



Feed the Future Innovation Lab for Food Security Policy
February 9, 2018

Annual Report:

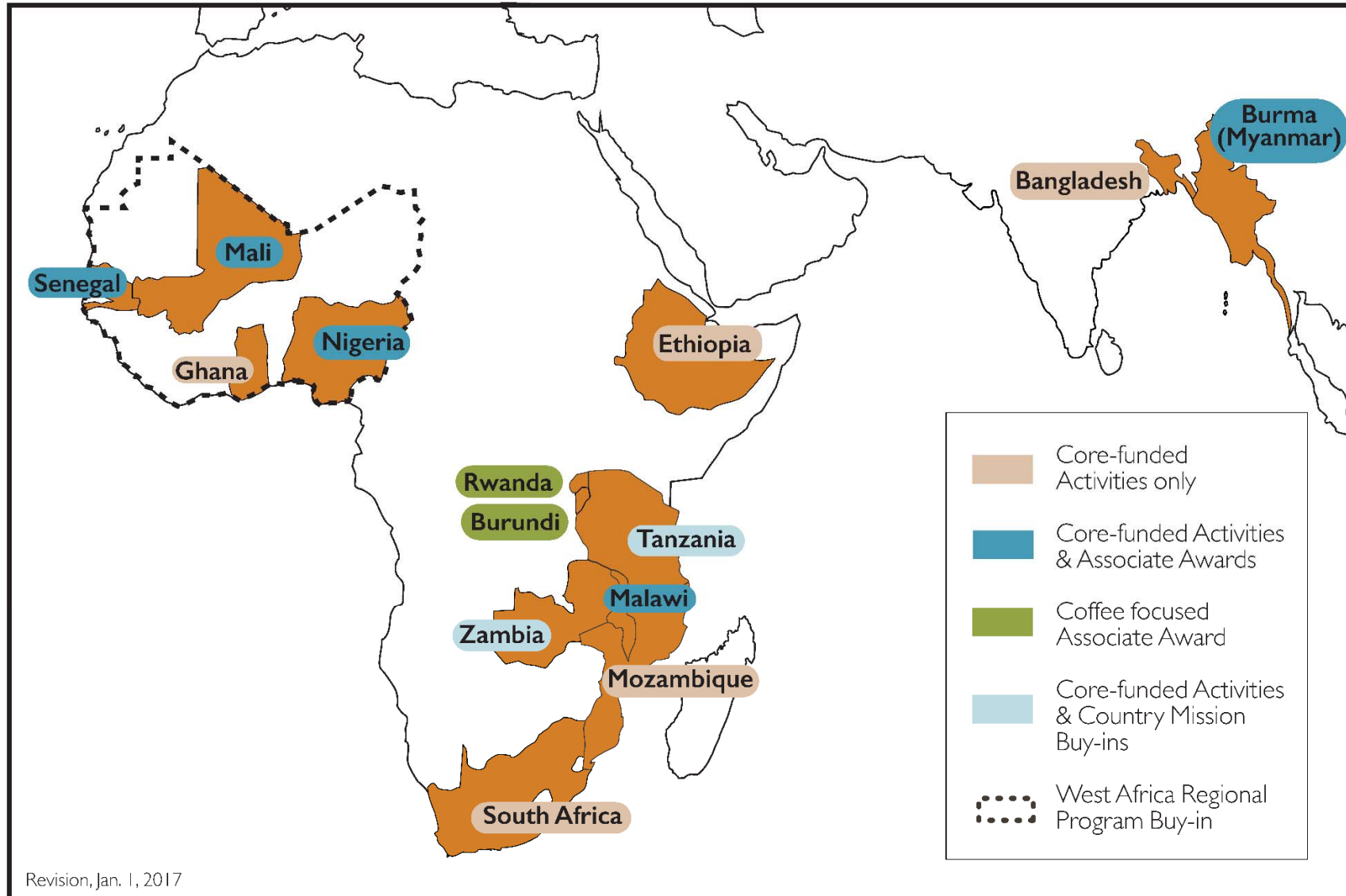
October 1, 2016 – September 30, 2017

(Award AID-OAA-L-13-00001)

Lead University: Michigan State University

Consortium Members:
International Food Policy Research Institute, University of Pretoria

WHERE THE PROJECT WORKS



PROGRAM PARTNERS

Consortium Members

- Michigan State University
- International Food Policy Research Institute
- University of Pretoria

In-Country/Regional Collaborators:

- Ethiopia
 - Ethiopian Development Research Institute (EDRI)
- Kenya
 - Kenya Land Alliance
- Malawi
 - Civil Society Agriculture Network (CISANET) – Malawi
 - Malawi’s Ministry of Agriculture, Irrigation and Water Development (MoAIWD)
 - MoAIWD Department of Agricultural Planning Services (DAPS)
- Mali
 - Institut Polytechnique Rural (Mali)
- Myanmar
 - Food Security Working Group
 - Centre for Economic and Social Development (CESD)
- Nigeria
 - University of Ibadan
- Senegal
 - Senegal’s Ministry of Agriculture, Directorate for Analysis, Forecasting and Statistics (DAPS)
 - Senegalese Institute for Agricultural Research (ISRA)
 - University Cheikh Anta Diop of Dakar.
- Senegal’s Ministry of Agriculture, Directorate for Analysis, Forecasting and Statistics (DAPS)
- Tanzania
 - Directorate of Policy & Planning – MAFC
 - Department of Agricultural Economics and Agribusiness (DAEA), Sokoine University
 - Policy Analysis Group
- Zambia
 - Zambia Land Alliance
 - IAPRI
- International
 - AFAP
 - Africa Rising
 - Bill and Melinda Gates Foundation
 - CGIAR PIM (CRP2)
 - CIMMYT
 - ECOWAS
 - Global Center for Food Systems Innovation (GCFSI)
 - IFDC
 - ICRISAT KSU Sustainable Intensification Innovation Lab
 - ReNAPRI
 - ReSAKSS-Asia

ACRONYMS

AA	Associate Award
ADD	Agricultural Development Division
AFAP	African Fertilizer and Agribusiness Partnership
AGP	Agricultural Growth Program
AMIS	Ag Market Information System
ASWAp-SP	Agriculture Sector Wide Approach Support Project
ATOR	Annual Trends and Outlook Report
AU	Africa Union
BEE	Business Enabling Environment
BFAP	Bureau for Food and Agricultural Policy
BFS	Bureau for Food Security (USAID)
BMGF	Bill and Melinda Gates Foundation
BRN	Big Results Now
C1, C2, C3, C4, C5	Components of the FSP project
CAADP	Comprehensive Africa Agriculture Development Programme
CARD	Centre for Agricultural Research and Development (CARD), Bunda College, Malawi
CEPPAG	University Eduardo Mondlane Applied Policy Network
CESD	Centre for Economic and Social Development, Burma
CFS	Committee of Food Security
CGE	C3 General Equilibrium
CILLS	Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel
CIMMYT	International Maize and Wheat Improvement Center
CISANET	Civil Society Agriculture Network
CLD	Community Land Delimitation
CPS/SDR	Statistiques du Secteur Développement
CSP	Comité Sahélien des Pesticide
DADO	District Agriculture. Development Offices
DAEA	Department of Agricultural & Agribusiness Economics
DAES	Department of Agricultural Extension Services
DAPS	Department of Agricultural Planning Services (Malawi)
DARD	ECOWAS's Directorate for Agriculture and Rural Development
DARS	Department of Agricultural Research Services
DNHA	Department of Nutrition, HIV and AIDS
DPP	Directorate of Policy & Planning
ECOAGRIS	ECOWAS agricultural information system
ECOSIM	Economic Community of West African States Simulation Model
ECOWAP	ECOWAS Investment Plan
ECOWAS	Economic Community of West African States
EDRI	Ethiopian Development Research Institute
FBOs	Farmer Based Organizations
FISP	Farm Input Subsidy Programme

FSP	Food Security Policy (Feed the Future Innovation Lab)
FSWG	Food Security Working Group
FTF	Feed the Future
FY	Fiscal Year
GCFSI	Global Center for Food Systems Innovation
GISAIA	Guiding Investments in Sustainable Agricultural Intensification in Africa
GoG	Government of Ghana
GoM	Government of Malawi
GOT	Government of Tanzania
GSSP	Ghana Strategy Support Program
GTAP	Global Trade Analysis Project
GTP	Growth and Transformation Plan
HESN	Higher Education Solutions Network
HLPE	High Level Panel of Expert
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICT	Information and Communications Technology
IER	Mali's Institut d'Economie Rurale
IFDC	International Fertilizer Development Center
IFPRI	International Food Policy Research Institute
IPR	Institut Polytechnique Rural
IRs	Intermediate Results
JSR	Joint Sector Review
KALRO	Kenya Agricultural and Livestock Research Organization
KLA	Kenya Land Alliance
LG(A)	Local Government (Authority)
LGAF	Land Governance and Assessment Framework
LIFT	Livelihoods and Food Security Trust
LPI	Land Policy Initiative
LSMS	Living Standards Measurement Study
LUANAR	Lilongwe University of Agriculture and Natural Resources
M&E	Monitoring and Evaluation
MaFAAS	Malawi Forum for Agricultural Advisory Services
MAFC	Ministry of Agriculture, Food Security and Cooperatives
MAFS	Modernizing African Food Systems
MDRI	Myanmar Development Research Institute
MIT	Ministry of Industry and Trade
MoAIWD	Ministry of Agriculture, Irrigation and Water Development
Mozefo	Mozefo - Fórum Económico e Social de Moçambique
MSU	Michigan State University
NACCF	New Alliance Country Cooperation Framework
NAIPS	National Agricultural Investment Plans
NAP	National Agricultural Policy

NAPAS	New Alliance Policy Acceleration Support
NGO	Non-Governmental Organization
NLD	National League for Democracy
PE	Partial Equilibrium
PMO-RALG	Prime Minister's Office Regional Administration and Local Government
PRePoSAM	Projet de Recherche sur les Politiques Sécurité Alimentaire
PS	Permanent Secretary
RAIP	Regional Agricultural Investment Programme
ReNAPRI	Regional Network of Agricultural Policy Research Institutes
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
RTS	Results Tracking System
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SAKSS	Strategic Analysis and Knowledge Support System
SAM	Social Accounting Matrix
SEBAP	Supporting Evidence-based Agriculture Policy
SME	Small Medium Enterprise
SUA	Sokoine University of Agriculture
TIA	Trabalho de Inquérito Agrícola (National Agricultural Survey)
TOR	Terms of Reference
UP	University of Pretoria
USAID	United States Agency for International Development
WA	West Africa

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EXECUTIVE SUMMARY

The overall goal of the FSP program is to promote inclusive agricultural productivity growth, improved nutritional outcomes, and enhanced livelihood resilience for men and women through improved policy environments. The goal is achieved by fostering credible, inclusive, transparent and sustainable policy processes at country and regional levels and filling critical policy evidence gaps. The overall implementation of activities by FSP is motivated by the Malabo Declaration goals of doubling smallholder productivity and tripling intra-African trade by 2025 as a means to accelerate poverty reduction.

In Year 4, activities in **West Africa** focused on providing empirical and institutional support for agricultural policy making in the region. Regionally, IFPRI has worked closely with Economic Community of West African States (ECOWAS) and partners to support development of next-generation National Agricultural Investment Plans (NAIPS) as well as the Regional Agricultural Investment Programme (RAIP). IFPRI support has included enhancements to the empirical data base on which regional agricultural policy and planning takes place (through ReSAKSS and e-Atlas) as well as process-oriented support for national and regional planners through a variety of handbooks, best-practice guides and national workshops. MSU has likewise worked regionally on a review of regional pesticide policies. Though some countries (mostly in the Sahel) have fully implemented regional regulations as agreed by the member states, others ECOWAS members (mostly in the coastal humid zone) have not. In November, the team will present key findings from the six national comparative case studies to regional regulators outlining key lessons for accelerating national implementation of agreed-upon regional policies.

In **Mali**, the FSP core has supported an extensive program of policy research and engagement focusing initially on priority input policies governing farmer access to improved seeds, fertilizer subsidies and herbicides. Working with national partners at Mali's *Institut d'Economie Rurale* (IER) and *Institut Polytechnique Rural* (IPR), the FSP team has produced a series empirical studies, included a dozen student theses, which feed into ongoing agricultural policy dialogues.

In **East and Southern Africa**, FSP has continued to build capacity in applying modeling for agricultural outlook purposes through members of the Regional Network of Agricultural Policy Research Institutes (ReNAPRI). The Partial Equilibrium modeling capacity building activity, led by University of Pretoria, was implemented in **Tanzania** and **Mozambique** in the past, and most recently in **Malawi** for the purposes of making agricultural projections, and identifying policy implications, using a rigorous and consistent modeling approach across the region. Additionally, in **Malawi** the FSP program has continued to provide the backstopping support to the NAPAS:Malawi project implemented under a Mission funded FSP Associate Award. The NAPAS:Malawi project also commissioned several value chain studies (at the request of the MoAIWD and the National Agricultural Investment Program development team) to inform the NAIP development team.

In **Zambia**, FSP continued to work closely with IAPRI to positively influence agricultural and natural resource management policies in Zambia. To this end, a number of empirical studies on market development, climate-smart agriculture, forest resources management and climate resilience were produced during the reporting period. FSP also continued to participate in policy dialogues in Zambia and to facilitate the participation of Zambian stakeholders in international policy dialogues. Some highlights include the completion of the FSP baseline survey on agriculture and food security policy processes in Zambia, the climate summit co-arranged with IAPRI in March, 2017 in Lusaka, and the participation of the Zambian Minister of Agriculture, Hon. Dora Siliya at the World Food Prize conference in Des Moines, Iowa, in October, 2017. MSU/FSP researchers had in-depth discussions with the Minister and her staff on major agricultural policy options for the Food Reserve Agency (FRA), the evolving nature of support to smallholder farmers beyond the Farmer Input Support Program (FISP), and options for promoting climate-smart agricultural programs. While at the conference, FSP also arranged for the Minister to be on a high-

level panel of experts from African Development Bank, AGRA, the African Capacity Building Foundation, and African research institutes to identify the main ingredients of effective collaboration and mutual capacity development between African governments, international partners and local partners.

In **Burma**, IFPRI team initiated the research activities of the “Strategic Planning for Irrigation Development in Myanmar Project (Activity 4)” during the third quarter of 2017. A series of meetings organized by MSU were carried out in Yangon and Nay Pyi Taw. Details of the research project including objectives, activities and outputs were presented to high level policymakers, other government officials, and donor agencies. Feedback were sought from these agencies regarding the potentials or national plans in expanding the irrigation subsector and related facilities to enhance the agriculture sector of the country. Preliminary discussions on the ex-ante land suitability layers and crop distribution for irrigation development in Myanmar were presented during the third quarter of 2017. Furthermore, a national-scale hydrological and crop simulation model which covers major agricultural area of Myanmar was set-up which will provide spatial temporal estimates (including under future climate) on the abundance of water resources available for irrigation development; irrigation water demand of crop plants; and attainable yields of irrigated crops. The major challenge faced by the team is the absence or inaccessibility of information on planned irrigation dams in the country. This information is important in the second step of hydrological-economic modeling analysis.

A working paper on the Strategic Planning for Irrigation Development in Myanmar is under preparation and will be submitted by end of first quarter 2018. A Multi-stakeholder workshop will be carried out as avenue to present the project results and obtain feedback from the national government, donor agencies and other stakeholders on the feasibility of the recommended actions for irrigation development in Myanmar. The workshop will be organized in collaboration with MSU and MOALI.

Under **Component 3 (C3)**, FSP conducts global collaborative research and outreach to inform best practices in policy process and capacity building. The C3 team spent the reporting year shifting its focus from the theoretical and conceptual development of the KM into practical guides, analytical frameworks, conducting analyses and sharing the findings with countries where we work, learning platforms and global audiences. The team generated two working papers (Zambia fertilizer and nutrition paper and Tanzania fertilizer), three practitioners' guides, five Policy briefs, one published journal paper and resubmitted two more. They also published one paper in the Conversation Africa and one Agrilinks Blog. Policy Brief 31, entitled “What Drives Policy Change?” summarized key lessons emerging about best practices for supporting policy reform. Based on a review of 50 policy reform episodes, this work identifies four major opportunities for stakeholders interested in supporting policy reform. These include: evidence, advocacy, financial support and institutional reform. Successful contribution to policy reform efforts requires a unique blend of opportunism, humility, preparation, focus, credibility and good timing. In picking promising arenas for engagement in policy reform, interested stakeholders need to look for settings in which these four elements converge.

As part of their outreach and policy communications effort, the **C3 team** members participated in seven learning events, reaching over 350 participants. They have also reviewed over 570 international, African, regional and national policy documents and continue migrating the library of these documents to the ReSAKSS database as a global public good for countries to use in aligning their national policy frameworks with the Malabo commitments and SDGs and for research purposes. About 12 policy engagements were held in Malawi related to the revision of the NAIP and the Agricultural Policy. This work in Malawi has influenced the Agricultural Policy and the National Nutrition Strategy.

Food systems, especially in Africa, are changing rapidly. Under its Component 4 (C4) FSP analyzes **upstream and downstream food system transformation** in a range of countries using a structural transformation lens. Employment outcomes in agriculture and the food economy as a result of food system transformation is an increasingly important dimension of food security. Research on **upstream transformation of agri-food systems (C4a)** has made major contributions to understanding of: a) the importance of inclusive agricultural

productivity growth as a foundation of a comprehensive youth employment strategy, b) how carefully designed land policies can promote synergistic development between the small-scale and medium-scale farm sectors; c) the need for input subsidy programs to feature a broader set of inputs and practices beyond inorganic fertilizers to achieve resilience and climate-smart agriculture; d) the rapid mechanization of agriculture as part of the broader economic and structural transformation and how such growth is transforming the agricultural sector, including the economies of scale and distributional effects across different types of farms; e) how to promote development of accessible finance to unlock the food system; and e) seed policy issues to ensure farmer access to good quality seeds.

C4a global research on input subsidy programs has been utilized by governments and local policy institutes in Kenya, Nigeria, Tanzania, and Ghana, and has tangibly influencing national agro-input policies in Zambia and Malawi. In 2016, the government of Malawi introduced sweeping cut-backs to its FISP program after repeated discussions with FSP/C4a, FSP/C1-C2 and NAPAS analysts. In 2017, the Zambian government rolled out its E-Voucher subsidy program nationwide after years of active support for this program by FSP and IAPRI. C4a research has also influenced the views and policy options considered by African policy makers, other African and international analysts, pan-African organizations such as the African Development Bank, African Union, AGRA, and NEPAD, as well as international development partners. The most clear example of this influence of C4a research has been the integration of C4a research on youth and agricultural transformation into the 2016 and 2017 AGRA annual reports.

Research on **downstream transformation (C4b)** has made major contributions to understanding the pace and nature of change in African diets, and how this is creating opportunities and challenges in African agrifood systems. In Tanzania, research by the C4b team has fed into the country's draft agro processing strategy, with an emphasis on the role of small and medium size enterprises (SMEs) and approaches to foster continued and increased dynamism in this sector. In Ethiopia, research results served as an important inputs into the quantitative assessments of likely trajectories of the Ethiopian economy up to 2030 (requested by the Executive Committee of the RED&FS - the coordinating body on activities related to "Rural Economic Development and Food Security", co-chaired by donors and the government). In Nigeria, research was presented to stakeholders at the state level in two study states and discussion and feedback has been used to refine the study focus and ongoing data collection efforts. More broadly, C4b research findings and presentations have begun to shape a more nuanced view of future food consumption and demand, value chain evolution, and the relative importance of food imports and local food production, processing and distribution in global and regional policy and strategy debates.

The FSP **Component 5 (C5)** program focuses on providing strategic analytical support to donor policy and strategy. In FY2017 C5 played a crucial strategic role in shaping development of the USG Global Food Security Strategy. It supported the US Government's inter-agency Global Food Security Strategy country selection team by contributing to a tool to identify--and then analysis to support the identification-- of the GFSS target countries. During this process, C5 participated in discussion to identify indicators to rank countries, developed the methodology and an Excel-based tool, and presented the results to the inter-agency team. With GFSS focus on systemic, national level food systems change, FSP-C5 has also made major contributions to conceptualization and development of new indicators to track performance and transformation of agri-food systems in GFSS and other countries, including the AgGDP+ indicator (including farm level as well as off farm components of agriculture from GDP national accounts), as well as employment in these sectors called AgEMP+. In response to USAID's request, University of Pretoria undertook a new activity of mapping policy change in food security and nutrition to feed into and provide quality control on African government National Agricultural Investment Plans.

The management team at MSU, IFPRI, and UP has continued to serve as a liaison between USAID and the FSP Consortium partners, and has played a coordination role: a) across FSP work streams, especially between the country and global components; b) with other partners where it can make a significant difference in effecting policy change or capacity building; and c) with Missions. Two internal reviews were completed, and

reports shared with USAID and the FSP team. As a follow up to one of the recommendations, an FSP team meeting was organized in Washington, D.C. in March, which was attended by all the global team members and country leads. The meeting provided an opportunity to all the FSP team members to learn about accomplishments, and ongoing and planned activities at the global and country level, and helped better coordination of the research demand and supply side within the FSP program. Under the leadership of the new FSP Communications Manager, a new FSP project website was launched in February, which serves as a repository of documents as well as a new dissemination tool. Through her efforts, FSP has compiled and published several stories on larger media outlets such as *AgriLinks* (4 articles) and *The Conversation* articles (3) to promote the successes of FSP. Year 4 saw the departure of two FSP team members -- Boubacar Diallo and Nick Sitko.

In Year 4, FSP program went through an independent mid-term performance evaluation. The management team played a coordination role in providing access to all the documents and information needed by the review team, and facilitating online surveys and in-country visits to Tanzania and Myanmar. Based on the analysis, the evaluation team determined that:

“...there is a great deal of qualitative and quantitative evidence that the FSP IL has exceeded its original intended results in terms of the two Feed the Future Sub-IRs and Sub-Sub IRs.2 Furthermore, it has worked in a larger number of countries than the initial IL was designed to intervene.”

The evaluation team identified several insights and recommendations, which provide a source of many lessons learned that will be the focus of the synthesis efforts in FY 18. Some examples of lessons learned based on these findings include:

- a) Long-term research and engagement with local partners are necessary to build a critical mass of evidence to influence policies. This pre-existing relationships and ongoing research through other programs/initiatives provided a platform for FSP to quickly build on and generate results in a shorter period of time.
- b) The power of participatory approach in influencing policies: Early evidence of policy influence indicates that the highly participatory manner in which the initial FSP IL studies were selected, designed, and conducted affected their policy influence.
- c) The importance of monitoring the impact of policy change: Policy changes can have unforeseen negative and positive impacts, and it is not sufficient to only focus on influencing policy change, but to also assess the impacts of policy change.
- d) While FSP has had significant impact strengthening the capacity of individual policy researchers and analysts, its capacity impact at institutional level hasn't been so strong. Future activities need to include more intentional capacity strengthening of local think tanks/universities.
- e) There were some lost opportunities identified due to less than full synergy/integration between policy and research work under AAs/buy-ins funded by Missions and the global activities funded by BFS. A more coherent approach to integrating scopes and synergies at country level between Mission funded buy-in/AAs and BFS funded global research is needed in the future.

INTRODUCTION

The Feed the Future Innovation Lab for Food Security Policy (FSP) was awarded to a consortium comprised of Michigan State University (MSU), the International Food Policy Research Institute (IFPRI) and the University of Pretoria on July 15, 2013.

FSP Goal and Objectives

The overall goal of the FSP program is to promote inclusive agricultural productivity growth, improved nutritional outcomes, and enhanced livelihood resilience for men and women through improved policy environments. FSP focuses on two integrated objectives:

- *Objective 1:* Address critical evidence gaps for informed policy debate and formulation at country, regional and global levels. FSP will generate, synthesize and disseminate new knowledge on targeted policy issues for which the current evidence base is insufficient or inadequately understood to permit confident formulation and implementation of effective policies at country, regional and global levels.
- *Objective 2:* Foster credible, inclusive, transparent and sustainable policy processes at country level. The FSP will strengthen the building blocks for national policy systems in their regional contexts, promote inclusion of and dialogue among all stakeholders around critical policy issues, and disseminate globally sourced examples of successful innovation and best practice in policy system capacity building.

As FSP accomplishes these two complementary objectives, improved policies will accelerate and deepen the FTF-wide intermediate results (IRs) of increased agriculture productivity, improved market access, increased public and private investment, new rural farm and non-farm employment, and improved resilience.

FSP Organization, Target Geographies and Approach

The FSP workplan is organized into five components developed by blended teams from all three consortium members:

- C1: Country-Level Collaborative Research (on Farms, Firms, and Markets) and Formulation/Analysis of Policy Options
- C2: Country-Level Capacity-Building for Policy (Data, Analysis, Advocacy, Formulation, Consultation, Coordination, and Implementation)
- C3: Global Collaborative Research on Support to the Policy Process and Policy Capacity
- C4: Engagement in Global Policy Debates on Food and Nutrition Security
- C5: Strategic Analytical Agenda and Support to Donor Policy and Strategy

Components C1 and C2 are designed jointly and grouped by region (West Africa, Eastern and Southern Africa, Asia) to capture potential geographical spillovers. They are implemented in close collaboration with global components, whose agendas directly support several strategic areas identified in the AUC draft implementation strategy to implement the Malabo Declaration¹.

¹ “Strategy and Roadmap to Achieve the 2025 Vision on CAADP: a Strategy to Achieve the 2014 Malabo Declaration on Accelerated Africa Agriculture Growth and Transformation for Shared Prosperity and Improved Livelihoods”. Draft November 3, 2014. Africa Union Commission.

DETAILED ACTIVITIES AND ACHIEVEMENTS

COMPONENT C1/C2 WEST AFRICA

This component included a series of research activities funded through a USAID/WA Buy In, which aims to provide analytical support for ECOWAS regional agricultural policy implementation. In addition, FSP has provided core funding to support the launch of a long-term program of policy research and capacity building in Mali. This core funding aims to complement and help start up activities during the first two years of a five-year associate award from USAID/Mali. The Projet de Recherche sur les Politiques Sécurité Alimentaire (PRPoSAM) includes a program of applied policy research, outreach and capacity building focusing on policy issues important to the Malian government and to USAID/Mali.

- Case studies of uneven implementation of regional input policies
- Support to national programs: Mali
- IFPRI/ReSAKSS Support to ECOWAS next generation NAIPS and RAIP

Activity #2. Case studies of uneven implementation of regional input policies

Description: Under USAID/WA funding, MSU team members (Haggblade, Diallo, Tasié and Traoré) are working with a series of local researchers to conduct case studies of uneven national implementation of regional pesticide policies in Gambia, Senegal, Ghana, Ivory Coast, Mali and Nigeria. The work involves active engagement with local policy makers and private sector stakeholders. This work will culminate in a regional policy conference. The country pesticide case studies conducted under this activity aim to offer practical insights into ways of facilitating faster and more effective country implementation of regional input policies in West Africa.

Achievements: Over the past year, FSP collaborators have completed field-work in all seven countries and have completed six country case study reports. These country reports cover recent trends in pesticide markets and regulatory structures in Côte d'Ivoire, Gambia, Ghana, Guinea, Mali, and Senegal. The one remaining country study, in Nigeria, has posed challenges given the large size of Nigeria's domestic market and the significant differences across the country's various agro-ecological zones. Unfortunately, as a result of the scale and complexity of the market, the Nigeria team has been unable to date to complete their assessment at the same level of detail and confidence as the other teams. We have, therefore, modified our initial plan. Instead of producing a full-scale country case study from the Nigeria work, we will instead consider the preliminary Nigeria team report as an unpublished rapid reconnaissance report. This will allow us to summarize findings from all seven countries in time for the FSG outreach presentation at the CSP technical meeting in November of this year.

Outputs:

- [Mali pesticide policy case study](#)
- [Gambia pesticide policy case study](#)
- [Senegal pesticide policy case study](#)
- [Guinea pesticide policy case study](#)
- [Ivory Coast pesticide policy case study](#)
- [Ghana pesticide policy case study](#)
- [Regional pesticide policy workshop](#)

Country case study reports:

- Diarra, Amadou and Diallo, Boubacar. 2017. Mise en œuvre des politiques régionales sur les pesticides en Afrique de l'Ouest: Rapport de l'étude de cas au Sénégal. Food Security Innovation Lab Research Paper 71. East Lansing: Michigan State University.

- Diarra, Amadou and Tasié, Oyinkan. 2017. National implementation of regional pesticide policies in West Africa: Ghana case study report. FSP Innovation Lab Research Paper 70. East Lansing, MI: Michigan State University.
- Diallo, Boubacar and Tasié, Oyinkan. 2017. National implementation of regional pesticide policies in West Africa: Case Study Report from the Gambia. Food Security Innovation Lab Research Paper. East Lansing: Michigan State University.
- Haggblade, S., Diallo, B., Diarra, A., Keita, N., Tasié, O. and Traoré, A. 2017. Mise en œuvre des politiques régionales sur les pesticides en Afrique de l'Ouest: Rapport de l'étude de cas au Mali. FSP Research Paper 47. East Lansing: Michigan State University.
- Traoré, A. and Haggblade, S. 2017. Mise en œuvre des politiques régionales sur les pesticides en Afrique de l'Ouest: Rapport de l'étude de cas en Côte d'Ivoire. Food Security Innovation Lab Research Paper 67. East Lansing: Michigan State University.
- Traoré, A. and Haggblade, S. 2017. Mise en œuvre des politiques régionales sur les pesticides en Afrique de l'Ouest: Rapport de l'étude de cas en Guinée. Food Security Innovation Lab Research Paper 68. East Lansing: Michigan State University.

Policy Brief:

- Haggblade, S. and Diarra, A. 2017. Trends in West African Pesticide Markets. FSP Policy Research Brief No.49.

Outcomes: The project team and local collaborators have provided empirical content for a series of ongoing policy debates on input policies, farm productivity and agribusiness investment. The team has kept key regional regulators at CILSS (CSP) and private sector leaders (Croplife) apprised of the progress of our country case studies and our two-pronged laboratory testing of registered and unregistered glyphosate samples from Mali. Both groups have expressed strong interest in the policy and market reviews as well as the quality testing of the wide array of currently marketed pesticide products. CSP has asked MSU to present key findings at their next regional CSP technical meeting in November 2017.

Activity #5. Support to national programs: Mali

Description: MSU team members (Haggblade, Thériault, Smale, Témé and Traoré) are working closely with three local institutions – the Institut d'Economie Rurale (IER), Institut Polytechnique Rural (IPR) and Cellule de Planification et de Statistiques du Secteur Développement Rural (CPS/SDR) -- on a program of collaborative research and capacity building.

Achievements: MSU and local collaborators at Mali's Institut d'Economie Rurale (IER) produced a series of empirical analyses which the team members disseminated in formal and informal policy discussions with local stakeholders in the private and public sector. The list of outputs below provides an overview of the substantive content of these policy discussions.

Outputs:

Research Papers

- The Potential Economic Impact of Guinea-Race Sorghum Hybrids in Mali: A Comparison of Research. October 2016. Alpha Kergna, Melinda Smale, Amidou Assima, Abdoulaye Diallo, Eva Weltzien, and Fred Rattunde. *FSP Innovation Lab Research Paper 23*.
- Causes et conséquences de l'utilisation accrue d'herbicides au Mali. Octobre 2016. Steven Haggblade, Melinda Smale, Alpha Kergna, Véronique Thériault et Amidou Assima. *FSP Innovation Lab Research Paper 24*.
- Farm Family Effects of Improved Sorghum Varieties in Mali: A Multivalued Treatment Approach. Octobre 2016. Melinda Smale, Amidou Assima, Alpha Kergna, Véronique Thériault, and Eva Weltzien. *FSP Innovation Lab Research Paper 25*.
- Gender, Generation and Agricultural Intensification: A Case of Two Cereals in the Sudanian

Savanna. October 2016. Melinda Smale, Alpha Kergna, Véronique Thériault, Amidou Assima, and Naman Keita. *FSP Innovation Lab Research Paper 26*.

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- Rapport technique sur l'approche méthodologique de l'enquête Projet GISAIA. Mars 2017. Amidou Assima, Naman Keita, Alpha Kergna, Melinda Smale and Steven Haggblade. *FSP Innovation Lab Research Paper 44*.
- National implementation of regional pesticide policies: Mali case study report. February 2017. Steven Haggblade, Boubacar Diallo, Amadou Diarra, Naman Keita, Oyinkan Tasie and Abdramane Traore. *FSP Innovation Lab Research Paper 47*.
- Counterfeit herbicides and farm productivity in Mali: a multivalued treatment approach. Amidou Assima, Steven Haggblade and Melinda Smale. April, 2017. *FSP Innovation Lab Research Paper No. 50*.
- Intra-household efficiency of fertilizer use on dryland cereals in Mali. By Melinda Smale, Veronique Theriault and Hamza Haider. July 2017. *Feed the Future Innovation Lab Research Paper No. 63*.
- A city retail outlet inventory of processed dairy and grain foods: evidence from Mali. By Veronique Theriault, Amidou Assima, Ryan Vroegindewey, David Tschirley and Naman Keita. July 2017. *Feed the Future Innovation Lab Research Paper No. 65*.

Policy briefs

- Le genre, la génération et l'utilisation d'engrais au Mali. novembre 2016. Véronique Thériault, Melinda Smale, Alpha Kergna, Steve Haggblade, Bino Témé et Abdramane Traoré. *FSP Innovation Lab Policy Brief 22*.
- Utilisation et adoption des semences améliorées et hybrides de sorgho au Mali : Impacts économiques. Novembre 2016. Melinda Smale, Alpha Kergna, Amidou Assima, Naman Keita, Abdramane Traoré, Steve Haggblade et Bino Teme. *FSP Innovation Lab Policy Brief 21*.
- Causes et conséquences de l'utilisation accrue d'herbicides au Mali. novembre 2016. Steven Haggblade, Melinda Smale, Alpha Kergna, Véronique Thériault et Amidou Assima. *FSP Innovation Lab Policy Brief 20*.

Peer-reviewed journal articles

- The potential economic impact of Guinea-race sorghum hybrids in Mali: a comparison of research and development paradigms. 2017. By Kergna, A., Smale, M., Assima, A., Diallo, A., Weltzien, E. and Rattunde, F. *African Journal of Agricultural and Resource Economics* 12(1):17-34.
- Causes and consequences of increasing herbicide use in Mali. By Steven Haggblade, Melinda Smale, Alpha Kergna, Veronique Theriault and Amidou Assima. *European Journal of Development Studies* 29:648-674.

Capacity building:

- Five student theses from Institut Polytechnique Rural (IPR) completed and defended November 2016

Table 1. IPR student researchers and topics in 2017

N°	Etudiant	Filière	Thème de mémoire	Encadreur
1	Anta BARRY	Ingénieur en Agronomie (IA)	Efficacité du système de distribution des engrais: cas des systèmes classiques et e-voucher	Dr Bourama KONE
2	Issa T. SIDIBE	Ingénieur en Agronomie (IA)	Analyse de l'effet de la subvention des engrais sur la production de semences de riz en zone Office du Niger	Mme Assitan TRAORE
3	Aminata SANGARA	Ingénieur en Agronomie (IA)	Impact de la subvention des engrais sur la production du riz en zone Office du Niger (ON)	Mr Alpha KERGNA
4	Antoine DOUGNON	Licence en Agriculture Durable (LAD)	Impact de la subvention des engrais sur la production du riz	Mr Bouréma ONGOIBA
5	Niamangolo TOURE	Licence en AgroBusiness (LAB)	Impact de la subvention des engrais sur la situation socioéconomique des producteurs: cas de la zone de Baguineda	Mr Balla KEITA/Diabaté

- During the month of June 2017, Malian M.Sc. student Manda Sissoko successfully defended her M.Sc. thesis completed under the supervision of MSU faculty member Veronique Theriault:
- The Effect of Farmers' Organization on Productive Efficiency: Evidence from Coarse Grain Farmers in Mali. June 2017. Manda Sissoko

Short-term training during the past year has included two training seminars (C6 and C7) focused on building up research skills of the IPR students mentored by PRePoSAM. The first of these workshops, conducted in June 2017, focused on research methods, including problem statements, sampling design, questionnaire formulation and file and protocols for conducting household survey data collection. Following this workshop, each student formulated a research plan with his or her mentors. The second short-term training workshop occurred in August 2017, after the students had completed their field research. This workshop concentrated on data management and analytical issues, included topics such as data entry, data cleaning and data analysis using Stata.

