ++</td>
<td>Biosafety regulations (Cluster 1.2); Technology adoption (Cluster 1.3).</td>
<td>Growth and transformation (Cluster 2.1); Prioritizing agricultural investment (Cluster 2.2).</td>
<td>Measuring incentives (with FAO) (Cluster 3.1); Upgrading of value chains (Cluster 3.2); Value chain research and activities through Ethiopia hub (Cluster 3.3).</td>
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<td>CGIAR countries of collaboration ++ are a priority.</td>
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<td>Country</td>
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<td>Uganda</td>
<td>Collaboration +</td>
<td>Biosafety regulations (Cluster 1.2); Potential country for technology adoption (Cluster 1.3).</td>
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<td>Measuring incentives (with FAO) (Cluster 3.1); Value chain research and activities through Ethiopia hub (Cluster 3.3).</td>
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<td>Vietnam</td>
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<td>Biosafety regulations (Cluster 1.2).</td>
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<td>Potential focus of value chain research (Clusters 3.2 and 3.3).</td>
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<td>Zambia</td>
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<td>Biosafety regulations (Cluster 1.2).</td>
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<td>Potential focus of value chain research (Clusters 3.2 and 3.3).</td>
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<td>Governance and tenure (with Fish) (Clusters 5.1 and 5.2).</td>
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Annex VI: Technical competency – List of CVs of PIM flagship core team members
FLAGSHIP 1: TECHNOLOGICAL INNOVATION AND SUSTAINABLE INTENSIFICATION

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Bantilan, Ma Cynthia S.</td>
<td>ICRISAT</td>
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<tr>
<td>Davis, Kristin</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Franzel, Steven</td>
<td>ICRAF</td>
</tr>
<tr>
<td>Hareau, Guy</td>
<td>CIP</td>
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<tr>
<td>Koo, Jawoo</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Maredia, Mywish</td>
<td>Michigan State University</td>
</tr>
<tr>
<td>Msangi, Siwa</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Place, Frank</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Prager, Steven</td>
<td>CIAT</td>
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<tr>
<td>Rosegrant, Mark</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Spielman, David</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Van Meijl, Hans</td>
<td>LEI-Wageningen UR</td>
</tr>
<tr>
<td>Wiebe, Keith</td>
<td>IFPRI</td>
</tr>
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</table>
BANTILAN, MA CYNTHIA S.

SUMMARY

Cynthia Bantilan is the Research Program Director of ICRISAT's Research Program on Markets, Institutions Policy. Formerly, she was the Global Theme Leader of ICRISAT's Global Theme on "Institutions, Markets, Policy and Impacts." Earlier, she was Principal Scientist and Project Leader for Research Evaluation and Impact Assessment of the Socioeconomics and Policy Program at ICRISAT; then, she led the same program as Program Director. Dr. Bantilan obtained her Ph.D. degree in Economics and Statistics from North Carolina State University. Before joining ICRISAT, she held the position of Associate Professor of Economics and Professor of Statistics at the University of the Philippines at Los Baños. She specializes in agricultural research evaluation and impact assessment, monitoring and evaluation, poverty and income distribution, econometrics, agricultural economics and agricultural statistics, information systems management, and applications for decision support and policy analysis.

EMPLOYMENT

2011-present Research Program Director, ICRISAT Research Program on Markets Institutions Policy, based in ICRISAT, Patancheru, India
2005-2010 Global Theme Leader, ICRISAT Global Theme on Institutions, Markets, Policy and Impacts, based in ICRISAT, Patancheru, India
2002- 2004 Global Theme Leader, ICRISAT Global Theme on SAT Futures and Development Pathways, based in ICRISAT, Patancheru, India

EDUCATION

1984 Ph.D., Economics and Statistics, North Carolina State University, Raleigh, USA
1977 M.Sc., Statistics and Economics, University of the Philippines, Los Baños, Philippines

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


Nedumaran, S, Bantilan MCS, Rajalakshmi A and Shyam Moses D. 2013. Analysing scientific strength and varietal generation, adoption, and turnover in Peninsular India: The case of Sorghum, Pearl Millet, Chickpea, Pigeonpea, and Groundnut, Chapter 14 in Walker, Tom and Alwang, Jeff (eds), CABI publication.


Kumara Charyulu D, Bantilan MCS, Rajalakshmi A and Shyam Moses D. 2013. Analysing scientific strength and varietal generation, adoption, and turnover in Peninsular India: The case of Sorghum, Pearl Millet, Chickpea, Pigeonpea, and Groundnut, Chapter 14 in Walker, Tom and Alwang, Jeff (eds), CABI publication.


Singh NP, Bantilan MCS and Byjesh K. 2011. Farmer’s perception to climate change/variability and adaptive behavior to cope with its impacts – Case studies from SAT villages of India. Pages 180-187 in Agricultural Drought: Climate Change and Rainfed Agriculture. 5th SERC School, Central Research Institute for Dry-land Agriculture, (Rao VUM, Rao, AVMS, Kumar PV, Desai S, Saikia US, Srivastava NN, and Venkateswarulu B, eds.) Hyderabad, India.

ROLE IN PIM PHASE 1

Member of the Management Committee; Focal Point; Activity Leader.
DAVIS, KRISTIN

SUMMARY

Kristin Davis is a research fellow with the International Food Policy Research Institute. Her research and capacity strengthening focuses on agricultural extension, education, and innovation, mainly in Sub-Saharan Africa. She also leads the Global Forum for Rural Advisory Services, providing evidence, communication, and advocacy on extension and advisory services. She has published over 30 peer-reviewed journal articles and book chapters.

EMPLOYMENT

<table>
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<th>Period</th>
<th>Position</th>
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<tbody>
<tr>
<td>April 2007-Present</td>
<td>Research Fellow, International Food Policy Research Institute</td>
</tr>
<tr>
<td>November 2004-March 2007</td>
<td>Postdoctoral Fellow, International Food Policy Research Institute</td>
</tr>
<tr>
<td>August 2000-August 2004</td>
<td>Graduate Student, University of Florida</td>
</tr>
<tr>
<td>February 1999-July 2000</td>
<td>Agricultural Resources Specialist</td>
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EDUCATION

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<tr>
<td>2004</td>
<td>PhD, International Agricultural Extension with Minor in Farming Systems</td>
<td>University of Florida</td>
</tr>
<tr>
<td>1992</td>
<td>B. S., Biology (Cum Laude)</td>
<td>University of Florida</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

“Presidential Plaque in Recognition of Exceptional Leadership” as President of the Association for International Agricultural and Extension Education (AIAEE), 2014-2015.

Outstanding Achievement Award (2014). The AIAEE presents this to a professional who during their career has demonstrated a combination of service, leadership, and scholarly activity.

Fellows Award (2012). The AIAEE presents this to a member who has made exceptional contributions to the profession and who have no less than eight years and no more than 15 years of service as a professional in agricultural and extension education and who show great promise for continued contributions.


ROLE IN PIM PHASE 1

Leader of activities on research on advisory services under cluster 1.3, technology adoption and impacts at scale.
FRANZEL, STEVEN

SUMMARY
Leader, Research on Rural Advisory Services, World Agroforestry Centre. Main research areas: rural advisory services, smallholder farming systems, agroforestry, marketing, adoption and participatory research.

EMPLOYMENT
2013-present Leader, Research on Rural Advisory Services, World Agroforestry Centre
2008-2012 Leader, Science Domain on Tree Products and Marketing, World Agroforestry Centre
1997-2007 Principal Agricultural Economist, World Agroforestry Centre
1991-1997 Senior Agricultural Economist, World Agroforestry Centre

EDUCATION
1983 PhD Agricultural Economics, Michigan State University
1979 MSc Agricultural Economics, Michigan State University
1974 BA Economics, Cornell University

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS
2014-2019 East Africa Dairy Development Project, Phase 2, Bill and Melinda Gates Foundation
2012-2016 Innovative Extension Approaches, Ministry of Foreign Affairs, Finland

ROLE IN PIM PHASE 1
Member, PIM Management Team. Focal person for ICRAF to PIM
HAREAU, GUY G.

SUMMARY

Guy G. Hareau, a national from Uruguay, is currently an Agricultural Economist in the Social and Health Sciences Global Program at the International Potato Center (CIP) in Lima, Peru.

EMPLOYMENT

<table>
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<tr>
<td>2008-Present</td>
<td>Agricultural Economist, CIP, Lima, Peru</td>
</tr>
<tr>
<td>2004–2008</td>
<td>Principal Researcher, Office of the Deputy Director for Program and Operations, National Agricultural Research Institute (INIA), Uruguay</td>
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EDUCATION

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<tr>
<td>2006</td>
<td>Ph.D., Economics (Agriculture)</td>
<td>Virginia Tech, USA</td>
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<tr>
<td>2002</td>
<td>M.S., Agricultural Economics</td>
<td>Virginia Tech, USA</td>
</tr>
<tr>
<td>1987</td>
<td>B.Sc., Agronomy Engineer</td>
<td>University of the Republic, Uruguay</td>
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</table>

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


ROLE IN PIM PHASE 1

Focal Point; Activity Leader.
Koo, Jawoo

SUMMARY

Research Fellow at IFPRI, serving as the Leader of Spatial Data and Analytics Theme and the Global Coordinator of the CGIAR Consortium for Spatial Information; Studied Plant Pathology and Agricultural Systems Modeling; Applying large geospatial datasets and crop systems modeling framework for ex-ante/ex-post assessment of agricultural technology and development investment impacts; 11 peer-reviewed publications since 2010.

EMPLOYMENT

2008–Current Research Fellow, IFPRI
2007–2008 Postdoctoral Fellow, IFPRI

EDUCATION

2007 Ph.D., Agricultural and Biological Engineering, University of Florida, Gainesville, Florida
2002 M.S., Agricultural and Biological Engineering, University of Florida, Gainesville, Florida
1998 B.A., Agricultural Biology, Korea University, Seoul, South Korea

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

2007 – 2015 HarvestChoice Phase I and II (funded by the Bill and Melinda Gates Foundation)
2013 – 2014 New Alliance Technology Platform (funded by USAID)

OTHER EVIDENCE OF DELIVERY

HarvestChoice Website (http://harvestchoice.org) – Data and knowledge sharing platform for improved investments
HarvestChoice Mappr (http://apps.harvestchoice.org/mapper) – Geospatial data and analysis platform
MapSPAM (http://mapspam.info) – Spatially-disaggregated crop production statistics data
CGIAR Research Portfolio (http://where.cgiar.org) – Inventory of CGIAR’s research portfolio across CRPs

ROLE IN PIM PHASE 1

Leader of Activity 45 (Geospatial tools to support: Mapping of the work of the CGIAR CRPs, Development of the G8 Technology Platform, and alignment of investment to support agricultural growths) under the Flagship 3, Cluster 3.2.
MAREDIA, MYWISH

SUMMARY

Mywish Maredia is a Professor of International Development in the Department of Agricultural, Food and Resource Economics at Michigan State University. She served as the Deputy Director of the USAID funded Dry Grain Pulses CRSP (and its predecessor Bean/Cowpea CRSP) from 2000-2009, and as a member of the Standing Panel on Impact Assessment of the CGIAR’s Science Council from 2006-2011. She has broad expertise and experience in impact evaluation research using experimental and quasi-experimental approaches; methodologies for tracking and measuring the impact of technology adoption; economics of agricultural science and policies; and seed system efficiency issues in developing countries. She leads several impact assessment and technology adoption research projects in Africa, Asia and Central America funded by USAID, CGIAR, and the Millennium Challenge Corporation.

EDUCATION

1993 Ph.D. Agricultural Economics, Michigan State University, East Lansing
1986 M.A., Economics, University of Bombay, India
1984 B.A., Economics, University of Bombay, India

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

   *Legume Innovation Lab Collaborative Research (USAID)—US$900,000: Impact assessment of the adoption and uptake of Legume Lab research technologies in Africa, Latin America and the U.S. (with E. Crawford)
2011: Millennium Challenge Corporation (MCC)-- Impact evaluation of MCA interventions on land titling in Lesotho (US$ 785,000) and Mozambique (US$ 1.3 million) (with G. Schultink and S. Jin)
2010: *Dry Grain Pulses CRSP (USAID)—US$221,434: Monitoring and evaluation of a bean technology transfer project in Central America

Award: Outstanding Dissertation Award. American Agricultural Economics Association (1994)
Siwa Msangi is a Senior Research Fellow in the Environment and Production Technology Division, and works under IFPRI's research theme on Natural Resource Management. Siwa's research focuses on the major socio-economic and bio-physical drivers affecting agricultural production systems, and their impacts on trade, nutrition, poverty and the environment. While a great deal of his current research activity focuses on the sustainable intensification of agriculture, and the interactions of agriculture and energy, Siwa has a broader research background in natural resource management -- especially that of surface and groundwater management policy. Siwa also has research interests in livestock and aquatic production systems, and their interaction with the environment.

Employment

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<tr>
<td>2009-Present</td>
<td>Senior Research Fellow, IFPRI</td>
<td>Washington, DC</td>
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<td>Research Fellow, IFPRI</td>
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<td>2004-2006</td>
<td>Post-doctoral Fellow, IFPRI</td>
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Education

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<tr>
<td>2004</td>
<td>Ph.D., Agricultural and Resource Economics</td>
<td>University of California-Davis</td>
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Selected Recent Peer-Reviewed Publications


Role in PIM Phase 1

Cluster Leader and Activity Leader.
PLACE, FRANK

SUMMARY

Senior Research Fellow, Policies, Institutions and Markets Program, based at IFPRI. Heads the impact assessment cross cutting activity of PIM and cluster 1.3 on Technology Adoption and Impact. Main expertise related to Flagship 1 is on methods testing and empirical studies on technology adoption and impact. Formerly based at World Agroforestry Center conducting similar research on agroforestry and natural resources technologies. Author or co-author of 6 books and about 70 journal articles or book chapters. H Factor from Harzing Publish or Perish (using google scholar) of 37.

EMPLOYMENT

June 2014–Current Senior Research Fellow, PIM, IFPRI, Washington.
Previous positions with the Land Tenure Center, University of Wisconsin and the World Bank, Washington DC.

EDUCATION

1988 PhD, Economics, University of Wisconsin
1984 M.A., Economics, University of Wisconsin
1981 BSc., Business, University of Illinois

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Led the proposal development for Euro 40 million grant from the Government of Netherlands to World Agroforestry Center 2014
Led the proposal development for Euro 14 million grant from the Government of Finland to the World Agroforestry Center 2013

ROLE IN PIM PHASE 1

Leader of cluster 1.3 on Technology Adoption and Impact; head of cross-cutting activity on impact assessment; member of Program Management Unit of PIM.
STEVEN D. PRAGER

**SUMMARY**

Steven D. Prager is currently a Senior Scientist for Integrated Modeling at the International Center for Tropical Agriculture (CIAT) in Cali, Colombia.

**EMPLOYMENT**

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<tr>
<th>Year</th>
<th>Position</th>
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<td>2014-Present</td>
<td>Senior Scientist for Integrated Modeling, CIAT, Cali, Colombia</td>
<td>CIAT, Cali, Colombia</td>
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<tr>
<td>2010-2014</td>
<td>Associate Professor, Geography, University of Wyoming, USA</td>
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<tr>
<td>2004-2010</td>
<td>Assistant Professor, Geography, University of Wyoming, USA</td>
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<tr>
<td>2001-2004</td>
<td>Software Engineer, Lockheed Martin, Bellevue, WA, USA</td>
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<tr>
<td>1999-2001</td>
<td>Contract GIS Specialist, Lockheed Martin, Bellevue, WA, USA</td>
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**EDUCATION**

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<tr>
<td>2002</td>
<td>PhD in Geography</td>
<td>Simon Fraser University, Burnaby, BC, Canada.</td>
</tr>
<tr>
<td>1995</td>
<td>MA in Geography</td>
<td>University of North Carolina, Charlotte.</td>
</tr>
<tr>
<td>1992</td>
<td>BS in Earth Science</td>
<td>University of North Carolina, Charlotte.</td>
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**SELECTED RECENT PEER-REVIEWED PUBLICATIONS**


Mark W. Rosegrant is the Director of the Environment and Production Technology Division at the International Food Policy Research Institute (IFPRI) in Washington, DC. With a Ph.D. in Public Policy from the University of Michigan, he has extensive experience in research and policy analysis in agriculture and economic development, with an emphasis on water resources and other natural resource and agricultural policy issues as they impact food security, rural livelihoods, and environmental sustainability. He currently directs research on climate change, water resources, sustainable land management, genetic resources and biotechnology, and agriculture and energy. He is the author or editor of 12 books and over 100 refereed papers in agricultural economics, water resources, and food policy analysis.

**Employment**

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
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<tbody>
<tr>
<td>2003–present</td>
<td>Director, Environment and Production Technology Division, IFPRI</td>
</tr>
<tr>
<td>1991–2003</td>
<td>Senior Research Fellow, IFPRI</td>
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<tr>
<td>1980–1991</td>
<td>Research Fellow, IFPRI</td>
</tr>
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</table>

**Education**

- Ph.D., Public Policy Studies (Economics and Political Science), University of Michigan, 1978
- M.P.P., Public Policy Studies, University of Michigan, 1974
- B.A., Government, Beloit College, 1972

**Selected recent peer-reviewed publications**

- Sulser, T.B., B. Nestorova, M.W. Rosegrant and T. van Rheeune. 2011. The Future Role of Agriculture in the Arab Region’s Food Security. Food Sec. 3 (Suppl 1)

**Significant grants, fellowships, awards**

Dr. Rosegrant has won numerous awards, such as Outstanding Journal Article (2008), Quality of Communications Award (2004), and Distinguished Policy Contribution Award(2002) awarded by the Agricultural and Applied Economics Association (formerly American Agricultural Economics Association); and Best Article Award (2005) from the International Water Resources Association. Dr. Rosegrant is a Fellow of the American Association for the Advancement of Science; and a Fellow of the Agricultural and Applied Economics Association.

**Role in PIM Phase 1**

Leader of Flagship 1; Member of the Management Committee.
SPIELMAN, DAVID J.

SUMMARY

David J. Spielman, a U.S. national, joined the International Food Policy Research Institute (IFPRI) in 2004, and is currently a senior research fellow based in Washington, DC. His research agenda covers a range of topics including agricultural science, technology and innovation policy; seed systems and input markets; and community-driven rural development. Prior to this, David was posted to Addis Ababa, Ethiopia with IFPRI’s Knowledge, Innovation, and Capacity Division. Earlier in his career, he worked on agriculture and rural development issues for the World Bank (Washington, D.C.), the Aga Khan Development Network (Pakistan), and several other organizations.

EMPLOYMENT

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<th>Year</th>
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<tr>
<td>2010-Present</td>
<td>Senior Research Fellow, IFPRI,</td>
<td>Washington, DC</td>
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<td>Washington DC</td>
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<tr>
<td>2006-2011</td>
<td>Research Fellow, IFPRI, Washington DC/</td>
<td>Addis Ababa, Ethiopia</td>
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<td>Addis Ababa, Ethiopia</td>
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<td>2004-2006</td>
<td>Postdoctoral Research Fellow, IFPRI,</td>
<td>Addis Ababa, Ethiopia</td>
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EDUCATION

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<tr>
<td>2003</td>
<td>Ph.D. in Economics</td>
<td>American University</td>
<td>Washington, DC</td>
</tr>
<tr>
<td>1993</td>
<td>M.Sc. in Development Studies</td>
<td>London School of Economics</td>
<td>London, UK</td>
</tr>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS


Current position and affiliation; Hans van Meijl (PhD) is research director on the water-climate-energy-food nexus and bio-based economy themes at LEI of the Wageningen University and Research Centrum. He is involved in research in international trade, agricultural policy, food and nutrition security, the bioeconomy and the field of technological progress and innovation. He has published about 50 articles in reviewed international journals in these fields. He has very extensive expertise in managing large projects and consortia. Currently he is leading the 10.5 million FOODSECURE Integrated FP7 Project, the H2020 SUSFANS (sustainable food and nutrition security) project and the FP7 SAT-BBE project to design an EU modelling strategy for the Biobased economy. He is an active member of the International Agricultural Trade Research Consortium (IATRC), a research fellow of the Global Trade Analyses Project (GTAP) and Senior Research Fellow at the Mansholt Graduate School.

**EMPLOYMENT**

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<tr>
<td>2013-2014</td>
<td>Research director Food Security and the Bioeconomy, LEI-Wageningen UR</td>
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<tr>
<td>2010-2013</td>
<td>Head of department International Policy, LEI-Wageningen UR</td>
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<td>2002-2009</td>
<td>Head of division of Agricultural and food policy, LEI-Wageningen UR</td>
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<td>1995</td>
<td>PhD in Economics</td>
<td>Maastricht Economics Research Institute on Innovation and Technology (MERIT), Maastricht University</td>
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<td>1991</td>
<td>Master in Economics</td>
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**SELECTED RECENT PEER-REVIEWED PUBLICATIONS**


**SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS**

Coordinator EU FP7 FoodSecure (Interdisciplinary Research Project to Explore the Future of Global Food and Nutrition Security), 2012-2017. IFPRI is core partner (M. Torero, D. Laborde)

Coordinator EU FP7 SAT-BBE project. A systems analysis tools framework for the bioeconomy (IFPRI is partner)

Coordinator Horizon 2020 project Sustainable food and nutrition security (SUSFANS).

**ROLE IN PIM PHASE 1**

Collaborator in foresight modeling through the AgMIP Global Economics team (economics leadership team)
**WIEBE, KEITH D.**

**SUMMARY**

Keith Wiebe is a Senior Research Fellow at the International Food Policy Research Institute in Washington DC, where he leads a research program on Global Futures and Strategic Foresight. Prior to joining IFPRI in October 2013, he was Deputy Director of the Agricultural Development Economics Division of the United Nations Food and Agriculture Organization in Rome, where he managed a program of economic research and policy analysis for food security and sustainable development, and helped coordinate preparation of FAO’s annual flagship reports on the State of Food and Agriculture and the State of Food Insecurity in the World. Previously he was Deputy Director of the Resource and Rural Economics Division of the US Department of Agriculture’s Economic Research Service in Washington, DC. His areas of particular interest include land tenure, natural resource use and conservation, agricultural productivity and food security.

**EMPLOYMENT**

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<td>2013–present</td>
<td>Senior Research Fellow, Environment and Production Technology Division, IFPRI</td>
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**SELECTED RECENT PEER-REVIEWED PUBLICATIONS**

- FAO. 2012. Towards the Future We Want: End hunger and make the transition to sustainable agriculture and food systems. Rome: Food and Agriculture Organization.

**ROLE IN PIM PHASE 1**

Leader of the cluster of activities on foresight modeling.
## Flagship 2: Inclusive Growth and Rural Transformation

<table>
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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>de Brauw, Alan</td>
<td>IFPRI</td>
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<td>Diao, Xinshen</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Haggblade, Steve</td>
<td>Michigan State University</td>
</tr>
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<td>Jayne, Thom</td>
<td>Michigan State University</td>
</tr>
<tr>
<td>McMillan, Margaret S.</td>
<td>Tufts University</td>
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<td>Mogues, Tewodaj</td>
<td>IFPRI</td>
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<td>Resnick, Danielle</td>
<td>IFPRI</td>
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<td>Surydarma, Daniel</td>
<td>CIFOR</td>
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<tr>
<td>Thurlow, James</td>
<td>IFPRI</td>
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<td>Zhang, Xiaobo</td>
<td>Peking University</td>
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</table>
DE BRAUW, ALAN

SUMMARY

Senior Research Fellow, Markets, Trade and Institutions Division; International Food Policy Research Institute. Extensive research on migration and labor markets; economics of agriculture and value chains in developing countries; social protection programs; and interface between agriculture and nutrition. 27 peer-reviewed journal publications and 5 peer reviewed book chapters.

EMPLOYMENT

<table>
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<tr>
<td>September 2010-present</td>
<td>Adjunct Professor, McCourt School of Public Policy, Georgetown University</td>
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<tr>
<td>December 2010-present</td>
<td>Senior Research Fellow, Markets, Trade and Institutions Division, IFPRI</td>
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<tr>
<td>June 2006-December 2010</td>
<td>Research Fellow/Senior Research Fellow, Poverty, Health and Nutrition Division, IFPRI</td>
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<tr>
<td>January 2002-June 2007</td>
<td>Assistant Professor of Economics, Williams College</td>
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<tr>
<td>2002</td>
<td>Ph.D.</td>
<td>Agricultural and Resource Economics, University of California at Davis</td>
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<tr>
<td>1994</td>
<td>B.A.</td>
<td>Physics, Carleton College, Northfield, Minnesota</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS

JOURNAL ARTICLES:


BOOK CHAPTERS:


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Co-PI, USAID, Impact Evaluations on Feed the Future Interventions, 2014-present, $3 million plus (leading impact evaluations in Mozambique and Bangladesh).

Co-PI, DFID, South-South Learning: Lessons from Brazil for Africa, 2012-present, $3 million; conducting impact evaluations in .

Co-PI, IFAD, Ex Post Impact Evaluations, 2014-present, $500,000.
DIAO, XINSHEN

SUMMARY

Xinshen is currently Deputy Division Director and Senior Research Fellow, Development Strategy and Governance Division, IFPRI. She is a development economist original from China. She has long time experience working on economic development and growth, intersectoral linkages, international trade, and regional integration and dynamics. Her recent research includes agricultural and broad economic transformation and growth and poverty reduction linkages in Africa. The countries she has been working on include Ethiopia, Ghana, Malawi, Morocco, Nigeria, Rwanda, South Sudan, Uganda, and Tanzania. She has more than 100 peer reviewed publications.

EMPLOYMENT

2000-Present  Research Fellow, Senior Research Fellow, Deputy Division Director, DSGD, IFPRI
1995-2000  Research Associate, Assistant Professor, University of Minnesota and Economic Research Service, USDA
1984-1990  Senior Research Fellow, Division Chief, Assistant Director-General, Economic Reform Institute of China

EDUCATION

1990-1995  Ph.D. in Applied Economics, Department of Applied Economics, University of Minnesota
1982-1984  M.A. in Economics, Department of Business Economics, Beijing Institute of Economics, Beijing, China

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

JOURNAL ARTICLES:

“Regional Integration and Liberalization of Agricultural Trade in Southern Africa: Infatuation or Real Need?” Journal of Economic Integration 29(3 September 2014): 520-562 (Alejandro Nin-Pratt and Xinshen Diao)


“Economic transformation in Ghana: Where will the path lead?” Journal of African Development 14(2): 41-78, Fall 2012


“Measuring structural change: the cases of China, Malaysia, and Ghana,” Journal of Developing Areas 2012. (Thaddée Badibanga, Xinshen Diao, Terry Roe and Agapi Somwaru)


BOOKS AND BOOK CHAPTERS:


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Deputy Director, Food Security Policy Project, a five-year 25 million joint project led by MSU, IFPRI and UP (2013-2018)

ROLE IN PIM PHASE 1

Leader of Flagship 2
HAGGBLADE, STEVEN

SUMMARY

Steven Haggblade is Professor of International Development in the Department of Agricultural, Food and Resource Economics at Michigan State University (MSU). He has worked overseas for most of his career, holding long-term assignments in Botswana, Bangladesh, Cameroon, Madagascar and Zambia. His professional research, in a collection of over 50 peer-reviewed publications, has focused on themes related to agricultural growth, the rural nonfarm economy and structural change in the value chains that link farms and related nonfarm businesses with final consumers.

EMPLOYMENT

2005 to present: Professor, International Development, Michigan State University (MSU)
2000-2005: Senior Research Fellow, International Food Policy Research Institute (IFPRI)
1994-2009: Senior Research Associate, Cornell University Food and Nutrition Policy Program
1992 to 1994: Research Fellow and Chief of Party, Bangladesh Food Policy Project, IFPRI
1985-1989: Assistant Professor, Department of Public Administration, Syracuse University

EDUCATION

1984 Ph.D., Economics, Michigan State University
1979 M.Sc. Economics, Michigan State University

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

BOOKS:

BOOK CHAPTERS:

JOURNAL ARTICLES:

SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Capacity Development for Modernizing African Food Systems, 2012-2014 (International Fund For Agricultural Development)
JAYNE, THOM

SUMMARY

Jayne is University Foundation Professor of Agricultural, Food, and Resource Economics at Michigan State University and Visiting Professor at the University of Pretoria. His primary areas of research are agricultural and land policies, food markets and trade, and sustainable intensification. Jayne has published over 80 peer-reviewed articles and has received six distinguished research excellence awards, including the 2009 Outstanding Article Award in Agricultural Economics. H-index: 42, ranked in top 2% of economists/agricultural economists registered with RePEc.

EMPLOYMENT


EDUCATION

1989: PhD, Agricultural Economics, Michigan State University

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Main MSU manager of over $35 million of external grants since 2008, including the $7.8m Guiding Investments in Sustainable Agricultural Intensification grant from the Bill and Melinda Gates Foundation (2012-2017); the $12.5m Zambian Food Security Research Project from USAID; and the $1.2m African Agricultural Markets Programme from the Common Market for Eastern and Southern Africa through the World Bank (2008-2011).

Inducted as a Distinguished Fellow of the African Association of Agricultural Economists, September 2013.

Received six research awards since 2005, including the Research Excellence Award from Michigan State University, Department of Agricultural, Food and Resource Economics, 2011, and the Outstanding Article of 2009 in Agricultural Economics.
MCMILLAN, MARGARET

SUMMARY

Maggie’s research interests lie in the areas of international trade, investment, economic growth and structural change with an emphasis on Africa. She has received numerous awards for her research. Her work has been featured in the Financial Times, the New York Times, the NBER Digest and on VoxEU. She has published over 30 peer reviewed articles in a wide range of leading economics journals and a forthcoming book with Dani Rodrik on Structural Change and Growth.

EMPLOYMENT

<table>
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<tr>
<th>Year</th>
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<tbody>
<tr>
<td>2014-</td>
<td>Professor of Economics, Tufts University</td>
</tr>
<tr>
<td>1998-2014</td>
<td>Assistant/Associate Professor of Economics, Tufts University</td>
</tr>
<tr>
<td>2010-</td>
<td>Division Director/Senior Research Fellow, Development Strategy and Governance Division, IFPRI.</td>
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EDUCATION

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<tr>
<td>1998</td>
<td>Columbia University</td>
<td>Ph.D. in Economics</td>
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<td>1985</td>
<td>Princeton University, Woodrow Wilson School</td>
<td>M.P.A.</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS

“African Development in Historical Perspective,” forthcoming, Journal of Economic Literature


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Co-PI (with Deborah Brautigam), “China, FDI and Structural Transformation in Africa”, DFID/Economic and Social Research Council UK, June 2015, $1,100K

Publication of Enduring Quality Award for “Climate and Scale in Economic Growth”, April 2014, Agricultural and Applied Economics Association


Principal Investigator, DFID/Economic and Social Research Council (UK), 2012-2015, $1,500K

OTHER EVIDENCE OF DELIVERY

BACKGROUND

Danielle Resnick is a political scientist who focuses on the political economy of development, especially in sub-Saharan Africa. She has over 30 peer-reviewed publications and has consulted for the U.S. State Department, World Bank, and Oxford Analytica. She currently co-leads IFPRI’s research pillar on Strengthening Institutions and Governance and is IFPRI’s theme leader on governance.