Outcomes: The project team and local collaborators have provided empirical content for a series of ongoing policy debates on input policies, farm productivity and agribusiness investment.

Activity # 6. IFPRI/ReSAKSS Support to ECOWAS next generation NAIPS and RAIP

Description: Under this activity, IFPRI and collaborators will support the design of next generation NAIPs and RAIP.

Achievements: During the reporting period, national workshops on eAtlas validation, launching, and transfer to the national Strategic Analysis and Knowledge Support Systems (SAKSS) were held in Senegal (on November 25-26) and Mali (on November 29-30). Following the production of the final Malabo indicators in December 2016 by the African Union (AU) and its technical partners, as well as technical guidelines and data collection templates, ReSAKSS, in January and February 2017, provided technical support on revising the ECOWAP technical guidelines and handbook of indicators to merge and make them consistent with the Malabo indicators. This resulted in the production of technical guidelines and country data collection templates to support the ECOWAP/CAADP/Biennial Review process. Subsequently, ReSAKSS staff formed part of a team that trained ECOWAS member states on using the ECOWAP/CAADP/Biennial Review guidelines. The training for Anglophone countries was held from February 27-March 03, 2017 in Accra and training for Francophone countries was held from 6-10, March 2017 in Abidjan. In addition, ReSAKSS organized a joint planning workshop on the ECOWAS Common Agricultural Policy (ECOWAP) M&E activities which took place in Ibadan, Nigeria from 20-21 February, 2017.

Over the last 6 months ReSAKSS and IFPRI have been supporting ECOWAS in two main areas: i) strengthening the ECOWAS M&E unit and its M&E activities, and ii) developing and operationalizing eAtlases for country SAKSS platforms in West Africa.

IFPRI and ReSAKSS participated in a planning workshop on the ECOWAP M&E activities in Ibadan, Nigeria from 20-21 February 2017. Meeting participants reviewed and validated a joint work plan for implementing ECOWAP M&E activities. Other participants at the workshop included representatives from the M&E Unit of the ECOWAS's Directorate for Agriculture and Rural Development (DARD), and the ECOWAS agricultural information system (ECOAGRIS).

A final draft of the ECOWAP M&E mechanism was produced with technical support of ReSAKSS. The draft ECOWAP M&E mechanism was endorsed by ECOWAS member states during an ECOWAS M&E workshop held in December 2016. The ECOWAS M&E mechanism describes the M&E plans for the region, including its guiding principles, the key stakeholders and their expected roles and inter-relationships, and planned M&E products. ReSAKSS also supported the ECOWAS's DARD and M&E unit with the production of an outline for the ECOWAP M&E annual report, and the production of an institutional data collection template to be used for an M&E annual report.

ReSAKSS also provided technical support to ECOWAS in developing a handbook of indicators for the ECOWAP M&E. And following the production of the final Malabo indicators in December 2016 by the African Union (AU) and its technical partners, technical guidelines and data collection templates, ReSAKSS, in January and February 2017, provided technical support on revising the ECOWAP technical guidelines and handbook of indicators to merge and make them consistent with the Malabo indicators. This resulted in the production of technical guidelines and country data collection templates to support the ECOWAP/CAADP/Biennial Review process. These guidelines and templates cover ECOWAP specific indicators as well as CAADP/Malabo Biennial Review indicators.

Subsequently, ReSAKSS staff formed part of a team that trained ECOWAS member states on using the ECOWAP/CAADP/Biennial Review guidelines and templates during two regional training workshops held in early 2017. The workshops sought to help countries prepare to produce their M&E reports under the ECOWAP M&E framework and for the first CAADP Biennial Review due in January 2018. The training for Anglophone countries was held from February 27-March 03, 2017 in Accra and training for Francophone countries was held from 6-10, March 2017 in Abidjan. Following the training sessions, ReSAKSS prepared for ECOWAS, a road map and budget for strengthening regional and national M&E systems as well as the Malabo Declaration Biennial Review reporting process.

Also during the reporting period, IFPRI conducted national workshops to launch, review, and validate eAtlases and transfer them to national teams in seven countries. The countries include: Benin (September 29-30), Burkina Faso (July 28-29), Cote d'Ivoire (August 2-3), Ghana (September 8-9), Senegal (November 25-26), Mali (November 29-30), and Togo (July 11-13). During the workshops, IFPRI trained national teams on how to access, use the eAtlas and update the underlying data. Each country eAtlas is a mapping tool to help policy makers and analysts' access and utilize disaggregated, high-quality data on agricultural, socioeconomic, and biophysical indicators. The eAtlas tool allows national teams through country SAKSS platforms to collect, analyze, store, and disseminate data broadly. It can also be used for prioritization and M&E of agricultural policies, interventions, and investment programs. IFPRI is currently developing country eAtlases for the following countries: Cape Verde, Gambia, Guinea, Guinea Bissau, Liberia, and Sierra Leone.

Outputs:

- Regional M&E training a. Anglophone country training Feb/March 2017
- Francophone country training March 2017
- e-Atlas validation and transfer to national SAKSS platforms
- revised guidelines and handbook of indicators for ECOWAP M&E indicators
- ECOWAS M&E mechanism finalized.
- Merged M&E Indicators handbook on ECOWAP and Malabo indicators finalized.
- Country eAtlases for Benin, Burkina Faso, Cote d'Ivoire, Ghana, Senegal, Mali, and Togo finalized.

- Country eAtlas training workshops in Benin, Burkina Faso, Cote d'Ivoire, Ghana, Senegal, Mali, and Togo held.

Outcomes:

- Improved capacity of national SAKSS platforms
- Improved M&E guidelines
- Validated a joint work plan for implementing ECOWAP M&E activities.
- Improved capacity to implement ECOWAP M&E system and CAADP Biennial Review

Data Management Plan

	Dataset Type	Brief description	Anticipated time frame for a scholarly output based on this dataset?	When will it be registered in DDL?
1	Farm household survey in Sudan savanna of Mali, 2014/15	Household survey featuring asset summaries and plot-level information on land allocation, cropping, input use, soil fertility and outputs	April 2016	December 2016 (submitted)
2	Inventory of processed foods, 2016	Inventory of processed dairy and cereal products produced and sold in Mali	July 2017	January 2018 (submitted)
3	M&E Policy System Baseline Indices	Baseline survey of Mali policy system and processes.	July 2017	February 2018 (to be registered)
4	Farm household survey in two agro-ecological zones, 2017/18	Household survey featuring asset summaries and plot-level information on land allocation, cropping, input use and outputs	December 2018	February 2019 (to be submitted)

COMPONENT C1/C2 ASIA

FSP core support in Asia is focused on Burma. At the beginning of April 2016 a new government took office in Burma under the leadership of Aung Sang Suu Kyi, head of the National League for Democracy (NLD). Agricultural development was a top priority in the NLD election manifesto. Now in office, the government is seeking to facilitate rapid, smallholder-led agricultural growth for inclusive rural economic growth. The challenges are formidable after more than five decades of top-down socialist management of the economy, and almost three decades of international isolation. With the new government in place USAID Burma considers that the country has now entered a “transition” phase. All remaining sanctions against Burma were lifted with effect from October 7, 2016.

Previous FSP core support to Burma focused on laying the foundation for evidence-based policy analysis through key pieces of empirical research on agricultural value chains and rural livelihoods and putting in place essential missing elements in policy architecture. Coinciding with the final two years of FSP core support, the focus will shift to working closely with Ministry of Agriculture, Livestock and Irrigation (MOALI) Department of Planning, where a new Agricultural Policy Unit (APU) is being established in response to an FSP proposal developed by IFPRI and MSU in July. The APU will be a critical entry point for introducing evidence-based policy analysis, prioritizing public investment, and support the MOALI’s functional transition to a facilitator/enabler of the private sector.

A top priority for MOALI is to develop an improved irrigation strategy. Irrigation is critical to achieving increased smallholder productivity and diversification into high value enterprises, while at the same time adapting to climate change. Historically, large investments have been made in dams but smallholder access to irrigation water, and technical support for diversification and productivity gains, remains underdeveloped. Burma has been identified as one of the most vulnerable countries in the world to climate change and hence irrigation strategy is key to improved livelihood resilience. Complementary investments are needed to enhance access to improved varieties, extension, and financial services.

Activity # 4. Research study on “Strategic Planning for Irrigation Development in Myanmar”

Description: To assess the current irrigation status and potential for development to enhance the agriculture sector of Myanmar, and to examine the effectiveness of alternative agricultural policies on water resources. This activity was led by Mark Rosegrant from IFPRI.

Achievements:

The IFPRI team traveled to Yangon and Nay Pyi Taw to present and discuss the project objectives, activities and outputs to high level policymakers, other government officials and donor agencies based on the recommendations of MSU in July 2017. Consultations and feedbacks were sought regarding the potentials or national plans of expanding irrigation and related facilities for agricultural development. Literatures and (published and unpublished) not accessible at the internet were likewise collected, including disaggregated data on agriculture production, prices of major crops, irrigation costs, etc. in CD format and published reports by the government. The data and other information collected are important in the assessment of the current irrigation status and development plans for the irrigation sector of Myanmar. Details of the information collected are presented in the bi-monthly report for June-July. The meetings were organized by Dr. Duncan Boughton of MSU. Additionally, a project factsheet was prepared by IFPRI team and distributed during these meetings. Annex 4.1 provides the list of key government staff met during this travel. Annex 4.2 presents the project factsheet distributed during the meetings.

An initial version of the ex-ante land suitability layers and crop distribution for irrigation development in Myanmar were developed and presented under Annex 4.3. This was also presented in the bi-monthly report for August-September. Furthermore, a national-scale hydrological and crop simulation model which covers major agricultural area of Myanmar was set-up and reported in the bi-monthly report for October-November.

The development of the model was based on codes of the Soil and Water Assessment Tool (SWAT) and was used to provide spatial temporal estimates (including under future climate) on the abundance of water resources available for irrigation development; irrigation water demand of crop plants; and attainable yields of irrigated crops.

Outputs:

- Working Paper on the Strategic Planning for Irrigation Development in Myanmar under preparation and will be submitted by end of first quarter 2018
- Multi-stakeholder workshop will be carried out in March 2018. This will serve as avenue to present the results of the project and seek feedback from the national government, donor agencies and other stakeholders regarding the irrigation development for the country. The workshop will be organized in collaboration with MSU and MOALI.

Outcomes s from this Activity:

- Increased effectiveness of public investment in irrigation
- Increased resilience of agricultural systems to climate change

Table 1. List of key staff met in Nay Pyi Taw and Yangon, Myanmar, July 10-14, 2017

- A. Ministry of Agriculture, Livestock and Irrigation
 1. Dr. Tin Htut, Permanent Secretary, Department of Agriculture
 2. Dr. Ye Tint Tun, Director General
 3. Daw Thu Zar Myint, Director, Rice Division, Department of Irrigation and Water Management Utilization
 4. Soe Myint Tun, Deputy Director General
 5. Ms. Khon Ra, Director, Hydrology Branch
 6. Maung Maung, Deputy Director, Hydrology Branch,
 7. Dr. Aung Than Oo, Assistant Director, Hydrology Branch, Department of Planning
 8. Kyaw Swe Lin, Deputy Director General
 9. Khin Mar Oo, Director
- B. Ministry of Commerce and Trade
 10. U Han Win Kyaw, Deputy Director, Department of Consumer Affair
- C. Ministry of Planning and Finance
 11. Mrs. Khin Swe Latt, Director, Central Statistics Organization
- D. Ministry of Transport and Communications
 12. Dr. Hrin Nei Thiam, Director General, Department of Meteorology and Hydrology
 13. Dr. Kyaw Moe Oo, Deputy Director General, Department of Meteorology and Hydrology
 14. Ms. Htay Htay Than, Director, Department of Meteorology and Hydrology
- E. Center for Economic and Social Development
 15. Dr. Zaw Oo, Chief Executive Officer
- F. International Water Management Institute
 16. Dr. Petra Schmitter, International Researcher
- G. Asian Development Bank
 17. Dr. Stefania Dina, Agriculture and Rural Development Specialist
- H. Japan International Cooperation Agency
 18. Dr. Hiromichi Kitada, Advisor for Irrigation Policy
- I. United States Agency for International Development
 19. Dr. Travis Guymon, Agriculture Development Officer
- J. World Bank
 20. Dr. Indira Ekanayake, Senior Agricultural Economist

Activity # 5. Backstopping application of kaleidoscope model.

Description:

The agricultural research and extension system in Myanmar has a key role to play in increasing the rate of growth in agricultural GDP from the current level of only 3% per annum. Each increase of 1% in the agricultural growth rate is worth over \$200 million per year to the economy. Reform of the agricultural research system is therefore one pillar of the new Agricultural Development Strategy. An initial assessment of the agricultural research system was undertaken by a Department of Agricultural Research Task Force in collaboration with the Agricultural Policy Unit continued during the period April – May 2017. Results and key recommendations were presented to MOALI leadership at the annual research and extension meetings May 12 – 14, 2017 (http://foodsecuritypolicy.msu.edu/resources/harvesting_the_future). Through collaboration with IFPRI staff David Spielman and Kristin Davis, the USAID funded Developing Local Extension Capacity project also made a presentation at the same meetings.

Key recommendations include expansion of human capacity, decentralization of the research system, adoption of a multidisciplinary approach with stronger linkages with extension, farmers and agribusiness at regional level, development of the capacity to “fast track” new technologies, and strengthened monitoring and evaluation systems. The recommendations were well received by senior management of the Department of Agricultural Research and the Department of Agriculture (which houses the Extension Division).

Achievements:

Nick Sitko made a one week orientation visit to Myanmar in November 2016 to meet with Associate Award project staff and collaborators. He worked with CESD policy coordinator Ngu Wah Win on the design of a policy system baseline assessment questionnaire.

Sitko provided Brett Ballard from the Myanmar LIFT Management Office, a multi-donor trust fund that co-funds the Associate Award, a draft of the practitioner’s guide to policy engagement for use in a LIFT policy implementing partners workshop held December 13th 2016 in Myanmar. The ultimate aim of the work shop was to generate and sound out enthusiasm for a more regular series of workshops that could help implementing partners under the LIFT program to develop sharper strategic approaches to policy work.

Sitko also provided feedback on a draft rice price policy memo for the Department of Planning of the Ministry of Agriculture, Livestock and Irrigation (MOALI). The significant fall in paddy prices at harvest time due to a combination of China border trade barriers and an extended monsoon season resulted in calls for paddy price intervention by government.

Outputs:

- Improved policy system baseline survey questionnaire.
- Paddy price policy memo.

Outcomes from this Activity:

- MOALI did not advocate for paddy price intervention as requested by certain private sector lobbies and total government outlays were limited to a minimal level.

Activity # 6. Capacity strengthening for new Agricultural Policy Unit in Ministry of Agriculture, Livestock and Irrigation (MOALI)

Description: To strengthen the institutional and human capacity of the newly formed Agricultural Policy Unit in MOALI for effective design of policies and strategies. This activity was jointly led by Suresh Babu from IFPRI and Duncan Boughton from MSU.

Achievements:

1. During the reporting period, IFPRI – MSU team undertook a set of activities to identify the policy system, institutional, and human capacity for agricultural policy analysis in Myanmar at the national level and at a state (Mandalay) level. During the first two weeks in November 2016, the needs assessment exerciser involved: 1. engagement of the state level agricultural department officials in the Mandalay state and 2. Consultations with the national level institutions on the need for policy analysis among organizations involved in the policy systems.

As part of working with the Mandalay state, IFPRI-MSU team participated in the national state level consultations held in Mandalay and presented the Kaleidoscope model, to engage the policy and program directors at the state level in the dialogue on the need for strengthening policy system. Using this information further discussions were held in Nay Pyi Taw and in Yangon with key individuals to assess the need for policy analysis capacity. Based on the consultations and discussions held a policy analysis course was designed to be offered in the next year.

A major achievement during this period was the increased commitment of the MAOLI leadership to build capacity for implementations of the new Agricultural Development Strategy (ADS) of MOALI. It calls for innovative capacity and increased attention to monitoring policy implementation and outcomes. Based on the discussions, it was agreed that capacity building for Agricultural Policy Unit staff in the Department of Planning, as well as policy focal points in other Departments of MOALI, will involve a combination of formal short course as well as in-service training. Current staff of the APU have very limited exposure to the basic economic concepts underlying policy analysis. It was therefore important to include staff from other MOALI units that do have this foundation, and especially the Department of Agricultural Economics at Yezin Agricultural University (YAU).

2. Terms of reference for staff positions in the APU were developed to complement the earlier concept note setting out the objectives and structure of the unit. Further progress was delayed due to difficulties encountered by MOALI in staffing the new policy unit.
3. Three staff seconded to the Agricultural Policy Unit (Kyaw Lwin, Assistant Director APU, Saya Ma Cho, and Aint Jue Kay Khaing) participated in an intensive two-week residential data analysis workshop in Pyin Oo Lwin, Mandalay, from July 1-15. Also participating in the workshop were 12 young researchers from the Center for Economic and Social Development, four MSU researchers and two researchers from IFPRI. The workshop was structured to ensure all participants gained applied knowledge and experience of household survey data analysis and were able to generate rapid research outputs over which they had ownership. Researchers were assigned survey modules to analyze using STATA software and provided technical support and guidance to do so. Daily presentations and feedback sessions allowed all participants to share emerging findings and learn from each other. As the week progressed, participants began to visualize their research results using graphs and tables, to select the most important results, and to write up narratives on the results and their significance. Regular short training sessions on technical aspects of STATA analysis were provided by IFPRI and MSU staff. APU staff paired with CESD researchers and worked together to draft research briefs on topics of interest to them. These included: land ownership, tenure and access; seed use in Myanmar's Dry Zone; horticultural production; and livelihood strategies of landless households.

Outputs:

1. Identification of Agricultural Policy Unit training needs and plan: We began with the capacity of the MAOLI and Yezin agricultural university for the for analysis of policy alternatives facing the food, agriculture and natural resources sectors is fundamental for evidence based policy making. Continued interactions with the leadership in MOALI and the Yezin Agricultural University indicate the need for strengthening capacity in several thematic and analytical areas which included:
 - Food security, nutrition, and poverty analysis

- Rural stakeholder engagement and participatory appraisal
- Contract farming and value chain analysis
- Markets and trade analysis
- Agriculture and the macro economy

While other topics for the training would be identified, the above thematic and analytical courses will be offered over the next two-year period to strengthen the policy analytical capacity of the APU and YAU. The key objective of these courses is to develop a policy environment in which there is a full understanding of the policy process, concepts and terminologies related to explain policy concepts, develop a common language for discussing policy, and identify policy topics for future policy training exercises.

An Agricultural Policy Course was designed to begin with and to develop training materials. The first session of the course would cover a combination of conceptual and analytical tools, and case studies of specific policies of high relevance to Myanmar. Topics to be covered are expected to include:

- Policy definitions and concepts
- Economic foundations of policy analysis
- Agricultural policy and Agricultural Development Strategy
- Policy cycle and process (kaleidoscope model)
- Policy Analysis and M&E Tools
- Introduction to agricultural policy themes and challenges

In the second session, would cover a set of Policy Case Studies covering the following policy topics will be analyzed (potential resource persons were identified as below):

- Land policy (Paul DeWit FAO, Rob Oberndorf ARD Tetrattech)
- Nutrition policy (Suresh Babu, IFPRI; Rema Balasundaram, FAO)
- Seed policy and strategy (David Spielman IFPRI)
- Input policy (Graham Hunter, IFDC)
- Irrigation Strategy and policy (Mark Rosegrant, IFPRI)
- Rice policy and strategy (Paul Dorosh, IFPRI)
- Trade and regional integration policies (Thanda Kyi, MOALI; Zaw Oo, CESD)

The second session would involve group exercises on the above case studies by joint teams each comprising one YAU faculty, one APU staff, one MOALI policy focal point, and a mentor (APU advisor or IFPRI researcher). These joint thematic teams will continue to engage in specific policy analysis to serve the policy analysis needs of the MOALI and with the broader community of practice through engagement with civil society and the private sector. Participants for the course will come from MOALI APU and focal points, YAU faculty/staff, and grad students interested in policy analysis.

2. Provision of training materials on priority topics: Pedagogical resources will include: Food policy analysis literature by IFPRI and MSU; Myanmar short term Ag policy and strategy; and Agricultural Development Strategy of Myanmar.
3. Terms of reference for APU staff positions developed
4. APU staff were able to gain a deep practical understanding of the process of data analysis needed to support evidence-based policy making, and to improve their own analytical and presentational skills.

Outcomes from this Activity:

1. MOALI capacity needs identified to evaluate alternative policies and public investments. The needs assessment activity helped the MAOLI and Yezin Agricultural University to analyses their gaps in capacity and identify the areas where policy analysis capacity could be strengthened. This helped in strategic investment of the limited resources for the capacity development activities.
2. MOALI remains committed to using the APU in support of policy reform under the new Agricultural

Policy released in January and the draft Agricultural Development Strategy undergoing regional consultations.

3. Agricultural Policy Unit staff participation in the Rural Economy and Agriculture and Dry Zone survey analysis workshop.

Key People met during Policy Analysis Capacity Needs Assessment Exercise

- Dr. Tin Htut, Permanent Secretary, Department of Agriculture, MOALI
- Mr. Kyaw Swe Lin, Deputy Director General, MOALI
- Dr. Thanda Kyi, Director, Department of Planning, MAOLI
- U san Thein Agricultural Development Strategy - consultant
- Dr. Zaw Oo, Chief Executive Officer, Center for Economic and Social Development
- Ms. Ngu Wah Win Policy Coordinator, Center for Economic & Social Development
- Dr. Theingi Myint, Head of Department of Agricultural University, Yezin Agricultural University
- Dr. Myint Thuzar, Lecturer & International Relations, Yezin Agricultural University
- Dr. Tin Tin Aye, Professor & Head of Academic Affairs and International Relationship office, Yezin Agricultural University
- Prof. Dr. Myo Kywe, Rector, Yezin Agricultural University

Data Management Plan

	Dataset Type	Brief description	Anticipated time frame for a scholarly output to be completed based on this dataset?	When will it be registered in DDL?
1	Mon State Rural Livelihoods Survey	Household Data Set	March 2017	December 2018
2	Myanmar Agri-Aquaculture Survey	Household Data Set	June 2017	September 2018
3	Rural Economy and Agriculture in the Dry Zone	Household Data Set	May 2018	June 2018
4	Dry Zone Seed System Survey	Household Data Set	February 2019	March 2019

COMPONENT C1/C2 EASTERN AND SOUTHERN AFRICA – MALAWI

During FY 2017, Flora Nankhuni, Thom Jayne and Milu Muyanga were involved in a Malawi Land Symposium (May 10, 2017) where research that is conducted under C4a was presented to inform Malawian stakeholders of the interactions between land and commercialization of agriculture. Through this research the CoP of NAPAS: Malawi also assisted the staff of Ministry of Lands to incorporate their interests in the Malawi National Agricultural Investment Plan (NAIP). The second draft of the NAIP, includes one intervention area on empowerment and tenure security whose implementation will be led by the Ministry of Lands. Other activities include:

Flora Nankhuni, Thom Jayne, Milu Muyanga and Richard Mkandawire meeting with the acting LUANAR Vice Chancellor and other LUANAR administrators to explore strengthening ties with LUANAR in joint research and policy outreach activities in Malawi. Associated with this was the following presentation at LUANAR:

- Building Bridges among African Agricultural Policy Research Institutes; Challenges and Opportunities. T. S. Jayne, Milu Muyanga and Felix Kwame Yeboah. Public Address, Center for Agriculture and Rural Development, Lilongwe University of Agriculture and Natural Resources, Bunda Campus, Malawi. July 25, 2017.
- Flora Nankhuni, Thom Jayne, Milu Muyanga and Richard Mkandawire meeting with USAID/Malawi Deputy Mission Director and other USAID staff to review C4a FSP research findings relating to Malawi, on July 24, 2017 at USAID/Malawi office.
- Flora Nankhuni, Thom Jayne, Milu Muyanga and Richard Mkandawire meeting with World Bank staff to review C4a FSP research findings and policy implications for Malawi government on July 25, 2017.
- Flora Nankhuni, Thom Jayne, Milu Muyanga and Richard Mkandawire meeting with the Principal Secretary (PS) of Ministry of Agriculture (Mrs. Erica Maganga) on July 21, 2017 to introduce the Alliance for African Partnership initiative to the PS and to gauge her interest/support in having the Ministry utilize CARD/LUANAR as a think tank.
- Flora Nankhuni, Thom Jayne, Milu Muyanga and Richard Mkandawire and several LUANAR staff meeting the Secretary to the Treasury (Mr. Ben Botolo) and staff members working in the Ministry of Finance, Economic Planning and Development Department, on a Malawi Policy Research Project on July 24, 2017 to review C4a FSP research findings and policy implications for Malawi.
- Flora Nankhuni and Milu Muyanga meeting the Principal Secretary of Lands, Housing and Urban Development on July 26, to review C4a FSP research findings and policy implications for Malawi. They also provided him with a Policy brief on the Land Symposium that took place in May 2017: http://foodsecuritypolicy.msu.edu/resources/malawis_land_laws_and_agricultural_commercialization_recommendations_from_a

Budget resources do not permit research on downstream agrifood system transformation at the present time in Malawi. We have proposed modest such research in the costed extension. To date, David Tschirley has provided general backstopping to Flora Nankhuni on policy matters in Malawi. However, through the ReNAPRI, University of Pretoria staff (Ferdinand Meyer) coordinated with NAPAS: Malawi to conduct a Partial Equilibrium Analysis Training that took place from September 25, 2017 to September 29, 2017. Flora Nankhuni made a presentation to the trainees on September 25, 2017 to explain the NAPAS: Malawi Project in Malawi in the context of the Global Food Security Policy Innovation Lab. This was intended to explain the relevance of the training to ongoing policy reforms in Malawi.

Activity 3: Capacity building in PE modeling methods

Description: In FY2017, staff from the University of Pretoria will use FSP funding to provide training in the use of partial equilibrium (PE) modeling methods for policy analyses and national and regional crop market outlook projections to researchers affiliated with the Centre for Agricultural Research and

Development (CARD). CARD is a policy research institution associated with the Lilongwe University of Agriculture & Natural Resources, Bunda, Malawi and is a member of the Regional Network of Agricultural Policy Research Institutes (ReNAPRI).

This activity will be led by Richard Kachule and Julius Mangasoni from CARD and Ferdi Meyer and Tracy Davids of UP. Mr. Kachule has received basic training in PE modeling and, using PE techniques, produced ReNAPRI's 10-year outlook for the maize sector in Malawi. The approach to PE modeling that will be employed in this training is a middle approach to doing policy analysis that is easier to understand and to use and considerably less data-intensive than computable general equilibrium (CGE) modeling approaches.

Specific activities will include:

- 1) Expand partial-equilibrium modeling capacity among CARD-affiliated researchers so that they are able to develop PE crop models for commodities beyond maize. The PE model will be expanded in 2017 to include soybeans. The expansion of the model will include a period of data collection, extensive consultation with industry experts, and observation of market features through field work. While the field work is undertaken, the first version of the soybean module will be developed. The field work, module development, and validation of the model results will be led by Richard Kachule and Julius Mangasoni, in collaboration with Ferdi Meyer and Tracy Davids from UP. Two members from UP will travel to CARD for a 2-day technical meeting to assist with the expansion of the model and the initial validation of results.
- 2) Two researchers from Malawi will attend the mid-2017 course on policy and market modeling at the Food and Agricultural Policy Research Institute at the University of Missouri.
- 3) In order to expand the number of analysts and policy-makers that have exposure to this type of PE model building and applications, a three to five day short-course will then be held at CARD with up to five researchers. By the time this short course is held, the expanded PE model with soybean will be ready for use for the training.
- 4) Validation and refinement of results from the expanded PE model will be done by presenting the modeling results to industry and government. This process will lead into the development of a 10-year outlook for the maize and soybean sectors in Malawi. Mr. Kachule will present the results of this analysis at the ReNAPRI Stakeholder Conference in Cape Town in early November 2017.

Achievements:

1. Two researchers from Malawi trained in policy and market modeling

As part of the training and capacity building, Richard Kachule and Prof Julius Mangasoni attended the summer course on policy and market modeling presented by the Food and Agricultural Policy Research Institute at the University of Missouri in the week of 10-14 July 2017. The outcome under this proposed activity is thus to expand and strengthen capacity for CARD to use Partial Equilibrium Modelling for policy analysis and market outlook projections in national and regional contexts.

2. Development of a 10-year outlook for the maize and soybean sectors in Malawi; presentation of this analysis at the ReNAPRI Stakeholder Conference in November 2017.

The first version of the soybean sector model for Malawi has already been developed and is currently under review in preparation for the ReNAPRI stakeholder meetings in Cape Town on 30th November and 1st December.

3. In-country training in Malawi

The Lilongwe University of Agriculture and Natural Resources (LUANAR) through its Centre for Agricultural Research and Development (CARD) in collaboration with FAPRI and BFAP hosted a five days training from the 25th to 29th September, 2017. The training was facilitated by experts from FAPRI and BFAP. A cross section of participants was drawn from both the public and private sector institutions, the academia and civil society. Participants from public sector institutions included those from the Ministry of Agriculture, Irrigation and Water Development; Ministry of Trade, Industry and Tourism; The Malawi Revenue Authority

and the Reserve Bank of Malawi. Private sector institutions included the Auction Holdings Commodity Exchange and the Malawi Oilseeds Sector Transformation (MOST) while lectures and postgraduate students represented the academia from LUANAR and the civil society was represented by the Civil Society Agriculture Network (CISANET).

The training comprised of both theory and practical sessions. The theory covered topics as presented in Table 1 while the practical sessions involved simulations of different policy scenarios on the Malawi maize sector using the partial equilibrium model.

Table 1: Course Content

- Getting to know each other and the training material
- Introduction to FSP, training and larger program
- Overview and aims of the training
- Overview of the simple maize model
- Practical. Using the maize model
- Introduction to the FAPRI/BFAP approach. Flow diagrams and P/Q space
- Introduction to the FAPRI/BFAP approach. Flow diagrams and P/Q space
- Focus on data
- Focus on prices. Price formation in Southern Africa
- Focus on supply. How does policy interact? Incorporating input subsidies
- Focus on demand. How to parameterize a demand system
- Focus on demand. How to parameterize a demand system
- Practical. Shocks using the simple maize model
- Visit to crushing facility
- Incorporating trade in models. How to close the system
- Incorporating trade in models. How to close the system
- Practical. Closing the maize model different ways
- Generating a baseline. Practical using the maize model
- Practical – linking the maize model to the soybean model and generating a baseline
- FAPRI and BFAP policy analysis in practice
- Role in US Farm Bill Debate
- Role in EU Decoupling Debate
- Role in SA antidumping in poultry debate
- FAPRI and BFAP policy analysis in practice
- Role in US Farm Bill Debate
- Role in EU Decoupling Debate
- Role in SA antidumping in poultry debate
- Policy in Malawi- roundtable discussion
- Scenario analysis consideration
- Practical. Running example scenarios

Before the actual training commenced, some background presentations were made by Dr. Flora Nankhuni representing the New Alliance Policy Acceleration Support Project (NAPAS) under the Ministry of Agriculture, Irrigation and Water Development. This presentation (Annex 2) focused on activities and accomplishments of NAPAS in Malawi. Following Dr. Nankhuni's presentation was a joint presentation by Ms. Elizabeth Mkandawire and Prof. Nic Olivier from the University of Pretoria.

A field trip was organized on the afternoon of the last day of the training. The group visited a soybean processing/crushing plant which produces soybean cooking oil and soybean meal/cake which is used as an ingredient in livestock feed. The purpose of the industrial tour was for the training participants to appreciate the processes that take place in processing soybean and constraints the processing plant faces in terms of supply of raw materials (soybean) and any policy issues that affect operations of the plant. It was learnt that Malawi is a net importer of cooking oil as such, all the cooking oil produced at the plant is 100% for the Malawi market. On the other hand, the soybean meal/cake is supplied to the local feed manufacturers and also exported to countries such as Zimbabwe.

Outcomes:

- Increased use of data based projections in policy decisions

Activity 4: Land policy study

Description: Year 4 activities include a new land policy study to guide public discussion on upcoming Legislation to enact and implement the new Government Land Act. The proposed land study will deepen FSP C4 contributions to the Malawi Associate Award and engage LUANAR more substantively in the Food Security Policy Innovation Lab. The objectives would be: (a) to examine the relationship between agricultural productivity and farm size in Malawi; (b) to examine the potential synergies and spillover benefits that emergent medium scale farmers might provide to proximate smallholder farms; and (c) to examine the effects of rising land pressures on agricultural factor price ratios, farmer behavior, technology adoption and management practices, and the resulting effects on land productivity and household food security.

Achievements: MSU research on land informed land and agriculture sector policies. The high demand from the first Malawi land Symposium that was held in April 2016 necessitated a second Malawi Land Symposium that will be held in May 2017, and will be co-funded by the European Delegation to Malawi.

Outcomes:

- Increased awareness and attention to research informing land policies.
- Inclusion of land-related strategies in the National Agriculture Investment Plan (The NAPAS COP helped the Ministry of Lands, Housing and Urban Development to incorporate land-related interventions that affect the agriculture sector positively, in the NAIP).
- Development of a venue where issues that intersect in the land and agriculture sectors can be debated and eventually incorporated in land and agriculture programs. That is the Malawi Land Symposium, which is turning out to be an annual event.

Activity 6: Other policy research support activities:

Description: It was envisaged that some core resources from other components (e.g., C4b and management) will also go towards development and application of strategic policy tools to guide future FSP-IL policy engagement in Malawi and involvement of consortium partners on research that informs policy work in Malawi. For example, David Tschirley and Nathalie Me-Nsope's role in value chain studies to inform the second National Agricultural Investment Plan for Malawi and to inform effective implementation of several value chain development. However, no core resources were used towards these proposed activities in Malawi in Year 4. What is described below was supported by the Malawi-NAPAS project.

Achievements:

A pigeon pea value chain study led by Nathalie Me-Nsope was completed, and presented or planned to be presented at the following three venues:

- 1) The Ministry of Agriculture Senior Management – to inform them of potential value chains to inform development of the NAIP
- 2) At a Public Private Dialogue Forum (June 21, 2017)
- 3) At an IFPRI seminar (Malawi IFPRI) on November 21, 2017 (planned)

The Malawi team is planning to give three more presentations to USAID/Malawi and the DCAFS (Donor Committee on Agriculture and Food Security) in mid-March and to the general public (June and August 2017).

Outputs:

Research Paper and Policy Brief based on this value chain study is under development.

Outcomes:

In terms of outcome, the value chain studies (pigeon pea was one of the many studied in Malawi) are already informing development of a Horticulture Policy or Strategy (the Ministry has not decided whether they will make it a policy or a strategy). The findings from these value chain studies will guide the contents of the Policy/Strategy.

Data Management Plan

The new activity on partial equilibrium modeling in FY2017, will require the compilation of historical commodity data on supply, demand, and trade in markets for maize and soybean in Malawi and result in the creation of commodity balance sheets. The balance sheets will also include five to ten year outlooks for markets in Malawi and regionally based on results obtained from running scenarios in the partial equilibrium models for the two commodities. The complete dataset from this work will be posted to the USAID Development Data Library (DDL) website in early-2018 (calendar year).

COMPONENT C1/C2 EASTERN AND SOUTHERN AFRICA – TANZANIA AND OTHER COUNTRIES

Beginning in November 2013, FSP began applied policy research and policy process engagement in Tanzania funded by FSP-core resources. This work has complemented and built upon analytical work and capacity building activities led by MSU's Dr. David Nyange, who has been embedded since August 2013 within the Department of Policy/Planning of the Ministry of Agriculture, Food Security and Cooperatives (DPP/MAFC) under the BMGF-funded GISAIA/Tanzania project. Dr. Nyange provides support to DPP/MAFC in agricultural policy analysis, capacity building, and policy coordination activities to meet MAFC-driven research and capacity building priorities.