EMPLOYMENT

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<tr>
<td>Sept 2013-present</td>
<td>Research Fellow, IFPRI, Development Strategies and Governance Division, Washington, DC</td>
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<td>Jul 2010-Aug.2013</td>
<td>Research Fellow, UNU-WIDER, Helsinki, Finland</td>
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<tr>
<td>Aug.-Dec. 2007</td>
<td>Teaching Assistant, Cornell University, Ithaca (“Comparative Political Economy”)</td>
</tr>
</tbody>
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EDUCATION

2010 | Ph.D. in Government, Cornell University (Comparative Politics, International Relations) |
2003 | M.Sc. in Development Studies, London School of Economics and Political Science |

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

BOOKS:
African Youth and the Persistence of Marginalization: Employment, politics, and prospects for change. 2015. Routledge (co-edited with James Thurlow)

JOURNAL ARTICLES:

BOOK CHAPTERS:

OTHER EVIDENCE OF DELIVERY

Danielle managed four multi-year projects funded by UNU-WIDER and which involved large teams of inter-disciplinary and international researchers: 1) Africa’s Emergent Middle Class (2012-2014), 2) Prospects for Africa’s Youth (2012-2014), 3) Foreign Aid and Democracy (2011-2013), and 4) Decentralization and Urban Service Delivery (2011-2013). All of these projects culminated in peer-reviewed outputs, including two books and three special journal issues.
**SUMMARY**

Daniel Suryadarma (PhD) is a development economist. He conducts empirical research in the areas of education, poverty, social policy and the interplay between forests, environment and livelihoods. His work has appeared in peer-reviewed academic journals, including *American Economic Journal: Applied Economics* and *Journal of Development Economics*. He is currently the senior scientist in charge of impact assessment at the Center for International Forestry Research (CIFOR), where he manages and provides technical lead in the impact evaluation portfolio of CIFOR and CRP Forests Trees Agroforestry. Daniel is also a member of the expert roster and an external project advisor at the International Initiative for Impact Evaluation (3ie). He has provided advice to the Indonesian Vice President’s Office, Australian Aid Program and the World Bank. Prior to joining CIFOR, Daniel was with the SMERU Research Institute in Jakarta and the Australian National University, where he taught quantitative policy impact evaluation. Total peer-reviewed publications: 17; Total Google Scholar citations: 574.

**EMPLOYMENT**

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<td>2013-present</td>
<td>Senior Scientist – Impact Assessment, Center for International Forestry Research</td>
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<td>2010-2013</td>
<td>Research Fellow, Australian National University</td>
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<td>2003-2006</td>
<td>Researcher, SMERU Research Institute</td>
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**EDUCATION**

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<td>2010</td>
<td>PhD Economics, Australian National University</td>
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<td>2003</td>
<td>MA Economics, University of Toronto</td>
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**SELECTED RECENT PEER-REVIEWED PUBLICATIONS**


**SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS**

- Strengthening Impact Assessment in the CGIAR (with Jeff Alwang, Guy Hareau, Brad Mills & George Norton) – US$286,000 (2014-2016), Funded by CGIAR ISPC
- Height, BMI and Demographic Changes in the Asian Giants (with Timothy J. Hatton & Xin Meng) – A$327,000 (2014-2016), Funded by Australian Research Council

**OTHER EVIDENCE OF DELIVERY**

Provided advice on labor market, poverty and social protection issues to the Indonesian Vice President’s Office; World Bank; and the Australian Aid Program.
MOGUES, TEWODAJ

SUMMARY

Current position and affiliation: International Food Policy Research Institute (IFPRI) Development Strategy and Governance Division (DSGD). Washington DC. Senior Research Fellow. Quick profile description: Tewodaj Mogues serves as a cluster leader for a research program on public investments in and for agriculture within the IFPRI-led Policies, Institutions and Markets (PIM) initiative. Her publications include a co-edited book and a series of journal articles, book chapters, and other research papers on the above and other topics. Main research areas: Mogues conducts research on the impacts and measurement of public expenditures, the political economy of public investment, decentralization, and the governance of public services. Total number of peer-reviewed publications: She has 24 academic peer-reviewed publications (journal articles, books and monographs, and book chapters), and 43 publications in the form of institutional and working papers.

EMPLOYMENT

2014 – present Senior Research Fellow, Development Strategy and Governance Division (DSGD), IFPRI, Washington DC
2007 – 2013 Research Fellow, Development Strategy and Governance Division (DSGD), IFPRI, Washington DC.
2005 – 2007 Postdoctoral Fellow, Development Strategy and Governance Division (DSGD), IFPRI, Washington DC.
2005 Consultant, World Bank Research Department (DEC), Washington DC.

EDUCATION


SELECTED RECENT PEER-REVIEWED PUBLICATIONS


ROLE IN PIM PHASE 1

During PIM Phase 1, led the cluster of research on public expenditures and led an activity.
THURLOW, JAMES

SUMMARY

James Thurlow is a Senior Research Fellow at IFPRI. He is a development economist from South Africa whose research focuses on the interactions between policies and economic growth, employment and poverty. He has over 70 peer-reviewed publications. These mainly focus on agricultural and rural development and are country-level studies in Africa and South Asia. Beyond research, James has worked with Government Ministries of Agriculture and Planning in nine African countries to design evidence-based rural investment plans and national development strategies and policies.

EMPLOYMENT

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<tr>
<td>Sep 2013-Present</td>
<td>Senior Research Fellow, IFPRI, Washington D.C.</td>
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<tr>
<td>Jul 2010-Aug 2013</td>
<td>Research Fellow, UNU-WIDER, Helsinki, Finland</td>
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<tr>
<td>Jan 2009-Jun 2010</td>
<td>Associate Research Fellow, Department of Economics, University of Copenhagen</td>
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EDUCATION

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<tr>
<td>2005</td>
<td>Ph.D. in Economics</td>
<td>University of Natal, South Africa</td>
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<td>2000</td>
<td>M.Sc. in Economics (cum laude)</td>
<td>University of Natal, South Africa</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS

EDITED BOOKS:


JOURNAL ARTICLES:


EVIDENCE OF DELIVERY

James was project coordinator and principal investigator on multi-year research projects, including (1) Prospects for Africa’s Youth (UNU-WIDER, 2012-2014); (2) Economic Development under Climate Change (UNU-WIDER, 2010-2013); (3) Technical Support to the African Union’s CAADP (AU, 2007-2009). Each project culminated in edited books and/or journal special issue. DFID selected James’ climate change work in South Africa as its submission for the UK government’s “Civil Service Award” in 2012.

ROLE IN PIM PHASE 1

Activity leader: (1) Social Accounting Matrices for African Countries (CGIAR-PIM, 2013-2016); and (2) Youth Employment in African Agriculture: Patterns, Prospects and Policies (CGIAR-PIM, 2015-2016).
Zhang, Xiaobo

SUMMARY

Xiaobo’s research interests lie in economic development in China and other developing countries, in particular industrial clusters and income distribution. He has received numerous awards for her research, including Sun Yefang Economics Research Award, the highest economics award in China. His work has been featured in major media, such as the Economist, Financial Times, New York Times, New Yorker, New Republic, NPR Radio, Quartz, and Wall Street Journal. She has published over 50 peer reviewed articles in a wide range of leading economics journals.

EMPLOYMENT

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<tr>
<td>2012- Present</td>
<td>Distinguished Professor of Economics, National School of Development, Peking University</td>
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<tr>
<td>2006- Present</td>
<td>Senior research fellow, International Food Policy Research Institute (IFPRI)</td>
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<tr>
<td>1998- 2005</td>
<td>Research analyst, postdoctoral fellow, and research fellow, IFPRI.</td>
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EDUCATION

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<td>2000</td>
<td>Cornell University</td>
<td>Ph.D. in applied economics and management</td>
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<td>1998</td>
<td>Cornell University</td>
<td>MS in applied economics and management</td>
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<tr>
<td>1990</td>
<td>Tianjin University of Finance and Economics</td>
<td>MS in economics</td>
</tr>
</tbody>
</table>

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

- Sun Yefang Prize for Economics Research in China, 2015.
- Co-PI (with Yu Xie and Ping Tu), Grant from China National Natural Science Foundation to support three more waves of China Family Panel Studies survey, April 2015, 60 million yuan (nearly 10 million US dollars).
- Principal Investigator, Research award from the National Science Foundation (with Shang-jin Wei), “Competitive Savings, Competitive Growth, and Global Implications.” (Reference No. 1024574), $325,938, 2010-2013.
- Winner of the IFPRI Innovative Research Fund, 2010 ($300,000).
**FLAGSHIP 3: INCLUSIVE AND EFFICIENT VALUE CHAINS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
</tr>
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<tbody>
<tr>
<td>Abdoulaye, Tahirou</td>
<td>IITA</td>
</tr>
<tr>
<td>Bulte, Erwin</td>
<td>Wageningen University and Tilburg University</td>
</tr>
<tr>
<td>Devaux, Andre</td>
<td>CIP</td>
</tr>
<tr>
<td>Donovan, Jason</td>
<td>ICRAF</td>
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<td>Joshi, PK</td>
<td>IFPRI</td>
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<td>Kassie, Girma</td>
<td>ICARDA</td>
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<td>Katjiuongua, Hikuepi</td>
<td>ILRI</td>
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<td>Laborde, David</td>
<td>IFPRI</td>
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<td>Lundy, Mark</td>
<td>CIAT</td>
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<td>Martin, William</td>
<td>IFPRI</td>
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<td>Minot, Nick</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Orr, Alastair</td>
<td>ICRISAT</td>
</tr>
<tr>
<td>Stoian, Dietmar</td>
<td>Bioversity International</td>
</tr>
<tr>
<td>Torero, Maximo</td>
<td>IFPRI</td>
</tr>
</tbody>
</table>
ABDOULAYE, TAHIROU

SUMMARY

Since January 2009, Outcome and Impact economist at IITA, Ibadan, Nigeria. Currently conducting research on adoption and impact pathways of improved technologies and also managing research grants. Has contributed to writing winning proposals at IITA with several donors. Has published or contributed to about 40 refereed journal articles.

EMPLOYMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Position and Institution</th>
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<tbody>
<tr>
<td>2009 to present</td>
<td>Impact economist IITA Ibadan, Nigeria</td>
</tr>
<tr>
<td>Start date-End date</td>
<td>Project manager at IITA</td>
</tr>
<tr>
<td>May 2006-April 2007</td>
<td>Research fellow with JIRCAS at the Sahelian center of ICRISAT, Niamey.</td>
</tr>
<tr>
<td>July 2004-December 2004:</td>
<td>Niger Consultant with INTSORMIL</td>
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EDUCATION

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<tr>
<th>Year</th>
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<tbody>
<tr>
<td>1997-2002.</td>
<td>PhD, Purdue University</td>
</tr>
<tr>
<td>1994-1995.</td>
<td>Diploma MSc, Purdue University</td>
</tr>
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</table>

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


ROLE IN PIM PHASE 1

Leader of Activity 80.
Bulte, Erwin Hendricus

Summary

Research Fellow, OxCarre (Oxford Centre for the Analysis of Resource-Rich Economies), Department of Economics, University of Oxford; Professor of Development Economics, Wageningen University; Professor of Environmental and Natural Resource Economics, Department of Economics, Tilburg University; Extensive research on Development economics, Environmental economics, Agricultural economics, Natural resource economics; 100 peer-reviewed journal publications and 15 peer reviewed book chapters

Employment

2007 – Present: Research Fellow, OxCarre (Oxford Centre for the Analysis of Resource-Rich Economies), Department of Economics, University of Oxford
Nov 2006 – Present: Professor of Development Economics, Wageningen University
Mar 2005 - Present: Professor of Environmental and Natural Resource Economics, Department of Economics, Tilburg University
2005-present: Senior Research Fellow and Associate in the Department of Land Economy, University of Cambridge
2004-2007: Senior Advisor to the Agricultural and Development Economics Division (ESA) at the United Nations Food and Agricultural Organization (FAO)
Feb 2000-Mar 2005: KNAW researcher (researcher of the Royal Dutch Academy of Arts and Sciences), and Associate professor Department of Economics, Tilburg University

Education

1997: Ph.D Netherlands Network of Economics (NAKE), and Wageningen Agricultural University Diploma
1992: Master's Wageningen Agricultural University, Tropical Forestry, Wageningen Agricultural University, Development Economics Diploma

Selected recent peer-reviewed publications


Significant grants, fellowships, awards

VICI research grant, N.W.O., Netherlands Organisation for Scientific Research, “Institutions and policies for agricultural development in African post-conflict countries.” €1.5 mln
June 2008 – June 2013: Convergence of Science program (€ 4 mln), funded by DGIS (with other WUR groups, coordinator prof. A. Huis).
January 2008 – January 2013: INREF grant (€ 1 mln) on co-evolution of quality improvements in African commodity chains (with other WUR groups, coordinator prof. O. Omta)

Other evidence of delivery

Member of Board WOTRO (2009 – Present), Chair Board of Mansholt Graduate School, (2009-present), Board member Stichting Onderzoek Wereldvoedselvraagstuk (SOW-VU) (June 2007 – Present)

Role in PIM Phase 1

Collaborated with a PhD student associated with a PIM activity.
**SUMMARY**

André Devaux, Ph.D in Agriculture Science, Université Catholique Louvain (UCL), Belgium, with 30 years’ experience in Latin America, Africa and Asia. Extensive research experience in: Potato production systems, Innovation systems, Value Chain approaches and Food and Nutritional security. He has published more than 50 articles, books and reports. He is based in Ecuador as the International Potato Center (CIP) Latin American Regional Program Director, coordinating research activities on Linking Agricultural Research, Innovation, and Value Chain Development with other CGIAR centers, CRP-RTB in the region and in a more global context. He is the contact person at CIP for the CGIAR-PIM/ Value Chain Flagship 4.

**EMPLOYMENT**

- January 2012 up to date, CIP’s Latin American Regional Program Director
- 2010-2014, CIP’s Regional Science leader for Latin American and coordinator of the regional project: “Innovation for Food and Nutritional Security in the Andes” IssAndes
- 1999-2010, CIP’s Coordinator of the regional Initiative, Papa Andina, linking small farmers to value chains promoting stakeholder platforms and taking advantage of the genetic diversity of native potatoes
- 1989-1999, CIP’s International Director of the PROINPA project in Bolivia in support to the national Potato research program.
- Before 1989, he has also worked with FAO, the Belgian cooperation and the Swiss Agency for Development and Cooperation (SDC) in East Africa and Asia.

**EDUCATION**

1991, Ph.D. in Agriculture Science, Université Catholique Louvain (UCL), Belgium.  Thesis on Innovative potato seed production techniques in developing countries
1977, Ingenieur/MSc. Degree Agriculture Science, with specialty in agro-physiology, Louvain (UCL), Belgium

**SELECTED RECENT PEER-REVIEWED PUBLICATIONS**


**ROLE IN PIM PHASE 1**

Contact person at CIP for CGIAR-PIM/ Value Chain Flagship 4.
Coordinator for the publication of a Compendium on “Innovation for Inclusive Value-Chain Development: Successes and Challenges”, PIM/ IFPRI.
CIP’s project leader in the following activities:
- Activity 142: A multicenter learning and scaling initiative for enhancing PIM value chain tools and improving smallholder participation with a gender lens
- Activity 144: Virtual Hubs: R4D platforms for impact in value chains
- Activity 146: A general framework to evaluate the extent and sources of postharvest losses in developing countries.
DONOVAN, JASON

SUMMARY

Based at ICRAF’s Peru office, he holds the position of Research Leader – Value Chains and Transformational Change. He earned a Ph.D. from the University of London’s School of Oriental and African Studies. His research interests include opportunities for poor rural households to participate in higher value markets, economic growth in middle-income countries and its implications for smallholders, women’s empowerment through market participation, food safety and nutrition, and monitoring and evaluation systems. Among recent notable achievements is the 5Capitals tool for assessing the impact of value chain development and related journal articles, including the recent article in Food Policy on changing asset endowments in response to smallholder participation in value chains for certified coffee.

EMPLOYMENT

05/2011 - Present Research leader-Value chains and Transformation Change, ICRAF, Lima Peru
01/2001-04/2011 Rural Enterprise Specialist, CATIE, Turrialba, Costa Rica
01/1997-12/1998 Cooperative Development Advisor, US Peach Corps, Managua, Nicaragua

EDUCATION

2011 PhD, U. of London, School of Oriental and Africa Studies; Development Economics
2001 MSc, U. of Massachusetts-Amherst; Resource Economics
1995 BSc, U. of Georgia; Agricultural Economics

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


ROLE IN PIM PHASE 1

Focal point for ICRAF’s activities in PIM’s value chain cluster. Among major activities in phase 1 of PIM were: leadership in the design of 5Capitals-A tool for assessing the impact of value chain development; publication of the comparative review if value chain guides; significant contributions to CIP-IFPRI-ICRAF book on value chain development; leadership in the implementation of PIM supported research on tool needs of organizations engaged in value chain development.
JOHNSON, PRAMOD KUMAR

SUMMARY

Dr. Pramod K. Joshi is the director for IFPRI South Asia. Previous to this, he held the positions of the director of the National Academy of Agricultural Research Management, Hyderabad, India, and the director of the National Centre for Agricultural Economics and Policy Research, New Delhi. His areas of research include technology policy, market, and institutional economics. He was president of the Indian Society of Agricultural Economics (2014) and of Indian Society of Agricultural Marketing (2014). He has also served as the chairman of the SAARC Agricultural Centre's governing board in Dhaka, Bangladesh (2006–08); chairman of the UN-CAPSA governing board in Bogor (2007); and member of the intergovernmental panel on the World Bank’s International Assessment of Agricultural Science and Technology for Development (2007–08). He served as a member of the International Steering Committee for the Climate Change, Agriculture, and Food Security Challenge Program, led by the ESSP Science Community and the CGIAR (2009–11). He was also a member of the core group of the Indian government’s “Right to Food” National Human Rights Commission and the secretary-general of the Fourth World Congress on Conservation Agriculture.

EMPLOYMENT

<table>
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<tr>
<th>Year</th>
<th>Position</th>
<th>Location</th>
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<tbody>
<tr>
<td>2012-till</td>
<td>Director-South Asia, IFPRI, Delhi, India</td>
<td></td>
</tr>
<tr>
<td>2011-2012</td>
<td>Sr. Program Manager, IFPRI, Delhi, India</td>
<td></td>
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<tr>
<td>2009-2011</td>
<td>Director, National Academy of Agricultural Research Management (NAARM), Hyderabad, India</td>
<td></td>
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<tr>
<td>2006-2009</td>
<td>Director, National Centre for Agricultural Economics &amp; Policy Research (NCAP), Delhi, India</td>
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EDUCATION

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<th>Degree</th>
<th>Institution</th>
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<tbody>
<tr>
<td>1977</td>
<td>Ph. D (Agriculture Economics)</td>
<td>G B Pant University of Agri. and Tech., Pantnagar, India</td>
<td></td>
</tr>
<tr>
<td>1974</td>
<td>M. Sc. Agriculture (Ag Econ)</td>
<td>G B Pant University of Agri. and Tech., Pantnagar, India</td>
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</table>

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Member - Board of Governors, Institute of Economic Growth
Member-Board of Governors, Centre for Economic and Social Studies
Associate Editor, Agricultural Research. A publication of the National Academy of Agricultural Sciences
Member, Editorial Board, Agricultural Economics Research Review
Member- National Committee on Agriculture, Federation of Indian Chambers of Commerce and Industry
Member - Advisory Committee, The Confederation of Indian Industries, Food and Agriculture Centre of Excellence
M S Randhawa Award for outstanding contribution in Agricultural Administration, Transfer of Technology and Social Science. National Academy of Agricultural Sciences, New Delhi, India (2010-12)
Fourth Biennial Professor R C Agrawal Award of Excellence for outstanding contributions in the field of Agricultural Economics, Indian Society of Agricultural Economics, Delhi (2012).
Fellow, National Academy of Agricultural Sciences (NAAS), New Delhi, India
Fellow, Indian Society of Agricultural Economics, New Delhi (2012).

ROLE IN PIM PHASE 1

Project leader under value chain flagship on Financing Value Chain in India and China
Involved in building networks and partnerships and capacity building in South Asia.
KASSIE, Girma Tesfahun

SUMMARY
Agricultural economist (PhD) working for the international center for agricultural research in the dry areas (ICARDA) as a senior scientist based in Addis Ababa, Ethiopia. Close to 18 years of research and teaching experience in many fields applied economics particularly in the fields of agricultural production economics, agricultural marketing and value chain analysis, discrete choice analysis, agricultural risk analysis, and monitoring, evaluation and impact assessment of agricultural programs and technologies. 23 peer reviewed journal publications; five articles under review for publication on international journals.

EMPLOYMENT

<table>
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<tr>
<th>Period</th>
<th>Position</th>
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<tbody>
<tr>
<td>Jan 2014 - to date</td>
<td>Senior Scientist, Agricultural Marketing, ICARDA</td>
</tr>
<tr>
<td>March 2009 – Dec 2013</td>
<td>Associate Scientist, Socioeconomics, CIMMYT</td>
</tr>
<tr>
<td>Sept 2004 – March 2008</td>
<td>Research Fellow, Agricultural Economics, ILRI</td>
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EDUCATION

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<th>Year</th>
<th>Degree</th>
<th>Institution</th>
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<tbody>
<tr>
<td>February 2008</td>
<td>PhD in world food economics, University of Kiel, Germany</td>
<td></td>
</tr>
<tr>
<td>July 2002</td>
<td>MSc in Agricultural Economics, Haramaya University, Ethiopia</td>
<td></td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS


ROLE IN PIM PHASE 1
ICARDA’s focal person for inclusive and efficient value chains.
Hikuepi is an agricultural economist based in Nairobi. She joined the International Livestock Research Institute (ILRI) in 2012 as a senior research scientist and is currently the Acting Program Leader for the Policy Trade and Value Chains team at ILRI. She holds a PhD in Agricultural Economics from Michigan State University. Her research focuses on agricultural commodity value chain development, marketing, trade, and economics of animal health. Prior to joining ILRI she worked as a Trade Advisor for the Agricultural Trade Forum (Meat Board of Namibia) where she participated in trade negotiations (EPA-SADC), advised and updated various stakeholders including farmer organizations, government and private sector on international and regional trade issues. She conducted consultancies on agricultural development issues for various international development organizations.

### Employment

<table>
<thead>
<tr>
<th>Date</th>
<th>Position</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 2012-present</td>
<td>Senior Agricultural Economist &amp; Acting Program Leader</td>
<td>International Livestock Research Institute (ILRI) Kenya</td>
</tr>
<tr>
<td>May 2011 – Jan 2012</td>
<td>Consultant</td>
<td>Trade and Poverty Reduction Project, University of Missouri and USAID Washington DC</td>
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### Education

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<tr>
<th>Institution</th>
<th>Degree</th>
<th>Year</th>
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<tbody>
<tr>
<td>Michigan State University</td>
<td>Ph.D. Agricultural Economics</td>
<td>2010</td>
</tr>
<tr>
<td>Michigan State University</td>
<td>M. S. Agricultural Economics</td>
<td>2002</td>
</tr>
</tbody>
</table>

### Selected Recent Peer-Reviewed Publications

- “Market access by smallholder dairy producers in Tanzania: a quantitative approach using system dynamic modeling”, With Hamza, K. Paper submitted to 29th International Conference of Agricultural Economists August 8-14, 2015, Milan, Italy.
- A Stochastic Meta-frontier analysis of the determinants of Technical efficiency. An application to Botswana’s different beef farm systems. Paper submitted to 29th International Conference of Agricultural Economists. August 8-14, 2015, Milan, Italy.

### Role in PIM Phase 1

Cluster leader of cluster 3.3 “Innovations in value chains” in PIM flagship 3.
LABORDE DEBUCQUET, DAVID

SUMMARY
Senior Research fellow at IFPRI at the Market, Trade and Institutions Division. Within IFPRI, he is leading the Macroeconomics and Trade Theme. His research interests include international trade, multilateral and regional trade liberalization, and agricultural issues. He has developed the general computable equilibrium model (MIRAGE) and several partial equilibrium models as well as numerous databases used globally. He is a board member of the GTAP project. He has more than 60 peer-reviewed publications.

EMPLOYMENT
2011-present Senior Research fellow at IFPRI. Theme Leader on Macroeconomics and Trade.
2009-2011 Research fellow at IFPRI
2007-2009 Post-doctorate fellow at IFPRI
2003-2007 Economist at CEPII, Paris

EDUCATION
2008 PhD in International Economics, Summa Cum Laude, directed by Pr. Antoine Bouet. “Trade policies, Social preferences and Special Interest: a normative and positive analysis”.
2000 Master of International Economics. First Class Honours. Major: Trade and Trade Policy

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS
2002-2015 GTAP Research Fellow

OTHER EVIDENCE OF DELIVERY
Workpackage leader in different EU Framework project (TradeAG FP6 AGFOODTRADE FP7, FOODSECURE FP7)
MIRAGE and MIRAGRODEP CGE model. MACMABs database. TASTE software. Data contributor for GTAP6, GTAP7, GTAP8 and GTAP9 databases.

ROLE IN PIM PHASE 1
Cluster 3.1 Leader. Activity leader for: Coping with price volatility: trade policy options vs domestic interventions, Global Value Chains for Biofuels: challenges and opportunities,
LUNDY, MARK M.

SUMMARY

Senior Researcher and Theme Leader, Linking Farmers to Markets, International Center for Tropical Agriculture, CIAT, Cali, Colombia

Lead CIAT market access work and Focal Point for CIAT in the Policies, Institutions and Markets Collaborative Research Program. Directly responsible for managing research programming in Latin America, Eastern Africa and South-east Asia worth approximately US$ 2.3 m annually.

Principal researcher on inclusive business models and lead author the LINK Methodology. LINK is in use globally by CRS, VECO, Swisscontact and Heifer International and was adopted as the Sourcing Guide for smallholder farmers for Unilever in 2015.

Principal researcher on second generation R4D learning processes combining lessons from the learning alliance approach with impact assessment methods, ICT-based monitoring and evaluation tools and strategies for policy influence with key public and private sector actors.

Principal researcher on Climate Smart Value Chains with the Climate Change, Agriculture and Food Security Collaborate Research Program of CGIAR.

EMPLOYMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
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<tbody>
<tr>
<td>2010 to date</td>
<td>Senior Researcher, Theme Leader Linking Farmers to Markets, CIAT</td>
</tr>
<tr>
<td>2003 to 2010</td>
<td>Researcher, Agro-Enterprise Development Project, CIAT</td>
</tr>
<tr>
<td>1999 to 2003</td>
<td>Research Fellow, Agro-Enterprise Development Project, CIAT</td>
</tr>
<tr>
<td>1995 to 1999</td>
<td>Director, Corporación para el Desarrollo de Versalles</td>
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EDUCATION

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<th>Year</th>
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<tbody>
<tr>
<td>1995</td>
<td>MSc in Community and Regional Planning</td>
<td>University of Texas at Austin, Austin, Texas</td>
</tr>
<tr>
<td>1995</td>
<td>MA in Latin American Studies</td>
<td>University of Texas at Austin, Austin, Texas</td>
</tr>
<tr>
<td>1991</td>
<td>BA in International Studies</td>
<td>American University, Washington, DC</td>
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</table>

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


OTHER EVIDENCE OF DELIVERY

Use of LINK method globally by international NGOs (Catholic Relief Services, VECO, Swisscontact and Heifer International). Uptake of LINK methodology for the Smallholder Sourcing Guide by Unilever for global sourcing. Adoption of the ‘Learning Alliance’ approach in more than 40 countries by Catholic Relief Services.

ROLE IN PIM PHASE 1

CIAT PIM Focal Point, Lead on Cluster 3.3 in PIM 2015-2016 extension phase and Lead on Cluster 3.3 on Upgrading Value Chains at Scale.
MARTIN, WILLIAM JOHN

SUMMARY
Senior Research Fellow, International Food Policy Research Institute; Focusing on trade policy, food security, productivity growth and poverty. Over 180 peer-reviewed publications. President-Elect, International Association of Agricultural Economists.

EMPLOYMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
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<tbody>
<tr>
<td>April 2015</td>
<td>Senior Research Fellow</td>
<td>International Food Policy Research Institute</td>
</tr>
<tr>
<td>2009-15</td>
<td>Manager, Agriculture and Rural Development Research</td>
<td>World Bank</td>
</tr>
<tr>
<td>1988-90</td>
<td>Senior Research Fellow</td>
<td>Australian National University</td>
</tr>
<tr>
<td>1975-88</td>
<td>Economist-Lead Economist</td>
<td>Australian Bureau of Agricultural Economics</td>
</tr>
</tbody>
</table>

EDUCATION

Ph.D. (Econ.), Iowa State University, 1979-82
MS (Agric. Econ.), Iowa State University, 1979-81.

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Manager, Agricultural Trade Research, Multi-donor Trust Fund for Trade, World Bank 2012-2015, $600,000
Leader, Program Trust Fund for Agriculture and Rural Development, World Bank, 2014-15, $750,000
**MINOT, NICHOLAS**

**SUMMARY**

Deputy Director and Senior Research Fellow in the Markets, Trade, and Institutions Division at the International Food Policy Research Institute.

**EMPLOYMENT**

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
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<tbody>
<tr>
<td>2015-Present</td>
<td>Deputy Director of MTID, International Food Policy Research Institute</td>
</tr>
<tr>
<td>2004-Present</td>
<td>Senior Research Fellow, International Food Policy Research Institute</td>
</tr>
<tr>
<td>1998-2004</td>
<td>Research Fellow</td>
</tr>
<tr>
<td>1997-1998</td>
<td>Post-doctoral Fellow</td>
</tr>
<tr>
<td>1995-1997</td>
<td>Independent consultant for World Bank, IFPRI, and GTZ</td>
</tr>
<tr>
<td>1994-1995</td>
<td>Visiting Assistant Professor, Dept. of Ag. Economics, University of Illinois at Champaign-Urbana</td>
</tr>
<tr>
<td>1992-1994</td>
<td>Advisor to the Ministry of Finance, Zimbabwe (employed by CIE (Australia) on UNDP project)</td>
</tr>
<tr>
<td>1989-1992</td>
<td>Research assistant and graduate student, Michigan State University</td>
</tr>
<tr>
<td>1986-1988</td>
<td>Survey analysis at the Ministry of Planning, Rwanda (employed by MSU on USAID project)</td>
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**EDUCATION**

<table>
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<th>Year</th>
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<th>Institution</th>
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<tbody>
<tr>
<td>1992</td>
<td>Ph.D.</td>
<td>Agricultural Economics, Michigan State University</td>
</tr>
<tr>
<td>1985</td>
<td>M.Sc.</td>
<td>Agricultural Economics, Michigan State University</td>
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</table>

**SELECTED RECENT PEER-REVIEWED PUBLICATIONS**


**SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS**


**ROLE IN PIM PHASE 1**

Leader of project “Adoption of agricultural innovations in Indonesia.” Funded by PIM.