Activity involves local faculty from Sokoine University of Agriculture (SUA) and/or analysts or staff from MAFC so that each activity serves as an opportunity for capacity building of local public sector researchers and analysts.

Activity 11: Strengthen capacity at the Research Centre for Agricultural and Food Policies and Programs (CEPPAG), Eduardo Mondlane University, Mozambique

Description: Maintenance of the maize and rice Partial Equilibrium (PE) model and support additional research to incorporate more salient market features into the PE model.

The first version of the maize and rice PE model was developed under the key milestones set for year 3 of the FSP funding. The overall objective for year 4 was to strengthen the capabilities of CEPPAG to internalize the skills that were taught in the training workshop by undertaking more practical research and analysis on the PE system.

Outputs:

In preparation for the annual ReNAPRI stakeholder meeting that was hosted by BFAP in Cape Town on 28&29 November 2017, the CEPPAG and BFAP team prepared a 10-year outlook for a range of commodity markets in Mozambique. In the second year that CEPPAG receives funding and professional support to expand the modelling capacity in PE models, the maize and rice modules in the ReNAPRI PE module were already developed and only the updates of the most recent market information was required to develop the outlook. The team also added soybeans to the list of commodities, and for the first time a soybean balance sheet and outlook was developed for Mozambique. This outlook was presented at the conference in Cape Town. More than 100 delegates from all spheres of government and industry across Africa attended the meeting. Apart from the outlook that was presented, this model was also applied in a report that was completed for the US.

Outcomes from this Activity:

Increased use of data based projections in policy

Data Management Plan

C1/C2 did not fund data collection. Its funding helped prepare for data collection, which was then funded by Tanzania mission funds. Data sets will be made available through those awards.

COMPONENT C1/C2 EASTERN AND SOUTHERN AFRICA – ZAMBIA

Resources for FSP activities in Zambia under this component come from FSP core funding and a USAID/Zambia buy-in. This funding enables continued capacity building and technical support for policy system strengthening and agricultural policy research to Zambia following the end of the third phase of the Food Security Research Project (FSRP III). FSRP III created the Zambia's first think tank dedicated to agricultural policy research and outreach, the Indaba Agricultural Policy Research Institute (IAPRI), and supported its institutional capacity development over the period 2012-2016. Year Three FSP activities in Zambia will be carried out in support of IAPRI's research, outreach and capacity building activities, and to undertake work that supports sustainable improvements in policy systems for agriculture. The four major activities to be implemented in 2016/17 are:

1. Grain, oilseed, and livestock market development for smallholders to inform policy discussions and investment prioritization;
2. Analysis of land commodification and alienation to inform dialogue on Zambia's draft Land Policy;
3. Strategies for helping Zambian farmers to utilize fertilizer more efficiently and profitably;
4. FSP baseline report in Zambia; and
5. Analytical training to IAPRI researchers on experimental economics for policy analysis

Additional policy-oriented activities have been identified and will be carried out in 2018 to inform and guide the Zambian government's efforts to promote Climate Smart Agriculture (CSA).

Please note that we modified the activity names and categories starting in FY17. The revised categories more accurately and succinctly describe our work plan activities in Zambia than what was originally submitted. The old categories are numbered incorrectly (missing categories 3, 4, and 5). The old Category 8 is most appropriately subsumed under the new Category 2. The old Category 7 is cross cutting and therefore should be subsumed under all the categories. After making these changes and renumbering the categories sequentially, the old 7 categories now become the new 5 categories. Therefore, we propose to move forward with the new 5 categories, stressing that there is no substantive change in the work plan, just a re-organization of them.

FSP continued to participate in policy dialogues in Zambia and to facilitate the participation of Zambian stakeholders in international policy dialogues. Some highlights include the completion of the FSP baseline survey on agriculture and food security policy processes in Zambia, further policy engagement regarding climate summit co-arranged with IAPRI in March, 2017 in Lusaka, and MSU's funding of the Zambian Minister of Agriculture, Hon. Dora Siliya and two Ministry associates to attend the World Food Prize conference in Des Moines, Iowa, in October, 2017. MSU/FSP researchers had in-depth discussions with the Minister and her staff on major land and agricultural policy options, the evolving nature of support to smallholder farmers beyond the Farmer Input Support Program (FISP), and options for promoting climate-smart agricultural programs. While at the conference, FSP also arranged for the Minister to be on a high-level panel of experts from African Development Bank, AGRA, the African Capacity Building Foundation, and African research institutes to identify the main ingredients of effective collaboration and mutual capacity development between African governments, international partners and local partners.

Activity #1 Oilseed and livestock market development for smallholders to inform policy and investment prioritization

Description: In Zambia, there is a great deal of policy interest in identifying effective strategies to trigger smallholder income growth through agricultural diversification and market linkages. To build the evidence base to inform debates on this, the activity examines evolving oilseed, and livestock markets in the context of dramatic changes in land access and farm size dynamics, uncertain trade policy, and growing urban demand. Research activities carried out under this activity area come from MSU and IAPRI.

Outputs:

- Impacts of Legume Technologies on Food Security: Evidence from Zambia. Christine Sauer, Nicole M. Mason, Mywish Maredia, and Rhoda Mofya-Mukuka. Research Paper No. 36. Feed the Future Innovation Lab for Food Security Policy. December 2016.

Activity # 2: Analysis of land commodification and alienation to inform Zambia's draft Land Policy:

Description: In Zambia, the land policy is under review. To support the evidence base on land policy options, this work area focuses on the relationship between changing farm size dynamics and farm productivity in an effort to inform land and farm block policies. Research in this area will be carried out by researchers from MSU, IAPRI, and University of Zambia. MSU and IFPRI are also coordinating and sharing information in IFPRI's implementation of a land policy assessment for LPI in Zambia.

Achievements:

FSP in collaboration with IAPRI and the Ministry of Agriculture piloted a full listing of all farms over 5 hectares in six districts of the country. This listing exercise was completed in June, 2017. A total of 4,116 households were listed. The intention of the listing was to compare the number of medium- and large-scale farms in these six districts with the estimates of such farms according to the Central Statistical Office's Crop Forecast Surveys to gauge the latter's ability to adequately capture the number of medium/large farms in Zambia and whether new data collection activities are necessary in Zambia to accurately provide annual national crop production estimates. A second objective of the pilot listing was to provide the sampling frame for a full survey of medium-scale farms in these six districts. The full survey covering about 1,200 households was completed in the six districts as of 31 October, 2017. Data from the survey are being cleaned in readiness for analysis in the FY2017/18.

Outputs:

1. A draft write up/initial analysis comparing the number of farms cultivating 5 – 100 ha in the CFS and was nearly complete as of 31 October, 2017.

Activity # 3. Strategies for guiding the Zambian government's efforts to promote climate-smart agriculture, resilience and sustainable agricultural intensification in support of natural resource preservation

Description: It is widely accepted that there is an urgent need to identify strategies to make agri-food systems more resilient to the effects of rapidly changing climate conditions. African farmers, consumers and agri-food systems are particularly vulnerable to climate-related shocks due to the region's reliance on rain-fed agricultural production systems, infrastructure and transport systems that often cannot efficiently handle the region's food import needs during crises, and the low incomes, assets and coping abilities of a large share of the region's population. Governments, the private sector, and development partners all have important roles to play in supporting climate adaptation and resiliency efforts in Africa. There is need to identify evidence-based strategies that can stabilize supplies, access to food, and livelihoods in the face of increasingly variable climates. It is against this background that FSP in FY17 worked with IAPRI, VUNA, and the Department of Science and Technology/National Research Foundation center of Excellence in Food Security at the University of the Western Cape to guide the Zambian government's efforts to promote CSA, resilience and sustainable agricultural intensification. Significant policy interest and donor support exists in Zambia to improve the climate resilience of the country's food and agricultural system. However, the evidence base on effective strategies remains thin. This activity therefore has been set up to provide empirical guidance on policies and investments to improve the climate resilience of Zambian agriculture.

Both MSU and IAPRI researchers are leads on outputs in this activity area.

Achievements:

- [Eastern and Southern Africa Regional Sustainability Summit, March 16–17, Lusaka, Zambia](#) Jayne and Ngoma worked with IAPRI to co-organize this symposium and introduced IAPRI to the other organizations who formally co-organized the event with IAPRI (e.g., SAAIA/University of Cape Town and VUNA). The Sustainability Summit focused on climate change adaptation and mitigation in relation to agriculture and food security. High profile personalities, policy makers and scientists from Zambia, the region, and the international community met to learn and share research findings, highlight promising response strategies, and identify unresolved issues for future research and implementation. [Summit Report](#). Thomas Jayne and Hambulo Ngoma of MSU each made presentations at this symposium based on their work in Zambia and the wider C4a research in east/southern Africa region.
- In continued efforts to inform the nexus between natural resource management and food security in the wider region, Ngoma was nominated by the Zambian government to serve as an expert on the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) (<https://www.ipbes.net/about>) and consequently attended the Third Author Meeting for the IPBES Africa region assessment which took place from 7-11 August in Addis Ababa, Ethiopia. Ngoma is co-review editor of Chapter two of the Africa Biodiversity Assessment report on nature's benefits to people, including the interrelationship between biodiversity and ecosystem functions and society, and future dynamics of ecosystems goods and services and nature's gifts to people. Similar assessments are concurrently being done for the Americas, Europe and Asia, which will feed into the global biodiversity and ecosystem assessment report. As review editor, Ngoma worked and continues to work with contributing and lead authors to ensure that all external review comments to the second order draft report are addressed.
- Ngoma also attended the first Science for Nature and People Partnership (SNAPP) expert working group meeting on agriculture, food production and forest conservation in Sub-Saharan Africa held in Oxford, 1-6 October 2017. The purpose of this work is to advise the governments of Zambia, Ethiopia, Tanzania and Ghana on how best they can reconcile food production to meet growing food demand and conserve forests to mitigate climate change. Various outputs including working papers and journal articles are envisaged from this work.

Outputs:

- [Understanding Fertilizer Effectiveness and Adoption on Maize in Zambia](#) Research Paper 30. William J. Burke, Emmanuel Frossard, Stephen Kabwe, and Thomas S. Jayne. October 2016
- [What Drives Input Subsidy Policy Reform? The Case of Zambia, 2002-2016](#). Danielle Resnick and Nicole M. Mason. Research Paper No. 28. Feed the Future Innovation Lab for Food Security Policy. October 2016.
- [The Political Economy of Fertilizer Subsidy Programs in Africa: Evidence from Zambia](#). Nicole M. Mason, Thomas S. Jayne, and Nicolas van de Walle. *American Journal of Agricultural Economics* December 2016.
- Danielle Resnick, Steven Haggblade, Suresh Babu, Sheryl L. Hendriks, David Mather. 2017. The Kaleidoscope model of policy change: applications to food security policy in Zambia. Feed the Future Innovation Lab for Food Security Policy Research Paper 40
- Hambulo Ngoma and Arid Angelsen. 2017. Can conservation agriculture save tropical forests? The case of minimum tillage in Zambia, Working Papers No. 2/2017, Norwegian University of Life Sciences, School of Economics and Business <https://www.nmbu.no/download/file/fid/25148>.
- [Do Crop Income Shocks Widen Disparities in Smallholder Agricultural Investments? Panel Survey Evidence from Zambia](#). Yoko Kusunose, Nicole M. Mason, and Solomon T. Tembo. Working Paper No. 116. Indaba Agricultural Policy Research Institute. December 2016. (A revised version of this paper has also been submitted to *Food Policy* for consideration for publication.)

- Ngoma completed revising and resubmitted two manuscripts on “*the welfare impacts of adopting minimum tillage in Zambia*” to *Food Security* and on “*the impacts of minimum tillage on cropland expansion (deforestation) in Zambia*” to *Agricultural Economics*.
- Ngoma attended and presented a paper at the 23rd Annual Conference of the European Association of Environmental and Resource Economists, in Athens Greece from 28 June to 1 July 2017. During this conference, Ngoma chaired a session on Environment and Development: Forestry, and presented a manuscript titled “*To conserve or cultivate? Smallholder farmers’ willingness to participate in REDD+ in Zambia*”. A manuscript for this paper was finalized during the reporting period and will soon be submitted for journal review.
- Ngoma initiated work on a manuscript titled “*Conservation Agriculture: Is it climate smart? Can it be?*” (With Thom Jayne and Arild Angelsen). This work was presented under a symposium Sustainable Agricultural Intensification: How to Make It Happen in Africa at the Global Food Security conference held in Cape Town in December 2017.
- IAPRI Sustainability [Summit Report](#). (Prepared with IAPRI and FSP/Zambia input).
- Submitted: Jayne, Mason, Burke, and Ariga prepared and submitted a journal manuscript to *Food Policy* on Africa’s second-generation agricultural input subsidy programs (ISPs). The manuscript reviews nearly 80 empirical studies on these ISPs, synthesizes findings on the targeting and impacts of the programs, and discusses the implications for reforms and complementary investments to improve the effectiveness of the programs, including Zambia’s Farmer Input Support Program.

Outcomes:

- Sensitization of Zambian leaders: Through various public and private policy engagement activities during the reporting period and over the past few years, we believe that both government and mainstream society has greater awareness of the range of actions needed to promote sustainable agricultural productivity and resilience in Zambia. For example, the recent Sustainability Summit was well attended by Zambian government officials, including the Minister of Agriculture, Hon. Dora Siliya, and four paramount chiefs in the country, so we would like to believe that we have been effective in sensitizing Zambian officials to strategies for promoting resilience and sustainability objectives.
- MSU/FSP staff arranged for the Minister of Agriculture, Hon. Dora Siliya, and MoA staff to participate in the World Food Prize conference in Des Moines, Iowa, October 18-20, 2017. MSU/FSP researchers had in-depth discussions with the Minister and her staff on major agricultural policy options for FRA, the evolving nature of support to smallholder farmers beyond the FISP, and options for promoting climate-smart agricultural programs. While at the conference, FSP also arranged for the Minister to be on a high-level panel of experts from African Development Bank, AGRA, the African Capacity Building Foundation, and African research institutes to identify the main ingredients of effective collaboration and mutual capacity development between African governments, international partners and local partners (see: https://www.worldfoodprize.org/index.cfm/93391/89657/changing_environment_for_effective_partnerships_between_african_and_international_organizations_in_support_of_agricultural_transformation). While in Des Moines, FSP also facilitated a meeting involving MSU, Honorable Minister, and the president of the African Development Bank, Dr. Akin Adesina. Finally, the Minister’s visit enabled MSU/FSP and the Ministry of Agriculture to identify pressing issues for MSU and IAPRI to focus on together under the Food Security Policy Innovation Lab and IAPRI.
- FSP is especially pleased that, after years of intensive dialogue between MSU, IAPRI, and the Government of Zambia, the e-Voucher input subsidy program is now being implemented throughout the country, replacing the old FISP program. The implementation of this program is a noteworthy policy success story in Zambia. MSU’s longstanding analysis in support of the e-Voucher Programme, as well as IAPRI’s more recent analysis and policy engagement has contributed importantly to this policy success story. Full story here http://foodsecuritypolicy.msu.edu/news/a_policy_reform_boosts_business_and_promotes_diversification_the_e_voucher

Activity 4: FSP baseline report in Zambia

Description: The main purpose for the baseline survey was to measure two qualitative indicators on the overall quality of policy processes and institutional architecture that are included in the FSP Performance Monitoring Plan. These indices measure the overall perceptions of stakeholder on the quality of agricultural and food security policies and the overall quality of the institutional architecture in Zambia. Similar baseline studies were undertaken in other countries.

Achievements:

- The baseline survey based on responses from 23 stakeholder was completed and the report is available here http://foodsecuritypolicy.msu.edu/resources/institutional_architecture_and_quality_of_agriculture_and_food_security_pro. The report was distributed to over 4000 stakeholders in Zambia's agricultural sector via IAPRI communications and outreach directorate. The publication of this report was timely as it coincided with Government decision to distribute input subsidies based on the electronic voucher system for the entire country. The report in particular addresses questions around the policy change in the input distribution to the electronic based platform in Zambia.

Outputs:

- Hambulo Ngoma, Nicholas J Sitko, Thomas Jayne, Antony Chapoto, and Mywish Maredia. 2017. Institutional Architecture and Quality of Agriculture and Food Security Processes in Zambia. *Feed the Future Innovation Lab for Food Security Policy Research Paper 75*. East Lansing: Michigan State University.

Outcomes:

It is envisaged that stakeholders in Zambia will gain a better understanding of the issues around the policy processes space in Zambia. In particular, stakeholder will gain a better understanding of what drives policy change? How it happens? And, what accounts for the policy reversals or failure to fully adopt agreed upon policy changes?

Activity 5. Capacity building and technical support to IAPRI

Description: This activity area responds to a request from IAPRI management to support improved technical writing skills, ability to identify priority issues/topics for maximizing IAPRI's research impact on policy processes, and more effective peer feedback within IAPRI, and institutional support of various kinds to enable IAPRI to effectively grow and carry out a wider range of activities.

Achievements:

Several capacity building activities were carried out during the period under review.

- Improving IAPRI staff's writing skills is a priority capacity building area identified by IAPRI management. To help address this need, MSU led the organization of (and funded through the Zambia FSP Buy-In) a writing workshop for IAPRI researchers, outreach staff, and interns, and select UNZA MSc students (those that received scholarships from IAPRI). The workshop was facilitated by staff from the Southern African Institute for Policy and Research, an organization with extensive experience in facilitating writing workshops for research organizations in southern Africa. The two-day workshop (March 27-28, 2017) focused on writing journal articles, as increasing outputs in peer-reviewed journals is imperative for strengthening IAPRI's bona fides within and outside of Zambia. Topics included article structure, conducting literature reviews, referencing/citations, and the peer review process. In total, 12 IAPRI staff, 3 IAPRI interns, and 3 UNZA MSc students (or 18 total people, of which 9 were women) participated in the workshop. The workshop was facilitated by four resources persons.
- During the reporting period, Mason (in collaboration with Ngoma) developed training materials on

modeling agricultural technology adoption in preparation for a technical training held from **April 25-26, 2017** at IAPRI. Co-led by Mason and Ngoma, 16 total participants were involved with the training. Of these, 8 were men and 8 were women; 10 were IAPRI researchers, 3 were IAPRI interns, and 3 were MSc students from UNZA. Understanding the drivers and constraints to the adoption of improved agricultural inputs and management practices is a core issue in agricultural development and policy analysis, and as a result of the training, the participants should be better able to draw on economic and other theory to guide their empirical analysis of technology adoption. This, in turn, should result in improved insights for policymakers.

- Mason and Ngoma led another technical training session on July 13, 2017 at IAPRI entitled “Impact Evaluation: Introduction & Methods Overview”. This session was designed as the first in a series of technical trainings on impact evaluation and sought to introduce participants to the range of rigorous quantitative methods that can be used for impact evaluation. Subsequent trainings will cover individual methods in detail, including hands-on applications in Stata or other software. 6 people participated in the workshop (4 IAPRI researchers, 1 IAPRI intern, and 1 UNZA MSc student); of these, 5 were female, and 1 was male. All materials were availed to other IAPRI researchers that were not able to attend due to being on leave or in the field. Understanding the breadth of impact evaluation methods that are available is an important skill for IAPRI researchers as they consider which method or methods best suit the research question of interest. More rigorous impact evaluation work should improve the quality of the policy guidance emerging from the research.
- To enable more IAPRI researchers to benefit from the impact evaluation training, the training was repeated on 5th September, 2017 at IAPRI and was led by Ngoma. A total of 19 participants (7 females and 12 males) attended the training. Of these there were 5 UNZA lecturers, 1 PhD and 4 MSc UNZA students and 9 IAPRI researchers. The training covered an overview of impact assessment and briefly discussed the methods as done in the earlier training in July. The session included a hands-on practical exercise on implementing the propensity score matching in Stata. There was a lot of interest on practical implementation of regression discontinuity and difference in difference, suggesting that these should be prioritized in early 2018.
- Other capacity building activities during the reporting period involved direct mentorship of IAPRI researchers.
 - In this regard, Mason worked with IAPRI researchers Auckland Kuteya, Munguzwe Hichaambwa, Henry Machina, and Chinyama Lukama to plan, design, and implement a midline survey for an impact assessment of the e-voucher Farmer Input Support Program (FISP). Included on this survey was a module to measure farmers’ agricultural sector policy preferences using a method known as best-worst scaling. Designing the module together enabled ‘learning by doing’ of the method by both Mason and IAPRI collaborators, and the best-worst scaling method is likely to be one that IAPRI uses again in future research. Data collection was completed in July and data are currently being cleaned. Data analysis will begin in late 2017.
 - Ngoma provided technical support to IAPRI’s Climate Change and Natural Resources thematic area and designed and conducted a contingent valuation study to estimate the economic value of the indirect and non-use benefits of non-timber forest products (NTFPs) in Zambia. This study was part of the priority research outputs designed to influence forest management policies in Zambia. The study involved face-face interviews with 352 households from seven rural districts of Zambia. This is joint work with Chewe Nkonde from the Department of Agricultural Economics and Extension, University of Zambia and Paul Samboko. A working paper and policy brief titled *The Value of Non-Timber Forest Products in Zambia: Indirect and non-Use Benefits* were finalised during the reporting period.
 - Ngoma provided technical support and worked with Henry Machina and Auckland Kuteya to complete a working paper titled “*Are Agricultural Subsidies Gender Sensitive? Heterogeneous Impacts of the Farmer Input Support Program in Zambia*”. The paper applies panel data methods and is available here <http://www.iapri.org.zm/images/WorkingPapers/Wp121.pdf>.

- Ngoma continued to lead on another IAPRI flagship study “*building climate resilience with irrigation development in Zambia*”. This study was designed to provide empirical evidence on the status of smallholder irrigation development in Zambia and on the impacts of climate change on water availability and how this will impact irrigation development. Significant progress was made during the reporting period, and the full report was expected to be completed the end of November, 2017.
- In addition, Mason is finalizing, in collaboration with IAPRI researcher Olipa Zulu-Mbata and an MSU graduate student a working paper and manuscript for submission to a top journal on the effects of FISP on farmers’ use of soil fertility management practices.

Outcomes:

1. Enhanced analytical, technical, and writing skills among IAPRI research staff
2. Enhanced ability to carry out regional conferences after the joint IAPRI-VUNA-DST-NRF Regional Sustainability Summit
3. Enhanced local policy analysis capacity in Zambia.

Going forward, the FSP capacity building activities will include additional technical trainings on specific impact assessment methods, continued review of IAPRI research reports and mentorship of IAPRI researchers in technical writing, on the integration of theory in empirical work, and on applying new and appropriate methods. There are also discussions to introduce a technical brown bag seminar series (possibly to include relevant departments from local Universities). It is envisaged that such an initiative will enable IAPRI researchers build confidence in making technical presentations and obtain helpful feedback.

Data Management Plan

	Dataset type	Brief description	Anticipated time frame for a scholarly output to be completed based on this dataset?	When will it be registered in DDL?	Status
1	Large-scale trader survey	Survey of large-scale traders in Zambia	Q4-2018	Q2-2018	Data cleaning under way
2	Emergent farmer survey	Survey of medium to large scale farmers in six districts of Zambia	Q4-2018	Q4-2018	Data cleaning under way

COMPONENT 3: GLOBAL COLLABORATIVE RESEARCH ON POLICY PROCESS AND CAPACITY

The C3 team spent the reporting year shifting its focus from the theoretical and conceptual development of the KM into practical guides, analytical frameworks, conducting analyses and sharing the findings with countries where we work, learning platforms and global audiences. The team generated 2 working papers (Zambia fertilizer and nutrition paper and Tanzania fertilizer), 3 practitioners' guides, 5 Policy briefs, and one published journal paper and resubmitted two more. They also published one paper in the Conversation Africa and one Agrilinks Blog. As part of their outreach and policy communications effort, the team members participated in 7 learning events, reaching over 350 participants. They also have reviewed over 570 international, African, regional and national policy documents and continue migrating the library of these documents to the ReSAKSS database as a global public good for countries to use in aligning their national policy frameworks with the Malabo commitments and SDGs and for research purposes. About 12 policy engagements have been held in Malawi related to the revision of the NAIP and the Agricultural Policy. Our work in Malawi influenced the Agricultural Policy and the National Nutrition Strategy.

The three-institution team has demonstrated creativity in advancing the theory and practice of influencing policy change. Cutting edge research has been conducted, practical tools have been developed and guidelines for policymakers, and trained civil society actors in sub-Saharan Africa and Asia have been prepared to support and influence policy change. The outcomes of this work over the past four years include a widely shared kaleidoscope model that provides an improved understanding of the factors that encourage or inhibit food security policy change, lessons learned and best practices drawn from past experience in building capacity for policy analysis and dialogue, and innovative approaches for measuring and monitoring improvements in policy analysis capacity. These outcomes are achieved through lesson-rich case studies undertaken in collaboration with local researchers and stakeholders, review of cutting-edge literature, and participant evaluations of previous policy analysis capacity-building projects. Materials supporting the achievements of this team are included in this nomination package.

The significant achievements include efforts to communicate and disseminate the Kaleidoscope model, case study results, tools, and guidance to other people and places is a perfect example of scientific excellence.

The C3 team has focused on four major activities. Activity 1, the major focus effort in years 1 and 2 of FSP, involved deriving and refining a conceptual framework (Kaleidoscope Model) to generate testable and operational hypotheses about key factors influencing policy change. Activity 2, the key focus in years 2 and 3, involved conducting 6 in-depth case studies of policy change (fertilizer policy in Ghana, Malawi and Tanzania and micro-nutrient policies Malawi, South Africa and Zambia) to test the rigor of the Kaleidoscope Model across different policy domains and disparate institutional, political, and economic settings. In the final two years of FSP, the team will devote a majority of its time to two new activities. Activity 3 focuses more broadly on efforts to reform food security policy systems by analyzing how different experiments with institutional reforms (e.g. coordinating units, service delivery units, devolution of agricultural ministries) have emerged and how reform of policy institutions has altered incentives, stakeholder motivations and policy outcomes. Activity 4 involves policy engagement applying a range of tools in a variety of settings including international policy forums, national stakeholder workshops, CAADP-Malabo Declaration follow-up processes and implementation of regional input policies in West Africa. Drawing on findings that cut across all activities, the team has developed a series of tools for policy process analysis, training and policy engagement.

The outcomes of Component 3 encompass three areas: policy influence, methodological advancements in the area of policy process analysis, and capacity building. With respect to policy influence, the Kaleidoscope Model has been used to predict the possibility for reform in key policy domains already examined in different countries by the C3 team. Such domains include input subsidies, micronutrient interventions, pesticide policies, and land governance reforms. This work identifies what typically precipitates a reform mentality by governments, when and what type of research will be most effective, and whether there are sufficient

budgetary resources and policy champions to sustain reforms. Insights from the Kaleidoscope Model have also informed ECOWAS and CILSS of the requirements for incentivizing West African governments to implement already agreed-upon regional input policies and strengthen linkages with C1/C2. Key outcomes from policy systems work under Activity 3 include enhancing the awareness of African governments about the potential of presidential delivery units and similar results-based management approaches to overseeing agricultural policy formulation and implementation.

More broadly, through the contributions of all four activities, civil society and other stakeholders will have an enhanced ability to understand how policymaking is occurring in their respective countries and communities and have accessibility to methods and frameworks that allow for identifying entry points into the policy process. Through workshops and dissemination activities with the African Union's research unit as well as with parties that have expressed an interest in applying the Kaleidoscope Model, such as AfricaLead and FAO's MAFAP, the policy lessons learned and the research methods developed under C3 will reach a broad range of influential decision makers in the area of food and nutrition security.

The KM model has been integrated into the Food Security Policy Module of the Collaborative Masters in Agricultural Economics curriculum taught at the University of Pretoria and has been included in training for support of the NAIP review and redesign through a ReSAKSS module. Capacity in the use of the tool has been developed among 39 journalists (see C1/2 for more detail on the training) from Malawi, Zambia and South Africa. The list of outputs for this activity includes a radio broadcast where one of the young journalist explains the model in her own words.

At least three PhD theses are using and applying the KM model at the University of Pretoria and two Masters at the University of the North West, South Africa.

Activity # 1. Develop conceptual framework for studying policy process and change:

The main contribution of this activity has been the creation of the Kaleidoscope Model (KM) of Food Security Policy Change. The KM was motivated by the fact that achieving sustainable impacts on food security and economic growth at scale requires the formulation of sound policies by government actors and a long-term commitment to, and capacity for, their implementation. Yet, too often, environmentally or economically unsustainable policies prevail, or well-meaning policies never translate into progress on the ground. For example, input subsidies tend to crowd out more high productivity investments in agricultural research or in agricultural extension systems and encourage a reliance on inorganic fertilizer that may be detrimental to soil structure and groundwater. The KM helps explain why these dynamics occur and how they can be addressed by adopting an inter-disciplinary perspective that builds on the C3 team's collective expertise in agricultural economics, gender, nutrition, and political science

The significance of the KM is its ability to synthesize a tremendously vast set of prior scholarly literature and practical lessons into a manageable set of 16 variables that appear to repeatedly play a critical role at different stages of the policy process. This enables researchers working on food security to better identify where and when empirical findings can have the greatest impact. The model provides a visualization of the policy process to equip researchers and empower policy makers in driving policy change¹. Furthermore, it also allows donors to better understand how development assistance should be more effectively targeted for sustainable outcomes and enables both private sector and civil society actors to identify government champions with whom to partner in advancing particular food security goals.

In terms of methodological advancements, the outcomes in this area are threefold. First, the development of a practitioner's guidebook for applying the Kaleidoscope Model allows for rigorous and replicable policy process research. Given that most policy process theoretical frameworks are not bolstered by a particular methodological approach or attention to standard operationalization of concepts, this is a significant public good outcome. Secondly, the development of a policy engagement toolkit allows for engaging with a range of stakeholders to practically consider how reforms can be pursued in areas already deemed most amenable to

change. Thirdly, through the work of Activity 4, an important outcome will be a replicable, cross-sectoral stocktaking analysis to identify trade-offs and complementarities in national and regional food security and nutrition policies. Fourthly, the gender work has provided a toolkit for analysis of gendered nutrition policies and helps advance the inclusion of men as important partners in ensuring child growth and development.

Finally, in the area of capacity building, Activity 4 in particular will result in improved capacity of African governments to adhere to their CAADP-Malabo commitments. A toolkit under finalization provides a rigorous process for assessing the alignment and linkages of (i) international, African and regional commitments and (ii) national transversal development imperatives (including, but not limited to, the country-specific constitution, vision, medium term growth and development strategy, and cross-cutting intergovernmental, financial and development legislation), (iii) the quality of the NAIPs in attaining the Malabo and SDG2 targets related to food security and nutrition and (iv) assessing the gender equality components against commitments. This work has been integrated into postgraduate curricula, ReSAKSS training materials and CAADP Learning events, reaching hundreds of CAADP country team members.

During the initial years of the FSP Innovation Lab, the C3 team developed the Kaleidoscope Model of policy change to synthesize and distill into a single framework core hypotheses about the key factors driving policy change. This work has drawn on multiple strands of academic literature in the political sciences as well as a large body of professional experience working on policy reform agendas in agricultural and food security policy. Following six field tests of the Kaleidoscope Model in Years 2 and 3, the C3 team reviewed and refined the KM model. During Year 4, the team prepared a formal journal article presentation of the final model as well as a training manual for interested practitioners. Training of various stakeholder groups continued in a variety of settings. The team has likewise summarized key findings from three of the policy case studies exploring factors driving micronutrient policy change in three African countries.

The first elaborates on four types of tools that can assist others in testing the Model in any context or policy area. These tools include policy chronologies, stakeholder inventories, policy system schematics, and circle of influence graphics. The second is a practitioner's guide, called the PMCA approach, which enables policymakers to identify *ex-ante* those policies that are more amenable to reform and should be prioritized as opposed to those that are more intractable due to political economy and associated considerations. The third provides an integrated framework for gender analysis of nutrition policy and was developed as a tool for influencing gendered policy change. One of the team members has also developed a framework that integrates the KM into the methodology for national agriculture and food security plan assessments.

The KM and its associated tools have been broadly communicated and disseminated to a vast number of audiences. Within the international development and donor community, relevant events have included a USAID Agrilinks webinar (February 2015), a seminar to the World Bank's agricultural community of practice (February 2016), a regional research findings validation workshop in Pretoria (September 2016) an IFPRI policy seminar (March 2017) with discussants from the World Bank and Cornell University, and the CAADP Learning Event in Kampala (May 2017). Regional Network of Agricultural Policy Research Institutes (RENAPRI) in Maputo, Mozambique (October 2015), at a Public-Private dialogue in Kathmandu, Nepal (January 2016), to South Africa's parliamentary Joint Portfolio Committee on Agriculture, Forestry and Fisheries; Health; Social Development and Mineral Resources (February 2016), and at a Feed the Future Nigeria Agricultural Policy seminar in Abuja (July 2016). Government policymakers, the private sector, and civil society have been exposed to the KM during the annual meetings of the

1. An IFPRI policy seminar was held on March 29, 2017 to present the Kaleidoscope Model and its applications. Discussants were invited from Cornell University and the World Bank. Links to the seminar can be found here: <http://www.ifpri.org/event/what-drives-policy-change-insights-kaleidoscope-model-food-security-po>

2. Nicholas J Sitko, Suresh Babu, and Barak Hoffman, 2017, Practitioner's Guidebook and Toolkit for Agricultural Policy Reform: The P.M.C.A. Approach to Strategic Policy Engagement. *Feed the Future Innovation Lab for Food Security Policy Research Paper 49*. East Lansing: Michigan State University
3. What drives nutrition policy reform? A comparative assessment of micronutrient policy change in Malawi, South Africa and Zambia. By Sheryl Hendriks, Suresh Babu and Steven Haggblade, submitted to *Global Food Security*, December 2017.
4. Danielle Resnick, Suresh Babu, Steven Haggblade, Sheryl Hendriks, and David Mather. 2015. Conceptualizing Drivers of Policy Change in Agriculture, Nutrition, and Food Security: The Kaleidoscope Model. *Feed the Future Innovation Lab for Food Security Policy Research Paper 2*. East Lansing: Michigan State University (FSP site: 29 views; Google scholar: 17 Citations)
5. Danielle Resnick, Suresh Babu, Steve Haggblade, Sheryl Hendriks, and David Mather. 2015. Conceptualizing Drivers of Agriculture and Nutrition Policy Change through the Kaleidoscope Model. *Feed the Future Innovation Lab for Food Security Policy Research Brief 7*. East Lansing: Michigan State University

Activity # 2. Case Studies of Policy Change

Description: This activity will focus on identifying the drivers of micro-nutrient policy, drivers of fertilizer subsidy policy and implications for policy engagement through country case studies.

The adaptability of the KM and the application of its associated tools is one of its major strengths. After deriving the KM from secondary scholarship, the KM was tested in two different policy domains across five African countries. Specifically, the team pursued in-depth interviews with multiple stakeholders with respect to micronutrient policies (vitamin A supplementation, iron supplementation, and iodine fortification) in Malawi, South Africa, and Zambia and with a focus on fertilizer and seed subsidies in Ghana, Tanzania, and Zambia. Extensions of the work have included applying the KM to understand differential pesticide regulation implementation within the Economic Community of West African States (ECOWAS), and on land reform in Nigeria. In this way, the KM has shown its versatility across a wide range of policy domains and country contexts.

Moreover, on-going applications of the Model also include an analysis of differential reform of land tenure regularization across six Nigerian states (Cross Rivers, Kaduna, Kano, Katsina, Jigawa, and Ondo) and to assessing gender in nutrition policy⁵. Collectively, therefore, the Model is adaptable to identifying food security and nutrition policy process dynamics and points of intervention not only across countries but also at the sub-national and regional levels.

Furthermore, Activity 2 work on the impacts of agricultural devolution to district governments in Ghana will not only directly inform refinements to that policy by Ghana's Ministry of Food and Agriculture (MoFA) but also offer insights to other countries that are either undergoing this devolution process (e.g. Kenya) or considering it (e.g. Malawi). The case study on South Africa was conducted in parallel with the development of the South African National Food Security and Nutrition Plan of Action (or FSNP - the equivalent of a CAADP NAIP) that the SA-based team won a competitive bid to draft. The FSNP benefitted from the KM analysis process, especially in the rigor of the background analysis that meticulously documents the influence of human and child rights and the influence of the unfolding global nutrition agenda. The documentation of the global, African and regional policy landscape forms a base of the work being carried out under activity 4 in Malawi and will extend to an analysis of the food security policy landscape in Ghana in Y4. This analysis fed into the ReSAKSS ATOR for 2015

The analysis of gender mainstreaming in nutrition policy in Malawi was workshopped as part of a review of the policies and is now an integral part to the review of the Malawi NAIP. This work provides an analytical framework for assessing gender mainstreaming in nutrition policy.