Leader of project “Integrated analysis of grain trade in East Africa.” Funded by PIM.
ORR, ALASTAIR

SUMMARY
Principal Scientist (Economics) and Assistant Director (Eastern and Southern Africa), ICRISAT, Nairobi. Dr. Orr has 30 years' experience of research on smallholder agriculture both in Asia and sub-Saharan Africa. His experience covers farming systems research, integrated pest management, and smallholder value chains. Since 2010 he has led ICRISAT's socio-economic research on dryland cereals in Eastern and Southern Africa, focusing on access to markets, value chains and social inclusion, with field research in Kenya, Ethiopia, Tanzania, Uganda, and Malawi. Peer reviewed journal articles: 24. Monographs (author or co-author): 9.

EMPLOYMENT

<table>
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<tr>
<th>Year</th>
<th>Employment</th>
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<tbody>
<tr>
<td>2010-present</td>
<td>Assistant Director and Principal Scientist (Economics), ICRISAT, Nairobi.</td>
</tr>
<tr>
<td>2002-2009</td>
<td>Principal Scientist, Natural Resources Institute, University of Greenwich, United Kingdom</td>
</tr>
<tr>
<td>1993-1995</td>
<td>Advisor, Planning Division, Ministry of Agriculture, Lilongwe, Malawi</td>
</tr>
<tr>
<td>1985-1992</td>
<td>Agricultural Economist, Bangladesh Rice Research Institute, Bangladesh</td>
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<tr>
<td>1985</td>
<td>PhD (Economics)</td>
<td>University of Edinburgh</td>
</tr>
<tr>
<td>1982</td>
<td>M.Sc (Agricultural Economics)</td>
<td>University of Reading</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Harnessing Opportunities for Productivity Enhancement for Sorghum and Millets (HOPE), BMGF, 2009-2014 $18 m.
Improving groundnut farmer incomes and nutrition through innovation and technology enhancement (I-FINITE), Zambia, USAID, 2012-2015, $5.4 m.

ROLE IN PIM PHASE 1

ICRISAT Focal Point, Eastern and Southern Africa. Leader of ICRISAT activities on commercialization and gender. Leader of activity on value chains as complex systems.
STOIAN, DIETMAR

SUMMARY

Principal Scientist, Value Chains and Private Sector Engagement at Bioversity International
Main research areas: value chain analysis and development, sustainability standards, private sector engagement, markets and marketing of agricultural and forest products, smallholder livelihoods, asset-based approaches
Total number of peer-reviewed publications and citations:
https://scholar.google.fr/citations?hl=en&user=4hL5NUAAAAJ&view_op=list_works&cstart=0&pagesize=100

EMPLOYMENT

Since 09/2012: Leader, Commodity Systems & Genetic Resources Program at Bioversity International, Montpellier, France
04/2001-08/2012: Leader, Competitiveness and Value Chains Program at CATIE, Turrialba, Costa Rica
03/1996-12/2000: Research Fellow at Inst. of Forest Policy, Markets & Marketing Section, University of Freiburg, Germany

EDUCATION

2000 PhD Forest Economics (University of Freiburg, Germany)
1993 MSc equivalent Forest Sciences (University of Freiburg, Germany)

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


ROLE IN PIM PHASE 1

Link to value chain work in RTB and FTA
TORERO, MAXIMO

SUMMARY

Division Director of the Markets, Trade, and Institutions Division at the International Food Policy Research Institute, Director for Latin America and leader of the flagship on Value chains under PIM. His major research work lies mostly in analyzing poverty, inequality, importance of geography and assets (private or public) in explaining poverty, value chains, and in policies oriented towards poverty alleviation based on the role played by infrastructure, institutions, and on how technological breakthroughs (or discontinuities) can improve the welfare of households and small farmers. His experience encompasses Latin America, Sub-Saharan Africa, and Asia. He has more than 30 journal articles in top journals (QJE, AJAE, EDCC, EE, JPueE, etc.) 7 books, and several other publications.

EMPLOYMENT

<table>
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<tr>
<th>Year</th>
<th>Position</th>
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<tbody>
<tr>
<td>2006-Present</td>
<td>Division Director of MTID, International Food Policy Research Institute</td>
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<tr>
<td>2005-Present</td>
<td>Senior Research Fellow, International Food Policy Research Institute</td>
</tr>
<tr>
<td>2003-2005</td>
<td>Research Fellow</td>
</tr>
<tr>
<td>1999-Present</td>
<td>Associate Professor at Universidad del Pacifico (on leave since 2003)</td>
</tr>
<tr>
<td>1997-2003</td>
<td>Senior Research Fellow at Group of Analysis for Development and director of the executive management committee.</td>
</tr>
<tr>
<td>1997-2000</td>
<td>Associate Researcher, Center for Development Research (ZEF), University of Bonn</td>
</tr>
<tr>
<td>1994-2003</td>
<td>Associate Researcher at the Institute of Social Science and Research, UCLA</td>
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EDUCATION

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<th>Year</th>
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<tr>
<td>1999</td>
<td>Post Doctorate</td>
<td>University of California at Los Angeles</td>
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<td>1998</td>
<td>Ph.D. Economics</td>
<td>University of California at Los Angeles</td>
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<td>1993</td>
<td>M.Sc. Economics</td>
<td>University of California at Los Angeles</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS

(with Saenger, Christopher; Qaim, Matin; Viceiszla). 2013. Contract farming and smallholder incentives to produce high quality: experimental evidence from the Vietnamese dairy sector. AGRICULTURAL ECONOMICS. Volume 44, Issue 3, May 2013, Pages: 297–308

SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

2014. EU 4.00 million. Principal investigator. "Food Security Portal Phase II." European Commission under Strengthen governance approaches for food security. This includes several areas relevant to value chains under food availability and access.

ROLE IN PIM PHASE 1

Leader of Flagship 3 on Value Chains and PI of several activities under PIM.
### Flagship 4: Social Protection Strategies and Programs

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Ahmed, Akhter U.</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Alderman, Harold</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Devereux, Stephen</td>
<td>Centre for Social Protection, Institute for Development Studies</td>
</tr>
<tr>
<td>Gilligan, Daniel</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Hidrobo, Melissa</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Hoddinott, John</td>
<td>Cornell University</td>
</tr>
<tr>
<td>Kumar, Neha</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Robles, Miguel</td>
<td>IFPRI</td>
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<tr>
<td>Roy, Shalini</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Taffesse, Alemayehu Seyoum</td>
<td>IFPRI</td>
</tr>
</tbody>
</table>
AHMED, AKHTER

SUMMARY

Akhter Ahmed is a senior research fellow in the Poverty, Health, and Nutrition Division (PHND) at IFPRI. He joined IFPRI in 1990. Currently he is based in Bangladesh as Chief of Party of the Policy Research and Strategy Support Program, funded by USAID. Ahmed works on poverty and human development issues and strategies for restructuring social protection programs to improve the food security, nutrition, and livelihoods of the poor in developing countries. He worked in Bangladesh, China, Egypt, India, Malawi, the Philippines, Turkey, and Vietnam. Ahmed has 22 peer-reviewed publications.

EMPLOYMENT

Sep 2008 – Sep 2010: Senior Research Fellow, PHND, IFPRI Asia Regional Office, New Delhi, India
Apr 2001 – Aug 2008: Senior Research Fellow, PHND, IFPRI, Washington, DC
Nov 1999 – Mar 2001: Research Fellow, PHND, IFPRI, Washington, DC
Aug 1996 – Oct 1999: Chief of Party, Egypt Food Security Research Project, Cairo, Egypt, and Research Fellow, Food Consumption and Nutrition Division (FCND), IFPRI,
May 1990 - Jun 1994: Consumption Economist, Bangladesh Food Policy Project, Dhaka, Bangladesh, and Research Fellow, PHND, IFPRI
May 1978 - Jan 1983: Agricultural Economist, USAID, Dhaka, Bangladesh

EDUCATION

1990  PhD in Agricultural Economics, Colorado State University, Fort Collins, Colorado, USA
1985  MS in Agricultural Economics, Cornell University, Ithaca, New York, USA

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

JOURNAL ARTICLES:

BOOK CHAPTERS:

SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Ford Foundation Scholarship to pursue graduate studies at Cornell University.
MERITORIOUS HONOR AWARD FROM USAID IN RECOGNITION OF OUTSTANDING PERFORMANCE.

OTHER EVIDENCE OF DELIVERY

ALDERMAN, HAROLD

SUMMARY

Harold Alderman is a senior research fellow at the International Food Policy Research Institute. He holds both a master's degree in nutrition (Cornell) and a Ph.D. in economics (Harvard). He has more than 28 years of experience conducting research on the economics of nutrition and food policy. He spent 10 years at the IFPRI prior to joining the World Bank in 1991. He rejoined IFPRI in 2012. While at the World Bank, he divided his time between the Development Research Group and the Africa region where he advised on social protection policy. His current research has focused on the linkages between nutrition and early child development and the means by which nutrition and social protection programs contribute to long-term economic growth. He is the author or co-author of more than 90 peer-reviewed journal articles.

EMPLOYMENT

2012-present, IFPRI. Senior Research Fellow. Poverty Health and Nutrition Division.

EDUCATION

1984 PhD, Economics, Harvard University
1978 MS, Nutrition, Cornell University, Ithaca, New York

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

DEVEREUX, STEPHEN

SUMMARY
Research Fellow and Director, Centre for Social Protection, Institute for Development Studies, UK. Dr. Devereux is a development economist with 25 years of experience in food security, poverty, and rural development in 13 African countries, including 3 years heading a Rural Research Programme at the University of Namibia. He has written or edited 7 books on food security, famine, and social protection, and has published articles in more than 20 journals.

EMPLOYMENT

<table>
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<tr>
<th>Year</th>
<th>Position</th>
<th>Institution/Location</th>
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<tbody>
<tr>
<td>1996–present</td>
<td>Fellow, Institute of Development Studies</td>
<td>University of Sussex, UK</td>
</tr>
<tr>
<td>1993–1995</td>
<td>Senior Researcher, Social Sciences Division</td>
<td>University of Namibia</td>
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EDUCATION

| Year | Degree | Institution | Featured
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<tr>
<td>1992</td>
<td>DPhil, Economics</td>
<td>Oxford University</td>
<td>Luca d’Agliano Award for development research; Africa Studies Association Dissertation Prize: Household Responses to Food Insecurity in Northern Ghana</td>
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<tr>
<td>1986</td>
<td>MPhil, Economics</td>
<td>Oxford University</td>
<td>Balliol College: Third World Scholarship</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS

BOOKS:

BOOK CHAPTERS:

JOURNAL ARTICLES:

OTHER EVIDENCE OF DELIVERY

Examples of recent relevant projects:
Project: Child Support Grant evaluation, South Africa, 2010, for Department of Social Development, Government of South Africa, and UNICEF South Africa. Included Qualitative fieldwork in 4 provinces of South Africa. Position held and activities: Team Leader, qualitative evaluation. Project coordination and management, methodology design, training of fieldworkers, piloting of research methods, overseeing fieldwork, lead author of qualitative research report, presented findings at national workshops.

ROLE IN PIM PHASE 1

Contributed to research on social protection in Ethiopia under Flagship 6.
GILLIGAN, DANIEL

SUMMARY

Deputy Director and Senior Research Fellow, Poverty, Health, and Nutrition Division, International Food Policy Research Institute (IFPRI). Dr. Gilligan’s research addresses the economics of household investments in childhood nutrition and education in developing countries, as well as the impact and cost-effectiveness of social protection and agricultural nutrition interventions. Much of his research is based on experimental and quasi-experimental impact evaluations. Main research areas include social protection, nutrition, education, food security, and agricultural technology adoption. Publications in peer-reviewed journals: 14.

EMPLOYMENT

Jan. 2015-present  Deputy Director, Poverty, Health, and Nutrition Division, IFPRI
Aug. 2013-present  Adjunct Professor, McCourt School of Public Policy, Georgetown University

EDUCATION

2004  PhD, Agricultural and Resource Economics, University of Maryland at College Park
1999  MS, Agricultural and Resource Economics, University of Maryland at College Park
1992  MA, Economic Development, Fletcher School of Law and Diplomacy, Tufts University

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Lead Principal Investigator, “Impact Evaluation of Counterfeit Agricultural Inputs and Technology Adoption in Uganda.” 2014. $1,853,545 grant funding from USAID. Joint proposal with Naureen Karachiwalla.
Winner, 2008 Outstanding Journal Article Award for Best Paper in the American Journal of Agricultural Economics

ROLE IN PIM PHASE 1

Investigator for flagship on social protection. Leader of flagship on social protection as of January 2015.
HIDROBO, MELISSA

SUMMARY

Melissa is a research fellow in the Poverty, Health, and Nutrition Division of the International Food Policy Research Institute (IFPRI). She is an applied microeconomist working at the intersection of gender, early childhood development, and social protection. Her research focuses on the determinants and consequences of poor early childhood development and health; and how resource allocation within households affects the intended and unintended outcome of development policies. She has investigated the impacts of cash transfers programs and food assistance programs through her work with the Bono de Desarrollo Humano Program and the World Food Programme in Ecuador, and the Jigisemejiri program in Mali. Her current work involves impact evaluations of nutrition-sensitive agricultural and social protection programs in Mali, Ghana, and Senegal.

EMPLOYMENT

<table>
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<th>Date</th>
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<tr>
<td>August 2013-Current</td>
<td>Research Fellow, International Food Policy Research Institute</td>
</tr>
<tr>
<td>August 2011-July 2013</td>
<td>Associate Research Fellow, International Food Policy Research Institute</td>
</tr>
<tr>
<td>August 2005-May 2011</td>
<td>Graduate Student Researcher, University of California, Berkeley</td>
</tr>
<tr>
<td>July 2003-July 2005</td>
<td>Research Assistant, American Institutes for Research</td>
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EDUCATION

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<th>Year</th>
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<tr>
<td>2011</td>
<td>Ph.D. in Agricultural and Resource Economics</td>
<td>University of California, Berkeley</td>
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<tr>
<td>2008</td>
<td>Master of Science in Agricultural and Resource Economics</td>
<td>University of California, Berkeley</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

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<tr>
<td>2014</td>
<td>IFPRI’s Strategic Innovation Funds Award</td>
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<td>2010</td>
<td>Dissertation Research Award, Institute of Business and Economics Research (IBER)</td>
</tr>
<tr>
<td>2008-2009</td>
<td>Mentored Research Award, University of California, Berkeley</td>
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HODDINOTT, JOHN

SUMMARY
H.E. Babcock Professor of Food & Nutrition Economics and Policy, Professor of Applied Economics and Management and Professor of Nutritional Sciences, Cornell University. Dr. Hoddinott’s research interests include causes of poverty, food insecurity and undernutrition, and the design and evaluation of interventions that would reduce these. Another topical area includes the determinants and consequences of human capital formation. Dr. Hoddinott has published more than 50 peer reviewed journal articles.