Achievements:

As a project focused on analyzing and improving the policy making processes around food security and nutrition, the C3 team's KM, research and policy tools, and associated case studies are contributing first and foremost as a global public good to researchers, donors, governments, civil society, and the private sector. More concretely, C3 team members have led approximately 13 capacity building events that exposed stakeholders to the KM and its tools. Such events have been held globally, ranging from Nepal, Myanmar, India, Malawi, and South Africa (see Annex 2 for a comprehensive list of all the events organized by this team).

The C3 team's commitment to journalist training on food security issues is particularly notable since the engagement of developing country journalists on complex issues, and their exposure to dynamics of the policy process can, in the long-term, improve the quality of knowledge and engagement that citizens can have with their government on these issues⁶. The model has been integrated into the curriculum of the Collaborative Masters in Agriculture and Applied Economics and University of Pretoria (28 students trained) and the technical support to the CAADP process (24 experts). Five students at UP are using the model for their thesis work.

The indirect impact of the applications is significantly larger, with changes influenced in the Malawi nutrition policy and strategy as a direct result of the gender analysis work, potentially reaching the next generation of children. The integration of elements and insights from the South African micronutrient policy case into the draft National Food and Nutrition Security Plan will have widespread future impact once the plan is implemented.

Three extensive country case studies on micronutrients and three on fertilizer completed. The work from the Malawi case study led to opportunities to assess the Malawi Agricultural Investment Plan (NAIP) and a number of engagements with policy makers evaluating the Nutrition Strategy and Plan, Growth and Development Strategy and the Agriculture Policy. A comparative assessment of the drivers of change in Zambia with regard to human nutrition and fertilizer policy has been completed. A comparative review of the Malawi, South Africa and Zambia nutrition cases is underway.

The three fertilizer studies reveal that major policy reforms were triggered by changing information made available through independent research, media reports, and parliamentary inquiries. For instance, in Ghana, research not only showed that the original targeted voucher scheme was administratively burdensome and not reaching predominantly smallholder farmers but also revealed that a large part of fertilizer costs was due to the high cost of transport, resulting in the switch to the waybill approach. In Zambia, the original FSP and its FISP successor were assessed by myriad organizations, researchers, and the Auditor General. Suggestions regarding how to improve FSP and how to implement the FISP e-voucher were communicated in stakeholder workshops in 2008 and 2015, respectively. A paper comparing Ghana and Zambia on subsidy policy processes is also underway.

Outputs:

1. Steven Haggblade, Suresh Babu, Sheryl Hendriks, David Mather, Danielle Resnick. 2017. What Drives Policy Change? Evidence from Six Empirical Applications of the Kaleidoscope Model. Feed the Future Innovation Lab for Food Security Policy Research Brief 31. East Lansing: Michigan State University
2. Sheryl L Hendriks, Suresh C Babu, Elizabeth Mkandawire and Flora Nankhuni. 2017. Strengthening Policy Systems: Enhancing media's capacity to report on food security and nutrition policy issues, Feed the Future Innovation Lab for Food Security Policy Research Brief 35. East Lansing: Michigan State University.
3. Sheryl L. Hendriks, Suresh C. Babu and Steven Haggblade. 2017. What Drives Nutrition Policy Reform in South Africa? Applying the Kaleidoscope Model of Food Security Policy Change, Feed the Future Innovation Lab for Food Security Policy Research Brief 30. East Lansing: Michigan State

University

4. Suresh Babu, Steven Haggblade, Elizabeth Mkandawire, Flora Nankhuni, and Sheryl L. Hendriks. 2016. Micronutrient Policy Process in Malawi. Feed the Future Innovation Lab for Food Security Policy Research Paper 38. East Lansing: Michigan State University
5. Steven Haggblade, Suresh Babu, Jody Harris, Elizabeth Mkandawire, Dorothy Nthani and Sheryl L. Hendriks. 2016. Drivers of Micronutrient Policy Change in Zambia: An Application of the Kaleidoscope Model. Feed the Future Innovation Lab for Food Security Policy Research Paper 14. East Lansing: Michigan State University
6. Sheryl L. Hendriks, Elizabeth Mkandawire, Nicolette Hall, Nic JJ Olivier, Hettie C Schönfeldt, Phillip Randall, Stephen Morgan, Nico JJ Olivier, Steven Haggblade, Suresh C Babu. 2016. Micronutrient Policy Change in South Africa: Implications for the Kaleidoscope Model for Food Security Policy Change. Feed the Future Innovation Lab for Food Security Policy Research Paper 18. East Lansing: Michigan State University
7. Hendriks, S. L., Babu, S. C and Haggblade. 2017. [Driving Change in Nutrition Policy Requires the Confluence of a Number of Key Elements](#)
8. Sheryl L. Hendriks. (2017). The Kaleidoscope Model of Food Security Reform: Understanding how policy change happens and influencing change. CAADP Learning Event, Speke report, Uganda, May 2017.
9. Sheryl L. Hendriks. (2017). Food Security and Nutrition: Component 4 of the Malabo Commitments. CAADP Learning Event, Speke report, Uganda, May 2017.
10. Integration of Kaleidoscope Model in National Agriculture and Food Security Investment Plan (NAFSIP) expert training, Dakar, Senegal, February 2017
11. Integration of Kaleidoscope Model in National Agriculture and Food Security Investment Plan (NAFSIP) expert training, Dakar, Senegal, May 2017
12. Sheryl L. Hendriks. (2017). NAIP Component 4: Food security and nutrition. Support to country learning at the NAIP Clinic, Saly, Senegal, 9 – 13 October 2017.

Outcomes:

1. Improved and widely shared understanding of policy processes and factors driving policy change
2. Increased capacity to analyze and understand policy processes
3. Substantial capacity developed to support in-country use of the tool and theory and applied to NAIP development
4. Substantive engagement in relevant, ongoing policy processes

The KM is having positive and significant downstream impacts on other initiatives that are aimed at enhancing growth and environmental sustainability. This includes analytical, technical and capacity support to the African Union Commission's 20 priority countries and Malawi in the current round of CAADP National Agricultural Investment Plans (NAIPs). Moreover, the C3 has interacted continuously with DAI's work on the Institutional Architecture Assessments (IAA) to establish how the KM can inform and refine the IAAs. Relatedly, the KM has proved useful to the Bureau of Food Security's brainstorming on an institutional architecture indicator that would inform a broader set of country graduation criteria intended for the 12 countries targeted by the forthcoming Global Food Security Strategy. Moreover, the World Bank and IFPRI staff have reportedly used the model as a base for assessing their program impacts and making funding decisions.

Activity # 3. Changes in Policy Architecture: Origins and Impact

Description: This work examines efforts to reform policy systems by analyzing how different experiments with institutional reforms have emerged and how reform of policy institutions has altered incentives, stakeholder motivations accountability mechanisms, and policy outcomes with respect to agriculture and food security.

Achievements:

1. Innovations in Policy Architecture: An Inventory of Policy System Reforms, by Steven Haggblade and Danielle Resnick
2. Devolution of Agricultural Service Delivery in Ghana, by Danielle Resnick

Outputs:

This workplan component initially planned for two in-depth case studies of presidential delivery units, with the initial case being Tanzania's Big Results Now (BRN). However, as the team was making final plans for the initial Tanzania BRN case study, we were advised that the new presidential administration in Tanzania was shutting this program down and did not want any outside scrutiny of that decision. So, at the strong insistence of David Nyange, the C3 team has stopped work on the Tanzania BRN review. This required a late change to our workplan, which includes the three outputs listed below. Of these, the team has completed numbers 1 and 3 and expects to complete output number 2 during the first quarter of 2018.

1. Innovations in Policy Architecture: An Inventory of Policy System Reforms

This paper offers a review of the range of innovations that have been used to reform policy systems, including decentralization, delivery units, and community-led development. It highlights when, where, and why each of these models became popular and helps contextualize more in-depth studies of these modalities elaborated in the two outputs listed below.

2. Delivery units as vehicles for improving policy implementation

A review paper on the use of delivery units as a modality of improving organizational incentives and agricultural service delivery was commenced, with a focus on Tanzania, South Africa, and Kenya and drawing on experiences more globally with delivery units in Asia and Latin America. The paper examines what factors have motivated policymakers in selected countries to adopt delivery units. In addition, the paper argues that while such units can help policymakers focus on deliverable outputs and ensure high level political commitment, they may supplant existing bureaucratic structures and are vulnerable to transitions in political administration. In this way, there may be a trade-off between short-term service delivery and long-term institutional sustainability. A finalized paper is expected in the second quarter of FY18.

3. Ghana devolution of agricultural service delivery

Many countries are undergoing a "devolution revolution" whereby central ministries have ceded key functions to lower-level, elected governments. Agriculture is one of the most common functions to be devolved in countries as diverse as Ghana, Kenya, Nepal, Pakistan, and Zambia. This study draws on the transition to devolution that commenced in Ghana in 2012 in order to draw larger lessons about whether devolution improves agricultural service delivery, particularly extension services, or whether it displaces agriculture in favor of other services that can be more politically rewarding (e.g. schools, health clinics, etc.) and of higher demand among local constituencies. The study draws on a survey of 80 of Ghana's 216 District Directors of Agriculture, 960 households in six regions, interviews with government officials (Ministry of Food and Agriculture, Local Government Services Secretariat, District Coordinating Directors, and the Ministry of Finance and Economic Planning), and composite budget data for all 216 districts between 2012 and 2016. The draft report is being finalized to present to the Ministry of Food and Agriculture by the end of January, 2018 and initial findings were presented to Ghanaian stakeholders in Accra in September 2017.

Outcomes:

1. Improved understanding of factors triggering change in food security policy processes and policy architecture

2. Practical lessons about how results-based management and devolution to local governments affects agricultural policy formulation and implementation

Activity #4. Policy Engagement:

Description: Using the analytical tools and research findings from Activities 1-3, the FSP team will engage in a variety of ongoing policy processes with partners at MSU, IFPRI, UP, Africa Lead and possibly others, such as the African Union and FAO's Monitoring and Analyzing Food and Agricultural Policies (MAFAP) program. These efforts will include development and application of tools for guiding policy engagement, substantive engagement in various ongoing global and national policy debates and contributions to policy processes in selected CAADP-Malabo Declaration countries. Under the West Africa Buy-In to FSP, members of the C3 team will participate in a series of case studies of national implementation of regional input policies in West Africa.

Achievements:

- Practitioner's guide for identifying priority areas for policy intervention and the constellation of stakeholder interests related to those policies
- The University of Pretoria participated in a workshop in Malawi (24-28 October 2017) on the finalization of the Malawi National Agricultural Policy (NAP). It also The University of Pretoria participated in a planning meeting (8 February 2017) for a workshop on the Malawi National Agriculture Investment Plan. The purpose of the meeting was to ensure that issues of gender and nutrition are adequately captured in the plan. The University of Pretoria team also participated in the workshop held on 14 February 2017. Meetings have been held with several Malawi government officials from:
 - Ministry of Agriculture,
 - Ministry of Irrigation and Water Development,
 - Office of the President and Cabinet,
 - Ministry of Industry and Trade, and
 - Ministry of Information.
- Arrangements were made with the senior official in the Ministry of Agriculture (responsible for the coordination of the NAIP2 drafting process) for the C3/A4 team to evaluate relevant parts of the Malawi NAIP2, and to make focused inputs (to be considered by the NAIP2 drafting team). This review was completed in September 2017 and submitted to the CAADP Team in Malawi.
- The database of international, Africa and regional and Malawi obligations and commitments and obligations is nearing completion and the report highlighting key findings and recommendations as regards the alignment and incorporation of said obligations and commitments in the 2017 Malawi NAIP2 is under development. Meetings with government officials took place in February and March 2017, where officials made specific requests of the team. These included, amongst others, writing a paragraph to include in the National Agriculture Investment Plan on the importance of establishing such a database and providing recommendations on coordination of reporting on international commitments and obligations.
- The outputs from a policy dialogue on gendering Malawi's National Nutrition Policy are being used to inform Malawi's National Nutrition Strategy.
- One recommendation from the gender policy dialogue was integrated in Malawi's forthcoming National Multisectoral Nutrition Policy
- A brief of the Integrated Framework for Gender Analysis of Nutrition Policy was published.
- A framework listing the deliverables flowing from the commitments (based on key international instruments such as the Sustainable Development Goals and key African commitments such as Agenda 2063 (read with its first 10 Year Implementation Plan (2014-2023)) and the two 2014 Malabo Declarations) made by the Malawi government was prepared.
- Two students have enrolled at the North-West University for research Masters on topics related to Activity 4.

Outputs:

1. Practitioner's guidebook and toolkit for agricultural policy reform: The PMCA approach to strategic policy engagement, by Sitko, March 2017
2. Databases created and populated with over 350 documents related to:
 - a. (A) Binding FSN-related international treaties, conventions, protocols etc. creating obligations for Malawi + (B) Non legally binding FSN-related international declarations, agreements, etc. creating commitments for Malawi
 - b. (A) Binding FSN-related African treaties, conventions, protocols etc. creating obligations for Malawi + (B) Non legally binding FSN-related African declarations, agreements, etc. creating commitments for Malawi
 - c. (A) Binding FSN-related regional (COMESA + SADC) treaties, conventions, protocols etc. creating obligations for Malawi + (B) Non legally binding FSN-related regional (COMESA + SADC) declarations, agreements, etc. creating commitments for Malawi
 - d. Malawi domestic FSN-related (A) constitutional framework; (B) transversal policy frameworks; (C) sector-specific policy frameworks; (D) transversal statutory instruments; (E) sector-specific statutory instruments; (G) sector-specific strategic plans; (H) sector-specific annual work (performance) plans; (I) sector-specific annual reports; (J) sector-specific programmes; (K) sector-specific implementation plans/frameworks/strategies; (L) transversal and sector-specific reviews and reports
3. Elizabeth Mkandawire and Sheryl Hendriks. 2017. The Integrated Framework for Gender Analysis of Nutrition Policy, Feed the Future Innovation Lab for Food Security Policy Research Brief 32. East Lansing: Michigan State University
4. Elizabeth Mkandawire and Sheryl Hendriks. 2016. Gendering Malawi's National Nutrition Policy using the integrated framework for gender analysis in nutrition policy, Feed the Future Innovation Lab for Food Security Policy Research Brief 17. East Lansing: Michigan State University.
5. Elizabeth Mkandawire and Sheryl Hendriks. 2017. The Integrated Framework for Gender Analysis of Nutrition Policy.
6. Elizabeth Mkandawire, Sheryl L. Hendriks and Lucy Mkandawire. When men tackle mother and child health: Lessons from Malawi, The Conversation. December 5, 2016

Data Management Plan

- No datasets are anticipated to be generated from the proposed activities.

COMPONENT 4a: ENGAGEMENT ON GLOBAL POLICY DEBATES ON FOOD SECURITY AND UPSTREAM AGRIFOOD SYSTEM TRANSFORMATION:

Year 4 activities under C4a continued to revolve around the five main global research themes and policy engagement activities initiated in Years 1 to 3 (fertilizer policy, sustainable agricultural intensification, land dynamics and land tenure/registration policies, mechanization, and youth engagement in agrifood systems in an era of rapid food systems transformation). However, in Year 4, the first two themes have been merged to address the role of fertilizer policy as part of broader sustainable intensification strategies. In addition, two new activities were initiated in early 2017 after the FSP partners meeting in Washington DC: the role of agricultural financial markets, led by UP; and seed systems policy, led by MSU. Therefore, C4a activities since early 2017 have featured six main activities:

- Activity #1: Toward a Holistic Sustainable Intensification Strategy that addresses fertilizer policy within a framework of sustainable agricultural intensification and resilience
- Activity #2: The Role of Land Policy in Structural Transformation
- Activity #3: Mechanization in Agricultural Transformation: South-South Learning and Knowledge Exchange
- Activity #4: Exploring the Relationships between Agricultural Transformation and Youth Employment in Africa's Economic Transformation
- Activity #5: Agricultural financial markets intermediation to unlock food system transformation
- Activity #6: Seed system policy

The topics addressed in this activity are highly inter-related. Therefore, we have sought to integrate our topics of changing farmland ownership and use structure, implications of rising land prices in many areas of Africa, shifts in technologies (e.g., mechanization), fertilizer promotion strategies and sustainable intensification issues and market responses to these changing dynamics in a more integrated and holistic way in Year 4. Discussions between IFPRI and MSU have resulted in plans to synthesize related work on land tenure/registration and changing farm size distributions in 2018. With rising interest in structural transformation topics in Africa, we believe that major policy-relevant insights may be obtained by addressing issues of land dynamics, farm technology and rural employment as part of an integrated system. We are also planning to integrate emerging work on agricultural finance with other themes of research under C4a. Plans are also in place for the new work on seed systems policies to be carried out jointly with the CGIAR Research Programs on Policies, Institutions and Markets (PIM) and the Roots, Tubers and Bananas (RTB). There is a growing global interest in addressing seed policy issues related to vegetatively propagated crops, which are under-served (and neglected) by the current seed systems and not adequately represented in policy debates around the world.

The following describes C4a activities undertaken during the October 2016 to September 2017 period. This description also highlights significant synergies between C4 and C1/C2 activities in several African countries.

Activity #1: Toward a Holistic Sustainable Intensification Strategy that addresses fertilizer policy within a framework of sustainable agricultural intensification and resilience

Description and context: Sub-Saharan Africa (SSA) has experienced impressive agricultural production growth since 2000. But growth rates have varied considerably across countries. African governments that have effectively promoted agricultural growth have enjoyed faster rates of poverty reduction, higher rates of labor productivity in the non-farm segments of the economy, and more rapid diversification of the labor force out of farming (Yeboah and Jayne, 2018). Because agriculture still provides employment for the majority of Africans and influences the pace of growth in many other sectors of the economy, agricultural growth will continue to influence the pace of economic transformation in the region.

Since the 1960s, agricultural production growth in SSA has occurred primarily through area expansion. Yield growth contributed less than 20% of SSA's total agricultural production growth between 2000 and 2008 (Fuglie and Rada, 2013). But rising population densities in many parts of Africa are making continued reliance on area expansion untenable for millions of African farmers. The land frontier has already been reached in many smallholder areas, causing farms to become subdivided, fragmented, and increasingly small. Smallholders have responded to shrinking farm sizes by more continuously cropping their fields every year, mainly to their priority staple foods. Fallows have largely disappeared in densely populated areas, and for the overall SSA region, fallowed land as a proportion of total farmland has declined steadily from 40 per cent in 1960 to 15 per cent in 2011 (Fuglie and Rada, 2013). It will be harder to sustain production growth on existing smallholder farms through area expansion, putting more pressure on African farming systems to raise yields and the value of farm output per hectare and per labor unit.

The challenge of achieving sustainable yield growth in SSA in the context of rising land scarcity is further complicated by mounting evidence of yield-depressing soil degradation arising from unsustainable intensification in SSA's densely populated areas (Montpellier Panel, 2014; Tittonell and Giller, 2013; Barbier and Hochard, 2012; Drechsel et al., 2001; Stoorvogel and Smaling, 1990). Continuous cultivation of existing plots would not pose problems for sustainable intensification if farmers were able to maintain or improve soil quality over time through sufficient use of fertilizers, soil amendment practices, and other land-augmenting investments. However, there is growing evidence of a significant relationship between population pressure, reduced fallow periods, and land degradation, pointing to an unsustainable dynamic between population, agriculture and the natural resource base (Drechsel et al., 2001; Lal, 2011). Losses of soil organic matter and acidification pose special problems, because they cannot be ameliorated by the application of conventional fertilizers and because they tend to depress the efficiency of inorganic fertilizer in contributing to crop output. Smallholder farmers are often unable to benefit from the current yield gains offered by plant genetic improvement due to their farming on depleted soils that do not respond well to fertilizer application (Tittonell and Giller, 2013). Given UN projections that rural sub-Saharan Africa will contain 52 percent more people in 2050 than it does in 2017, the challenge of helping millions of African smallholders to raise the productivity of their existing farmland in sustainable ways is an urgent priority.

Nitrogen is the main constraining nutrient for cereal crop performance across most environments, both in terms of yield level and yield stability (Vanlauwe et al. 2011). Indeed, nitrogen has been identified as one of the grand challenges of the 21st Century given its pivotal role in food production, and nowhere is this more important than in sub-Saharan Africa where a strong negative relationship has been observed between soil nitrogen balances and population density (Drechsel et al., 2001). Therefore, understanding the agronomic efficiency of nitrogen (AEN) – defined as the kilograms of additional grain harvested per kilogram of nitrogen applied to the field – becomes a critical issue that undergirds the achievement of sustainable intensification in the region (Cassman et al., 2002; Kaizzi et al., 2012).

Raising AEN can promote sustainable agricultural intensification in at least four ways. First, higher AEN contributes directly to yield growth by producing greater quantities of crop output per kg N applied. Second, raising AEN improves the profitability of fertilizer use, thereby raising farmer demand for fertilizer and contributing to greater use rates, further promoting yield growth. Third, by raising farmers' effective demand for fertilizers, higher AEN encourages greater private sector investment in input delivery systems, reducing transaction costs and market access problems faced by farmers, which further promotes its use (Ariga and Jayne, 2009). 'Last mile' transaction costs of acquiring fertilizer can be high in Africa, and so a denser spatial network of private fertilizer suppliers can appreciably reduce its cost to farmers (Minten et al., 2013). Finally, higher rates of soil N makes other complementary soil fertility management practices more attractive, which may further raise yields in a virtuous cycle (Snapp et al., 1998; 2010; Palm et al., 2001).

This C4a activity examines the role of raising the agronomic efficiency of nitrogen fertilizer use (AEN) in efforts to achieve sustainable intensification and resilience in SSA in the context of rising land scarcity. Our

particular focus is on the soil and moisture management practices affecting AEN, why many African farmers appear unable to use such practices, and how these challenges can be overcome.

Achievements:

- Wide international exposure of FSP research on input subsidy programs
- Invitation by Kenyan Ministry of Agriculture to discuss FSP research implications for their input subsidy program, October 2016.
- Multiple discussions with the Zambian Ministry of Agriculture (along with Zambian collaborators at IAPRI) finally leading to reform of Zambia's input subsidy program to a nationwide E-Voucher system in 2017/18.
- award-winning research under FSP on these issues (2017 AAEA Bruce Gardner Memorial Prize for FSP work on input subsidy programs in Africa)
- at least four presentations of this work in Africa at policy engagement fora in 2017
- Publication of FSP Research Paper 87: Can input subsidy programs contribute to climate smart agriculture? http://foodsecuritypolicy.msu.edu/uploads/resources/FSP_Research_Paper_87.pdf
- inclusion of FSP Research Paper 87 in a [2017 FAO book on Climate Smart Agriculture](#)

Outputs:

Presentations

- [Understanding Fertilizer Effectiveness and Adoption on Maize in Zambia](#). William J. Burke, Emmanuel Frossard, Stephen Kabwe, and Thomas S. Jayne. International Development Working Paper 147. October 2016.
- [Maize, fertilizer and sustainable agricultural intensification](#). Thomas Jayne. Sustainable Agricultural Intensification Workshop Hosted by Global Change and Earth Observation. Kellogg Center. Michigan State University East Lansing, Michigan. December 14-15, 2016.
- [Agricultural Input Subsidy Programs in Africa: A Review of Recent Evidence](#). T.S. Jayne and Nicole Mason. Agricultural Input Distribution and Subsidy Program Conference. Alliance for a Green Revolution in Africa. Nairobi, Kenya. 1 December 2016.
- [Eastern and Southern Africa Regional Sustainability Summit, March 16–17, Lusaka, Zambia](#) The Summit focused on climate change adaptation and mitigation in relation to agriculture and food security. High profile personalities, policy makers and scientists from Zambia, the Region, and the international community met to learn and share research findings, highlight promising response strategies, and identify unresolved issues for future research and implementation. [Summit Report](#).
- C4a contribution to [3rd Annual Agricultural Policy Conference, March 1–3, Dar es Salaam, Tanzania](#). Jayne and Muyanga presented multi-country C4a analysis on rural population growth, land degradation, and their implications for sustainable intensification and resilience strategies, with particular emphasis on findings from Tanzania and the east Africa region.
- [Raising Crop Response: Bidirectional learning to catalyze sustainable intensification at multiple scales](#). Sieg Snapp, Freddy Baijukya, Mateete Bekunda, Ken Giller, Neema Kassim, Thom Jayne, Nicky Mason, Judith Odhiambo, Jean Claude Rubyogo and Hamisi Tindwa. Presentation to USAID/Tanzania, March 2, 2017.
- [Maize, fertilizer and sustainable agricultural intensification](#). Thomas Jayne. Sustainable Agricultural Intensification Workshop Hosted by Global Change and Earth Observation. Kellogg Center. Michigan State University East Lansing, Michigan. December 14-15, 2016.

Policy briefs and research papers

- [Input Subsidy Programs and Climate Smart Agriculture: Current Realities and Future Potential](#). Jayne T.S., Sitko N.J., Mason N.M., Skole D. (2017) In: Lipper L., McCarthy N., Zilberman D., Asfaw S., Branca G. (eds) Climate Smart Agriculture. Natural Resource Management and Policy,

vol. 52. Springer, Cham.

- [Agricultural Input Subsidy Programs in Africa: An Assessment of Recent Evidence](#) Research Paper 29. Thomas S. Jayne, Nicole M. Mason, William J. Burke, and Joshua Ariga. October 2016
- [Taking Stock of Africa's Second-Generation Agricultural Input Subsidy Programs, 2000–2015](#) Policy Research Brief 34. Jayne, T. S., Mason, N. M., Burke, W., and Ariga J. April 2017.

Outcomes:

- FSP completed its major report on the impacts from the wave of “second generation” input subsidy policies in Africa, which were designed to overcome poor performance of such policies in earlier decades. Our C4a study provides the most comprehensive review of recent evidence to date regarding the performance of these second generation ISPs, synthesizing nearly 80 ISP-related studies from seven countries (Ghana, Nigeria, Kenya, Tanzania, Malawi, Zambia, and Ethiopia). We specifically evaluate ISP impacts on total fertilizer use, food production, commercial input distribution systems, food prices, wages, and poverty. We also consider measures that could enable ISPs to more cost-effectively achieve their objectives. We find that ISPs can quickly raise national food production, and that receiving subsidized inputs raises beneficiary households’ grain yields and production levels at least in the short-term. However, the overall production and welfare effects of subsidy programs tend to be smaller than expected. Two characteristics of program implementation consistently mitigate the intended effects of ISPs: (1) subsidy programs partially crowd out commercial fertilizer demand due to difficulties associated with targeting and sale of inputs by program implementers, and (2) lower than expected crop yield response to fertilizer on smallholder-managed fields. If these challenges could be addressed, ISPs could more effectively mitigate the concurrent challenges of rapidly rising demand for staple cereals and climate change in SSA. This FSP report was synthesized into Chapter 3 of the World Bank’s 2017 flagship publication, “Reaping Richer Rewards.”
- In addition, new research in 2017 examined the potential for input subsidy programs to contribute to climate-smart objectives. This work has now also received strong international recognition and outreach work on this has also been initiated during the reporting period.
- These results have been picked up by research institutes within the RENAPRI network and they are now including these findings in their own research and outreach work, particularly in Zambia, Malawi, and Kenya.

Activity #2: The Role of Land Policy in Structural Transformation

Sub-Activity 2.1: Understanding land dynamics and impacts of land policy

Description: Because of rapidly shifting farm structure in some African countries, there is an urgent need to understand the implications of these changes for rural welfare, agricultural transformation, and other important policy questions. This sub-activity is geared toward documenting these shifts in the distribution of farm sizes, considering the consequences of such shifts under status quo policies, and thinking through possible policy options for African governments.

In 2017, we are developing a plan for bringing together work under sub-activity 2.1 (led by MSU and UP) and sub-activity 2.2 (led by IFPRI). There is a rough draft paper in progress on this synthesis.

Sub-Activity 2.1 during FY2017 covers Tanzania, Kenya, Malawi, Senegal, and Zambia, and will begin to include Nigeria and Ghana in FY18. In Tanzania, a multi-disciplinary and multi-institutional team of researchers (from SUA, National Bureau of Statistics, and MSU) have been working as a coordinated team on nine studies under the theme of land issues and rural livelihoods in Tanzania. The team is led by Dr. Ntengua Mdoe, Dr. Milu Muyanga, and Dr. Titus Mwisomba. This work -- which has integrated research, policy engagement, and capacity building of all three institutions -- is mainly funded by ASPIRES but has also

received support from PIM/IFPRI. Work in Kenya, Malawi, Zambia, and Nigeria builds on prior work funded under C1/C2 activities and also benefiting from prior GISAIA/Gates Foundation funding.

Some main policy-relevant highlights on this work to date:

- The quantity of land held by parents is a significant determinant of young rural adults' decisions to stay in their rural area or migrate away
- Medium-scale farms (5-100 ha) are growing rapidly and control as much as 40% or more of total farmland among holdings 0-100 hectares in some countries.
- The concentration of farmland locally influences mean farm and non-farm per capita incomes even after controlling for other household and community characteristics, pointing to the potential importance of farmland distribution in affecting the multiplier effects from agricultural growth.
- Medium-scale farms tend to create some neighbor effects/spillover benefits for surrounding smallholders: they tend to attract input suppliers and commodity buyers to invest in their area, thereby improving market access conditions for smallholders. For example, over 20% of small-scale farms rent tractor services in five regions of Tanzania that have a high concentration of medium-scale farms.

Achievements:

- Meetings between MSU and IFPRI researchers working on Activity 2 to plan next steps in integrating work on land dynamics/changing farm size distributions and land tenure policies.
- Many policy presentations on this work in Africa and internationally.
- This work is closely coordinated with C1/C2 activities in Tanzania, Malawi, Zambia and now Nigeria.
- FSP research on land informed land and agriculture sector policies. The high demand from the first Malawi Land Symposium that was held in April 2016 set in motion stakeholder interest in a second Malawi Land Symposium that was held in May 2017, and co-funded by the European Delegation to Malawi. These FSP/NAPAS Land Symposia have increased awareness and attention to the effects of land acquisitions by investors on rural youth access to land, the potential for an emerging African enclosures process, and other dimensions that Malawian policy makers would want to consider in their deliberations on land tenure policies. The NAPAS COP helped the Ministry of Lands, Housing and Urban Development to incorporate land-related interventions that affect the agriculture sector positively, in the NAIP.

Outputs and Presentations from this Activity:

The C4a team made several policy outreach presentations in Africa and to USAID and US congressional committees during this reporting period:

- **Changing Farm Size Distribution in Tanzania: The Rise of Medium- and Largescale Farms**, Muyanga, Jayne, Wineman, Minde, Nyange. We conducted household-level interviews and collected soil samples from 1200 small-, medium-, and large- scale in 8 districts in 8 regions in rural Tanzania between October 1st and December 31, 2016. Data cleaning took place between January 1, and April 30, 2017. Data and analysis and report writing is on-going, and will include evolution of cropping patterns by medium- and large-scale farms over time, compared to the evolution of cropping patterns for Tanzania's overall farm sector. Preliminary results from this study were presented in the 2017 Annual Agricultural policy Conference held on March 1-3, 2017 in Dar es Salaam.
- Presentation of FSP C4a land work presented as the kick-off webinar for development agencies and researchers in Africa under the PIM/IFPRI webinar series, May 23, 2017: <https://pim.cgiar.org/2017/05/25/webinar-the-rise-of-medium-scale-farms-in-africa/>
- [Factor Market Activity and the Inverse Farm Size-Productivity Relationship in Tanzania](#), Ayala Wineman and Thomas S. Jayne, AAEA Annual Meeting, Chicago, Illinois, July 31, 2017.

- T.S. Jayne, with Milu Muyanga, Kwame Yeboah, Ayala Wineman, Nicholas Sitko, Lulama Traub. [Megatrends Transforming Africa's Agri-food Systems](#). USAID Bureau for Food Security Seminar, Washington, DC, 21 June, 2017
- [Rise of Medium-Scale Farms in Africa: Causes and Consequences of Changing Farm Size Distribution](#). T.S. Jayne, Milu Muyanga, Kwame Yeboah, Jordan Chamberlin, Ayala Wineman, Ward Anseeuw, Antony Chapoto, and Nicholas Sitko. Keynote Address: Conference on "Rural Transformation and Urbanization" Agri4D, Uppsala, Sweden. 20-21 September 2017.
- Egerton University, Michigan University sign MoU to tackle policy issues in agriculture. [Interview video](#). September 13, 2017.
- [The Future of Work in African Agriculture: Trends and Drivers of Change](#). Thomas Jayne and F. Kwame Yeboah. International Labour Organization. Geneva, Switzerland. 15 September, 2017.
- [Megatrends Driving Agricultural Transformation in Africa: Challenges and Opportunities](#). T. S. Jayne, Milu Muyanga, Felix Kwame Yeboah, Ayala Wineman, Lulama Traub. USAID/Kenya Nairobi, Kenya. September, 12, 2017.
- [Farmland Concentration and Rural Labor Productivity: Evidence from Tanzania](#). Jordan Chamberlin and T.S. Jayne. PEGNet Conference Zurich, Switzerland. September 11–12, 2017.
- [Enhancing United States Efforts to Develop Sustainable Agri-Food Systems in Africa](#). T.S. Jayne. Discussion with Michigan congressional staff delegation, University Research Corridor Research Tour, Kellogg Center. August 15, 2017.
- [Mega-trends and the Future of African Economies](#). T.S. Jayne, Lulama Traub, Felix Yeboah, Milu Muyanga, Jordan Chamberlin. MSU Foundation Board of Directors, Michigan State University. August 15, 2017.
- [Agricultural & Applied Economics Association Annual Meeting, Chicago, Illinois. July 30–August 1, 2017](#).
 - [Is Small Still Beautiful? The Farm Size-Productivity Relationship Revisited](#). Milu Muyanga & T.S. Jayne.
 - [Does the Inverse Farm Size and Productivity Relationship Hold Among Larger Farms?](#) Godwin Debrah and Thomas Jayne.
 - [Factor Market Activity and the Inverse Farm Size-Productivity Relationship in Tanzania](#). Ayala Wineman and Thomas S. Jayne.
- [Building Bridges among African Agricultural Policy Research Institutes: Challenges and Opportunities](#). T. S. Jayne, Milu Muyanga and Felix Kwame Yeboah. Public Address, Center for Agriculture and Rural Development, Lilongwe University of Agriculture and Natural Resources, Bunda Campus, Malawi. July 25, 2017.
- [Megatrends Driving Agricultural Transformation in Africa: Focus on Malawi](#). T. S. Jayne, Kwame Yeboah, and Milu Muyanga. USAID/Malawi Lilongwe, Malawi. July 24, 2017.
- T.S. Jayne, Jordan Chamberlin, Lulama Traub, Nicholas Sitko, Milu Muyanga, Felix K. Yeboah, Ward Anseeuw, Antony Chapoto, Ayala Wineman, Chewe Nkonde and Richard Kachule. [Africa's changing farm size distribution patterns: the rise of medium-scale farms](#). Agricultural Economics Volume 47, Issue S1, pages 197–214, November 2016.
- [Rise of Medium-Scale Farms in Africa](#). T.S. Jayne, Jordan Chamberlin, Milu Muyanga, Nicholas Sitko, Felix K. Yeboah, Lulama Traub, Chewe Nkonde, Ward Anseeuw, Ayala Wineman. 3rd Annual Stakeholders Conference, ReNAPRI, Nairobi, Kenya, 10 November 2016.
- [Rise of Medium-Scale Farms in Africa](#). T.S. Jayne, Jordan Chamberlin, Milu Muyanga, Nicholas Sitko, Felix K. Yeboah, Lulama Traub, Chewe Nkonde, Ward Anseeuw, Ayala Wineman. Seminar at Dept. Agricultural Economics, University of Nairobi, 7 November 2016.
- [Agri-Food Systems and Youth Livelihoods in Sub-Saharan Africa](#). Thom Jayne, John Holtzman, F. Kwame Yeboah, Jock Anderson and James Oehmke. Seminar at USAID/BFS. Washington, DC. November 3, 2016.
- [Africa's evolving employment structure: Trends and drivers of change](#). F. Kwame Yeboah and

Thomas S. Jayne. Eye on Africa Seminar Series, African Studies Center, MSU. East Lansing, MI. October 20, 2016.