EMPLOYMENT
2015 – present H.E. Babcock Professor of Food & Nutrition Economics and Policy, Professor of Applied Economics and Management and Professor of Nutritional Sciences, Cornell University, Ithaca, New York
2002 – 2015 Deputy Division Director, Senior Research Fellow, International Food Policy Research Institute (IFPRI), Washington, DC

EDUCATION
1986 - 1989 DPhil (Economics), University of Oxford
1984 - 1986 MA (Economics), York University, Canada

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS
"Evaluation design, implementation monitoring and evaluation of vouchers and cash transfer programs", funded by the World Food Programme, January 2010-December 2011.

ROLE IN PIM PHASE 1
Leader of Flagship 6 on social protection.
# Summary

Research focuses on impact evaluation of social protection and agricultural interventions. Main research areas: poverty, risk management, gender, and maternal and child nutrition.

## Employment

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<tr>
<th>Year</th>
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<tbody>
<tr>
<td>2012-present</td>
<td>Research Fellow</td>
<td>International Food Policy Research Institute, Washington, DC, USA</td>
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<tr>
<td>2008-2012</td>
<td>Postdoctoral Fellow</td>
<td>International Food Policy Research Institute, Washington, DC, USA</td>
</tr>
<tr>
<td>2006-2007</td>
<td>Short-term consultant</td>
<td>The World Bank, Washington, DC, USA</td>
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## Education

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<tr>
<td>2008</td>
<td>Ph.D. Economics</td>
<td>Boston University, Boston, USA</td>
</tr>
<tr>
<td>2002</td>
<td>M.A. Economics</td>
<td>Delhi School of Economics, India</td>
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## Selected Recent Peer-Reviewed Publication

### Journal Articles:


### Book Chapters:


## Significant Grants, Fellowships, Awards

- Strategic Impact Evaluation Fund, The World Bank, 2015, $600K

## Other Evidence of Delivery

Reports produced as part of impact evaluation of the Productive Safety Nets Program of Ethiopia
ROBLES, MIGUEL

SUMMARY

Miguel Robles is a Research Fellow at the International Food Policy Research Institute, IFPRI, in the Markets, Trade, and Institutions Divisions. At IFPRI, he has conducted research on several topics, among the most recent: a new approach to provide weather index-based insurance in Africa, Asia, and Latin America; the behavior of international agricultural commodity markets; price transmission estimations from international markets to domestic food markets in Latin America and Asia; analysis of futures markets and the role of speculation; analysis on the welfare impact of changing food prices in Latin America and Asia; rural employment strategies in developing countries and general equilibrium modeling of rural-urban linkages. With a total of 15 peer-reviewed publications, he holds a PhD in Economics from the University of California Los Angeles (UCLA) where he specialized in Macroeconomics and Asset Pricing.

EMPLOYMENT

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<tr>
<td>2009 to Present</td>
<td>Research Fellow, Markets, Trade, and Institutions Division, IFPRI</td>
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<td>2006 to 2009</td>
<td>Postdoctoral Fellow, Markets, Trade and Institutions Division, IFPRI</td>
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<td>2000-2002</td>
<td>Associate Researcher, Group for the Analysis of Development (GRADE)</td>
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EDUCATION

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<tr>
<td>2008</td>
<td>PhD Economics, University of California, Los Angeles</td>
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<td>2005</td>
<td>MA Economics, University of California, Los Angeles</td>
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<td>1999</td>
<td>MA Macroeconomics, Universidad Católica de Chile, Santiago de Chile</td>
</tr>
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</table>

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

- Robles, Miguel, and Maximo Torero (2010). “Understanding the Impact of High Food Prices in Latin America.” ECONOMIA, the Journal of LACEA, 10 (2).

SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

<table>
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<tr>
<td>2010</td>
<td>Winner, Marketplace on Innovative Financial Solutions for Development for research on weather insurance</td>
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<td>2002-2004</td>
<td>Fulbright Scholarship</td>
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OTHER EVIDENCE OF DELIVERY

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<th>Year</th>
<th>Evidence of Delivery</th>
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<tr>
<td>2013 to present</td>
<td>Commercial implementation of an innovative index-based weather insurance in Uruguay</td>
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</tbody>
</table>

ROLE IN PIM PHASE 1

Leader of PIM Phase 1 “Insurance for the Poor“ cluster
Roy, Shalini

Summary

Research Fellow, Poverty, Health, and Nutrition Division (PHND), International Food Policy Research Institute (IFPRI). Shalini Roy presently focuses her work on evaluating interventions related to social protection, gender, nutrition, education, early childhood, and agriculture in West Africa, East Africa, South Asia, and Latin America. She received her PhD in Economics in 2009 from the University of Pennsylvania, and a BA in Economics and Mathematics in 2002 from Northwestern University. She has listed six peer-reviewed publications.

Employment

2013-present Research Fellow, Poverty, Health, and Nutrition Division, International Food Policy Research Institute
2009-2013 Postdoctoral Fellow, Poverty, Health, and Nutrition Division, International Food Policy Research Institute
2007-2008 Research Assistant to Professor Vida Maralani, University of Pennsylvania
2006-2007 Research Assistant to Professor Jere Behrman, Department of Economics, University of Pennsylvania
2005-2006 Research Assistant to Professor Iourii Manovskii, Department of Economics, University of Pennsylvania
2005-2006 Research Assistant to Professor Albert Saiz, Wharton School
2000-2003 Research Assistant to Professor Deborah Dobrez, Institute for Health Services Research & Policy Studies, Northwestern University

Education

2009 PhD, Economics, University of Pennsylvania

Selected Recent Peer-Reviewed Publications


In Progress:

Significant Grants, Fellowships, Awards

2009 Penn Prize for Excellence in Teaching by Graduate Students, University of Pennsylvania
2002-2007 University of Pennsylvania Graduate Division of Arts and Sciences Fellowship
2002 Frederick S. Deibler Award for Excellence in Economics
SEYOM TAFESSE, ALEMAYEHU

SUMMARY

Alemayehu Seyoum Taffesse is Senior Research Fellow, Development Strategy and Governance Division, International Food Policy Research Institute. His recent research activities have included research regarding aspirations and well-being, impact evaluation of safety net programs, risk and insurance in rural Ethiopia, impact evaluation of large government/donor-financed development programs, agricultural productivity growth—patterns and determinants, and consumption patterns and demand elasticities in Ethiopia.

EMPLOYMENT

<table>
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<tr>
<td>Apr 2012 – present</td>
<td>Senior Research Fellow, Development Strategy and Governance Division, IFPRI</td>
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<td>Jan 2009 – Mar 2012</td>
<td>Research Fellow, Development Strategy and Governance Division, IFPRI</td>
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<tr>
<td>Jan 2006 – Dec 2008</td>
<td>Visiting Research Fellow, Development Strategy and Governance Division, IFPRI</td>
</tr>
<tr>
<td>Aug 2004 – Dec 2005</td>
<td>Director, African Centre for Economic and Historical Studies (ACEHS)</td>
</tr>
<tr>
<td>Jan 1999 – Jul 2003</td>
<td>Economic Affairs Officer, United Nations Economic Commission for Africa</td>
</tr>
<tr>
<td>1997 - 1998</td>
<td>Assistant Professor, Department of Economics, Addis Ababa University</td>
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EDUCATION

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<th>Year</th>
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<tr>
<td>1997</td>
<td>DPhil</td>
<td>Economics, University of Oxford</td>
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<tr>
<td>1992</td>
<td>MSc</td>
<td>Quantitative Development Economics, University of Warwick</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS


ROLE IN PIM PHASE 1

Contributed to research on social protection in Ethiopia under Flagship 6.
## Flagship 5: Governance of Natural Resources

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Catacutan, Delia C.</td>
<td>ICRAF</td>
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<tr>
<td>Ghebru, Hosaena</td>
<td>IFPRI</td>
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<tr>
<td>Halewood, Michael</td>
<td>Bioversity Int'l</td>
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<td>Larson, Anne</td>
<td>CIFOR</td>
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<tr>
<td>Lawry, Steven</td>
<td>CIFOR</td>
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<tr>
<td>Mapedza, Everisto</td>
<td>IWMI</td>
</tr>
<tr>
<td>Meinzen-Dick, Ruth</td>
<td>IFPRI</td>
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<td>Ratner, Blake</td>
<td>Worldfish</td>
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<tr>
<td>Ringler, Claudia</td>
<td>IFPRI</td>
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<tr>
<td>van Noordwijk, Meine</td>
<td>ICRAF</td>
</tr>
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</table>
CATACUTAN, DELIA C.

SUMMARY

Senior Social Scientist & ICRAF-Vietnam Representative, World Agroforestry Centre. Responsibilities include country program development, research conceptualization, developing research methodologies, coordinating and carrying out research, writing and editing books, reports, and articles, holding workshops, developing networks of researchers and practitioners, and project management. Areas of research include policy and institutional research on integrated natural resource management and agroforestry, linking knowledge with action, collective action and property rights, farmer adoption, payments for ecosystems services, and scaling up, among others. Field work in the Philippines, Vietnam, Kenya, Uganda, Ethiopia, Rwanda, Malawi, Tunisia, and South Africa. >50 peer-reviewed publications.

EMPLOYMENT

2009-present Senior Social Scientist/Country Rep, ICRAF
2008-2009 Post Doctoral Fellow, Harvard University
1998- 2009 NRM Research Officer, ICRAF

EDUCATION

2004 PhD, University of Queensland, Natural & Rural Systems Management
1999 MM, Liceo De Cagayan Philippines, Development

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


Seline S. Meijer, Delia Catacutan, Oluyede C. Ajayi, Gudeta W. Sileshi & Maarten Nieuwenhuis (2014). The role of knowledge, attitudes and perceptions in the uptake of agricultural and agroforestry innovations among smallholder farmers in sub-Saharan Africa. International Journal of Agricultural Sustainability


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Co-developer, SANREM CRSP in SEA Phase 3 (2005-2010); Post-Doc fellowship on sustainability science at Harvard University’s Center for International Development

ROLE IN PIM PHASE 1

Study Leader: Collective Action & Property Rights
GHEBRU, HOSAENA

SUMMARY

Research Fellow in the Development Strategy and Governance Division at the International Food Policy Research Institute (IFPRI) with responsibilities including supervising and carrying out research, writing reports, and articles, fundraising, and project management. Overall research focuses on applied microeconomics with a focus on Africa and rural issues: property rights, land markets and investment incentives, impact evaluation land policy and governance reforms on agricultural productivity and sustainable land management. His current work focuses on understanding drivers of various forms of land tenure and governance reforms and their economic outcomes on the rural poor and vulnerable groups in Nigeria, Ethiopia, Mozambique, and Ghana. He holds a Ph.D. in development Economics from the Norwegian University of Life Sciences – department of Economics and Resource Management (2010). Current research focus include: Impact evaluation of land tenure reform programs; land markets and valuation; gender and youth based analysis on land access, tenure security and livelihood strategy with fieldwork experience in Ethiopia, Mozambique, Nigeria and Ghana.

EMPLOYMENT

<table>
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<tr>
<th>Date</th>
<th>Position</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Oct. 2014 - present</td>
<td>Research Fellow</td>
<td>International Food Policy Research Institute</td>
</tr>
<tr>
<td>July 2002 – June 2004</td>
<td>Assistant Lecturer</td>
<td>Mekelle University, Ethiopia</td>
</tr>
</tbody>
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EDUCATION

<table>
<thead>
<tr>
<th>Year</th>
<th>Degree</th>
<th>Institution</th>
</tr>
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<tbody>
<tr>
<td>2010</td>
<td>PhD</td>
<td>Norwegian University of Life Sciences</td>
</tr>
<tr>
<td>2004</td>
<td>MSc</td>
<td>Agricultural University of Norway</td>
</tr>
</tbody>
</table>

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


OTHER EVIDENCE OF DELIVERY


ROLE IN PIM PHASE 1

Co-leader of PIM activity on “What works to secure land tenure for women, youth and other vulnerable groups?”
HALEWOOD, MICHAEL

SUMMARY
Leader, Genetic Resources Policies, Institutions and Monitoring group, Bioversity International.
Designing, overseeing and conducting policy-relevant research concerning the management and conservation of agricultural biological diversity from local to global levels.
Main research areas: factors effecting availability and use of crop diversity on farm, across agricultural landscapes, and in globally developed systems of conservation and sustainable use; collective action institutions for the management of common pool resources; public investment in and regulation of seed systems; access and benefit sharing

EMPLOYMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
</tr>
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<tbody>
<tr>
<td>2001-present</td>
<td>Leader, Genetic Resources Policy Unit, Bioversity International</td>
</tr>
<tr>
<td>1997-2001</td>
<td>Coordinator, Crucible Group (global think-tank on GR policy issues), International Development Research Centre, Canada</td>
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EDUCATION

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<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>2005</td>
<td>Doctor of Jurisprudence</td>
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<td>1991</td>
<td>Bar Admission</td>
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<tr>
<td>1991</td>
<td>Bachelor of Law</td>
</tr>
<tr>
<td>1987</td>
<td>Bachelor of Arts and Science</td>
</tr>
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</table>

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

BOOKS:

BOOK CHAPTERS:

JOURNAL ARTICLES:

ROLE IN PIM PHASE 1
Leader, Activity number 3: Collective action in the creation, maintenance and use of common genetic resources pools
LARSON, ANNE

SUMMARY

Principal Scientist, Center for International Forestry Research. Conduct research on multiple aspects of forest and landscape governance policy and institutions, including property rights, climate change, decentralization, indigenous territories and gender, from local to international scales. Responsibilities include developing research strategies, projects and methodologies, fundraising, supervising and conducting research, writing and editing books, reports, and articles, networking with policy-makers, NGOs and grassroots organizations for impact, and project management. Serve on the science committee for the Global Landscape Forum (2014, 2015), the CIFOR Strategy Working Group (2014-15), and the council of the International Association for the Study of the Commons (IASC, 2014-16) and represent CIFOR to the Rights and Resources Initiative. Current research priorities include multilevel governance, REDD+ and low emissions development; women’s rights to land and communal forests; and opportunities and challenges for forest tenure reforms. Coordinate fieldwork in Peru, Nicaragua, Mexico, Tanzania, Uganda, Indonesia and Vietnam.

EMPLOYMENT

2012-present  Principal Scientist, Senior Scientist, Center for International Forestry Research
2001-2012  Senior Associate, Associate, Center for International Forestry Research and Independent Consultant

EDUCATION

2001  PhD, University of California at Berkeley, Wildland Resource Science

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS


From Climate Research to Action under Multilevel Governance: €4.8 million from the International Climate Initiative, Germany, 2015-2017.

LAWRY, STEVEN

SUMMARY

Research Director, Forests & Governance Portfolio, CIFOR. Lead CIFOR’s global governance research program, including research on land and forest tenure reform, REDD+ implementation, forest product trade and investment, and corporate commitments to sustainability and CIFOR’s cross-cutting gender research program. Total number of peer-reviewed publication: +10.

EMPLOYMENT

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Position/Location</th>
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<tbody>
<tr>
<td>Sept. 2014-Present</td>
<td>Research Director, Forests and Governance, CIFOR, Bogor, Indonesia</td>
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<tr>
<td>Dec. 2011—July 2014</td>
<td>Global Practice Leader, Land Tenure and Property Rights, DAI, Bethesda, MD</td>
</tr>
<tr>
<td>Jan. 2006—Dec. 2007</td>
<td>President, Antioch College, Yellow Springs, Ohio, USA</td>
</tr>
<tr>
<td>Sept. 2001—Jan. 2006</td>
<td>Director, Office of Management Services, Ford Foundation, NY, NY, USA</td>
</tr>
<tr>
<td>July 1997—Sept. 2001</td>
<td>Representative, Middle East and North Africa, Ford Foundation, Cairo, Egypt</td>
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<tr>
<td>May 1988—Sept. 1992</td>
<td>Africa Research Director, Land Tenure Center, University of Wisconsin-Madison, USA</td>
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EDUCATION

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<tr>
<td>1988</td>
<td>PhD, Nelson Institute for Environmental Studies, University of Wisconsin-Madison</td>
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<tr>
<td>1975</td>
<td>MA, Urban and Regional Planning, Florida State University</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS


2014. With Cyrus Samii, Ruth Hall, Aaron Leopold, Donna Hornby and Farai Mtero. The Impact of Land Property Rights Interventions on Investment and Agricultural Productivity in Developing Countries: a Systematic Review. The Campbell Collaboration of Systematic Reviews, Oslo

OTHER EVIDENCE OF DELIVERY

MAPEDZA, EVERISTO

SUMMARY

Everisto is a Senior Social and Institutional Researcher who has an interest in engaging in applied social science research which leads to impact. This entails engagement in grounded field research which helps inform policy makers. Through the CPWF research on four irrigation schemes in Zimbabwe lessons of experience were drawn which have been used to provide input in the on-going Irrigation Policy development in Zimbabwe. Everisto also provided research leadership through projects such as the Challenge Program on Water and Food (CPWF). The leadership has entailed involvement from proposal development, research methodology development, data collection, analysis and report writing. Everisto is also currently providing leadership of the Southern Africa component of the CRP1.3: Aquatic Agricultural Systems whose initial hub is the Barotse Flood Plain in Zambia. Everisto is currently the Focal Point for CRP1.1. Dryland Systems Integrated Agricultural Production Systems for the Poor and Vulnerable in Dry Areas with IWMI research focussing on South Asia, Central Asia, West Africa, East and Southern Africa. Everisto has published just over 20 peer reviewed journal and book chapters. Everisto is served as a managing co-editor for a part-special issue on the commons which was published in the Water International Journal in 2014. Everisto has also reviewed manuscripts submitted for publication consideration in a number of journals as well as proposals submitted for funding consideration by funders such as the Water Research Commission of South Africa. Everisto has been actively involved in capacity building through co-supervision of PhD and MSc students. Everisto works well in multi-cultural and multi-disciplinary teams. Everisto has led successful proposal development such as the CPWF Water Governance Project.

EMPLOYMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
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<tr>
<td>2003 – 2006</td>
<td>Alcoa Research Fellow, London School of Economics and Political Science, UK</td>
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EDUCATION

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<tr>
<td>2003</td>
<td>PhD</td>
<td>Edinburgh University, Edinburgh, United Kingdom</td>
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<td>1996</td>
<td>MSc</td>
<td>Rural and Urban Planning, University of Zimbabwe</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS


MEINZEN-DICK, RUTH

SUMMARY

Senior Research Fellow, International Food Policy Research Institute: Conduct research on water policy, local organizations, property rights, and poverty impacts. Coordinator CGIAR System-wide Program on Collective Action and Property Rights (CAPRi). Responsibilities include developing research methodologies, supervising and carrying out research, writing and editing books, reports, and articles, fundraising, holding workshops, developing networks of researchers and practitioners, and project management. Substantive areas of research include policies for water and natural resource management, gender analysis, local organizations, property rights and collective action, comparative analysis of irrigation system performance, relations between farmers and government agencies; impact of agricultural research on poverty; sustainable livelihoods. Field work in India, Zimbabwe, Uganda, Kenya, Nepal, Pakistan, and Sri Lanka. 140 peer-reviewed publications.

EMPLOYMENT

1991-present Senior Research Fellow, Research Fellow, International Food Policy Research Institute

EDUCATION

1989 PhD, Cornell University Development Sociology
1983 MSc, Cornell University Development Sociology

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Gender, Agriculture and Assets Project I and II: $8 million total from Bill and Melinda Gates Foundation, 2010-2019

CGIAR Science Award for Outstanding Partnership awarded to CAPRi program, 2002

OTHER EVIDENCE OF DELIVERY

Co-developer of Women’s Empowerment in Agriculture Index

ROLE IN PIM PHASE 1

Leader of Flagship 5 on Property Rights Regimes for Management of Natural Resources and Assets
RATNER, BLAKE D.

SUMMARY

Blake D. Ratner is Research Director at WorldFish, an international, nonprofit research organization dedicated to reducing poverty and increasing food and nutrition security by improving fisheries and aquaculture. He is responsible for overall research strategy and leadership, with oversight of WorldFish’s three research disciplines, including some 60 PhD-level research staff distributed in 10 offices in Africa, Asia, and the Pacific. An environmental sociologist, Blake’s own research focuses on natural resource governance, conflict, and cooperation from local to regional scales. He is a specialist in participatory multi-stakeholder dialogue to build institutional and policy innovation addressing competition over common-pool resources (land, water, forests, fisheries), and has authored over 30 peer-reviewed publications on rights, equity, and accountability in environmental decision-making, in addition to a wide range of practitioner and policy guidance. Blake is skilled in executive leadership, organizational change, participatory facilitation, experiential education, and conflict mediation, and is fluent in English, Spanish, French and Khmer.

EMPLOYMENT

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<tr>
<td>Apr 2014 – ongoing</td>
<td>Research Director, WorldFish</td>
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<tr>
<td>Nov 2009 – Mar 2014</td>
<td>Program Leader, Governance, WorldFish</td>
</tr>
<tr>
<td>Mar 2003 – Oct 2009</td>
<td>Project Leader, then Regional Director, Mekong, WorldFish</td>
</tr>
<tr>
<td>Mar 2000 – Feb 2003</td>
<td>Consultant and Faculty Appointments: World Bank, University of Minnesota</td>
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<tr>
<td>Sep 1997 – Feb 2000</td>
<td>Senior Associate and Regional Project Manager, World Resources Institute</td>
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EDUCATION

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<tbody>
<tr>
<td>1997</td>
<td>PhD, Development Sociology</td>
<td>Cornell University</td>
</tr>
<tr>
<td>1995</td>
<td>MS, Development Sociology</td>
<td>Cornell University</td>
</tr>
<tr>
<td></td>
<td>and MPS, Rural Development Administration</td>
<td>Cornell University</td>
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SELECTED RECENT PEER-REVIEWED PUBLICATIONS


OTHER EVIDENCE OF DELIVERY

Led cross-regional, action research resulting in governance innovations that improved resource access, reinforced livelihood security, and reduced social conflict in Cambodia, Uganda, and Zambia, with lessons from the Collaborating for Resilience approach now being applied in Bangladesh, Solomons, Philippines, and India.


Led participatory research to build collective action and strengthen civil society-state linkages in Cambodia’s Tonle Sap Lake, contributing to more effective community advocacy for regulatory and policy reform, and decisions to expand access rights for community fisheries and pilot new forms of community-based commercial production.

ROLE IN PIM PHASE 1

Leader, WorldFish governance research.
RINGLER, CLAUDIA

**SUMMARY**

**Deputy Division Director.** International Food Policy Research Institute: Manage IFPRI Natural Resource Management (NRM) Theme; Co-lead, IFPRI water research program and CGIAR WLE Managing Resource Variability and Competing Uses Flagship. Guide research on water resources management and agricultural and natural resource policies, including climate change adaptation and mitigation, the water-energy-food nexus, water quality assessments and the link between irrigation, nutrition and health; develop strategies for NRM research at IFPRI, WLE and PIM. Geographic experience in the Indus, Mekong, Niger, Nile and Volta River Basins; Bangladesh, Chile, China, Ethiopia, Pakistan, Tanzania and Viet Nam. 100 peer-reviewed publications.

**EMPLOYMENT**

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<th>Position</th>
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<tr>
<td>2011-present</td>
<td>Deputy Division Director, Environment and Production Technology Division, IFPRI</td>
<td>IFPRI</td>
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<tr>
<td>2004-2010</td>
<td>Research Fellow and Senior Research Fellow, IFPRI</td>
<td>IFPRI</td>
</tr>
<tr>
<td>2001-2003</td>
<td>Postdoctoral Fellow, International Food Policy Research Institute</td>
<td>IFPRI</td>
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**EDUCATION**

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<tbody>
<tr>
<td>2001</td>
<td>PhD, Agricultural Economics</td>
<td>University of Bonn, Germany</td>
</tr>
<tr>
<td>1996</td>
<td>MA, International and Development Economics</td>
<td>Yale University, USA</td>
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**SELECTED RECENT PEER-REVIEWED PUBLICATIONS**


**SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS**

Water-Energy-Food Nexus in the Eastern Nile Basin, Federal Government of Germany, €1.2 million; Enhancing Women’s Assets to Manage Risk under Climate Change: Potential for Group-Based Approaches, Federal Government of Germany, €1.2 million; and many others; Agricultural Economics Association of South Africa Award for best publication in a professional journal (2011); Zayed International Prize for the Environment, to all Millennium Ecosystem Assessment authors (2005); German Developing Country Prize for Best Dissertation (2004)

**OTHER EVIDENCE OF DELIVERY**

Co-developer of several online tools, such as the Ag Water Solutions Investment Visualizer (http://investmentvisualizer.agwater.org/) and the Agitech Toolbox (http://apps.harvestchoice.org/agritech-toolbox/)

**ROLE IN PIM PHASE 1**

Leader of Activity Cluster on Land and Water Policy under Flagship 5 on Property Rights Regimes for Management of Natural Resources and Assets
van Noordwijk, Meine

Summary

Chief Science Adviser, Principal Scientists at World Agroforestry Centre (ICRAF). Current responsibilities as Chief Science Adviser include responsibility for articulating science quality and advancing the two-way linkages between knowledge and action, across all ICRAF regions and science domains. As principal scientist I currently serve as FP leader of the landscape part of FTA and am helping to shape this for the second phase proposal. Areas of research include environmental consequences of land use systems and land use change in tropical forest margins (productivity, water, biodiversity, climate), and the various policy and institutional approaches to strengthening the feedback to changes at driver, community or individual level (incl. PES, land use planning etc.). Field work in Indonesia, the Philippines, Thailand, Vietnam, S. Sudan, Burkina Faso, Kenya. >300 peer-reviewed publications. https://scholar.google.com/citations?user=CyTMe1IAAAAJ&hl=en; h-factor = 59, i10 = 306, total citations 15609

Employment

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<th>Year</th>
<th>Position and Institution</th>
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<tbody>
<tr>
<td>2014 - present</td>
<td>Seconded as part-time Professor of Agroforestry, Wageningen University (the Netherlands)</td>
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<tr>
<td>1993 – present</td>
<td>Senior to Principal scientist (Ecologist), ICRAF (serving as Regional Coordinator SE Asia 2001-2008)</td>
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<tr>
<td>1979-1981</td>
<td>Lecturer Botany/Ecology at University of Juba (S Sudan)</td>
</tr>
<tr>
<td>1976 – 1993</td>
<td>Steps from junior to senior scientist at Institute for Soil Fertility Research (Haren, the Netherlands)</td>
</tr>
</tbody>
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Education

1987  PhD, Agricultural Science, Wageningen University (the Netherlands)
1976  “Doctorandus” ~ MSc, Ecology (cum laude), Utrecht University, the Netherlands

Selected Recent Peer-reviewed Publications


Role in PIM Phase 1

No explicit role, supporting cross-CRP integration in ICRAF
FLAGSHIP 6: GENDER EQUITY AND AGRICULTURAL DEVELOPMENT

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Delavallade, Clara</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Doss, Cheryl</td>
<td>Yale University</td>
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<tr>
<td>Jones, Kelly M.</td>
<td>IFPRI</td>
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<td>Malapit, Hazel Jean L.</td>
<td>IFPRI</td>
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<tr>
<td>Meinzen-Dick, Ruth</td>
<td>IFPRI</td>
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<td>Mueller, Valerie</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Najjar, Dina</td>
<td>ICARDA</td>
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<tr>
<td>Quisumbing, Agnes</td>
<td>IFPRI</td>
</tr>
<tr>
<td>Twyman, Jennifer</td>
<td>CIAT</td>
</tr>
</tbody>
</table>

Note: Discussions with researchers interested to contribute to Flagship 6 are ongoing, and the current core team listed above will be augmented during preparation of the full proposal. Most additions to the core team will probably come from outside CGIAR, in light of the opportunities for researchers from other Centers and CRPs to collaborate through the gender platform.
**Summary**

Clara Delavallade is a Research Fellow in the Markets, Trade, and Institutions Division of IFPRI, and an Associate Professor of Economics at the University of Cape Town. Her main areas of research are in development and behavioral economics. Most of her research draws upon randomized field experiments in India and Africa south of the Sahara (Senegal, Burkina Faso, South Africa). She is currently studying various incentive-based and monitoring mechanisms improving service delivery in tuberculosis control and school-feeding programs. She is also interested in human capital formation through innovative education techniques and life skills programs in India. Another set of her research investigates risk management (through weather and health insurance, credit and savings for farmers), with a gender focus. She has eight peer-reviewed publications.

**Employment**

<table>
<thead>
<tr>
<th>Year</th>
<th>Institution, Location</th>
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<tbody>
<tr>
<td>2013-2013</td>
<td>International Food Policy Research Institute, Washington DC</td>
<td>Research Fellow</td>
</tr>
<tr>
<td>2013-2013</td>
<td>University of Cape Town, South Africa</td>
<td>Associate Professor (on leave)</td>
</tr>
<tr>
<td>2010-2012</td>
<td>University of Cape Town, South Africa</td>
<td>Senior Lecturer (Assistant Professor)</td>
</tr>
<tr>
<td>2008-2010</td>
<td>Jameel Poverty Action Lab (J-PAL) South Asia, India</td>
<td>Executive Director</td>
</tr>
<tr>
<td>2004-2008</td>
<td>University Paris 1 Sorbonne / Paris School of Economics, France</td>
<td>Lecturer</td>
</tr>
<tr>
<td>2003-2004</td>
<td>NGO Courants de Femmes Senegal, Mali,</td>
<td>President and volunteer</td>
</tr>
<tr>
<td>2003-2004</td>
<td>NGO Courants de Femmes Burkina Faso, Benin</td>
<td>President and volunteer</td>
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**Education**

<table>
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<tr>
<th>Year</th>
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<tbody>
<tr>
<td>2004-2007</td>
<td>Ph.D. in Economics, University Paris 1 Sorbonne/PSE</td>
</tr>
<tr>
<td>2002-2003</td>
<td>M. Sc. in International Economics, Development, Transition and Globalization, University Paris 1 Sorbonne</td>
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<td>2000-2003</td>
<td>ENSAE (Grande Ecole of Statistics and Economics)</td>
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**Selected Recent Peer-Reviewed Publications**


**Significant Grants, Fellowships, Awards**

<table>
<thead>
<tr>
<th>Year</th>
<th>Grant</th>
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<tbody>
<tr>
<td>2014</td>
<td>Wellspring Inc. Grant</td>
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<td>2013</td>
<td>CGIAR Research Program 2 Grant</td>
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<td>2013</td>
<td>AusAID Grant No. 66885</td>
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<td>2012</td>
<td>USAID Grant No. AID-OAA-G-12-00010</td>
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<tr>
<td>2011</td>
<td>European Commission Grant (NOPOOR project)</td>
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<td>2011</td>
<td>UCT Top-Up Grant for Collaborative Research Project in the South</td>
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<tr>
<td>2011</td>
<td>Gates Foundation Global Health Grant # OPP1030140</td>
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<td>2011</td>
<td>URC Conference Travel Grant</td>
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<td>2011-2012</td>
<td>UCT Block Grant</td>
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<tr>
<td>2011</td>
<td>J-PAL Start-up grant</td>
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<td>2010</td>
<td>International Initiative for Impact Evaluation (3ie) Grants</td>
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<tr>
<td>2010</td>
<td>University Research Committee Start-up grant</td>
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<tr>
<td>2010-2012</td>
<td>Carnegie Research Development Grant</td>
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<td>2009</td>
<td>ILO Grant</td>
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</table>

**Role in PIM Phase 1**

Activity Leader for PIM activity “Impact evaluation informing the formation of life skills and human capital among adolescent girls in rural India”. 
DOSS, CHERYL

SUMMARY

Cheryl Doss leads the Strategic Gender Research for the CGIAR Program on Policies, Institutions and Markets. She is a Senior Lecturer at Yale University in Economics and African Studies. She has over 25 peer-reviewed publications, including many in leading agricultural economics and development journals. Her research focuses on the role of gender in agriculture, the economics of intrahousehold dynamics, the gender asset gap, and methods for collecting and analyzing sex disaggregated data.