- [Africa's Evolving Employment Structure](#). F. Kwame Yeboah and T.S. Jayne. International Development Working Paper 148. October 2016.
- MSU researcher Thomas Jayne cited in New York Times article, [Disappearance of Fertile Land Fuels Looming Crisis' in Africa](#), by Jeffrey Gettleman, page 1, Sunday July 30, 2017 print edition.
- [New Opportunities & New Challenges for African Farmers In A Fast Changing Market](#). WFO E-Magazine, F@RMLETTER. Thomas S. Jayne and William J. Burke. June 2017.
- Articles regarding testimony to the House Ag Committee, Thomas Jayne, June 2017:
 - [MSU professor Thomas Jayne testifies on The Next Farm Bill](#). MSU, College of Agriculture & Natural Resources, News. June 16, 2017.
 - [AGree Transforming Food & Ag Policy](#). June 7, 2017.

Outcomes:

- Slow percolation of these research findings into African development organizations' thinking about the agricultural transformation strategies. For example, some signs are apparent that AGRA's activities are increasingly aware of increasing land scarcity, rising land prices, and difficulties that youth face in accessing land.
- Some indications that the Government of Tanzania is asking questions about the role of medium-scale farms and what crops they are growing and selling. FSP has produced a draft paper in response to these requests that will be finalized in late February 2018. Initial results to be presented at the 4th Annual Agricultural Policy Conference in mid-February 2018.

Sub-Activity 2.2: Drivers and Consequences of Land Tenure Insecurity: Implications for Land Policies

Description: Support the AU-LPI in Monitoring and Tracking Progress in Implementation of the AU Declaration on Land Issues and Challenges. This sub-activity has been co-funded by the CGIAR PIM and is expected to provide insights to governments and development partners in better understanding of the drivers and consequences of land tenure (in) insecurity in the African context focusing on case studies from selected African countries with peculiar socio-economic and land tenure settings – namely, Nigeria, Mozambique, Ethiopia and Ghana.

Achievements:

- Participate in a workshop on Securing Community Land Rights with attendance of Land commissioners from 17 African countries – workshop organized by African Union – Land Policy Initiative (LPI) and Rights and Resources – RRI, July 19, 2017, Accra, Ghana
- Organize (present at) an Africa-wide Inception workshop to launch the LPI-IFPRI joint pilot project “Monitoring and Evaluation of Land governance in Africa – MELA”, July 20, 2017, Accra, Ghana.
- Participate at a validation workshop of the Study report on “Curricula Needs Assessment and Mapping of land training Institutions in Africa” July 26-28, 2017, Addis Ababa, Ethiopia
- Participate (present at) a national inception workshop to launch a project on “Monitoring and Evaluation of Land Governance in Africa – MELA” in Madagascar, September 1, 2017, Antananarivo, Madagascar
- Organized (Presented at) joint LPI-IFPRI Project planning workshop on the methodology and framework of the “pilot study to track the implementation of the AU-declaration on land issues and Challenges in Africa”, March 1-2, 2017, Addis Ababa, Ethiopia.
- Organized/Presented at a multi-stakeholder Consultative workshop on the Monitoring and Evaluation of Land Governance in Africa (MELA) project, March 20, 2017, Washington, D.C., USA.
- Organized (presented at) a Technical inception workshop to validate methodology and process for the new joint pilot project with the AU-Land Policy Initiative (LPI) on Monitoring and Evaluation of

Land governance in Africa (MELA) project – pilot project to track the implementation of the AU-declaration on land issues in Africa – being piloted in 12 African countries: Malawi, Tanzania, Nigeria, Uganda, Kenya, Zambia, Madagascar, Ethiopia, DRC, Ivory Coast, Niger, and Rwanda, May 3 – 4, 2017, Addis Ababa, Ethiopia

- Draft book chapter on “Natural Resource Management and Resource Rights for Agriculture (with Frank Place, and Ruth Meinzen-Dick) for a book on “Agricultural Development: New Perspectives in a Changing World” Edited by Keijiro Otsuka and Shenggen Fan
- Conference paper on “Land access, tenure security and the fate of rural youth in Africa: the case of Ondo state - Nigeria” presented at the 17th annual World Bank conference on Land and Poverty, March 20 – 24, 2017, Washington DC, USA.
https://www.conftool.com/landandpoverty2017/index.php?page=browseSessions&form_session=782&presentations=show
- Conference paper on “Land Access, Tenure Security and the Fate of Rural Youth in Africa: The Case of Mozambique” presented at the 17th annual World Bank conference on Land and Poverty, March 20 – 24, 2017, Washington DC, USA.
https://www.conftool.com/landandpoverty2017/index.php?page=browseSessions&form_session=782&presentations=show
- Conference paper on “Inheritance Dynamics and Women land Rights in Nigeria.” presented at the 17th annual World Bank conference on Land and Poverty, March 20 – 24, 2017, Washington DC, USA.
https://www.conftool.com/landandpoverty2017/index.php?page=browseSessions&form_session=782&presentations=show
- [DISCUSSION PAPER] Paper on “The effect of land inheritance on youth employment and migration decisions: Evidence from rural Ethiopia” published as ESSP working paper # 104, 2017
<http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/131116>
- [DISCUSSION PAPER] Paper on “Scrutinizing the status quo: Rural transformation and land tenure security in Nigeria” published as NSSP working paper # 43, 2017
<http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/131363>
- [POLICY NOTE] Synopsis on “Scrutinizing the status quo: Rural transformation and land tenure security in Nigeria” published as NSSP Policy Note # 45, 2017
<http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/131465>

Output:

Peer-reviewed journals

- Katrina Kosec, Hosaena Ghebru, Brian Holtemeyer, Valerie Mueller, Emily Schmidt. (2017) The Effect of Land Access on Youth Employment and Migration Decisions: Evidence from Rural Ethiopia, *American Journal of Agricultural Economics*, Article in press. First published online on December 28, 2017. <https://doi.org/10.1093/ajae/aax087>
- Ghebru, Hosaena; and Lambrecht, Isabel. (2017). Drivers of perceived land tenure (in) security: Empirical evidence from Ghana. *Land Use Policy*. 66(July 2017): 293-303.
<https://doi.org/10.1016/j.landusepol.2017.04.042>
- Holden, Stein; and Ghebru, Hosaena (2016). Land rental market legal restrictions in Northern Ethiopia. *Land Use Policy*. Vol. 55 (pp: 212–221)
<http://www.sciencedirect.com/science/article/pii/S0264837716303179>
- Holden, Stein Terje; and Ghebru, Hosaena (2016). Links between tenure security and food security in poor agrarian economies: Causal linkages and policy implications. *Global Food Security* 10: 21 - 28.
<http://dx.doi.org/10.1016/j.gfs.2016.07.002>

Working papers:

- Ghebru, Hosaena and Girmachew, Fikirte. 2017. Scrutinizing the status quo: Rural transformation and land tenure security in Nigeria. NSSP Working Paper 43. Washington, D.C.: International Food

Policy Research Institute (IFPRI).

<http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/131363>

- Ghebru, Hosaena and Girmachew, Fikirte. 2017. Scrutinizing the status quo: Rural transformation and land tenure security in Nigeria. NSSP Working Paper 43. Washington, D.C.: International Food Policy Research Institute (IFPRI).
<http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/131363>
- Kosec, Katrina; Ghebru, Hosaena; Holtemeyer, Brian; Mueller, Valerie; and Schmidt, Emily. 2017. The effect of land access on youth employment and migration decisions: Evidence from rural Ethiopia. Washington, D.C. and Addis Ababa, Ethiopia: International Food Policy Research Institute (IFPRI) and Ethiopian Development Research Institute (EDRI).
<http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/131116>
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Output - Outreach/communications/capacity building activities

- Presentation/seminar on “Land policy and the youth ‘bulge’ in Ethiopia: How social and economic transformations are scrutinizing the status quo” at the 17th annual World Bank conference on Land and Poverty, March 20 – 24, 2017, Washington DC, USA.
https://www.conftool.com/landandpoverty2017/index.php?page=browseSessions&form_session=650&presentations=show_
- Presentation on “Land access, tenure security and the fate of rural youth in Africa: the case of Ondo state - Nigeria” at the 17th annual World Bank conference on Land and Poverty, March 20 – 24, 2017, Washington DC, USA.
https://www.conftool.com/landandpoverty2017/index.php?page=browseSessions&form_session=782&presentations=show
- Presentation on “Land Access, Tenure Security and the Fate of Rural Youth in Africa: The Case of Mozambique” at the 17th annual World Bank conference on Land and Poverty, March 20 – 24, 2017, Washington DC, USA.
https://www.conftool.com/landandpoverty2017/index.php?page=browseSessions&form_session=782&presentations=show
- Presentation on “*Land Administration Service Delivery and Its Challenges in Nigeria: Case study of eight states*” at the 17th annual World Bank conference on Land and Poverty, March 20 – 24, 2017, Washington DC, USA.
https://www.conftool.com/landandpoverty2017/index.php?page=browseSessions&form_session=782&presentations=show
- Presentation on “Inheritance Dynamics and Women land Rights in Nigeria” at the 17th annual World Bank conference on Land and Poverty, March 20 – 24, 2017, Washington DC, USA.
https://www.conftool.com/landandpoverty2017/index.php?page=browseSessions&form_session=782&presentations=show
- Presentation on “Piloting AU-LPI Framework on Monitoring and Evaluation of Land Governance Africa (MELA)” at a round-table discussion of the 2017 2nd bi-annual Conference on land Policy in Africa (CLPA), November 14 – 17, 2017, Addis Ababa, Ethiopia
https://www.uneca.org/sites/default/files/uploaded-documents/LPI/CLPA_2017/clpa_programme_web.pdf

- Presentation on “Customary Tenure System under Scrutiny - How Social and Economic Transformations are Re-defining the Status quo: The Case of Mozambique” at the 2017 2nd bi-annual Conference on land Policy in Africa (CLPA), November 14 – 17, 2017, Addis Ababa, Ethiopia
https://www.uneca.org/sites/default/files/uploaded-documents/LPI/CLPA_2017/clpa_programme_web.pdf
- Presentation on “The Effect of Land Access on Youth Employment and Migration Decisions: Evidence from Rural Ethiopia” at the 2017 2nd bi-annual Conference on land Policy in Africa (CLPA), November 14 – 17, 2017, Addis Ababa, Ethiopia
https://www.uneca.org/sites/default/files/uploaded-documents/LPI/CLPA_2017/clpa_programme_web.pdf
- Presentation on “Scrutinizing the status quo: Rural transformation and land tenure security in Nigeria” at the 2017 2nd bi-annual Conference on land Policy in Africa (CLPA), November 14 – 17, 2017, Addis Ababa, Ethiopia
https://www.uneca.org/sites/default/files/uploaded-documents/LPI/CLPA_2017/clpa_programme_web.pdf
- Participate/present “Framework and Methodology for Monitoring and Evaluation of Land governance in Africa – MELA: tracking the implementation of the new Malawi land law” at 2nd Malawi National Land symposium organized by Michigan State University and IFPRI-Malawi, May 10, 2017, Lilongwe, Malawi
- Meeting with the Principal secretary of Land ministry and Principal secretary for Agricultural ministry for updates on the MELA content, methodology and process, May 11, 2017
- Participate/Present at CSSP’s retreat workshop, May 22-24, 2017, Abuja, Nigeria
- Participate at Expert Group Meeting to discuss/finalize methodology for SDG indicators on land governance – SDG indicator 1.4.2 on land tenure security and gender, May 25-26, 2017, Washington DC, USA
- Participate at a validation workshop to validate study on Land, Ethnicity and Conflicts in Africa – a report to be later endorsed by Specialized technical committee on issues of lands, water and environment at a ministerial level AUC by-annual meeting held June 13-14, 2017, Addis Ababa, Ethiopia
- June 19 – 22, 2017: Travel to Tanzania joining the AU-Land policy initiative official delegated for a mission trip to Dar es Salam and Dodoma (Tanzania)
 - June 19 (Dodoma-Tanzania):
 - Courtesy visit to the Minister of Agriculture, livestock and fisheries for an update on the new joint AU-LPI and IFPRI project MELA
 - Meeting with the deputy principal secretary for Ministry of Agriculture, livestock and fishery – person coordinating the new Agricultural Sector Development program (ASDP-2) on issues of mainstreaming land governance into the new ASDP and the role MELA plays.
 - June 20 (Dodoma-Tanzania):
 - Meeting with the deputy principal secretary for Ministry of Lands on updates on the implementation of AU declaration on land issues and challenges and the MELA
 - Courtesy visit to the Minister of Lands and update the Hon. Minister on the new joint AU-LPI and IFPRI project MELA
 - Meeting with member of the parliament (MP) – Secretary of the special committee on land issues and challenges
 - June 22 (Dar es Salam-Tanzania):
 - Retreat with Country Task Force (working group) on issues of land tenure and governance (discuss issues related to the Country report on mainstreaming land governance into CAADP-2 NAIPS and the launch of the new pilot project – MELA)
 - June 23 (Dar es Salam-Tanzania):

- To participate/Present “Monitoring and Evaluation of Land governance in Africa – MELA: methodology and process in Tanzania” at a workshop to launch the MELA project and validate a country report on “mainstreaming land governance into the CAADP-2/NAIPS-2.
- Participate/present at an expert group meeting (EGM) on Securing Women’s Land Rights in The SDGS Monitoring Framework; Towards a More Harmonized and Coordinated Global Approach – EGM organized by the Global Land Indicators Initiative GLII-UN – HABITAT and OXFAM, July 8-10, 2017, New York, USA
- Present “Lessons learn from the implementation IFPRI-LPI pilot project on Monitoring and Evaluation of Land governance in Africa – MELA”, September 13, 2017, Washington DC, USA

Activity #3: Mechanization in Agricultural Transformation: South-South Learning and Knowledge Exchange

Description: Agricultural mechanization has been rapidly emerging in Africa, as part of the broader economic and structural transformation, but with considerable heterogeneity across locations and farming systems within each country. In addition, where mechanization is growing relatively fast, there is still little understanding of how such growth is transforming the agricultural sector, including the economies of scale and distributional effects across different types of farms. This activity continues to examine the determinants of mechanization including various resource endowments and rural wages in different geographic locations within a country, while also paying attention to the interactions with the labor market. It also considers policy options to encourage private sector investment in mechanization at the appropriate scale and through appropriate market approaches that explicitly benefit smallholders, taking into account the potential heterogeneity of the suitable policy options across locations, farming systems.

The activity continues to rely on two main components:

- Sub Activity 3.1 Completion of the draft manuscript of a book on agricultural mechanization
- Sub Activity 3.2. Empirical assessments of the demand for mechanization and its heterogeneity across locations in Nigeria and potentially Ghana

Sub Activity 3.1 involves facilitation of south-south expert dialogues, and knowledge exchanges on mechanization strategies and policies. These dialogues will be informed by the review of mechanization growths experiences in a number of Asian and African countries, to influence the new thinking of African governments on facilitating the leadership role of the private sector in mechanization supply chain development. Sub Activity 3.2 consist of the empirical case studies on smallholder mechanization initiated in a few African countries including Ghana, Nigeria, as well as comparable Asian countries that have been undergoing fast mechanization growth, such as Indo-Gangetic Plain of Nepal.

Both these sub-Activities are jointly funded by CGIAR PIM. Sub-Activity 4.1 is expected to offer African stakeholders and the governments the insights about the economic conditions for substantial growths in the demand for mechanization, proper regulations and policies may help such growths, and the role of the private sector to meet such demand. Sub-Activity 4.2 is expected to help the governments in the studied countries identify sub-national areas with relatively high demand for tractors, and guide their efforts in appropriately setting up and expanding the government-supported private-sector hiring service centers across the countries. The achievements, outputs and outcomes of these sub-activities are as follow:

Sub Activity 3.1 Completion of the draft manuscript of a book on agricultural mechanization

Achievements: Progress has been made in the writings of various chapters. Namely, the draft has been mostly completed for Nigeria and Tanzania (by CIMMYT collaborators), as well as Ethiopia, China, Nepal, Sri Lanka, Thailand, through the joint funding by IFPRI’s PIM. The writings for other chapters including Ghana, Myanmar (by FSP Myanmar team) and a few other Asian countries are under way. The date for the conference for all chapter authors to present the findings has been set for October 31 and November 1 in Addis Ababa, Ethiopia. The conference will be jointly funded by PIM, as well as IFPRI’s Ethiopia Strategy

Support Program, and will be organized by IFPRI, CIMMYT as well as Ethiopian Agricultural Mechanization Forum. The conference will also bring various stakeholders in Ethiopia, private sector agents in Asia, and government officials in other African countries, as well as international actors, to the dialogue on how Asian mechanization experiences can be used to inform mechanization policies in African countries.

The discussion papers or working papers from some of the completed chapters are in the process of publication. One chapter draft on Nepal, describing the evolutions of agricultural mechanization in Nepal, has been completed and published as IFPRI Discussion paper ([1]). A chapter draft on Nigeria has been completed and has been shared with the Nigerian government official and local researcher co-authoring the chapter. Relatedly, an Issue Brief summarizing the key policy issues associated with agricultural mechanization in Africa are in the process of preparation, which will be completed after incorporating the feedback from the aforementioned Ethiopian conference ([2]).

Further data analyses and literature review have also been conducted for chapters on Asian countries. For India chapter, the Village Dynamics in South Asia (VDSA) survey data in Central India are being analyzed to obtain more accurate estimates of the effect of tractor and combine harvester adoptions on labor and draft animal uses, other modern inputs uses, and yields of major crops, as well as farm-size dynamics, taking advantage of VDSA data that report information at plot level for each crop and season for panel households spanning over 5 ~ 15 years, which can be used to separate out various confounding factors, so that the effects on tractor and combine harvesters can be more precisely estimated. Similarly, an intensive literature review is being conducted to obtain the historical, tractor adoption rates in various Asian countries, which are often not easily obtainable despite the potential for such information to provide important lessons to African countries.

A few papers that are part of the Nepal chapter, analyzing the effect of smallholder farmers' tractor adoptions decisions and their effects on scale economies, have been published or invited to revised and resubmit by peer-review journals ([3], [4]).

Sub Activity 3.2. Empirical assessments of the demand for mechanization and its heterogeneity across locations in Nigeria and potentially Ghana

Achievements: Progress has been made on the analyses assessing mainly the impact of tractor ownership on the returns-to-scale in household maize production in Ghana. Preliminary results have been obtained indicating that owning tractors significantly increase the returns-to-scale, particularly through the increased capacity to till more areas. These findings have policy implications for the support for tractor ownership, promotion of custom-hiring service providers, and various other tractor-related policies pursued by the Ghanaian government. The paper has been published as IFPRI Discussion Paper ([5]): In addition, a related discussion paper was completed and published, which focuses on the growths of service providers including power tiller and combine harvester service providers in one of the productive irrigation schemes in Ghana. This work has been jointly supported by PIM and IFPRI's Ghana Strategy Support Programme ([6]).

Similarly, progress has been made on the paper on agricultural mechanization in Nigeria, focusing on the roles of intermediate mechanization (growing adoptions of animal tractions) in returns-to-scale in agriculture, and the implications on the demand for tractors as substitutes. The analyses are being conducted using the three rounds of Living Standard Measurement Study – Integrated Survey on Agriculture (LSMS-ISA) collected by the World Bank and the National Bureau of Statistics of Nigeria.

Publication Outputs:

- 1) Takeshima H. (2017b). [*Overview of the Evolution of Agricultural Mechanization in Nepal, with a Particular Focus on Tractors and Combine Harvesters*](#). IFPRI Discussion Paper 01662.
- 2) Diao X, J Silver & H Takeshima. (2017). Agricultural Mechanization in Africa: Insights from Ghana's Experience. IFPRI Issue Brief, forthcoming.
- 3) Takeshima H. (2017a). Custom-hired tractor services and returns to scale in smallholder agriculture:

- A production function approach. *Agricultural Economics* 48(3), 363–372.
- 4) Takeshima H. (2017b). Mechanization and smallholder farmers' incomes when some smallholders self-select to exit farming: Multiple-treatment-effects model for lowland Nepal. *Review of Development Economics*, invited to revise and resubmit.
 - 5) Takeshima H, N Houssou, X Diao. (2017). [*Effects of tractor ownership on agricultural returns-to-scale in household maize production: Evidence from Ghana*](#). IFPRI Discussion Paper 01671.
 - 6) [6] Takeshima H, J Agandin & S Kolavalli. (2017). [*Growth of Modern Service Providers for the African Agricultural Sector: An Insight from a Public Irrigation Scheme in Ghana*](#). IFPRI Discussion Paper 01678.

Outreach and policy engagement activities:

- 1) Keynote address made at the conference “Transforming West African agriculture through the development of mechanization: what public policies?” (Organized by The Syngenta Foundation for Sustainable Agriculture (SFSA) and the Foundation for World Agriculture and Rurality (FARM)) held in Dakar, Senegal, February 1, 2017. The presentation has been posted on their conference website <https://www.syngentafoundation.org/file/4321/download?token=3rjBLSOs>.
- 2) A presentation at the workshop “Machine Reforms’ for Sustainable Intensification of Agriculture in South Asia: A Regional Dialogue”, held in New Delhi, July 20-21, organized by IFPRI South Asia office
- 3) IFPRI Research Seminar as a side-event of IFPRI’s annual meeting, on September 13, in which Chapters on Ethiopia, Myanmar and Nepal also presented
- 4) Meeting with Engineer Patrick Aboagy of the Ministry of Food and Agriculture, Ghana, as part of the aforementioned conference in Senegal, February 1, 2017.
 - o Shared the key findings in West Africa, that the private custom-hiring service providers are often more efficient in providing the services than government-selected service providers, in terms of the number of clients served, areas served, given the costs incurred.
- 5) Meeting with Engineer Abubakar of the Federal Ministry of Agriculture & Rural Development of Nigeria, May 25, 2017
 - o discussion on the updates on agricultural mechanization policy in Nigeria, including the support for the private enterprises providing the tractor-custom hiring service
 - o sharing of the draft Nigeria chapter for feedback

Activity #4: Exploring the Relationships between Agricultural Transformation and Youth Employment in Africa's Economic Transformation

Description:

The past two decades witnessed remarkable progress in understanding the nature and pace of economic transformation in sub-Saharan Africa (SSA). Investments in nationally representative household panel survey data in many African countries has made it possible to detect with greater accuracy and disaggregation the changes over time in various indicators of living standards and the drivers of these changes. While major pieces of the puzzle remain unclear, mounting evidence points to profound economic transformation in SSA since the early 2000s. This C4a activity is dedicated to considering these wide ranging trends, how they are differentially affecting the welfare of different socio-economic groups in the region, and the implications for agricultural and rural development policy. We take a particular interest in youth livelihoods within the rapid transformation process that the region is experiencing, partly because young people 15-35 years of age constitute about 60% of the labor force in Africa.

Outputs:

- 1) Kwame Yeboah named lead author of 2018 Chicago Council Global Food Security Report. Jayne on 2018 Task Force. Yeboah has been working most of 2017 to prepare this report, extensively drawing on C4a research.
- 2) [*Africa's Evolving Employment Structure*](#) Research Paper 31. F. Kwame Yeboah and Thomas S. Jayne. October 2016
- 3) Felix Kwame Yeboah and Thomas S. Jayne. 2017. [*Africa's Evolving Employment Trends:*](#)

- [Implications for Economic Transformation. Africa Growth Agenda](#), Volume 14, Issue 1, 18–22.
- 4) First Evidence to Action Conference for West Africa. University of Ghana, Legon, Accra, Ghana. July 25–26, 2017:
 - o [Africa's Evolving Employment Structure: Trends and Implications for Youth Livelihoods](#). F. Kwame Yeboah and Thomas S. Jayne. Plenary Presentation.
 - o [Megatrends Transforming Africa's Agrifood System](#). F. Kwame Yeboah, T.S. Jayne, Milu Muyanga, Ayala Wineman, Lulama Traub.
 - 5) Platform for African–US Partnership in Agricultural Research for Development summarizes Thom Jayne's testimony to the US House Agriculture Committee on The Next Farm Bill: [The Future of International Food Aid and Ag Development](#). June 22, 2017.
 - 6) T.S. Jayne, with Milu Muyanga, Kwame Yeboah, Ayala Wineman, Nicholas Sitko, Lulama Traub. [Megatrends Transforming Africa's Agri-food Systems](#). USAID Bureau for Food Security Seminar, Washington, DC, 21 June, 2017
 - 7) Allen, A., Howard, J., Kondo, M. A. Jamison, T.S. Jayne, J. Snyder, D. Tschirley, and Kwame Yeboah. 2017. [Youth employment opportunities in African agrifood systems](#). GREAT Insights Magazine, Volume 6, Issue 1, pp 16-18. February/March 2017.
 - 8) C4a contribution to [3rd Annual Agricultural Policy Conference](#), March 1–3, Dar es Salaam, Tanzania. Jayne presented multi-country C4a analysis on youth employment and the relationship between agricultural productivity growth, pace of change in the work force engaged in farming, and non-farm labor productivity, with a particular focus on findings from Tanzania.
 - 9) F. Kwame Yeboah and Thomas S. Jayne. 2017. From Theory to Practice: Exploring Sustainable Solutions to Africa's Developmental Challenges, Keynote speech at the 2nd Annual Conference of African Graduate Student Association, Michigan State University, East Lansing, MI, March 25, 2017.
 - 10) Food System Transformation and Market Evolutions: An Analysis of the Rise of Large-scale Grain Traders. FSP Research Paper 48. Nicholas J. Sitko, William J. Burke, and Thomas S. Jayne. March 2017
 - 11) C4a contribution to 3rd Annual Agricultural Policy Conference, March 1–3, Dar es Salaam, Tanzania. Muyanga and Mdoe presented multi-country C4a analysis on changing farm size distributions and their implications for agricultural sector and land policy strategies, with a focus on Tanzania.
 - 12) [Maize, fertilizer and sustainable agricultural intensification](#). Thomas Jayne. Sustainable Agricultural Intensification Workshop Hosted by Global Change and Earth Observation. Kellogg Center. Michigan State University East Lansing, Michigan. December 14-15, 2016.
 - 13) [Agricultural Input Subsidy Programs in Africa: A Review of Recent Evidence](#). T.S. Jayne and Nicole Mason. Agricultural Input Distribution and Subsidy Program Conference. Alliance for a Green Revolution in Africa. Nairobi, Kenya. 1 December 2016.
 - 14) [Rise of Medium-Scale Farms in Africa](#). T.S. Jayne, Jordan Chamberlin, Milu Muyanga, Nicholas Sitko, Felix K. Yeboah, Lulama Traub, Chewe Nkonde, Ward Anseeuw, Ayala Wineman. 3rd Annual Stakeholders Conference, ReNAPRI, Nairobi, Kenya, 10 November 2016.
 - 15) [Rise of Medium-Scale Farms in Africa](#). T.S. Jayne, Jordan Chamberlin, Milu Muyanga, Nicholas Sitko, Felix K. Yeboah, Lulama Traub, Chewe Nkonde, Ward Anseeuw, Ayala Wineman. Seminar at Dept. Agricultural Economics, University of Nairobi, 7 November 2016.
 - 16) [Agri-Food Systems and Youth Livelihoods in Sub-Saharan Africa](#). Thom Jayne, John Holtzman, F. Kwame Yeboah, Jock Anderson and James Oehmke. Seminar at USAID/BFS. Washington, DC. November 3, 2016.
 - 17) [Africa's evolving employment structure: Trends and drivers of change](#). F. Kwame Yeboah and Thomas S. Jayne. Eye on Africa Seminar Series, African Studies Center, MSU. East Lansing, MI. October 20, 2016.
 - 18) [Africa's Evolving Employment Structure](#). F. Kwame Yeboah and T.S. Jayne. International Development Working Paper 148. October 2016.
 - 19) [Understanding Fertilizer Effectiveness and Adoption on Maize in Zambia](#). William J. Burke, Emmanuel Frossard, Stephen Kabwe, and Thomas S. Jayne. International Development Working Paper 147. October 2016.

- 20) Megatrends transforming Tanzania's agri-food systems: Towards inclusive economic transformation? T.S. Jayne, Milu Muyanga, Kwame Yeboah, Ayala Wineman and Lulama Traub. Presentation at Third Annual Agricultural Policy Conference, Ministry of Agriculture, Livestock and Fisheries Dar es Salaam, Tanzania, 2 March, 2017.
- 21) Farm Land Concentration and Rural Labor Productivity: Evidence from Tanzania. Work in progress –not for citation. Jordan Chamberlin and T.S. Jayne. Presented at AFRE Graduate Student Organization Brown Bag Series, February 21, 2017.
- 22) Thomas Jayne cited in the Economist article, "High-tech, low impact: Ethiopia's state-of-the-art commodity exchange", Finance and Economics Section, February 4, 2017 issue.
- 23) The Farm Size-Productivity Relationship in Tanzania: Preliminary Findings. Ayala Wineman and Thomas S. Jayne. Presented at the Farm Size/Farm Productivity Conference, organized by Economic Research Service, USDA, Washington, DC, February 1-2, 2017.
- 24) T.S. Jayne, Chance Kabaghe, and Isaac Minde. 2017. Why the US has a lot to gain from investing in Africa's agri-food systems. The Conversation, February 1, 2017.
- 25) Enhancing U.S. Efforts to Develop Sustainable Agri-Food Systems in Africa. Prof. Thomas Jayne, Hon. Chance Kabaghe, and Prof. Isaac Minde, Farm Journal Foundation Policy Brief, Washington, DC. 2017.
- 26) Agricultural Input Subsidy Programs in Africa: A Review of Recent Evidence. T.S. Jayne and Nicole Mason. Agricultural Input Distribution and Subsidy Program Conference. Alliance for a Green Revolution in Africa. Nairobi, Kenya. 1 December 2016.
- 27) T.S. Jayne, Jordan Chamberlin, Lulama Traub, Nicholas Sitko, Milu Muyanga, Felix K. Yeboah, Ward Anseeuw, Antony Chapoto, Ayala Wineman, Chewe Nkonde and Richard Kachule. Africa's changing farm size distribution patterns: the rise of medium-scale farms. Agricultural Economics Volume 47, Issue S1, pages 197–214, November 2016.
- 28) Rise of Medium-Scale Farms in Africa. T.S. Jayne, Jordan Chamberlin, Milu Muyanga, Nicholas Sitko, Felix K. Yeboah, Lulama Traub, Chewe Nkonde, Ward Anseeuw, Ayala Wineman. 3rd Annual Stakeholders Conference, ReNAPRI, Nairobi, Kenya, 10 November 2016.
- 29) Rise of Medium-Scale Farms in Africa. T.S. Jayne, Jordan Chamberlin, Milu Muyanga, Nicholas Sitko, Felix K. Yeboah, Lulama Traub, Chewe Nkonde, Ward Anseeuw, Ayala Wineman. Seminar at Dept. Agricultural Economics, University of Nairobi, 7 November 2016.
- 30) Agri-Food Systems and Youth Livelihoods in Sub-Saharan Africa. Thom Jayne, John Holtzman, F. Kwame Yeboah, Jock Anderson and James Oehmke. Seminar at USAID/BFS. Washington, DC. November 3, 2016.
- 31) Africa's evolving employment structure: Trends and drivers of change. F. Kwame Yeboah and Thomas S. Jayne. Eye on Africa Seminar Series, African Studies Center, MSU. East Lansing, MI. October 20, 2016.
- 32) Africa's Evolving Employment Structure. F. Kwame Yeboah and T.S. Jayne. International Development Working Paper 148. October 2016.
- 33) Understanding Fertilizer Effectiveness and Adoption on Maize in Zambia. William J. Burke, Emmanuel Frossard, Stephen Kabwe, and Thomas S. Jayne. International Development Working Paper 147. October 2016.
- 34) [Rethinking the "Youth in not interested in agriculture" narrative](#), Thomas Jayne, Next Billion, Wednesday, October 12, 2016
- 35) [Rise of Medium-Scale Farms in Africa: Causes and Consequences of Changing Farm Size Distributions](#). T.S. Jayne, Milu Muyanga, Kwame Yeboah, Jordan Chamberlin, Ayala Wineman, Ward Anseeuw, Antony Chapoto, and Nicholas Sitko. Keynote Address: Conference on "Rural Transformation and Urbanization" Agri4D, Uppsala, Sweden. 20-21 September 2017.
- 36) [The Future of Work in African Agriculture: Trends and Drivers of Change](#). Thomas Jayne and F. Kwame Yeboah. International Labour Organization. Geneva, Switzerland. 15 September, 2017.
- 37) [Megatrends Driving Agricultural Transformation in Africa: Challenges and Opportunities](#). T. S. Jayne, Milu Muyanga, Felix Kwame Yeboah, Ayala Wineman, Lulama Traub. USAID/Kenya Nairobi, Kenya. September, 12, 2017.

- 38) [Building Bridges Among African Agricultural Policy Research Institutes: Challenges and Opportunities](#). T. S. Jayne, Milu Muyanga and Felix Kwame Yeboah. Public Address, Center for Agriculture and Rural Development, Lilongwe University of Agriculture and Natural Resources, Bunda Campus, Malawi. July 25, 2017.
- 39) First Evidence to Action Conference for West Africa. University of Ghana, Legon, Accra, Ghana. July 25-26, 2017.
- 40) [Africa's Evolving Employment Structure: Trends and Implications for Youth Livelihoods](#). F. Kwame Yeboah and Thomas S. Jayne. Plenary Presentation.
- 41) [Megatrends Transforming Africa's Agrifood System](#). F. Kwame Yeboah, T.S. Jayne, Milu Muyanga, Ayala Wineman, Lulama Traub.
- 42) Platform for African–European Partnership in Agricultural Research for Development summarizes Thom Jayne's testimony to the US House Agriculture Committee on The Next Farm Bill: [The Future of International Food Aid and Ag Development](#). June 22, 2017.
- 43) T.S. Jayne, with Milu Muyanga, Kwame Yeboah, Ayala Wineman, Nicholas Sitko, Lulama Traub. [Megatrends Transforming Africa's Agri-food Systems](#). USAID Bureau for Food Security Seminar, Washington, DC, 21 June, 2017
- 44) [There's More to Agriculture than Hand Hoes: Rising Opportunities for Youth Employment and Entrepreneurship in African Agrifood Systems](#). World Bank blog summarizing the findings of the Agrifood Youth Employment and Engagement Study (AgYees) by Andrea Allen, Julie Howard, M. Kondo, Amy Jamison, Thomas Jayne, J. Snyder, David Tschirley, and F. Kwame Yeboah.
- 45) Thom Jayne, invited speaker on "Transforming African Economies" at the Chicago Council Global Food Security Symposium, Ronald Reagan Building, Washington, DC., March 30, 2017. Interviewed by Ann Veneman, former US Secretary of Agriculture.
- 46) F. Kwame Yeboah and Thomas S. Jayne. 2017. [From Theory to Practice: Exploring Sustainable Solutions to Africa's Developmental Challenges](#). Keynote speech at the 2nd Annual Conference of African Graduate Student Association, Michigan State University, East Lansing, MI, March 25, 2016
- 47) Ayala Wineman and Thomas S. Jayne. 2017. [Intra-Rural Migration and Pathways to Greater Well-Being](#) - CSAE 2017, Oxford, UK, March 19–21, 2017
- 48) Allen, A., Howard, J., Kondo, M. A. Jamison, T.S. Jayne, J. Snyder, D. Tschirley, and Kwame Yeboah. 2017. [Youth employment opportunities in African agrifood systems](#). GREAT Insights Magazine, Volume 6, Issue 1, pp 16-18. February/March 2017.
- 49) [The Farm Size-Productivity Relationship in Tanzania: Preliminary Findings](#). Ayala Wineman and Thomas S. Jayne. Presented at the Farm Size/Farm Productivity Conference, organized by Economic Research Service, USDA, Washington, DC, February 1-2, 2017.
- 50) [Rise of Medium-Scale Farms in Africa](#). T.S. Jayne, Jordan Chamberlin, Milu Muyanga, Nicholas Sitko, Felix K. Yeboah, Lulama Traub, Chewie Nkonde, Ward Anseeuw, Ayala Wineman. 3rd Annual Stakeholders Conference, ReNAPRI, Nairobi, Kenya, 10 November 2016.
- 51) [Agri-Food Systems and Youth Livelihoods in Sub-Saharan Africa](#). Thom Jayne, John Holtzman, F. Kwame Yeboah, Jock Anderson and James Oehmke. Seminar at USAID/BFS. Washington, DC. November 3, 2016.