EMPLOYMENT

1999-present, Yale University, Senior Lecturer, 2008-present. Previously Lecturer, 1999-2008.
1996-99 Williams College, Assistant Professor of Economics

EDUCATION

1996 Ph.D. Applied Economics, University of Minnesota
1987 M.A. International Relations, Yale University

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

2010-present. The Gender Asset Gap Project. Lead PI. Multiple sources of funding including UN Women and an anonymous donor.

ROLE IN PIM PHASE 1

Leader of the cross-cutting Strategic Gender Research.
SUMMARY

As a Research Fellow in the Markets, Trade and Institutions Division of IFPRI, Jones’ research focuses on evaluating economic interventions aimed at improving welfare in Sub-Saharan Africa. Her upcoming work focuses on the role of gender dynamics in intra-household allocation of resources and productive activities. In particular, she will be exploring women’s contributions to and empowerment within small-scale commercial agriculture. Her current work focuses on the role of personal savings for improving risk coping behaviors among vulnerable women. Past work has included analyses of women’s risk coping strategies in the face of financial shocks, and the implications for women’s sexual and reproductive health and child health of various economic policies and phenomena. She has six peer-reviewed publications.

EMPLOYMENT

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<th>Position and Institution</th>
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<tr>
<td>June 2014 – present</td>
<td>Research Fellow; Markets, Trade and Institutions, IFPRI</td>
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<tr>
<td>July 2011 – June 2014</td>
<td>Associate Research Fellow; Markets, Trade and Institutions, IFPRI</td>
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<tr>
<td>Aug 2005 – July 2006</td>
<td>Junior Professional Associate; South Asia Rural Development, World Bank</td>
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EDUCATION

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<th>Year</th>
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<tr>
<td>2011</td>
<td>Ph.D. Agricultural &amp; Resource Economics, University of California, Berkeley</td>
</tr>
<tr>
<td>2005</td>
<td>M.A. School of Advanced International Studies, Johns Hopkins University</td>
</tr>
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</table>

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

“Using agriculture to improve child health: results from a randomized controlled trial on Vit. A intake” with Alan de Brauw. Forthcoming in World Development.


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

<table>
<thead>
<tr>
<th>Year</th>
<th>Grant/Award Description and Amount</th>
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<tbody>
<tr>
<td>2014</td>
<td>Growth and Economic Opportunities for Women, IDRC ($760,000)</td>
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<td>2014</td>
<td>Strategic Innovation Fund, IFPRI ($200,000)</td>
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<td>2013</td>
<td>Fellow Alumni Research Funding, Hewlett Foundation &amp; IIE ($100,000)</td>
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<td>2012</td>
<td>Strategic Innovation Fund Postdoctoral Competition, IFPRI ($50,000)</td>
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<td>2009</td>
<td>Doctoral Dissertation Research Improvement Grant, NSF ($32,500) Pilot Research Grant, UC Berkeley Population Center ($20,000)</td>
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<tr>
<td>2008</td>
<td>Sidney Hoos Award for Best Econometrics Project, UC Berkeley, Ag &amp; Res Economics</td>
</tr>
<tr>
<td>2005</td>
<td>Judy Hendren Mellow Fellowship, Mellow Foundation &amp; JHU SAIS</td>
</tr>
</tbody>
</table>
Malapit, Hazel Jean L.

Summary

Hazel coordinates research, training, and technical assistance on the implementation of the Women’s Empowerment in Agriculture Index (WEAI), manages and coordinates the integration of gender into the research of the CGIAR Research Program on Agriculture for Nutrition and Health (A4NH), and conducts research on gender, women’s empowerment, agriculture, health and nutrition issues. She has 8 peer-reviewed publications.

Employment

June 2013–Present
Gender Research Coordinator, A4NH/PHND, IFPRI, Washington.

August 2012–Present
Research Coordinator, WEAI, IFPRI, Washington.


Education

Ph.D.
Economics (August 2009), College of Arts and Sciences, American University, Washington DC

M.A.
Economics (2008), College of Arts and Sciences, American University, Washington, DC.

M.A.
Economics (2001), University of the Philippines, Diliman.

Selected Peer-Reviewed Publications


Significant Grants, Fellowships, Awards

Herman Postdoctoral Fellowship in Gender and Economics, University of Michigan, Ann Arbor, 2009-2010
Dissertation Fellowship, American University, Washington, DC, 2008 – 2009
Center for Teaching Excellence Fellowship, American University, Washington, DC, 2008 – 2009
First Place, Econometrics Paper Competition, American University, Washington, DC, 2008
Simon Naidel Award (Outstanding Work in Economic Theory), American University, Washington, DC, 2007
Merit Graduate Assistantship, American University, Washington, DC, 2005 – 2008
Poverty and Economic Policy (PEP) Research Grant (Project No: pr-pmma-229), 2004 – 2005

Role in PIM Phase 1

Research Coordinator for the WEAI, part of PIM’s cross-cutting gender research.
MEINZEN-DICK, RUTH

SUMMARY

Senior Research Fellow, International Food Policy Research Institute: Conduct research on water policy, local organizations, property rights, and poverty impacts. Coordinator CGIAR System-wide Program on Collective Action and Property Rights (CAPRi). Responsibilities include developing research methodologies, supervising and carrying out research, writing and editing books, reports, and articles, fundraising, holding workshops, developing networks of researchers and practitioners, and project management. Substantive areas of research include policies for water and natural resource management, gender analysis, local organizations, property rights and collective action, comparative analysis of irrigation system performance, relations between farmers and government agencies; impact of agricultural research on poverty; sustainable livelihoods. Field work in India, Zimbabwe, Uganda, Kenya, Nepal, Pakistan, and Sri Lanka. 140 peer-reviewed publications.

EMPLOYMENT

1991-present Senior Research Fellow, Research Fellow, International Food Policy Research Institute

EDUCATION

1989 PhD, Cornell University Development Sociology
1983 MSc, Cornell University Development Sociology

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Gender, Agriculture and Assets Project I and II: $8 million total from Bill and Melinda Gates Foundation, 2010-2019
CGIAR Science Award for Outstanding Partnership awarded to CAPRi program, 2002

OTHER EVIDENCE OF DELIVERY

Co-developer of Women’s Empowerment in Agriculture Index

ROLE IN PIM PHASE 1

Leader of Flagship 5 on Property Rights Regimes for Management of Natural Resources and Assets
SUMMARY

Valerie has ten years of experience working on topics related to the use of migration and employment to mitigate climate-induced income risk and understanding the benefits of migration and remittances on individual or household welfare in developing countries. She has extensive experience conducting longitudinal surveys in Bangladesh, Ethiopia, Malawi, Mozambique, Pakistan, and Tanzania. Her research has culminated into 16 peer-reviewed journal publications, notably in the Proceedings of the National Academy of Sciences and Nature Climate Change, and World Development.

EMPLOYMENT

2008- Present Postdoctoral Fellow/Research Fellow/Senior Research Fellow, Development Strategy and Governance Division, International Food Policy Research Institute, Washington, D.C.
2006- 2008 Postdoctoral Research Fellow, The Earth Institute at Columbia University, New York, NY.
2005- 2006 Postdoctoral Associate, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Florida

EDUCATION

2005 University of Maryland, College Park, Ph.D. in Agricultural and Resource Economics
2001 University of Maryland, College Park, M.S. in Agricultural and Resource Economics

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

"Migratory Responses to Agricultural Risk in Northern Nigeria," American Journal of Agricultural Economics, Volume 93, No. 4, Pages 1048-1061, 2011 (with Andrew Dillon and Sheu Salau).

SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Principal Investigator, “Research on Migration and Occupational Decisions in Africa”, World Bank, April 2015, $125K
Principal Investigator, “Evaluation of Community-Based Legal Aid Programs for Women’s Land Rights in Tanzania,” Anonymous donors, 2012-2016 $1,022K
Principal Investigator, “Seeing is Believing? Evidence from a Demonstration Plot Experiment in Mozambique,” 3ie, 2011-2014, $577K

ROLE IN PIM PHASE 1

NAJJAR, DINA

SUMMARY

Associate Social and Gender Scientist at ICARDA; Interdisciplinary training in anthropology, natural resources management and agriculture; with solid experience experience in the fields of (1) land rights for women, (2) agricultural innovations and gender, and (3) collecting sex-disaggregated (including decision-making and asset ownership) data with a strong focus on the Middle East and North Africa (Egypt, Morocco, Jordan, and Sudan) but also Sub-Saharan Africa (Ethiopia, Kenya), India (Rajasthan), Central Asia (Uzbekistan), and Canada; 2 peer-reviewed publications.

EMPLOYMENT

February 2014-Present: Associate Social and Gender Scientist, ICARDA
- Gender Focal Point at ICARDA for the following CRPs: Wheat, Dryland Cereals, and Dryland Systems looking at the interplay of gender norms and innovation adoption and adaption in Uzbekistan (4 villages), Morocco (3 villages, and India (3 villages), as well as the gender wage gap and working conditions in Morocco (Saiss) and Egypt (Noubariya and Kafr Sheikh)
- Leading Gender Integration Component, "Development of Strategic Crops in Africa (SARD-SC) Project, Wheat Commodity" funded by the African Development Bank in 4 countries (Ethiopia, Nigeria, Sudan, and Kenya) with out-scaling potential in 7 others.

November 2014-Present: Special Graduate Faculty, The School of Environmental Design and Rural Development, University of Guelph, Canada

EDUCATION

2013 PhD in Anthropology from the University of Western Ontario, Canada
2009 Masters in Natural Resource Management from the University of Manitoba, Canada

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS

Co-Awarded a Consortium of International Agricultural Research (CGIAR) grant for hiring a Gender Post-Doctoral (PDF) Fellow, CGIAR Consortium Office (December 2014)
IDRC Doctoral Research Award, The International Development Research Center (IDRC) (2011)
Middle East Research Competition, The Ford Foundation (2010)

OTHER EVIDENCE OF DELIVERY WITH A FOCUS ON PIM RESEARCH AREAS

FAO adopted learning framework that I developed in East Africa for Farmer Field Schools
Conducted PhD research over 5 years on women, property (land and housing, joint and full titles), and empowerment in Egypt’s massive Mubarak Resettlement Scheme (lived for a year and a half, including during the recent Revolution, in 7 villages working with 6 research assistants)
Working to influence sexual harassment policy and equal pay law enforcement in Morocco, Saiss
Capacity building for INRA, ARC, and NCARE (national agricultural research partners in Morocco, Egypt, and Jordan) in collecting sex-disaggregated data and analyzing it
Led three large surveys (sex-disaggregated) and pertaining to decision-making and asset ownership in Morocco (400 labourers, 200 men and 200 women), Egypt (400 farmers in Noubariya and Kafr El Sheikh, 50 women who own land, 50 women who rent land, 100 women married to men who own or rent land, 100 men who own land, and 100 men who rent land), and Jordan (180 livestock farmers, 90 women and 90 men)
QUISUMBING, AGNES

SUMMARY

Senior Research Fellow and Theme leader of the cross-cutting gender research theme, IFPRI; Applied microeconomist with experience in intrahousehold and gender analysis, analysis of panel data, impact evaluation; Intrahousehold and gender analysis, impact evaluation, property rights, economic mobility and poverty, intergenerational transfers; 68 peer-reviewed publications

EMPLOYMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
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<tbody>
<tr>
<td>1999-present</td>
<td>Senior Research Fellow, Poverty, Health, and Nutrition Division, IFPRI</td>
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<td>1995-1999</td>
<td>Research Fellow, Food Consumption and Nutrition Division, IFPRI</td>
</tr>
<tr>
<td>1993-1995</td>
<td>Economist, South Asia Population and Human Resources Division, and Women in Development Division, World Bank</td>
</tr>
<tr>
<td>1991-1993</td>
<td>Consultant, Women in Development Department, World Bank</td>
</tr>
<tr>
<td>1988-1991</td>
<td>Visiting Fellow, Economic Growth Center, Yale University</td>
</tr>
<tr>
<td>1987-1988</td>
<td>Assistant Professor, School of Economics, University of the Philippines, Diliman, Quezon City</td>
</tr>
<tr>
<td>1985-1988</td>
<td>Assistant Professor, Department of Economics, University of the Philippines, Los Banos</td>
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EDUCATION

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<tr>
<th>Year</th>
<th>Degree</th>
<th>Institution</th>
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<tbody>
<tr>
<td>1985</td>
<td>PhD</td>
<td>Economics, University of the Philippines, Quezon City</td>
</tr>
<tr>
<td>1982</td>
<td>MA</td>
<td>Economics University of the Philippines, Quezon City</td>
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</table>

SELECTED RECENT PEER-REVIEWED PUBLICATIONS

BOOKS:

JOURNAL ARTICLES:

SIGNIFICANT GRANTS, FELLOWSHIPS, AWARDS
1983-84 Fulbright-Hays Doctoral Enrichment Fellowship, Massachusetts Institute of Technology

ROLE IN PIM PHASE 1
Leader of Gender, Agriculture, and Assets project cluster
TWYMAN, JENNIFER

SUMMARY

Social Scientist leading the Gender Team at the International Center of Tropical Agriculture (CIAT), Dr. Twyman is an applied agricultural economist with experience in intra-household and gender data collection and analysis in rural/agricultural settings including survey design, implementation, and microeconomic analysis. Jennifer’s current research focuses on gender differences in the vulnerabilities to climate change and appropriate adaptation strategies. Her previous work has focused on the intra-household distribution of assets and wealth. Other areas of expertise include environmental and natural resource management economics.

EMPLOYMENT

Social Scientist, Decision and Policy Analysis (DAPA) Area of Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia; August 2014 – present.
Research Assistant, Gender Asset Gap Project, Quito, Ecuador and Gainesville, Florida; June 2009 – July 2012.

EDUCATION

2012 PhD, Food and Resource Economics from the University of Florida, Gainesville, FL
2005 MSc, Agricultural Economics from the University of Missouri, Columbia, MO

SELECTED RECENT PEER-REVIEWED PUBLICATIONS


OTHER EVIDENCE OF DELIVERY

Collaborating with Impact Assessment team at CIAT to systematize sex-disaggregated data collection and analysis in agricultural surveys.
Led sex-disaggregated data collection and analysis in three large surveys to understand women’s roles in rice production in Peru, Bolivia, and Ecuador.
Implementing participatory research methods in Colombia, Nicaragua, Uganda, and Tanzania to support local adaptation planning with a gender focus.
Co-authored reports, policy briefs, blogs and working papers with analysis of sex-disaggregated data collection.
Supervised graduate student fieldwork projects related to gender and agriculture (students from University of Florida, University of North Carolina, and SupAgro in Montpellier, France).