Activity #5: Agricultural financial markets intermediation to unlock food system transformation.

Description: The purpose of the activity is to promote development of accessible finance to unlock the food system. The activity has two sub-activities based on feedback from discussions with USAID BFS finance team.

Sub-activity 5.1: Analysis of finance policies to determine how they affect access to finance for SME in the food system in Southern Africa with particular reference to Malawi. This is a desktop review of policies, where the emerging issues will be tested with stakeholders. The activity will also draw from the BFS experts' prior work.

Sub-activity 5.2: Engagement activities with formal and informal financial sector in selected countries (Malawi) and facilitate design of financial solutions for SMEs in the food system

Achievements

- Met with BFS finance team in Washington to determine priority issues in finance. The engagement informed prioritization of policy analysis and review of financing policies across the food system.
- Identified critical policies for finance with implications for financing the food system in Malawi.
 - National Strategy for Financial Inclusion: 2016-2020
 - Long Term Finance Policy (Malawi) - 2016
 - New Land Acts
 - Malawi Agricultural Policy
- Invited to participate in 2nd Malawi Land Symposium (10 May 2017) to identify financing issues and engage with stakeholders on finance.
- Contributed financing questions for digital voting during the 2nd Malawi Land Symposium. Responses to Digital polling questions 20 to 22 on finance were included in the Proceedings of the 2nd Malawi Land Symposium. The response provide a feel of priority issue on finance
- Engagement with Malawi Forum for Agricultural Advisory Services (MaFAAS) on options for designing its financial services. This also included the consideration of financing focus area held during the Extension Week planned for 19 to 23 June 2017. Two finance sub-theme were included on Private Sector Day (Thursday 22 June 2017) Concept note during the MaFAAS 3rd Extension Week. The subthemes included; Easy Access & Cost of Agricultural Finance (e), and Financial inclusiveness for rural communities (f).
- Invited by New Alliance for Food Security (Malawi) to support the development of Concept Document to Commission research on financial inclusion.
- Involvement in Committee of Food Security (CFS) High Level Panel of Expert (HLPE) Project Team preparing report on Multi-stakeholder Partnerships to Finance and Improve Food Security in the Framework of the 2030 Agenda. The Project Team meeting convened in Pretoria in July 2017.

Outputs

- Pre-V0 draft on Multi-stakeholder Partnership for Financing and Improving Food Security developed. V0 draft to be distributed at the e-consultation in December.

Activity # 6: Seed system policy

Description: Collaborative work on seed system policies for vegetatively propagated crops was initiated in Year 4 jointly with the CGIAR PIM (Policy, Institution, and Market) program (cluster 1.2). The focus of this joint work was to conduct some case studies to fill knowledge gaps on policy issues related to certification guidelines, distribution systems for perishable planting material, cross-border seed trade, seed relief (post-disaster), and integrating seed policies in national action plans for climate-resilient agriculture.

Achievements:

MSU researcher (Maredia) contributed to the development of a concept note on the research questions and methodology for addressing the seed system challenges related to vegetatively propagated crops and policy implications. This was shared with the broader team from CGIAR's PIM and RTB (Roots, Tubers, and Bananas) programs.

An intensive two week pilot study was undertaken in Kenya in July with a focus on quality assurance system and policy issues for potato crop. A graduate student from MSU participated in the field work and Maredia attended the last day summary meetings in Nairobi. Outcomes of this Kenya pilot include a final agreement on methodologies, tools for data collection, and a list of priority countries and crops for implementing the joint collaborative policy work on vegetatively propagated crops. Countries and crops identified for case studies include—Kenya (potato), Nigeria (cassava), and Vietnam (potato and cassava). Most of the field work

and data collection has been completed in Kenya and planned in the last quarter of 2017 in Vietnam and Nigeria. The field work is led by CG centers through support from the PIM and RTB programs. Reports based on the case study will be developed in 2018. Some of the emerging insights from this work in Kenya include:

- A confirmation that farmers have insufficient access to clean planting material for VPCs. The challenge for VPCs is distinct from that facing cereal crops, and is associated with both the unique biological and economic nature of vegetative propagation.
- Unlike grain crops, the seed quality issues for VPCs are focused on addressing the concerns over spread of diseases rather than seed germination or purity
- Existing Seed Acts, regulations and standards have been developed for seed of grain crops rather than specific to VPCs. Thus specific characteristics of VPCs have not been taken into account, and often the drafts of seed standards for VPCs are prepared by people with no crop specific expertise and based on “cut and paste” approach. Also, some of the rationale and evidence needed to make informed policy decisions (for e.g. isolation distances) is not available/published.
- There has not been any systematic research on standards and tolerance levels to develop evidence based policies for VPC seed system
- Governments don’t have capacity to follow the official ‘certification’ standards and implement the processes needed for private sector to produce certified seed. Despite the lack of capacity, government insists on not legally recognizing ‘clean’ (but not certified) seeds produced by specialized seed producing organizations.
- Policy concerns are how to address the major trade-offs and tensions on following issues:
 - Should the government invest resources in building a stronger quarantine system to address the problem when diseases breakthrough (reactionary strategy) vs. improve the system that governs the supply of clean seed (prevention strategy)
 - Should the policy goal be more access by farmers to seed that is better quality than own saved seed or only promote the use of certified seed?
 - Quality seed production by the private sector is constraint by lack of access to early generation seed (i.e., pre-basic), which is controlled by the public sector.
 - Large scale potato seed producers are thus using their own imported varieties to bypass the constraint of EGS availability for public varieties.

The team also plans to explore engagement with BFS and partners on farmer “willingness to pay” for improved seed on a range of crops in planning major new seed sector support programs.

Outputs

None to report in this reporting time frame.

Outcomes:

None to report in this reporting time frame.

Data Management Plan

	Dataset Type	Brief description	Anticipated time frame for a scholarly output to be completed based on this dataset?	When will it be registered in DDL?	Status
1	Farm household survey	Socio economic farm data - Malawi/2014, including medium-scale farms	Completed August 2016 (journal article in Land)	1st quarter 2018	To be registered

2	Farm household survey	Socio economic farm data - Mozambique/2016, including medium-scale farms	Apr-17 – slowed down due to data quality issues, no analysis undertaken yet	1st quarter 2018	To be registered
3	Farm household survey	Socio economic farm data - Senegal/2016, including medium-scale farms	Jul-17	3rd quarter 2018	To be registered
4	Listing of Medium-scale farms in 8 districts of Tanzania	Listing of all medium-and large scale farms in eight (8) in rural Tanzania (completed in August 2016). This involves interviews with village headmen who provide information on households controlling 10 hectares and above, their landholding sizes and the area under crop, and GPS coordinates of the villages	1st Quarter/2019	1st quarter 2018	To be registered
5	Farmer survey data	Survey of 1,200 farm households in rural Tanzania. Collect household demographic data, agricultural practices, incomes, soil samples, and household location GPS coordinates (completed June 2017)	1st Quarter/2019	3rd quarter 2018	To be registered
6	Farmer survey data - Zambia	Listing of all medium-scale farms in six (6) districts in Zambia. This involves obtaining lists from Zambia National Farmers Union and interviews with ward-level extension workers. Develop lists of landholdings over 10 hectares and a separate list for those who operate more than 10 hectares of farmland. After listings are developed, we aim to interview roughly 5% of the medium-scale farms identified in the listing exercise to obtain information on their characteristics, how and when they acquired their farms, main residence (telephone farmer vs. full time farmer), the area under crops, production levels, etc., and GPS coordinates of the villages	1st quarter 2017 (listing), 3rd quarter 2017 (survey)	2nd quarter 2018	To be registered

COMPONENT 4b: ENGAGEMENT ON GLOBAL POLICY DEBATES ON FOOD SECURITY: AGRIFOOD SYSTEM TRANSFORMATION IN THE DOWNSTREAM

The purpose of work under this component is to (a) document the extremely rapid changes underway in agrifood systems of the African continent and (b) help policy makers design programs and policies that promote rapid but equitable growth in the systems. Key drivers of this transformation are rapid growth in per capita incomes and urbanization. Six key messages are emerging from the work. These are:

1. A diet transformation on the demand side: Population growth, rapid urbanization, and per capita income growth are driving very rapid growth in the amount of food demanded through markets, and in its composition: a diet transformation towards non-cereal foods, fresh foods (both animal and vegetable/fruit) processed foods, and food away from home, all increasingly sourced (even in rural areas) through markets. This demand-side transformation represents an enormous opportunity for local and regional agribusiness firms if they can be competitive in supplying these rapidly growing and transforming markets. It also has troubling implications for nutrition and for the emerging “double burden” of malnutrition.
2. A quiet revolution on the supply side: In most countries, this diet transformation and its associated urbanization and income growth are fueling a quiet revolution in the “hidden middle” of the continent’s agrifood systems: investment, huge in aggregate, by millions of micro, small, and medium-sized firms (as well as large firms) in the wholesaling, processing, and logistical operations between farming and retailing. This segment of the agrifood system, and the rise of SMEs within it, have largely escaped the attention of donors and government policymakers.
3. The primacy of domestic food value chains: Most food is coming from domestic food value chains – in most countries, food import bills amount to only about 10% of total food consumption. Furthermore, while imports are higher in urban areas (about 20%), in most urban areas of Africa their share does not rise with incomes. This means that, in most countries, domestic food systems, including for higher value foods, are competing with imports. Whether they are able to continue competing, and capture most of the growth in demand going forward, depends on the business enabling environment put in place by governments.
4. The primacy of urban demand, especially in secondary and tertiary cities: Most food is flowing in rural-urban supply chains to urban areas that now are the majority of food markets. In Africa, secondary and tertiary cities and towns now hold more people than primary cities. They are thus crucial as demanders of food and as intermediate nodes for supply chains. The urban agenda and the food security/food system agendas thus cannot be separated.
5. But also a reverse flow of processed foods from urban- to rural areas: About half of food consumption in rural areas is now sourced through markets. Most of this purchased food is processed in some way. A major emerging trend therefore is the flow of processed foods through markets within rural areas (rural-rural flows) and from urban areas to rural areas (urban-rural flows). There is almost no empirical research on this emerging phenomenon.
6. Major implications for employment: These agribusiness opportunities have major implications for employment. The specific implications, however, depend critically on the size distribution of the firms that capture growing demand. Policies that help micro firms grow in size, and that favor competitive response by small and medium-size firms, can generate substantial employment within the hidden middle. On the other hand, policies that favor consolidation into fewer, larger firms will result in less employment growth from this quiet revolution. Because women play major roles in most food processing and food away from home, pro-employment policies in this area will favor gender equity.

The C4b team has targeted four sets of stakeholders (host country governments, bilateral and multi-lateral donors, the private sector, and civil society) through various outreach events at national, regional, and global levels. It has also promoted and built capacity for research in this area with local research institutions. What follows is a summary of the team’s approach; details on activities appear in the sections below.

At national level, the C4b team has worked hand-in-hand with country programs to mainstream these messages and begin achieving concrete policy impact. This is facilitated by the fact that three C4b faculty – Tschirley, Liverpool-Tasie, and Minten – are either in-country directors or campus Principal Investigators for Tanzania, Nigeria, and Ethiopia. C4b research has been built directly into the country programs in all three of these countries. In each case, the C4b team has engaged at national level with (a) policy-makers in and beyond the agricultural sector, (b) bilateral and multi-lateral donors, (c) private sector, and (d) civil society in all four countries over the past two years. This engagement has taken the form of:

- 1) Annual national agricultural policy conferences;
- 2) Media events;
- 3) National stakeholder meetings;
- 4) Other formal public presentations; and
- 5) Briefings of USAID missions and policy makers in all four countries;

At regional level, C4b has engaged with ReSAKSS through its Annual Trends and Outlook Report of 2015, its continental conference that same year, and ReSAKSS meetings in Washington that brought together selected African policy makers.

At global level, C4b has formally engaged through roundtables, invited chapters, keynote speeches, invited talks, invited reviews, and informal requests with USAID/Washington, IFAD, FAO, World Bank, The MasterCard Foundation, the Chicago Council on Global Affairs, and the CG system's A4NH program (Agriculture for Nutrition and Health).

Activity #1: Analysis and outreach stemming from the retail and miller surveys in Tanzania

Description: This work includes

- (a) Data analysis of the retail and miller surveys;
- (b) Presentations in the third Annual Agricultural Policy Conference, which will bring together PS-level decision makers from various ministries along with private sector and civil society;
- (c) Intensive engagement with stakeholders built around the Policy Diagnostic Tool (see new activities section for more detail);
- (d) Collaboration with several partners, at Ministry of Agriculture request, to help develop the country's agroprocessing strategy. Together with the policy diagnostic tool, this will provide a platform for generating concrete policy impact from the C4b work; and
- (e) Continued use of policy structures in the country (Department of Policy and Planning in MALF; Policy Analysis Group) to raise knowledge and understanding. All will leverage Dr. Nyange's access to policy makers across sectors.

Outputs:

1. Papers for peer review and local consumption
2. Presentations to national policy makers on policy implications of changes occurring at midstream and downstream and how the agrifood system fits into the GOT's emerging industrialization strategy (See new activities for more detail on Policy Diagnostic Tool)
3. A national agroprocessing strategy that draws directly on C4b research and features initiatives to facilitate the growth of small- and medium scale food processing firms, in addition to exploiting the competitive advantage of existing large-scale processors in some sectors.

Outcomes:

1. Increased knowledge and ability of agrifood system stakeholders and policy makers to engage with other lead ministries to ensure agriculture's interests are protected as the country develops its industrialization strategy.
2. Greater capacity among MALF analysts to engage in this kind of work, including policy outreach.
3. An improved policy-making process in the agroprocessing arena that draws on solid empirical information

4. Improved policies that facilitate the growth of small- and medium scale food processing firms

Activity #2: Poultry sector analysis and outreach in Nigeria

Description:

1. Leveraging AA funds, the C4b Nigeria team conducted surveys at the following nodes in Oyo State: (a) Poultry producers, (b) Feed mills, (c) Maize wholesalers, (d) Maize farmers, and (d) Poultry retailers.
2. The team worked with partners at various research institutes and institutions of higher learning with mandates to support governments in their agricultural policy development and implementation to disseminate this information at multiple levels.
3. While working at the federal level in Nigeria, the team will also worked at the state level, due to the important role of the states in actual implementation of national policies and the fact that states often have their own specific agenda. In spring 2017, seminars on the sector were organized at several federal and state level fora.

Achievements:

During the fourth quarter data collection on actors along the poultry-maize value chain in Nigeria continued. The enumerators used for this activity continue to be largely young researchers in the study areas including postgraduate students and faculty at higher institutions of learning (including colleges of agriculture and universities). Data collection for the maize traders' node that was completed in quarter 3 was analyzed in this quarter. A draft report on this node is expected to be completed in quarter 1 of year 3. Also during this quarter primary data collection from over 1000 actors across the 5 selected nodes of the maize- poultry value chain was conducted by the survey team on the ground in Ibadan. A similar number of actors were also interviewed in Kaduna in North West Nigeria.

During the third quarter, training for data collection and actual data collection on actors along the poultry-maize value chain in Nigeria was launched using computer assisted personal interviews. Data collection for maize traders (wholesalers) was completed and the programming (digitizing) for the remaining four nodes (maize farmers, feed millers, poultry farmers and poultry retailers) was conducted. Leveraging on other funds, data collection (planned for Ibadan in South west with funding from USAID Nigeria) will be expanded to the North with additional funding from other donors.

The enumerators used in the study were largely young researchers in the study area; including postgraduate students and faculty at higher institutions of learning (including colleges of agriculture and universities). The training provided for the research activity is a capacity building activity and the data collected will inform on the structure of various nodes along key value chains while also informing on the challenges to profitability (market and climate related) and consequent policy interventions that are likely to be necessary.

In the second quarter, the listing exercise in south western Nigeria was completed and the study sample for certain key nodes (maize traders, feed millers, poultry retailers) was selected. The draft survey questionnaires for each node were completed and some converted to digital form for the use of computer aided personal investigation methods for actual data collection from the selected sample. As planned, the sampling approach was drafted to guide the data collection activities in the North and a value chain seminar/training took place at Ahmadu Bello University Zaria with students from universities in Kaduna, Plateau, Kano and Katsina. Following the training, the listing of actors along the poultry value chain in northern Nigeria was conducted. During the reporting period, a research paper on the link between climate change and the poultry value chain was finalized as planned. This will form the basis of an empirical analysis on how farmers' perceptions about climate change affect their behavior and investment decisions.

In the first quarter, the poultry value chain team expanded its descriptive analysis of the Nigerian poultry subsector with an empirical analysis, which used a double hurdle panel model to understand the determinants of engaging in poultry production in Nigeria across various regions. These revisions were completed and the

revised report has been updated and will be prepared for submission to a peer reviewed journal. Led by one of the project scholars, a policy paper looking at the poultry ban in Nigeria vis a vis the domestic poultry subsector was produced. The policy paper has been shared with various stakeholders in Nigeria and will be presented to stakeholders in the next quarter. The poultry value chain research team held 9 work group meetings and one skype meeting during the reporting period to refine the specific research questions to be explored across various nodes of the poultry value chain in Nigeria. Also, during the reporting period, work began on a piece to understand the links between climate change and the poultry value chain in Nigeria. This is work being done in conjunction with Oyo State College of Agriculture, Igbo-Ara Oyo State. Since there is no existing dataset or census of actors across various nodes of the value chain, the poultry value chain research team had to develop the listing protocol and began listing all actors along the key value chain nodes in the Ibadan area in South West Nigeria in order to get a sample frame for further analysis. The project scholar led the listing exercise on the ground. This involved training 25 enumerators and guiding them on the field for over 2 weeks. Five draft questionnaires; for maize farmers, poultry farmers.

Outputs:

1. Over 100 people trained on value chain concepts and applications in the poultry subsector.
2. All survey listing was completed in collaboration with local faculty and grad students
3. All planned seminars and stakeholder meetings were conducted during this period and listing for 5 nodes of the poultry-maize value chain study completed.
4. C4b researchers in Nigeria also played a major role in orienting and helping launch the Ag Youth Lab work in Nigeria (funded by Master Card Foundation).

Outcomes:

1. Greater knowledge among policy makers on policy challenges and priorities to promote a competitive poultry and feed grains sector
2. Greater capacity among faculty and students at collaborating universities to engage in survey work.

Activity #5: Planning for regional agrifood system transformation workshop:

This activity was replaced with the organization of a symposium at the Global Food Security Conference in Cape Town, South Africa, in December, 2018. Organized by C4b Tschirley, this symposium brought together researchers from MSU, Johns Hopkins University, and Tufts University, to explore the data gaps that need to be filled if we are to understand (a) the ways in which consumer food environments are changing and the drivers of those changes, and (b) the impact of these changes on consumer food choices. This symposium also represented the second C4b-led event that brought together C4b C4a research around a common topic (see below for the first event, the writing of a chapter in AGRA's 2017 AASR).

Activity #6: Global outreach:

Achievements: The key achievement of C4b work during this year was reaching an inflection point in terms of awareness among applied researchers across a wide range of institutions – who heavily influence programmatic initiatives in the UN, World Bank, and elsewhere – of the nature and dimension and speed of the diet transformation going on, the heretofore under-appreciated response of local agribusinesses, and the major implications for policy and programmatic design to enhance SME response and ensure robust employment- and income generation. During this period, interest in the research results, and their programmatic implications, increased dramatically within the World Bank, FAO, and USAID, among others. This spiking of interest includes the nutrition community, spurred by the ILSI presentation and resulting in an invitation to present results at the meetings of the International Union of Nutrition Science in Buenos Aires in October, 2017. This will be the first specifically nutrition-related conference in which C4b researchers have presented. New nutrition-focused analysis is now being conducted under C4b, and informal research partnerships are being forged, to continue the momentum in this area.

C4b analysis also contributed to the design of The MasterCard Foundation's Ag Youth Lab program in Tanzania and Nigeria, which began in January of 2017. Focusing on youth employment, this innovative

training program done in collaboration with public- and private sectors has drawn heavily on the expertise of Dr. Saweda Liverpool-Tasie in Nigeria and Dr. David Tschirley in Tanzania to identify priority value chains, initially assess employment prospects in them, and design a program of highly applied research that will inform the design of the training program. We expect to generate continued synergies between the AYL work and the country- and C4b work in each country. Members of the C4 team participated in the launch of the program in Nigeria and Tanzania during FY18, and in both countries led focus group discussion with private sector businesses – largely linked to food processing – that explored policy related constraints and priorities for their growth. Results of these focus group discussions are now being used to design the training program intervention.

Outputs: The outputs from this activity are the following set of presentations by C4b researchers:

1. Served as invited panel member at MasterCard Foundation 2016 Global Partner Convening “Learning for Action” on 25 October, 2016. The topic discussed was the implications of agrifood system transformation for employment opportunities in Africa. This convening brings together representatives of all TMCF global partners, and is a key input into evolving programming approaches of the Foundation;
2. Presented opening talk at World Food Programme Food Systems Strategy Convening in November, 2016, on “State of the Art in Food Systems Thinking”.
3. Served as invited expert participant in “Expert Consultation: Focusing Agricultural and Rural Development Research and Investment on Achieving SDGs 1 and 2: A joint initiative of FAO, IFAD, CGIAR and the World Bank”. Rome, Italy – January 9-11, 2017
4. Presented invited talk at World Food Policy Conference 2017. The Royal Society of Thailand. "Multinationalization of Retail in Asia: Impacts on Food System Structure & Conduct". January 16, 2017, Bangkok.
5. Invited Keynote Speaker at the International Life Sciences Institute (ILSI) Research Foundation’s scientific session on “Food System Transformation: Food Choice and Urbanization in Low and Middle Income Countries” (23 January, 2017). This session brought together 400 people from around the world in private sector (about one-third of participants), government, NGOs, and academia, including ILSI branches on four continents (Africa, Asia, Europe, and LAC). The title of the keynote address was “Urbanization, food systems, and the diet transformation in developing countries: What do we know, and what do we need to know?” Research under C4B in both Africa and Asia was the foundation for this talk.
6. Presented invited talk on transformation in food systems at the Economic Policy Dialogue, jointly organized by the OCP Policy Centre and the Ethiopian Development Research Institute, on February 8th-9th, Addis Ababa. The OCP Policy Center is a policy think tank based in Morocco, that engages in public policy analysis and consultation to promote international cooperation for the development of countries in the southern hemisphere.
7. Served as invited “plenary debater” together with Agnes Kalibata of AGRA at TMCF’s second “Young Africa Works Summit”, 16-17 February, 2017. This invite-only event brought together 300 thought leaders from NGOs, government, donors and the private sector committed to developing sustainable youth employment strategies in Africa. C4b messages will be the centerpiece of this talk;
8. Presented keynote on “Rapidly transforming agrifood markets in developing regions: implications for action” at USAID regional markets GLEE in Bangkok, March 27.
9. Presented invited talk at World Bank on 30 March, entitled “Africa’s unfolding diet transformation: What do we know, what do we need to know, and what role for policy?” The session was co-hosted by Agriculture Policies Community of Practice (APCoP) and Africa Agriculture Policy Unit. As follow-up to this presentation, C4b researchers interacted extensively with other World Bank personnel advising on programmatic implications and interpreting results generated by World Bank program design staff. This will be reported on separately in the next semi-annual report.
10. David Tschirley and Tom Reardon led preparation of chapter 3 of AGRA’s 2017 African Agricultural Status Report. Citation: Tschirley, D., T. Reardon, S. Haggblade, T. S. Jayne, S. Liverpool-Tasie, T. Awokuse, M. Muyanga, A. Wangalachi, and A. Makani (2017). “Engaging the

Agribusiness Sector in Inclusive Value Chain Development: Opportunities and Challenges”. Chapter 3 in *Africa Agriculture Status Report (AASR) 2017: The Business of Smallholder Agriculture*. Alliance for a Green Revolution in Africa.

11. David Tschirley made a presentation at the World Food Center, UC-Davis, during June. Citation: Tschirley, D. J. Goeb, and J. Snyder (2017). “Fresh Produce and the Diet Transformation in Africa: Challenges to Ensuring a Safe and Fresh Supply to Growing Urban Populations.” Presented at “Aligning the Food System to Meet Dietary Needs: Fruits and Vegetables”. World Food Center, University of California, Davis. 2 June 2017.
12. Reardon, T. “The sudden transformation of food systems in Asia and Africa,” July 14, 2017, ECI Food Group Seminar, Oxford University.
13. The C4b team organized a track session at the AAEA meetings in Chicago on 31 July, drawing heavily on C4b research regarding processed food penetration in African food systems. Presentations included:
 - a) Liverpool-Tasie, LSO, Reardon, T. and Abagyeh-Igbudu I. J. (2017). Rapid agri-food system transformation in sub-Saharan Africa: Evidence from processed food inventories in Nigeria. Presented paper at the 2017 Annual Meeting, Agricultural and Applied Economics Association, Chicago, IL.
 - b) Reardon, T. (2017). Rapid agri-food system transformation in sub-Saharan Africa: Overview of emerging results. Presented paper at the 2017 Annual Meeting, Agricultural and Applied Economics Association, Chicago, IL.
 - c) Theriault, V. (2017). A city-retail outlet inventory of processed dairy and grain foods: evidence from Mali. Presented paper at the 2017 Annual Meeting, Agricultural and Applied Economics Association, Chicago, IL.
 - d) (Tschirley absent due to family emergency)
14. Reardon, T. and D. Zilberman. “Climate change and developing country food supply chains,” July 31, AAEA.

Activity #7: Targeting of ReNAPRI, ReSAKSS, and AGRA Forum Annual meetings in 2017 for presentations on C4b research and policy implications.

Achievements: C4b researcher Tschirley led a team comprised of C4a and C4b researchers in authoring a chapter on linking agribusiness to smallholder farmers in AGRA’s flagship 2017 report. The report was entitled *The Business of Smallholder Agriculture in Sub-Saharan Africa*, and the chapter was entitled “Engaging the Agribusiness Sector in Inclusive Value Chain Development: Opportunities and Challenges.” This chapter represents the first formal collaboration between C4b and C4a researchers, and drew directly on both work streams to provide a clear set of implications for the prospects and limitations, and policy priorities, for engaging smallholder farmers in rapidly transforming agrifood systems in the region.

Activity #8: Application of the Policy Diagnostic Tool in Tanzania

A workshop on the application of this tool was held in Dar es Salaam in April, 2017, with the participation of ASPIRES staff and two faculty from SUA/SUGECO. Results of the use of the tool in the grains sector, on trade, and in the food processing sector were presented, and participants worked to apply it in additional areas, including oilseeds. Professors Caputo and Ortega of MSU made presentations to the group on analytical approaches to measuring policy preferences within value chains.

While funding prevents the conduct of the surveys needed to apply these tools in full, insights are being used in the ASPIRES project’s engagement on policy decisions within the country’s oilseeds sector. Here, a rapidly growing sunflower sector – on-farm production sold mostly to small-scale processors – confronts imports of low-cost palm oil from huge exporters (Malaysia and Indonesia). Key policy issues include what if any kind of tariff to apply to imported oil, and what investments and incentives (if any) to provide to small-scale processors to compete in this space. ASPIRES, with complementary input from C4b, is addressing both these issues through on-the-ground policy engagement in Tanzania combined with analytical work on

campus that feeds that policy dialogue. One result is that the first featured substantive session of the fourth AAPC, in February 2018, will be on the oilseeds sector and will feature (among others) MSU work, on the topic

Activity #9: In Ethiopia, the program has been asked by the Executive Committee of the RED&FS (the coordinating body on activities related to “Rural Economic Development and Food Security”

C4b contributed to the realization of a number of presentations to policy makers in Ethiopia on the ongoing work on the future of Ethiopian agriculture (and on transformation in the food marketing system). They included (1) A presentation at the Planning Commission during July, 2017; (2) A presentation at the RED&FS group at a seminar at the ILRI campus during July, 2017; (3) A presentation to USAID (including its deputy director for Africa) at the ILRI campus during August, and (4) A presentation to the heads of international development agencies at their annual retreat at the ILRI campus on October 2, 2017.

Key achievements in Ethiopia during FY18, which were made possible in part by C4b, are that policy makers and program designers have improved understanding/awareness of major changes that are shaping food systems in the country. While the discussion in Ethiopia has focused on relief for drought-stricken areas, it is often forgotten that there are a large number of other factors in the country (income growth, urbanization) that are shaping agriculture and food systems in different ways. Moreover, the impact of urbanization on national food systems is increasingly being recognized as seen in the recent deliberations of USAID in its planning of their country strategy plan.

Data Management Plan

	Dataset Type	Brief description	Anticipated time frame for a scholarly output to be completed based on this dataset?	When will it be registered in DDL?
1	Tanzania Retail Survey data	Retail survey in 3 cities in Tanzania documenting market share of different types of retail outlets, and rates of change of market share across major food groups in Tanzania. Retail outlets (Supermarket chains, independents, traditional shops, market vendors and street vendors).	1 st quarter 2018	2 nd quarter 2018
2	Tanzania Maize Millers Survey dataset	Survey of processors of maize meal and mixed meal products in Dar es Salaam, Tanzania to examine recent changes in the structure of this important sector.	1 st quarter 2018	2 nd quarter 2018
3	Nigeria poultry value chain survey datasets	Surveys at multiple levels of poultry value chain in Nigeria	2 nd quarter 2018	4 th quarter 2018

COMPONENT 5: STRATEGIC ANALYTICAL AGENDA AND SUPPORT TO DONOR POLICY AND STRATEGY

Description: This component provides a synthesis of research findings from FSP activities or customized on-demand technical support through analytics, dialogue, in-country consultation, and training drawing from the wealth of research outputs produced by the FSP member institutions.

Activity #1: Supporting the BFS Policy Unit with research evidence and analysis.

Description: The C5 workplan varies depending on the needs of the BFS Policy Unit and their partners. In the past, C5 has provided support to the Policy Unit, country missions, and USAID strategy more broadly through summaries of FSP research, literatures reviews, rapid analysis, and on-demand technical advising. This continued in 2017 by directly assisting USAID and its global development partners to assess trends and evaluate options on critical policy issues that have a bearing on the achievement of shared FTF, Global Food Security Strategy, and CAADP goals.

Achievements:

1. Support to the Global Food Security Strategy Country Selection Process

FSP C5 was approached by USAID BFS in early November 2016 to assist them and their other inter-agency partners (USDA, MCC, and Dept. of State) in developing indicators and a tool to select focus countries for the new USG Global Food Security Strategy. The first phase of our engagement was to assist in developing indicators by which countries could be ranked in terms of the following criteria as defined by the GFSS:

- Need
- Potential for agricultural-led growth
- Opportunities for partnership
- Opportunities for regional economic integration, and
- Government commitment to food and nutrition security.

These quantitative indicators needed to be easily accessible, come from reputable 3rd party sources, and have wide country coverage. Many criteria were rejected (e.g. participation in CAADP, various governance indicators) because of lack of coverage across the entire sample of low and lower middle income countries across Africa, Asia and Latin America. Numerous inter-agency groups also took part in finalizing this list of indicators during a series of meetings from mid-November until mid-December with USAID-BFS convening and leading the discussions.

Once this list of indicators was finalized, IFPRI collected the data and developed an Excel-based tool that allowed the user to select indicators and weight them within each of the GFSS criteria listed above. The tool also plotted the indicators along two axes: one based on need and another on enabling factors, which was a composite index of agricultural potential, regional integration, opportunities for partnership and government commitment. Plotting these scores grouped countries into one of four high/low, need/ EE categories.

The final presentation was given to Beth Dunford (Assistant to the USAID Administrator) and other senior BFS leadership on December 21st. It presents various scenarios based on weighting and groups countries into categories. From the initial list of 83 low and low-middle income countries considered during Phase I of this exercise, the tool helped to narrow the list to 54 countries that were included for further consideration in Phase II of the selection process. We provided USAID a copy of the Excel tool and conducted a brief training exercise so that they can continue to refine indicators and / or adjust weighting within the criteria.

FSP-C5 was also approached to support Phase II country selection to narrow the list of 54 countries to the final list. For Phase II, USAID BFS requested FSP-C5's assistance in exploring new metrics and data sources to evaluate in more depth the GFSS selection factors i) government commitment and ii) opportunities for

partnership. More specifically, USAID BFS requested that IFPRI develop metrics that explore:

- Government commitment: Whether countries are committed to making food security a priority agenda and the degree to which they put in place the framework and commitments to deliver on their plans, as well as their progress on delivering on those commitments.
- Opportunities for partnership: What additional data sources could measure opportunities to leverage complementary resources and expertise through partnerships with civil society, the private sector, and other donors working on food security?

FSP-C5 selected additional indicators to evaluate these criteria and provided the revised Excel tool, results and a final technical report describing all analyses to USAID. The final list of GFSS target countries is in preparation and makes use of FSP's analyses in selecting the countries.

2. Development of the AgGDP + indicator

FSP C5 is working with USAID to pilot a new means of measuring the size and growth of a country's agri-food-system. Labelled AgGDP+, this measure includes the value-added within agriculture, as well as the value-added generated by downstream processing, trading and transporting, and the domestic production of intermediate inputs used in the agricultural and agro-processing sectors. The AgGDP+ measure is estimated using information from national social accounting matrices (SAMs) constructed from national accounts, balance of payments, and agricultural, industrial and household surveys. IFPRI-DSGD has proposed a standardized definition and estimation procedure for AgGDP+ that could be used to track performance and transformation of agri-food systems in GFSS and other countries. Similarly, IFPRI-DSGD has explored whether it is possible to use a similar approach and data sources to estimate employment levels throughout the agri-food system. This indicator would allow for similar tracking over time and would be labelled AgEMP+. IFPRI has piloted the indicator measure in a dozen Sub-Saharan African countries and has incorporated into IFPRI-DSGD's Rural Investment and Policy Analysis (RIAPA) modeling framework for prioritizing agricultural value-chains and investments.

3. GFSS Country Strategy Support

USAID-Washington approached IFPRI to assist in the development of country strategy documents as part of the new US Gov't Global Food Security Strategy (GFSS). These strategy documents will be used to guide US investments in GFSS countries. To support these country strategies, IFPRI created and populated a dropbox folder with relevant IFPRI research on seven key analysis areas summarized below.

- Country Status Assessment and Profile: Assess country status in relation to defining and meeting food security and other CAADP and Malabo Declaration targets and objectives. Identify country-specific goals and milestones required to meet CAADP and Malabo Declaration targets.
- Targeting Analysis: Geospatial analysis around nutrition, poverty, hunger to inform focus areas and target populations (e.g., gender, youth, urban/rural). Analysis considers various criteria, including data on recurrent crises, as well as livelihoods, geography/agroecology.
- Agricultural Market Analysis: Explore constraints and opportunities to making the agriculture market system more competitive, inclusive, and resilient in support of GFSS goals. Analysis should include production, markets, policy, finance, infrastructure, etc., and may include analysis of key value chains. Analysis should consider the opportunities and challenges to driving change nationally and in target populations within the ZOI (e.g., smallholders, women, and landless who need employment).
- Nutrition Analysis: Explore the direct and underlying causes of the various aspects of malnutrition and identify opportunities along various nutrition-specific and nutrition-sensitive pathways to address these causes. Would include relevant aspects of resilience, such as safety nets.
- Enabling Environment/Policy Analysis: Reviews the policy framework governing the agriculture and food security related sectors and the policy constraints hindering investment in them. It should review the institutional architecture relevant to the agricultural and food security policy system and assess respective capacities for policy implementation. Government structures for financing agriculture, nutrition, and food security should also be described to better understand options to

support country investments and whether significant impact can be expected from GFSS project/program level investments.

- Agriculture-Food System Investment Analysis: Assist in the selection of investment choices across the different components of the agri-food system. Analysis of investment alternatives should be embedded in countries' investment plans and should reflect the investment options identified through a consultative process with stakeholders. Assessment of alternatives toward GFSS objectives should form one component of analysis.
- Risk and Resilience

4. FTF Policy Matrix Report

Each FTF country has a policy matrix jointly developed by missions and their country partners that lays out a prioritized agenda of policy actions that are to be accomplished between the period 2013 and 2017. Each year FTF countries report on: the status of various policy actions (complete, on target, etc.), the successes and barriers in achieving progress and policy change, those partners / stakeholders involved with various policy changes, and other status updates. Working with members of the policy team, C5 cleaned and analyzed the reporting data and prepared a summary report synthesizing progress on the policy matrices. The report was prepared in spring 2017 and reviewed by BFS staff and finalized in July 2017.

5. Rapid analysis to support BFS discussions on priority research crops for the GFSS

FSP C5 provided quick data analysis to support BFS discussions on prioritizing focus crops for the GFSS. The request consisted of identifying what crops are the most important for food security in GFSS countries and globally to understand where USAID may want to invest in crop science and technologies to have the largest impact.

Activity #2: Mapping policy change in food security and nutrition

Description: This activity will build on an earlier C3 mapping of food security and nutrition policies and programs globally (78) countries and the FTF policy matrices carried out for countries. The work will document the policy changes, new policies passed with regard to food security, food security and nutrition or nutrition. The work will begin with identification of the food security and nutrition elements of the original CAADP NAIPS and document the changes in policies, programs and orientation with regard to food systems, nutrition-sensitive programs and direct nutrition interventions covering under-nutrition, micro-nutrient deficiencies and overweight and obesity. Changes in institutional architecture will be documented. Innovations with regard to policies, programs and institutions will be highlighted as well as trends. The monitoring and evaluation frameworks will be examined and compared to the SDG indicators, Agenda 2063 indicators and the CAADP results framework.

Achievements:

A methodology for the work was elaborated. This has been integrated into the ReSAKSS NAIP support tools and forms part of the CAADP Technical network support. The tools and methodology were presented at the ECOWAS NAIP clinic 9 – 13 October in Saly, Senegal. Fourteen of the 15 ECOWAS countries participated in the workshop. Sheryl Hendriks worked with a young expert trained earlier on the C3 Kaleidoscope model policy analysis and the methodology for the C5 component of FSP. He is one of 24 experts trained to use the tool for assessing the NAIPs. As the 7 draft NAIP 2s from ECOWAS were only received a couple of days prior to the clinic, we did a preliminary analysis of Liberia and Togo's plans as examples to share with the participants.

Documentation on the agriculture and food security policy context in each of the 20 priority countries and Malawi has been collected as well as the first generation NAIP documents, reviews and assessments. We have developed a template for systematic analysis of policy and institutional changes between the two generations of NAIPs and have identified the indicators relevant to food security and nutrition from the SDGs, CAADP results Framework and Biennial Review.

We were able to use the tool to convince the Liberian delegation that their draft NAIP 2 is too unfocused and ambitious. They will be reporting back on the feedback to the country team and are considering going back to the original NAIP to refine this to align with Malabo rather than starting from scratch. The Theory of change tool showed that Liberia's NAIP 2 draft had five components, one of which was food security and nutrition. This component has over 35 programmes. We presented a comparison of Togo (a better example and focused) vs Liberia (all over the place and unfocused) as illustrations at the workshop.

We were also able to convince the countries that they have to include food security indicators to manage and mitigate these risks as the CAADP results framework only includes nutrition indicators. They agreed that this is necessary and will revise the indicators for food security and nutrition to align with the Malabo commitments, the Biennial Report outcomes and indicators we provided that could be useful for measuring and monitoring and setting targets for this element of the NAIPs. We have shared the C5 activity tool with the countries and are chasing to complete the analysis of the other ECOWAS and AU priority countries as well as conducting the analysis for Malawi.

We have been developing the indicator list from a range of available data and will put these into summaries to send to the countries by the end of October. The statistics go beyond the CAADP indicators to show displaced persons and numbers of people on food aid. We hope this will help the countries in identifying the most vulnerable and quantifying the level and scale of desperation.

We are in the process of reviewing the NAIPs and completing the templates for analysis to be share with countries to support their design of the NAIPs.

Outputs:

- Report on the review and documentation of policy changes, new policies passed with regard to food security, food security and nutrition or nutrition, including innovations
- Report on the review and documentation of related changes in institutional architecture, including innovations
- Report on the comparison of national M&E frameworks with regard to SDG indicators, Agenda 2063 indicators and the CAADP results framework

Outcomes:

- A deeper understanding of more recent trends in policy and program change with regard to the integration of nutrition into NAIPs
- A deeper understanding of the scope and extent of the translation of international policy directions into national policies and programs with regard to food security and nutrition
- A deeper understanding of what institutional changes have occurred to accommodate these changes in policy and the increasing need coordination among sectors and stakeholders.

9. MANAGEMENT SUPPORT FOR COORDINATION, COMMUNICATION, COMPLIANCE AND IMPACT

This Food Security Policy Innovation Lab is led by a management team at MSU (M. Maredia, S. Longabaugh, O. Tasié, and E. Paymal), IFPRI (X. Diao and I. Matias) and UP (S. Hendricks and E. Mkandawire) that serves as a liaison between USAID and the FSP Consortium partners. This team provides support to the FSP Innovation Lab through coordination, communication, compliance and facilitating capacity building and policy change drawing from the wealth of research outputs produced by the FSP Component teams C1 to C5. At each partner institution, the management team is supported by the business office staff that have key responsibilities in the contractual and financial management of the FSP Leader award, Mission buy-ins, and Associate Awards.

Specific tasks accomplished in Year 4 by the management team are noted below.

9.1 Coordination

The management team participated in USAID organized GFSS Policy Monitoring Partners Workshop in December. This meeting served as a platform to learn about the Global Food Security Strategy and share FSP's experience on qualitative approaches for monitoring policy outcomes.

The management team coordinated the completion of two internal reviews that were initiated in year 3 by MSU through support from the AFRE Department and the College. Consultants (Frank Young and Kristy Cook) were identified for the reviews. The management team played a coordination role in implementing these reviews by organizing and providing access to the review team documents and other review materials, conducting an online survey, and responding to reviewers' questions and participating in phone call interviews. The reports were submitted by the Reviewers in December – January, and shared with the broader team and USAID.

As a follow up to one of the recommendations of the Frank Young report, and given the strategic importance of shifting the focus towards policy influence and country level impacts, an FSP team meeting was organized in Washington D.C. in March. The meeting was attended by all the global component leads and team members from MSU, IFPRI and UP, and at least one lead from each country AA or buy-in. The meeting provided an opportunity to all the FSP team members to learn about accomplishments, and ongoing and planned activities at the global and country level, and helped better coordination of the research demand and supply side within the FSP program. This meeting facilitated communication between the global Component teams, Country teams, and Consortium partners.

In Year 4, FSP program went through an independent mid-term review. The FSP team meeting in March served as an opportunity for the review team to meet and interact with the FSP team members. The management team played a coordination role in providing access to all the documents and information needed by the review team, and facilitating online surveys and in-country visits to Tanzania and Myanmar. The evaluation was completed in July-August and the Report is available on the [USAID's DEC site](#). Based on the analysis, the evaluation team determined that:

"...there is a great deal of qualitative and quantitative evidence that the FSP IL has exceeded its original intended results in terms of the two Feed the Future Sub-IRs and Sub-Sub IRs.2 Furthermore, it has worked in a larger number of countries than the initial IL was designed to intervene."

The evaluation report included 20 priority recommendations for strengthening implementation of the project for the length of the project, and 14 recommendations for future USAID/Bureau for Food Security (BFS) initiatives to strengthen the national, regional, and global policy environment in countries where USAID has Feed the Future projects. Several recommendations that were feasible to implement within the budget resources and project timeframe have been prioritized and integrated in the final year workplan.

9.2 Communication

In October 2016, FSP hired a communications manager, which was a new position for the project. This person has focused on producing the basic communication tools that support the promotion of FSP's activity. Over the past 12 months, under the leadership of the new communications manager, the project has achieved several key milestones:

- Brochures: A four-page [project brochure](#) was revised to highlight FSP's mission, goals, and approach. It provides examples of its activities. Specific country brochures that describe key activities have also been created for 5 countries ([AGLC](#), [Malawi](#), [Mali](#), [Tanzania](#), and [Zambia](#)). Other country brochures are in the works. In print, these FSP brochures have been widely disseminated at in-country conferences and workshops as well as at events organized by USAID (such as the launch of the GFSS Research Strategy), and professional meetings like the AAEA annual meeting, and the World Food Prize event.
- A revitalized [FSP website](#): FSP website serves as a repository of documents as well as a news dissemination tool. A custom-developed web site was launched in February 2017. By the end of September 2017, it holds over 500 entries and pages. These are organized per themes, components and countries. A section is dedicated to the administration of the project (project introduction, people, and administrative reports). All the scientific [publications](#) of the projects are posted on the site (66 FSP Research Paper, 6 of them in French as well; 45 FSP Policy Research Briefs; 28 Peer Reviewed publications; 4 Tanzania Policy Reform Briefs; 11 Highlights and 9 State Policy Notes from Nigeria; 7 Research Highlights from Myanmar, and 10 Backgrounders from AGLC), as well as the PowerPoint presentations (over 160 of them) (see **Appendix B** for a list of these outputs for FY 2017). The site has 48 featured stories, for an average of 5 stories a month. In addition, 25 weekly news from Nigeria were posted. The site records over 4,000 users in the 8-month period, with an average of over 5 pages viewed per visit. 46% of the users are from the US. Among the countries where FSP works, Tanzania, Nigeria, Malawi, and Myanmar are the most frequent users. 25% of the users are using mobile devices.
- The [Twitter account](#) (@foodsecuritylab) was “reactivated,” linking to the web site pages and documents. The Twitter account has continued to steadily gain followers. We keep being very engaged with this account. At the end of September 2017, the account had about 470 followers, with 670 posted tweets.
- Telling our story: In this past year, several stories have been published on larger media outlets: *AgriLinks* stories (4 articles), and *The Conversation* articles (3), and several articles have been submitted to Feed the Future communication services (Appendix D).
- FSP's work has been cited or featured 59 times in the [media](#). These citations are posted on the web site.
- A [video](#) has been created for the Nigeria Agriculture Policy Project's Visiting Scholars Program.
- A knowledge dissemination tool has been designed in the form of “[True or Not, So What?](#)” questions. It's a playful and popular way to share serious facts from our research.
- Three infographics based on our performance or research outputs are in the works.
- Outreach: FSP co-organized with MSU AFRE Department a project presentation table at the AAEA conference in Chicago. FSP communication also promoted the team led by Thomas Jayne (C1/C2, C4a, Malawi, Tanzania, and Zambia) who received the AAEA Bruce Gardner Award. Several FSP team members were on that team (Eric Crawford, Saweda Liverpool-Tasie, Nicole Mason, and David Mather). FSP communication organized an information table at the Feed the Future/BIFAD meeting (September 2017, Washington, DC.)
- Some efforts have also been made to coordinate in-country communication strategies, through in-person meetings in Tanzania and Zambia, as well as an FSP communicators group.
- This past year, the Communication manager also traveled to Tanzania and Zambia. She participated in FSP co-organized conferences and supported their communications. She met with in-country communication staff as well as with USAID Tanzania Mission persons. In addition, the

Communication manager participated in the FSP team meeting held at IFPRI in March, and had an opportunity to meet and interact with collaborators from all three consortium institutions, and her counterpart at IFPRI.

- Relations with other MSU's communicators have been strengthened, exploring resources and collaboration opportunities, including with the University Communicators' Network, the communicators for international projects, and the College of Agriculture and Natural Resources.

9.3 Compliance with Open Data Management Plan

Each project component team funded by the FSP Core project has developed a data management plan that identifies all the datasets and elaborates on the plan for complying with the open data directives of USAID. Given the multiple partners and the nature of the program, there are many open data access sites available to FSP team members. The management team will continue to track and monitor the progress of this data management plan in year 5. The goal is to have the data available in the key sites used by professionals in each field, and give highest exposure to the data, in addition to registering these datasets in the USAID Development Data Library (DDL).

Achievement: Each component team was approach to revise their Data Management Plan (DMP) and status updates were provided throughout the year. A short presentation was made during the FSP meetings to keep team members informed on the requirements and process for submitting data to the USAID Development Data Library (DDL). FSP team members have been notified of datasets in the DMP that have met the requirements for registration to the DDL and plans have been developed for registration if datasets have not already been registered.

9.4 Working towards policy change

To improve the policy impact of FSP investments, Nicholas Sitko joined the management team from April 2016 to April 2017. As part of the management team he played a key role in supporting the application of policy engagement tools to explicitly link FSP research activities and insights generated under C3 and C4 to country level activities. In year 4, the following specific activities were carried out by Sitko in this coordination role within the management team:

- A "Practitioners guide to strategic policy engagement" was developed (jointly authored by Sitko, Babu, and Tschirley) and published as an FSP Research Paper on the website. This guide is a systematic approach for linking research, communication, and capacity building activities to identified policy constraints. It draws heavily on insights generated by the policy system analysis carried out by C3.
- In response to USAID/Malawi's request, and in collaboration with Todd Benson, Nick also played a backstopping role in the analysis of constraints to policy reform in three policy areas in Malawi. A concept note and associated methods were developed to analyze policy system constraints to reform in three key agricultural policy areas: seed system reform, ADMARC, and FISP. This concept note was accepted by the USAID mission in Malawi and fieldwork completed by March. This analysis applies the policy engagement tools developed by Sitko et al in order to shed light on the feasible range of activities to achieve policy reform. This work was carried out by a consultant, working in close collaboration with Nicholas Sitko and Todd Benson.

9.5 Grant Management, Reporting, and Monitoring and Evaluation

The management team continued to play a major role in providing support to the FSP program in terms of:

- Managing institutional sub-contracts and consultancy contracts (including reviewing workplans, budgets, invoicing, meeting Institutional Review Board requirements)
- Submitting required USAID reports: bi-monthly, semi-annual, and financial reports, accruals, etc.
- Collecting, maintaining and submitting to FTFMS system project M&E data (see Appendix E for submitted M&E reports). The narrative report submitted to FTFMS included major successes, challenges, and lessons learned in the implementation of FSP project in Year 4 (Appendix E). Two

management related challenges worth highlighting are:

- The total project management team effort this past year was about 25% less than budgeted due to one staff leaving MSU and demands from other competing projects on existing staff. This meant that several critical project M&E, and coordination efforts to facilitate linkages between the global and country level components to identify and achieve policy impacts did not occur as anticipated.
- The significant time involved in reporting and indicators sometimes leads to time being spent on the project that exceeds what is listed based on research, outreach and capacity building activities, and in some cases trade-offs between reporting and getting the work done are encountered. This may be the case mainly for components that have many activities under them.
- Providing support to Associate Awards and mission buy-ins in the implementation of the M&E plan, data collection templates, and conducting the baseline / midline /endline surveys for the qualitative indicators. During this past year the baseline survey in Nigeria, Mali, Zambia, and Tanzania was completed, and a survey in Senegal was initiated, and in Burma pilot tested. The Reports of the completed baseline surveys are published as FSP Research Papers 74, 75, 76, and 89.
- Coordinating the submission of concept notes and proposals in response to two requests for centrally funded buy-ins, which were awarded in September 2017. These include:
 - Development of a CDAIS tool kit and its application in a few case study countries
 - Agriculture sector assessment in Venezuela

APPENDIX A: LIST OF ONGOING AND PROSPECTIVE BUY INS AND ASSOCIATE AWARDS

Description	Dates	Amount	Obligated	Status (as of Jan 31, 2018)
Food Security Policy Leader Award RC102750	Signed: 7/15/2013 - 1/14/2020	\$15,000,000	\$11,300,000	Operational
Modification Buy-In:				
USAID/Mali RC104270	Signed: 9/8/2014 – 7/14/2018	\$ 900,000	\$ 900,000	Operational
USAID/Tanzania RC104271	Signed: 9/8/2014 - 7/17/2018	\$ 500,000	\$ 500,000	Operational
USAID/West Africa RC104272	Signed: 9/8/2014 - 7/14/2018	\$ 600,000	\$ 600,000	Operational
USAID/Tanzania (ASPIRE) RC106131	Signed: 5/1/2016 - 1/14/2020	\$ 6,000,000	\$ 6,000,000	Operational
USAID/Zambia RC106132	Signed: 9/8/2014 - 1/14/2020	\$ 1,500,168	\$ 400,000	Operational
USAID/CDAIS Toolkit RC107949	Signed: 10/1/2017 - 1/14/2020	\$ 700,000	\$ 700,000	Operational
USAID/Venezuela RC107950	Signed: 10/1/2017 - 1/14/2020	\$ 300,600	\$ 150,000	Operational
Total FSP Core (including Modifications)		\$25,500,768	\$20,550,000	
Associate Awards:				
Food Security Policy Project (Burma) RC104236	Signed: 9/24/2014 - 9/23/2019	\$ 7,718,509	\$ 5,743,307	Operational
Malawi New Alliance Policy Acceleration Support (NAPAS) RC104584	Signed: 11/27/2014 - 11/27/2018	\$ 4,002,467	\$ 4,002,467	Operational
African Great Lakes Coffee RC105110	Signed 7/20/2015 - 7/19/2018	\$ 1,800,000	\$ 1,390,000	Operational
Senegal Agricultural Policy Project (PAPA) RC105142	Signed: 7/27/2015 - 7/26/2018	\$ 6,000,000	\$ 2,878,962	Operational
Nigeria Agricultural Policy Project RC105214	Signed: 7/1/2015 - 6/30/2020	\$12,499,999	\$ 4,390,953	Operational
Mali RC105885	Signed 7/1/2015 - 2/15/2021	\$ 4,399,932	\$ 2,000,000	Operational
Total FSP Associate Awards		\$36,420,907	\$20,405,689	
Total FSP		\$61,921,675	\$40,955,689	

APPENDIX B. FY 2017 OUTPUTS POSTED ON FSP WEB SITE

FSP features three types of publication outputs on its website. These include:

[Research Papers](#). They target researchers, policy makers, donor agencies, educators, and international development practitioners. They provide the evidence for policy recommendations. These papers present the research methodology and detailed results with a synthetic conclusion. These can have a country, regional, or more global focus. They are co-authored, reflecting the multi-disciplinary, collaborative and cross-institutional work of FSP.

[Policy Research Brief](#). These are short synopses (2-4 pagers) outlining the main results and their possible implications for policy. This series more directly addresses government officials, policy- and decision-makers.

FSP team members also publish their findings in [peer reviewed publications](#) of national and international reputation.

In addition, the FSP website also features [Presentations](#) made by FSP team members at conferences, workshops and outreach events as Resources.

All these outputs are co-authored, reflecting the multi-disciplinary, collaborative and cross-institutional work of FSP. These outputs for FY 2017 are listed in descending chronological order, and are also linked to the website for accessibility.

FSP Research Papers

- [Mise en oeuvre des politiques régionales sur les pesticides en Afrique de l'Ouest : Sénégal](#). Research Paper 71 - FR. Amadou Diarra et Boubacar Diallo. Septembre 2017
- [National Implementation of Regional Pesticide Policies in West Africa: Ghana Case Study Report](#). Research Paper 70. Amadou Diarra and Oyinkan Tasié. August 2017
- [National Implementation of Regional Pesticide Policies In West Africa: The Gambia Case Study Report](#). Research Paper 69. Boubacar Diallo and Oyinkan Tasié. August 2017
- [Mise en oeuvre des politiques régionales sur les pesticides en Afrique de l'Ouest : Guinée](#). Research Paper 68. Abdramane Traoré et Steven Haggblade. August 2017
- [Mise en oeuvre des politiques regionales sur les pesticides en Afrique de l'Ouest : Côte d'Ivoire](#). Research Paper 67 - FR. Abdramane Traoré et Steven Haggblade. Août 2017.
- [Crop Production and Profitability in Ayeyarwady and Yangon](#). Research Paper 66. Aye Cho, Ben Belton and Duncan Boughton. August 2017
- [A City-Retail Outlet Inventory of Processed Dairy and Grain Foods: Evidence from Mali](#). Research Paper 65. Véronique Thériault, Amidou Assima, Ryan Vroegindewey, David Tschirley, and Naman Keita. July 2017
- [Rural Transformation in Central Myanmar](#). Research Paper 64. Ben Belton, Mateusz Filipowski, Chaoran Hu, Aung Tun Oo, Aung Htun. July 2017
- [Intrahousehold Efficiency of Fertilizer Use on Rainfed Cereals in Mali](#). Research Paper 63. Melinda Smale, Véronique Thériault, and Hamza Haider. 2017
- [Efficacité intra-ménage de l'utilisation d'engrais sur les céréales pluviales du Mali](#). Research Paper 63 - FR. Melinda Smale, Véronique Thériault et Hamza Haider. Juillet 2017
- [Women's Welfare and Livelihoods Outside of Marriage: Evidence from Rural Tanzania](#). Research Paper 62. Ayala Wineman. July 2017
- [Land Prices Heading Skyward? An Analysis for Farmland Values across Tanzania](#). Research Paper 61. Ayala Wineman and Thomas S. Jayne. July 2017

- [Intra-rural Migration and Pathways to Greater Well-being: Evidence from Tanzania.](#) Research Paper 60. Ayala Wineman and Thomas S. Jayne. July 2017
- [Assessing the State of the Rice Milling Sector in Nigeria: The Role of Policy for Growth](#) Research Paper 59. Michael Johnson and Ian Masias. June 2017
- [Land Administration Service Delivery and its Challenges in Nigeria: A Case Study of Eight States.](#) Research Paper 58. Hosaena Ghebru and Austen Okumo. June 2017
- [Institutional Limits to Land Governance Reform: Federal-State Dynamics in Nigeria.](#) Research Paper 57. Danielle Resnick and Austen Okumo. June 2017
- [Institutions and Public Agricultural Investments: A Qualitative Study of State and Local Government.](#) Research Paper 56. Tewodaj Mogues and Tolulope Olofinbiyi. June 2017
- [The Impact on Farm Household Welfare of Large Irrigation Dams and their Distribution.](#) Research Paper 55. Hiroyuki Takeshima, Adetola Adeoti, and Oluwafemi Adebola Popoola. June 2017
- [Who Influences Government Spending in Agriculture? The Roles of Public Actors in Subnational Funding.](#) Research Paper 54. Tolulope Olofinbiyi and Tewodaj Mogues. June 2017
- [Varietal Development and the Effectiveness of Sector Policies: The Case of Rice in Nigeria.](#) Research Paper 53. Hiroyuki Takeshima and Alhassan Maji. June 2017
- [Aquaculture in Myanmar: Fish Farm Technology, Production Economics and ...](#) Research Paper 52. Ben Belton, Mateusz Filipowski and Chaoran Hu. May 2017
- [Agricultural Extension and Advisory Service Delivery in Malawi: Historical Background and a Review.](#) Research Paper 51. Flora Janet Nankhuni. April 2017
- [Les Herbicides Contrefaits et la Productivité Agricole au Mali...](#) Research Paper 50 - FR. Amidou Assima, Steven Haggblade et Melinda Smale. March 2017
- [Counterfeit Herbicides and Farm Productivity in Mali: A Multivalued Treatment Approach.](#) Research Paper 50. Amidou Assima, Steven Haggblade, and Melinda Smale. March 2017
- [Practitioner's Guidebook and Toolkit for Agricultural Policy Reform: The P.M.C.A. Approach...](#) Research Paper 49. Nicholas J Sitko, Suresh Babu, and Barak Hoffman. March 2017
- [Food System Transformation and Market Evolutions: An Analysis of the Rise of Large-scale Grain....](#) Research Paper 48. Nicholas J. Sitko, William J. Burke, and Thomas S. Jayne. March 2017
- [National Implementation of Regional Pesticide Policies: Mali Case Study Report.](#) Research Paper 47. Steven Haggblade, Boubacar Diallo, Amadou Diarra, Naman Keita, Oyinkan Tasie, and Abdramane Traoré. March 2017
- [Mise en oeuvre nationale des politiques régionales de gestion des pesticides: Étude de cas du Mali.](#) Research Paper 47 - FR. Steven Haggblade, Boubacar Diallo, Amadou Diarra, Naman Keita, Oyinkan Tasie et Abdramane Traoré. May 2017
- [A User's Guide to the Kaleidoscope Model: Practical Tools for Understanding Policy Change.](#) FSP Research Paper 46. Steven Haggblade and Suresh Babu. March 2017
- [Climate Change and the Poultry Value Chain in Nigeria: Issues, Emerging Evidence, and Hypotheses.](#) Research Paper 45. Awa Sanou, Bukola Osuntade, Saweda Liverpool-Tasie, and Thomas Reardon. March 2017
- [Rapport technique sur l'approche méthodologique de l'enquête projet GISAIA.](#) Research Paper 44. Amidou Assima, Naman Keita, Alpha Kergna, Melinda Smale and Steve Haggblade. March 2017
- [Africa's Unfolding Diet Transformation and Farm Employment: Evidence from Tanzania.](#) Research Paper 43. David Tschirley, Benedito Cunguara, Steven Haggblade, Thomas Reardon, and Mayuko Kondo. February 2017
- [Market Imperfections for Tractor Service Provision in Nigeria.](#) Research Paper 42. Hiroyuki Takeshima. February 2017
- [The Effects of Kenya's 'Smarter' Input Subsidy Program on Smallholder Behavior and Incomes.](#) Research Paper 41. Nicole M. Mason, Ayala Wineman, Lilian Kirimi, and David Mather. February 2017
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- [Le Genre, la Génération et l'Utilisation d'Engrais.](#) Véronique Thériault, Melinda Smale, Alpha Kergna, Steve Haggblade, Bino Temé, Abdramane Traoré, Atelier de restitution, Bamako, Mali, 17 Novembre 2016
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- [Video Script: “Local Actions, Better Lives Decentralizing Rural Infrastructure Services”](#) Chris Gerrard, National APIS Workshop on ASWAp II, Lilongwe, Malawi, October 24–27, 2016
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- [Identifying the Highest Priority Institutional Reforms in the Priority Areas of the NAP.](#) Flora Janet Nankhuni and Chance Mwabutwa, National APIS Workshop on ASWAp II, Lilongwe, Malawi, October 24–27, 2016
- [Removing Barriers to inter African Trade.](#) Gem Argwings-Kodhek, National APIS Workshop on ASWApII Design, Lilongwe, Malawi, October 24–27, 2016
- [Guess the Country.](#) Suresh Babu, National APIS Workshop on ASWApII Design, Lilongwe, Malawi, October 24–27, 2016
- [Institutional Reform Challenges and Strategies: E-Voucher FISP Reform in Zambia.](#) Chris Gerrard, Athur Mabiso and Nicholas Sitko, National APIS Workshop on ASWAp II, Lilongwe, Malawi, October 24–27, 2016
- [Agricultural Policy Reform in Kenya: 2000–2016, Turning Vision into Law.](#) Gem Argwings-Kodhek,

National APIS Workshop on ASWAp II, Lilongwe, Malawi, October 24–27, 2016

- [Agricultural Market Reform: Lessons from Kenya](#). Gem Argwings-Kodhek, National APIS Workshop on ASWAp II, Lilongwe, Malawi, October 24–27, 2016
- [Overview of the ATA & the Agricultural Transformation Agenda in Ethiopia’s Growth & Transformation](#). Mirafe Gebriel Marcos, National APIS Workshop on ASWApII Design, Lilongwe, Malawi, October 24–27, 2016
- [Summary of the APIS Workshop](#). Flora Nankhuni, Athur Mabiso, Christopher Gerrard, and Gem Argwings-Kodhek, Agriculture Policy and Institutional Strengthening (APIS) in Malawi: A National Workshop on ASWAp II, Lilongwe, Malawi, October 24–27, 2016
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- [Understanding Institutions: Ten Institutional Perspectives on Agricultural and Rural Development](#). Christopher D. Gerrard, National APIS Workshop on ASWAp II, Lilongwe, Malawi, October 24–27, 2016
- [Understanding the Policy Framework for Agricultural Transformation in Malawi](#). Flora Janet Nankhuni, National APIS Workshop on ASWAp II Design, Lilongwe, Malawi, October 24–27, 2016
- [Rural Transformation in Ayeyarwady & Yangon: Emerging Evidence](#). Duncan Boughton, Ben Belton, Aung Hein and Ellen Payongayong, MSU Department of Agricultural, Food and Resource Economics (AFRE), Graduate Student Organization seminar, October 18, 2016
- [Toward Smallholder-led Agricultural Transformation in Myanmar: Beginning a Journey Together](#). Duncan Boughton, Ben Belton, Aung Hein and Ellen Payongayong, MSU Department of Agricultural, Food and Resource Economics (AFRE), Graduate Student Organization seminar, October 18, 2016.

APPENDIX C: MATRIX OF COUNTRY LEVEL ACTIVITIES FUNDED UNDER THE FTF INNOVATION LAB FOR FOOD SECURITY POLICY RESEARCH AS OF SEPTEMBER 2017

Country	Research Component and Topic	Lead researcher/ Component	In-Country Mission Contact (if any)	Collaborating in-country partner (if any)	Short description for BFS to share with Mission in requesting concurrence (2-3 sentences or short paragraph, including possible utility to mission)
Burma	“Strategic Planning for Irrigation Development in Myanmar”	Duncan Boughton: C1/C2 Asia	Dan Swift, Leslie Marbury	CESD, Nathan Associates	To assess the current irrigation status and potential for development to enhance the agriculture sector of Myanmar, and to examine the effectiveness of alternative agricultural policies on water resources.
Burma	Backstopping application of kaleidoscope model for improved policy process analysis and integration of evidence into policy making	Suresh Babu: C1/C2 Asia	Dan Swift, Leslie Marbury	CESD, FSWG	
Ethiopia	Rural Economic Development and Food Security	David Tschirley: C4b, Activity 5			In Ethiopia, the program has been asked by the Executive Committee of the RED&FS (the coordinating body on activities related to “Rural Economic Development and Food Security”; it is co-chaired by donors and the government), to make quantitative assessments of likely trajectories of the Ethiopian economy up to 2030. This will be done under alternative scenarios of public investment, economic policies, and external shocks. Results from the research from C4b (e.g. the diet transformation) will be an important input in developing different scenarios. Results will be presented at the end of 2017 to the stakeholders involved in the RED&FS group.
Ethiopia	Land Dynamics and Land Policy	Thom Jayne: C4a Activity 3			5. Impact evaluation reports on social and economic impacts (such as tenure security, investment, and over all welfare impacts) of various land rights protection programs (in Ethiopia, Nigeria, Mozambique)
Ethiopia	“Rural Economic Development and Food Security”	Dave Tschirley, C4b, Activity 5			The program has been asked by the Executive Committee of the RED&FS (the coordinating body on activities related to “Rural Economic Development and Food Security”; it is co-chaired by donors and the government), to make quantitative assessments of likely trajectories of the Ethiopian economy up to 2030. This will be done under alternative scenarios of public investment, economic policies, and external shocks. Results from the research from C4b (e.g. the diet transformation) will be an important input in developing different scenarios. Results will be presented at the end of 2017 to the stakeholders involved in the RED&FS group.

Country	Research Component and Topic	Lead researcher/ Component	In-Country Mission Contact (if any)	Collaborating in-country partner (if any)	Short description for BFS to share with Mission in requesting concurrence (2-3 sentences or short paragraph, including possible utility to mission)
Gambia	Case Studies of Uneven Implementation of Regional Input Policies	Steve Haggblade, C1/C2 W. Africa, Activity 2			Under USAID/WA funding, MSU team members (Haggblade, Diallo, Tasié and Traoré) are working with a series local researchers to conduct case studies of uneven national implementation of regional pesticide policies in Gambia, Senegal, Ghana, Ivory Coast, Mali and Nigeria. The work involves active engagement with local policy makers and private sector stakeholders. This work will culminate in a regional policy conference.
Ghana	Case Studies of Uneven Implementation of Regional Input Policies	Steve Haggblade, C1/C2 W. Africa, Activity 2			Case Studies of Uneven Implementation of Regional Input Policies
Ghana	Case Studies of Uneven Implementation of Regional Input Policies	Steve Haggblade, C1/C2 W. Africa, Activity 2			Under USAID/WA funding, MSU team members (Haggblade, Diallo, Tasié and Traoré) are working with a series local researchers to conduct case studies of uneven national implementation of regional pesticide policies in Gambia, Senegal, Ghana, Ivory Coast, Mali and Nigeria. The work involves active engagement with local policy makers and private sector stakeholders. This work will culminate in a regional policy conference.
Ghana	Case Studies of Policy Change	Steve Haggblade, C3, Activity 2			<ul style="list-style-type: none"> • 3 micro-nutrient policy studies (Malawi, South Africa , Zambia) • 3 fertilizer policy studies (Ghana, Tanzania, Zambia) • 1 gendering nutrition policy study (Malawi)
Ghana	Policy Engagement	Steve Haggblade, C3, Activity 4			Using the analytical tools and research findings from Activities 1-3, the FSP team will engage in a variety of ongoing policy processes with partners at MSU, IFPRI, UP, Africa Lead and possibly others. These efforts will include development and application of tools for guiding policy engagement, substantive engagement in various ongoing global and national policy. 4. Comprehensive policy stocktaking and mapping of the post-Malabo food security policy context in Ghana, background preparations
Ghana	Mechanization in Agricultural Transformation: South-South Learning and Knowledge Exchange	Xinshen Diao: C4a Activity 4			Empirical assessments of the demand for mechanization and its heterogeneity across locations in Nigeria and potentially Ghana

Country	Research Component and Topic	Lead researcher/ Component	In-Country Mission Contact (if any)	Collaborating in-country partner (if any)	Short description for BFS to share with Mission in requesting concurrence (2-3 sentences or short paragraph, including possible utility to mission)
Guinea	Case Studies of Uneven Implementation of Regional Input Policies	Steve Haggblade, C1/C2 W. Africa, Activity 2			Under USAID/WA funding, MSU team members (Haggblade, Diallo, Tasié and Traoré) are working with a series local researchers to conduct case studies of uneven national implementation of regional pesticide policies in Gambia, Senegal, Ghana, Ivory Coast, Mali and Nigeria. The work involves active engagement with local policy makers and private sector stakeholders. This work will culminate in a regional policy conference.
Ivory Coast	Case Studies of Uneven Implementation of Regional Input Policies	Steve Haggblade, C1/C2 W. Africa, Activity 2			Under USAID/WA funding, MSU team members (Haggblade, Diallo, Tasié and Traoré) are working with a series local researchers to conduct case studies of uneven national implementation of regional pesticide policies in Gambia, Senegal, Ghana, Ivory Coast, Mali and Nigeria. The work involves active engagement with local policy makers and private sector stakeholders. This work will culminate in a regional policy conference.
Malawi	Case Studies of Policy Change	Steve Haggblade, C3, Activity 2			<ul style="list-style-type: none"> • 3 micro-nutrient policy studies (Malawi, South Africa , Zambia) • 3 fertilizer policy studies (Ghana, Tanzania, Zambia) • 1 gendering nutrition policy study (Malawi)
Malawi	Policy Engagement	Steve Haggblade, C3, Activity 4			Using the analytical tools and research findings from Activities 1-3, the FSP team will engage in a variety of ongoing policy processes with partners at MSU, IFPRI, UP, Africa Lead and possibly others. These efforts will include development and application of tools for guiding policy engagement, substantive engagement in various ongoing global and national policy. 4. Comprehensive policy stocktaking and mapping of the post-Malabo food security policy context in Ghana, background preparations
Malawi	Fertilizer Policy	Thom Jayne: C4a Activity 1			policy engagement and outreach events on fertilizer policy in Africa including at the upcoming National Agricultural Policy Conference in Tanzania, March 1-3, 2017 and at upcoming 2017 NAPAS outreach events in Malawi to be determined

Country	Research Component and Topic	Lead researcher/ Component	In-Country Mission Contact (if any)	Collaborating in-country partner (if any)	Short description for BFS to share with Mission in requesting concurrence (2-3 sentences or short paragraph, including possible utility to mission)
Malawi	Toward a Holistic Sustainable Intensification Strategy for Smallholder Farmers in Increasingly Densely Populated Areas of Africa	Thom Jayne: C4a Activity 2			3. policy engagement activities on promoting interventions and policies that are both climate smart and promote agricultural productivity, including at the upcoming 2017 Climate Change Summit in Zambia (contributing to C1/C2 Zambia buy-in activities) and at the upcoming Malawi Land Policy Conference, to deepen C4 contributions to the FSP Malawi Associate Award. 4. a combination of research dissemination at policy outreach events in Africa (e.g., upcoming C1/C2 activities in Malawi, Zambia, and Tanzania) and high-level policy conferences reaching thought leaders at the World Bank, the MasterCard Foundation, AGRA, ReSAKSS, IFPRI, USAID, and other organizations.
Malawi	Land Dynamics and Land Policy	Thom Jayne: C4a Activity 3			1. To liaise more extensively with LPI through collaboration on country studies examining progress in protecting land rights of local communities (led by IFPRI but will engage MSU and UP in certain countries, e.g., Zambia, Malawi, Tanzania) 2. A cross-country study examining in detail the relationship between farm scale and farm productivity 3. Policy brief on the report above 4. a combination of research dissemination at policy outreach events in Africa (e.g., upcoming C1/C2 activities in Malawi, Zambia, and Tanzania) and high-level policy conferences reaching thought leaders at the World Bank, the MasterCard Foundation, AGRA, ReSAKSS, IFPRI, USAID, and other organizations.
Malawi	Working towards policy change	Nick Sitko, 9.3			• In response to USAID/Malawi's request, and in collaboration with Todd Benson, backstop an analysis of constraints to policy reform in three policy areas in Malawi. This study will be carried out by a consultant and will explicitly apply the tools developed for the practitioner's guide to the analysis.
Mali	Case Studies of Uneven Implementation of Regional Input Policies	Steve Haggblade, C1/C2 W. Africa, Activity 2	Halima Ouattara-Ayanou; David Yanggen		Under USAID/WA funding, MSU team members (Haggblade, Diallo, Tasié and Traoré) are working with a series local researchers to conduct case studies of uneven national implementation of regional pesticide policies in Gambia, Senegal, Ghana, Ivory Coast, Mali and Nigeria. The work involves active engagement with local policy makers and private sector stakeholders. This work will culminate in a regional policy conference.
Mali	Support to national programs: Mali	Steve Haggblade, C1/C2 W. Africa, Activity 5	Halima Ouattara-Ayanou; David Yanggen		MSU team members (Haggblade, Thériault, Smale, Témé and Traoré) are working closely with three local institutions – the Institut d'Economie Rurale (IER), Institut Polytechnique Rural (IPR) and Cellule de Planification et de Statistiques du Secteur Développement Rural (CPS/SDR) -- on a program of collaborative policy research and capacity building.

Country	Research Component and Topic	Lead researcher/ Component	In-Country Mission Contact (if any)	Collaborating in-country partner (if any)	Short description for BFS to share with Mission in requesting concurrence (2-3 sentences or short paragraph, including possible utility to mission)
Mozambique	Land Dynamics and Land Policy	Thom Jayne: C4a Activity 3			5. Impact evaluation reports on social and economic impacts (such as tenure security, investment, and over all welfare impacts) of various land rights protection programs (in Ethiopia, Nigeria, Mozambique)
Nigeria	Case Studies of Uneven Implementation of Regional Input Policies	Steve Haggblade, C1/C2 W. Africa, Activity 2			Under USAID/WA funding, MSU team members (Haggblade, Diallo, Tasié and Traoré) are working with a series local researchers to conduct case studies of uneven national implementation of regional pesticide policies in Gambia, Senegal, Ghana, Ivory Coast, Mali and Nigeria. The work involves active engagement with local policy makers and private sector stakeholders. This work will culminate in a regional policy conference.
Nigeria	Mechanization in Agricultural Transformation: South-South Learning and Knowledge Exchange	Xinshen Diao: C4a Activity 4			Empirical assessments of the demand for mechanization and its heterogeneity across locations in Nigeria and potentially Ghana. (2) More analyses on agricultural mechanization in selected African countries including Nigeria and possibly Ghana, both jointly funded by CGIAR PIM.
Nigeria	Land Dynamics and Land Policy	Thom Jayne: C4a			5. Impact evaluation reports on social and economic impacts (such as tenure security, investment, and over all welfare impacts) of various land rights protection programs (in Ethiopia, Nigeria, Mozambique)
Nigeria	Poultry sector analysis and outreach	Saweda Liverpool-Tasié, C4b, Activity 2			<p>i. Leveraging AA funds, the C4b Nigeria team will conduct surveys at the following nodes in Oyo State: (a) Poultry producers, (b) Feed mills, (c) Maize wholesalers, (d) Maize farmers, and (d) Poultry retailers.</p> <p>ii. The team will work with partners at various research institutes and institutions of higher learning with mandates to support governments in their agricultural policy development and implementation to disseminate this information at multiple levels.</p> <p>iii. While working at the federal level in Nigeria, the team will also work at the state level, due to the important role of the states in actual implementation of national policies and the fact that states often have their own specific agenda. In Spring, 2017, seminars on the sector will be organized at several federal and state level fora.</p>
Senegal	Case Studies of Uneven Implementation of Regional Input Policies	Steve Haggblade, C1/C2 W. Africa, Activity 2			Under USAID/WA funding, MSU team members (Haggblade, Diallo, Tasié and Traoré) are working with a series local researchers to conduct case studies of uneven national implementation of regional pesticide policies in Gambia, Senegal, Ghana, Ivory Coast, Mali and Nigeria. The work involves active engagement with local policy makers and private sector stakeholders. This work will culminate in a regional policy conference.

Country	Research Component and Topic	Lead researcher/ Component	In-Country Mission Contact (if any)	Collaborating in-country partner (if any)	Short description for BFS to share with Mission in requesting concurrence (2-3 sentences or short paragraph, including possible utility to mission)
South Africa	Case Studies of Policy Change	Steve Haggblade, C3, Activity 2			<ul style="list-style-type: none"> • 3 micro-nutrient policy studies (Malawi, South Africa , Zambia) • 3 fertilizer policy studies (Ghana, Tanzania, Zambia) • 1 gendering nutrition policy study (Malawi)
Tanzania	Case Studies of Policy Change	Steve Haggblade, C3, Activity 2			<ul style="list-style-type: none"> • 3 micro-nutrient policy studies (Malawi, South Africa , Zambia) • 3 fertilizer policy studies (Ghana, Tanzania, Zambia) • 1 gendering nutrition policy study (Malawi)
Tanzania	Toward a Holistic Sustainable Intensification Strategy for Smallholder Farmers in Increasingly Densely Populated Areas of Africa	Thom Jayne: C4a Activity 2			<p>3. policy engagement activities on promoting interventions and policies that are both climate smart and promote agricultural productivity, including at the upcoming 2017 Climate Change Summit in Zambia (contributing to C1/C2 Zambia buy-in activities) and at the upcoming Malawi Land Policy Conference, to deepen C4 contributions to the FSP Malawi Associate Award.</p> <p>4. a combination of research dissemination at policy outreach events in Africa (e.g., upcoming C1/C2 activities in Malawi, Zambia, and Tanzania) and high-level policy conferences reaching thought leaders at the World Bank, the MasterCard Foundation, AGRA, ReSAKSS, IFPRI, USAID, and other organizations.</p>
Tanzania	Land Dynamics and Land Policy	Thom Jayne: C4a Activity 3			<p>1. To liaise more extensively with LPI through collaboration on country studies examining progress in protecting land rights of local communities (led by IFPRI but will engage MSU and UP in certain countries, e.g., Zambia, Malawi, Tanzania)</p> <p>2. A cross-country study examining in detail the relationship between farm scale and farm productivity</p> <p>3. Policy brief on the report above</p> <p>4. a combination of research dissemination at policy outreach events in Africa (e.g., upcoming C1/C2 activities in Malawi, Zambia, and Tanzania) and high-level policy conferences reaching thought leaders at the World Bank, the MasterCard Foundation, AGRA, ReSAKSS, IFPRI, USAID, and other organizations.</p>

Country	Research Component and Topic	Lead researcher/ Component	In-Country Mission Contact (if any)	Collaborating in-country partner (if any)	Short description for BFS to share with Mission in requesting concurrence (2-3 sentences or short paragraph, including possible utility to mission)
Tanzania	Analysis and outreach stemming from the retail and miller surveys in Tanzania:	Dave Tschirley, C4b, Activity 1			This work will include (a) Data analysis of the retail and miller surveys; (b) Presentations in the third Annual Agricultural Policy Conference, which will bring together PS-level decision makers from various ministries along with private sector and civil society; (c) Intensive engagement with stakeholders built around the Policy Diagnostic Tool (see new activities section for more detail); (d) Collaboration with several partners, at Ministry of Agriculture request, to help develop the country's agroprocessing strategy. Together with the policy diagnostic tool, this will provide a platform for generating concrete policy impact from the C4b work; and (e) Continued use of policy structures in the country (Department of Policy and Planning in MALF; Policy Analysis Group) to raise knowledge and understanding. All will leverage Dr. Nyange's access to policy makers across sectors.
Tanzania	Application of the Policy Diagnostic Tool in Tanzania:	Dave Tschirley, C4b, Activity 4			This tool is related to, but separate from, the Kaleidoscope model that the C3 team has used. The purpose of the policy diagnostic tool is to identify and then pursue particular reforms in specific policies, programs, or regulations that national stakeholders have prioritized as both feasible and impactful identify. In Tanzania, C4b will work with the in-country SPIRES team to apply the tool during the first two quarters of FY17, then will engage intensively with policy makers around specific desired changes in policies, programs, or regulations.
Zambia	Oilseed and livestock market development for smallholders to inform policy and investment prioritization:	Thom Jayne, C1/C2 Zambia, Activity #1			In Zambia, there is a great deal of policy interest in identifying effective strategies to trigger smallholder income growth through agricultural diversification and market linkages. To build the evidence base to inform debates on this, the activity examines evolving grain, oilseed, and livestock markets in the context of dramatic changes in land access and farm size dynamics, uncertain trade policy, and growing urban demand. Research activities carried out under this activity area come from MSU and IAPRI.
Zambia	Analysis of land commodification and alienation to inform Zambia's draft Land Policy:	Thom Jayne, C1/C2 Zambia, Activity #2			In Zambia, the land policy is under review. To support the evidence base on land policy options, this work area focuses on the relationship between changing farm size dynamics and farm productivity in an effort to inform land and farm block policies. Research in this area will be carried out by researchers from MSU, IAPRI, and University of Zambia.

Country	Research Component and Topic	Lead researcher/ Component	In-Country Mission Contact (if any)	Collaborating in-country partner (if any)	Short description for BFS to share with Mission in requesting concurrence (2-3 sentences or short paragraph, including possible utility to mission)
Zambia	Developing an evidence base to guide food system climate resilience and adaption.	Thom Jayne, C1/C2 Zambia, Activity #6			Significant policy interest and donor support exists in Zambia to improve the climate resilience of the country's food and agricultural system. However, the evidence base on effective strategies remains thin. This activity area will examine the intersections between climate change and smallholder agriculture using a range of methodological approaches in order to provide empirical guidance on policies and investments to improve the climate resilience of Zambian agriculture. Both MSU and IAPRI researchers are leads on outputs in this activity area.
Zambia	Gender relationships and agricultural growth:	Thom Jayne, C1/C2 Zambia, Activity #7			This activity area explores the gendered implications of land titling and the control over sales proceeds on productivity and agricultural investments in order to help facilitate greater gender mainstreaming in agricultural policy strategies and discussions. Activities will be carried out jointly between MSU and IAPRI researchers.
Zambia	Capacity building support to IAPRI	Thom Jayne, C1/C2 Zambia, Activity #7			This activity area responds to a request from IAPRI management to support improved technical writing skills, ability to identify priority issues/topics for maximizing IAPRI's research impact on policy processes, and more effective peer feedback within IAPRI. This will be facilitated by MSU and the Southern African Institute for Policy Research (SAIPAR)
Zambia	Methods for conducting impact assessments in agriculture	Thom Jayne, C1/C2 Zambia, Activity #8			There is growing interest in conducting rigorous impact assessments to evaluate agricultural investment and policy options. This seminar will aim to provide IAPRI researchers with basic tools for carrying out impact assessments. This will be carried out jointly by MSU and Diginsights Zambia.
Zambia	Case Studies of Policy Change	Steve Haggblade, C3, Activity 2			<ul style="list-style-type: none"> • 3 micro-nutrient policy studies (Malawi, South Africa , Zambia) • 3 fertilizer policy studies (Ghana, Tanzania, Zambia) • 1 gendering nutrition policy study (Malawi)
Zambia	Toward a Holistic Sustainable Intensification Strategy for Smallholder Farmers in Increasingly Densely Populated Areas of Africa	Thom Jayne: C4a Activity 2			<p>3. policy engagement activities on promoting interventions and policies that are both climate smart and promote agricultural productivity, including at the upcoming 2017 Climate Change Summit in Zambia (contributing to C1/C2 Zambia buy-in activities) and at the upcoming Malawi Land Policy Conference, to deepen C4 contributions to the FSP Malawi Associate Award.</p> <p>4. a combination of research dissemination at policy outreach events in Africa (e.g., upcoming C1/C2 activities in Malawi, Zambia, and Tanzania) and high-level policy conferences reaching thought leaders at the World Bank, the MasterCard Foundation, AGRA, ReSAKSS, IFPRI, USAID, and other organizations.</p>

Country	Research Component and Topic	Lead researcher/ Component	In-Country Mission Contact (if any)	Collaborating in-country partner (if any)	Short description for BFS to share with Mission in requesting concurrence (2-3 sentences or short paragraph, including possible utility to mission)
Zambia	Land Dynamics and Land Policy	Thom Jayne: C4a Activity 3			<p>1. To liaise more extensively with LPI through collaboration on country studies examining progress in protecting land rights of local communities (led by IFPRI but will engage MSU and UP in certain countries, e.g., Zambia, Malawi, Tanzania)</p> <p>2. A cross-country study examining in detail the relationship between farm scale and farm productivity</p> <p>3. Policy brief on the report above</p> <p>4. a combination of research dissemination at policy outreach events in Africa (e.g., upcoming C1/C2 activities in Malawi, Zambia, and Tanzania) and high-level policy conferences reaching thought leaders at the World Bank, the MasterCard Foundation, AGRA, ReSAKSS, IFPRI, USAID, and other organizations.</p>

- C1: Country-Level Collaborative Research (on Farms, Firms, and Markets) and Formulation/Analysis of Policy Options
- C2: Country-Level Capacity-Building for Policy (Data, Analysis, Advocacy, Formulation, Consultation, Coordination, and Implementation)
- C3: Global Collaborative Research on Support to the Policy Process and Policy Capacity
- C4:a Agrifood System Transformation in the Upstream: Land Dynamics, Land Governance, Mechanization and Implications for Rural Employment
- C4:b Agrifood System Transformation in the Downstream and Implications for Linkages to the Upstream
- C5: Strategic Analytical Agenda and Support to Donor Policy and Strategy

APPENDIX D: STORIES PUBLISHED ON LARGER MEDIA OUTLETS

The Conversation

- [At Last, Evidence that African Agriculture is Powering Economic Transformation](#)
01/04/2017 □By Thomas Jayne, University Foundation Professor, Agricultural, Food and Resource Economics, Michigan State University
- [Why the US Has a Lot to Gain from Investing in Africa’s Agri-food Systems](#)
02/01/2017 □By Thomas Jayne, Isaac Minde and Chance Kabaghe

Agrilinks

- **FSP Rwanda Coffee Research in Feed the Future Agrilinks**
05/01/2017 □By AGLC Team
With Rwanda’s coffee, you’re in for a surprise when coffee and caramel flavors come together for a unique, sweet and tasty brew! Who is behind this magical cup? Why is Rwanda coffee production on the decline? An FSP study explains why.
 - [Feed the Future Agrilinks Newsletter and Blog, April 20, 2017](#)
 - See also [Research Paper 32](#), [Research Paper 33](#) and [Policy Brief 23](#)
- **Feeding on Farm Fish**
06/01/2017 □By Ben Belton
- Myanmar fish farmer with carp
- FSP Myanmar team posts [a blog on Agrilinks](#):
- **Women Farmers “Mind the Gap”**
 - Melinda Smale, Veronique Theriault, and Elisabeth Paymal 08/31/2017. FSP in Mali compared adoption and intensity of fertilizer use as well as productivity between men and women growers of sorghum within the same households. An AgriLinks post, August 31, 2017

Other publications

- [Feeding on Farm Fish](#)
- Ben Belton, *Worldfish blog*, June 14, 2017
- [Thomas S. Jayne: Institutional Capacity Building in Africa](#)
Thomas S. Jayne, *MSU Faculty Voice*, April 5, 2017

APPENDIX E: FTFMS PERFORMANCE NARRATIVE REPORT FOR FY 2017

Reporting Organization: **USAID**

Bureau: **BFS - Bureau for Food Security**

Operating Unit: **USAID Bureau For Food Security (BFS)**

Prime Partner: **Michigan State University**

IM ID: **43609**

Implementing Mechanism (IM): **ARP: FTFIL for Food Security Policy**

Award Number: **AID-OAA-L-13-00001**

Narrative Type: Performance Narrative (IM Performance Narrative (Multi Tabs))

Narrative Title: ARP: FTFIL for Food Security Policy

Last Modified On: Nov 22, 2017 Steve Longabaugh

Narrative Text:

1. Project Summary

The overall goal of the FSP program is to promote inclusive agricultural productivity growth, improved nutritional outcomes, and enhanced livelihood resilience for men and women through improved policy environments. The goal will be achieved by fostering credible, inclusive, transparent and sustainable policy processes at country and regional levels and filling critical policy evidence gaps. Entering its fifth full year of implementation, the FSP workplan is motivated by the Malabo Declaration goals of doubling smallholder productivity and tripling intra-African trade by 2025 as a means to accelerate poverty reduction.

2. FY17 (October 2016-September 2017) Performance

FSP work in the West Africa region under C1/C2 has focused on a series of regional and national policy issues affecting agriculture and food security. At the national level, the Mali Associate Award launched a program of applied research and capacity building, focusing primarily on policies affecting agricultural productivity, private sector agribusiness investments and trade. Influence to date on Government of Mali policies has included raising awareness of the serious regulatory problems posed by the rapid proliferation of pesticide use over the past decade, which underfunded national regulators have not had the capacity to monitor effectively concerning impact on input quality, human health and the environment. Ongoing work on Mali's fertilizer subsidy program, initiated at the request of Malian authorities, focuses on the impact alternative subsidy designs and prospects for reform.

At the regional level, work to identify lessons learned for faster regional policy harmonization at national level has focused on documenting lessons from the successful CILSS pesticide policy harmonization from the 1990s. Findings and policy influence to date include the presentation of key findings a series of six country case studies of three Sahelian and three coastal countries leading to four major recommendations made to regional regulators at the 41st Comité Sahélien des Pesticides (CSP), in November 2017, about key requirements for successful launch of the ECOWAS-wide Comité Ouest Africain des Pesticides (COAHP), scheduled to take place in May 2018. Following informal requests by CSP, CILSS and WAEMU, we expect formal requests for further assistance in completing necessary policy and institutional preparations over the coming six months.

1. In Burma, the FSP program is focused on working closely with the Ministry of Agriculture, Livestock and Irrigation (MOALI) Department of Planning, where FSP rapidly responded to the request of the incoming Government to take the lead in supporting a new Agricultural Policy Unit (APU), established in response to an FSP proposal developed by IFPRI and MSU in July 2016. The APU is a critical entry point for introducing evidence-based policy analysis, prioritizing public investment, and support the MOALI's functional transition to a facilitator/enabler of the private sector. A top priority for MOALI to which the FSP program is responding is the development of an improved irrigation strategy.
2. C1/2: EAST AND SOUTHERN AFRICA: FSP has continued to build capacity in applying modeling for agricultural outlook purposes through members of the Regional Network of Agricultural Policy Research Institutes (ReNAPRI). The Partial Equilibrium modeling capacity building activity, led by

University of Pretoria, was implemented in Tanzania and Mozambique in the past, and most recently in Malawi for the purposes of making agricultural projections, and identifying policy implications, using a rigorous and consistent modeling approach across the region.

3. In Malawi the FSP program has continued to provide the backstopping support to the NAPAS: Malawi project implemented under a Mission funded FSP Associate Award. The NAPAS:Malawi project also commissioned several value chain studies (at the request of the MoAIWD and the National Agricultural Investment Program development team) to inform the NAIP development team
4. FSPs work in Zambia has transitioned after having transformed its longstanding MSU project in Zambia into the Indaba Agricultural Policy Research Institute, one of the pre-eminent African policy think tanks in the region. The C1/C2 Zambia team now works closely with IAPRI to create greater awareness among both government and mainstream society on the range of actions needed to promote sustainable agricultural productivity and resilience in Zambia. Close collaboration between IAPRI and FSP resulted in advocacy work that convinced the Government of Zambia to pilot the E-Voucher input subsidy system in 2015 and 2016. These piloted programs were considered a success. Based on continued policy engagement by IAPRI and FSP in 2016, the Government of Zambia has begun its nationwide roll-out of the E-Voucher system in the 2017/18 season. The E-Voucher system has been actively promoted by IAPRI and MSU for the past eight years and we consider it a major policy achievement of IAPRI, FSP and earlier MSU efforts in Zambia
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8. The C3 team spent the reporting year shifting its focus from the theoretical and conceptual development of the KM into practical guides, analytical frameworks, conducting analyses and sharing the findings with countries where we work, learning platforms and global audiences. The team generated 2 working papers (Zambia fertilizer and nutrition paper and Tanzania fertilizer), 3 practitioners' guides, 5 Policy briefs, and one published journal paper and resubmitted two more. They also published one paper in the Conversation Africa and one Agrilinks Blog. As part of their outreach and policy communications effort, the team members participated in 7 learning events, reaching over 350 participants. They also have reviewed over 570 international, African, regional and national policy documents and continue migrating the library of these documents to the ReSAKSS database as a global public good for countries to use in aligning their national policy frameworks with the Malabo commitments and SDGs and for research purposes. About 12 policy engagements were held in Malawi related to the revision of the NAIP and the Agricultural Policy. Our work in Malawi influenced the Agricultural Policy and the National Nutrition Strategy. Further details are available in the annual report.
9. C4a global research on input subsidy programs has been utilized by governments and local policy institutes in Kenya, Nigeria, Tanzania, and Ghana, and has tangibly influencing national agro-input policies in Zambia and Malawi. In 2016, the government of Malawi introduced sweeping cut-backs to its FISP program after repeated discussions with FSP/C4a, FSP/C1-C2 and NAPAS analysts. In 2017, the

Zambian government is for the first time rolling out its E-Voucher subsidy program nationwide after years of active support for this program by FSP and IAPRI.

10. C4a research has also influenced the views and policy options considered by African policy makers, other African and international analysts, pan-African organizations such as the African Development Bank, African Union, AGRA, and NEPAD, as well as international development partners. The most clear examples of this influence of C4a research has been
 - o the integration of C4a research on youth and agricultural transformation into the 2016 and 2017 AGRA annual reports;
 - o the invitation of FSP/C4a researchers (Jayne, and Yeboah, Muyanga) to make keynote addresses at the annual RENAPRI and AGRF conferences in 2017 on
 - the importance of inclusive agricultural productivity growth as a foundation of a comprehensive youth employment strategy
 - how carefully designed land policies can promote synergistic development between the small-scale and medium-scale farm sectors;
 - The need for input subsidy programs to feature a broader set of inputs and practices beyond inorganic fertilizers to achieve resilience and climate-smart agriculture.
 - o C4a researchers had a one-on-one meeting with Dr. Akin Adesina in September 2017, discussing the implications of C4a research for African Development Bank Programs.
 - o C4a researcher was invited to meet with Bill and Melinda Gates for an hour-long meeting on land dynamics and land policies in Africa, drawing on FSP/C4a research.

These examples demonstrate the indirect influence that FSP/C4a research and outreach work in 2017 has had on the thinking of national policy makers, pan-African organizations and international development programs in 2017.

11. C4b Policy debates on agrifood system transformation in the downstream: in Tanzania, research fed into the country's draft agro processing strategy, with an emphasis on the role of SMEs and approaches to foster continued and increased dynamism in this sector. In Ethiopia, research results were important inputs into the quantitative assessments of likely trajectories of the Ethiopian economy up to 2030 (requested by the Executive Committee of the RED&FS - the coordinating body on activities related to "Rural Economic Development and Food Security", co-chaired by donors and the government). In Nigeria, research was presented to stakeholders at the state level in 2 study states and discussion and feedback has been used to refine the study focus and ongoing data collection efforts. More broadly, C4a research findings and presentations have begun to shape a more nuanced view of future food consumption and demand, value chain evolution, and the relative importance of food imports and local food production, processing and distribution in global and regional policy and strategy debates.
12. The FSP C5 program focuses on providing strategic analytical support to donor policy and strategy. In FY2017 C5 played a crucial strategic role in shaping development of the USG Global Food Security Strategy. It supported the US Government inter-agency Global Food Security Strategy country selection team by contributing to a tool to identify--and then analysis to support the identification -- of the GFSS target countries. During this process, C5 participated in discussion to identify indicators to rank countries, developed the methodology and an Excel-based tool, and presented the results to the inter-agency team. With GFSS focus on systemic, national level food systems change, FSP-C5 has been also made major contributions to conceptualization and development of new indicators to track performance and transformation of agri-food systems in GFSS and other countries, including the AgGDP+ indicator (including farm level as well as off farm components of agriculture from GDP national accounts), as well as employment in these sectors called AgEMP+. In response to USAID's request, University of Pretoria undertook a new activity of mapping policy change in food security and nutrition to feed into and provide quality control on African government National Agricultural Investment Plans.

3. Successes

1. In Malawi, the President also signed the National Agriculture Policy (NAP) (that the NAPAS: Malawi project helped produce). This was an action that has no precedence for a sector policy, probably signifying the high quality that the document portrayed. The event attracted more than 1,000 people

that were sensitized about the Policy. At the launch, the US Ambassador to Malawi provided remarks that made headlines in one of the Nation's major newspapers.

2. In Zambia, a full listing of all farms over 5 hectares was carried out in six districts of the country, which has demonstrated that there many more medium-scale farms in these districts than indicated by the use of the national statistical surveys utilized by the country to estimate national food production. This implies that the Government of Zambia may be significantly under-estimating its national agricultural production. C1/C2 Zambia activities in conjunction with IAPRI may lead to a revision of the way in which the national statistical agency collects data on agricultural production in the country.
3. Joint FSP and IAPRI research has finally led to the national roll-out of the E-Voucher input subsidy in the 2017/18 season by the Government of Zambia. This is a major policy reform achievement that has entailed over 8 years of concerted effort by IAPRI, FSP and its predecessor project in Zambia, the USAID-funded Food Security Research Project. (Steve – link this to the web-link of the success story written up about this – ask Elisabeth for the link)
4. A policy seminar was held in March to present the Kaleidoscope Model I and its applications. A user guide for applying the Kaleidoscope Model was also completed. The findings from six empirical case studies were compiled into synthesis briefs for greater accessibility to policy makers, civil society, and research audience.
5. C4a research on input subsidy programs in Africa was awarded the 2017 Bruce Gardner Memorial Prize for Applied Policy Analysis by the American Agricultural Economists Association, attesting to quality and policy impact of FSP research in Africa.
6. Policy debates on food security and upstream agrifood system transformation: Findings from the mechanization work were presented as a keynote address to a large number of stakeholders from various West African countries at a Workshop organized by Syngenta Foundation in Senegal in February. Various materials have been shared with government officials as well as the private sector (for example, tractor retailers). The report was completed in 2016 and summarized the policy issues of agricultural mechanization. The report summarized the experiences of Agricultural Mechanization Study Tour (participated in by four African government officials) and has been cited in various policy-relevant documents, including ASARECA Policy Newsletter, and FAO's new publication on agricultural mechanization between October 2016 and March 2017.
7. Policy debates on agrifood system transformation in the downstream: global level, constant outreach by researchers in multiple fora, together with identification of specific programmatic implications of the findings, resulted in a turning point in awareness of and interest in the C4b research by applied researchers and program officers across World Bank, UN Agencies, and USAID. Findings on processed food demand growth has especially aroused great interest across the board. An additional impact is the growing attention by the nutrition community in the work, leading to an invitation to present at the International Union of Nutrition Science meetings in Buenos Aires in October 2017, and the spurring of new nutrition-focused analysis under C4b. At a global level, C4b work has heavily influenced The MasterCard Foundation in its programmatic work, including the design of the Ag Youth Lab, which will benefit from major synergies with C4b- and country-level work in Nigeria and Tanzania.

4. Challenges

1. The total project management team effort this past year was about 25% less than budgeted due to one staff leaving MSU and demands from other competing projects on existing staff. This meant that several critical project M&E, and coordination efforts to facilitate linkages between the global and country level components to identify and achieve policy impacts did not occur as anticipated.
2. In Burma, the government is seeking to facilitate rapid, smallholder-led agricultural growth for inclusive rural economic growth. The challenges are formidable after more than five decades of top-down socialist management of the economy, and almost three decades of international isolation.
3. The significant time involved in reporting and indicators sometimes leads to time being spent on the project that exceeds what is listed based on research, outreach and capacity building activities, and in

some cases trade-offs between reporting and getting the work done are encountered. This may be the case mainly for components that have many activities under them.

4. Africa is moving into a phase of its development process in which African-led and African-managed development programs are becoming the key priorities of African states. An important challenge for FSP is to figure out how to align its activities more squarely with priority pan-African initiatives to ensure relevance and receptivity. This can be done but will entail greater resources for research, collaboration with local institutions, and management time for project activities. All are necessary.

5. Lessons Learned

The Food Security Policy Innovation Lab underwent an external mid-term performance evaluation this year. The evaluation team identified several insights and findings, which provide a source of many lessons learned that will be the focus of the synthesis efforts in FY 18. Some examples of lessons learned based on these findings include:

1. Long-term research and engagement with local partners are necessary to build a critical mass of evidence to influence policies. Conduct of policy analysis and research by FSP was heavily influenced by the component leader's and lead institution's previous work in conjunction with their contacts (stakeholders) in the countries of engagement. This pre-existing relationships and ongoing research through other programs/initiatives provided a platform for FSP to quickly build on and generate results in a shorter period of time.
2. The power of participatory approach in influencing policies: Early evidence of policy influence indicates that the highly participatory manner in which the initial FSP IL studies were selected, designed, and conducted affected their policy influence.
3. The importance of monitoring the impact of policy change: Policy changes can have unforeseen negative and positive impacts, making it important to evaluate their long-term and medium-term impacts on client groups and vulnerable households. Thus it is not sufficient to only focus on influencing policy change, but to also assess the impacts of policy change.
4. C4a research is finding that the livelihood strategies and support needs are different for people 15-20 vs 20-25 and 25-30, as they tend to be at different stages in their life cycles and face different kinds of challenges. Therefore, youth livelihood strategies need to be more nuanced and differentiated depending on individuals' point in their life cycle and initial conditions.
5. While FSP has had significant impact strengthening the capacity of individual policy researchers and analysts, its capacity impact at institutional level hasn't been so strong, so more intentional capacity strengthening of local think tanks/universities is a key lesson learned for this and future activities.
6. Some lost opportunities have been identified by less than full synergy/integration between policy and research work under AAs/buy-ins funded by Missions and the global activities funded by BFS, so a more coherent approach to integrating scopes and synergies at country level between Mission funded buy-in/AAs and BFS funded global research is appropriate in the future.

6. Description of Expected Activities

The workplan is in development. We expect it to contain the following elements:

1. Final major emphasis on policy influence/policy change
2. Incorporate appropriate external evaluation recommendations.
3. Build on final C3 activities to refocus C3 team on sustainable approaches to strengthening local policy institutional and human capacity, including but not limited to external evaluation recommendations regarding policy capacity building
4. Strong lessons learned/synthesis
5. Synthesizing other lessons, especially gender and nutrition.
6. Better communication of policy influence and people level impact. Human interest/impact from policy changes
7. Projections on employment outcomes and policies choices to get there; alternative agricultural transformation trajectories and how to shape the most favorable ones.
8. Strengthening local and regional policy research capacity.

9. C5 anticipated needs. These can't be fully anticipated but could include:
 1. Stronger FSP engagement/support to CAADP/Malabo agenda
 2. Coordination between FSP Components and AfricaLEAD and RESAKSS
 3. Continued assistance in analysis of annual reporting by Missions on policy progress in the policy matrix reporting data base
 4. Support to testing/rollout of Institutional Architecture Assessment indicator
10. C4a FY 2018 will aim to better lay out youth employment strategies appropriate for the very different age strata of young people. We are finding, for example, that the livelihood strategies and support needs are different for people 15-20 vs 20-25 and 25-30, as they tend to be at different stages in their life cycles and face different kinds of challenges.

APPENDIX F: FTFMS COMPLETE SET OF INDICATORS

#	Indicator ID	Indicator title	Year 1		Year 2		Year 3		Year 4		Year 5
			Targets	Actual	Targets	Actual	Targets	Actual	Targets	Actual	Targets
1	Custom	Number of policy research and best practice papers generated	13	13	13	23	11	42	17	93	9
2	Custom	Number of new data sets informing food security policies available for public use	5	5	3	7	3	7	12	2	3
3	Custom	Number of stakeholder learning forums (national or global) held where findings/best practices are presented	25	25	19	70	15	40	22	58	12
4	Custom	Number of legal frameworks/Regulations/Administrative Procedures/institutional arrangements reviewed and analyzed	16	16	3	4	0	13	0	19	0
5	4.5.2□7	Number of individuals who have received USG supported short□ term agricultural sector productivity or food security training	563	563	68	98	33	101	164	467	33
6	Custom	Number of institutions where trained individuals are applying new practices	12	12	16	36	11	24	18	58	11
7	Custom	Number of USAID operating units supported	5	5	13	6	13	6	7	12	13
8	Custom	Number of private sector and civil society organizations/entities assisted to participate in policy formulation process	10	10	12	8	10	5	2	463	10
9	Custom	Number of public□private policy and enabling environment consultations held	14	14	7	6	5	4	3	6	4

#	Indicator ID	Indicator title	Year 1		Year 2		Year 3		Year 4		Year 5
			Targets	Actual	Targets	Actual	Targets	Actual	Targets	Actual	Targets
10	Custom	Number of engagement events with ministry or heads of government implementing agencies (i.e., departments, directorate, division) held or facilitated through USG support	25	25	14	7	9	10	5	31	8
11	Custom	Number of engagement events with parliamentary bodies (e.g., agriculture committees) held or facilitated through USG support	3	3	5	1	1	0	2	1	1
12	Custom	Numbers of new legal frameworks/Regulations/Administrative Procedures/institutional systems <u>developed or existing</u> frameworks/procedures/systems <u>revised</u> to promote policy change agenda	1	1	3	1	0	0	1	4	0
13	Custom	Numbers of new or revised legal frameworks/Regulations/Administrative Procedures/institutional systems to promote policy change agenda <u>undergoing the formal approval process</u>	0	0	1	1	0	1	0	4	0
14	Custom	Numbers of new or revised legal frameworks/Regulations/Administrative Procedures/institutional systems to promote policy change agenda <u>approved for implementation</u>	0	0	0	0	1	0	0	3	0

#	Indicator ID	Indicator title	Year 1		Year 2		Year 3		Year 4		Year 5
			Targets	Actual	Targets	Actual	Targets	Actual	Targets	Actual	Targets
15	Custom	Numbers of new policies, legal frameworks/Regulations/Administrative Procedures/institutional systems implemented	0	0	0	2	1	1	0	3	0
16	Custom	Number of demonstrated uses by policy makers of findings and other outputs generated through USG support in policy, strategy, or program documents	5	2	12	1	10		6	12	9

Actuals for Indicator 5: Short term training (4.5.2□7)				
Type of organization	Male	Female	Unknown	Total
Civil society	16	12	23	51
Government	113	50	101	264
Private sector	32	20	0	52
Producers	0	0	0	0
Unknown	30	30	40	100
Total	191	112	164	467

