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# SERA POLICY PROJECT YEAR 5 QUARTER 3 REPORT

## TANZANIA ENABLING POLICY ENVIRONMENT FOR AGRICULTURAL SECTOR GROWTH

**APRIL 1, 2016 – JUNE 30, 2016**

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# SERA POLICY PROJECT

## YEAR 5 QUARTER 3 REPORT

Contract No. 621-C-00-11-00003-00  
USAID Feed the Future SERA Policy Project  
Tanzania Enabling Policy Environment for Agricultural Sector Growth

Implemented by Booz Allen Hamilton

### **DISCLAIMER**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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## ABBREVIATIONS AND ACRONYMS

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ANSAF	Agriculture Non-State Actors Forum
ASPIRE	USDA Specialty Crops Research Initiative
BOT	Bank of Tanzania
CI	Custom Indicator
COP	Chief of Party
COR	Contracting Officer's Representative
DAEA	Department of Agricultural Economics and Agribusiness
DFSN	Department of Food Security and Nutrition
DPP	Department of Policy and Planning
ENGINE	Enabling Growth through Investment and Enterprise
ERS	Economic Research Service
FBC	Food Basket Cost
FBM	Food Basket Methodology
FtF	Feed the Future
GOT	Government of the United Republic of Tanzania
HEA	Household Economic Approach
iAGRI	USAID Feed the Future Research and Education Project
IFC	International Finance Corporation
IR	Intermediate Result
MAFC	Ministry of Agriculture, Food Security and Cooperatives
MALF	Ministry of Agriculture, Livestock and Fisheries
MIU	Market Intelligence Unit
MLND	Maize Lethal Necrosis Disease
MLHHSD	Ministry of Lands, Housing and Human Settlements Development
MSME	Micro, small and medium enterprise
MSU	Michigan State University
NA	Not applicable
NAFAKA	USAID Feed the Future Staples Value Chain Project
NFRA	National Food Reserve Agency
NFSD	National Food Security Department
PAC	Policy Action Committee
PAG	Policy Agricultural Group
PAPAC	Platform for Agricultural Policy Analysis and Coordination
PDB	President's Delivery Bureau
PRU	Policy Research Unit
RCT	Rice Council of Tanzania
RGOZ	Revolutionary Government of Zanzibar

SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SERA	USAID Feed the Future Policy Project
SME	Small and medium-sized enterprise
STTA	Short term technical assistance
SUA	Sokoine University
TASTA	Tanzania Seed Trade Association
TBD	To be determined
TIC	Tanzania Investment Centre
TNS	Taylor Nelson Sofres
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USG	United States Government
WB	World Bank
ZFSND	Zanzibar Food Security and Nutrition Department

## EXECUTIVE SUMMARY

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The Tanzania SERA Policy Project (SERA) of the United States Agency for International Development (USAID) Feed the Future (FtF) Initiative is implemented by Booz Allen Hamilton. The SERA Project is focused on improving the policy environment for agriculture, and developing individual and institutional capacity to undertake policy analysis and advocate effectively for policy reforms. SERA began in April 2011, and completed the fourth full year of operation on September 30, 2015. This Quarterly Report, Quarter 3 (Q3) of Project Year 5 (Y5), covers the period from April 1, 2016 to June 30, 2016. The SERA Project's period of performance was originally set to end on April 6, 2016, however, a request for a no-cost extension was approved by USAID that extended the period of performance through August 30, 2016.

The following tasks were completed in Q3:

- Presentation of the Close-Out Plan to USAID on April 18.
- Presentation of the Business Environment Study to stakeholders on April 20, and completion of the Policy Brief (Annex 1).
- Completion of a Policy Brief on Policy Options for Food Security, Economic Growth and Poverty Alleviation (Annex 2).
- Completion of the Rice Market Efficiency Study (Annex 3).
- Completion of a report on the impact of the Global Food Crisis, in collaboration with the United States Department of Agriculture (USDA), that was accepted for publication in a forthcoming book on Food Security (Annex 4).
- Presentation of the draft Maize Gender Study, undertaken in collaboration with the World Bank (WB)/International Finance Corporation (IFC), at a workshop on May 23, and finalization of the report (Annex 5).
- Completion of the report on the Transparent Rules-Based System for Emergency Food Imports (Annex 6).
- Completion of a training on a Healthy Food Basket to the staff of the Department of Food Security and Nutrition in Zanzibar (Annex 7). The training was conducted by Nancy Cochrane of the Economic Research Service (ERS) in collaboration with SERA staff and a nutrition expert.
- SERA project worked with the USAID ASPIRE Project to deliver training to over 40 participants from the Government of Tanzania (GOT) and the Revolutionary Government of Zanzibar (RGOZ) on the use of STATA statistical software.
- SERA concluded its support to the Tanzania Seed Trade Association (TASTA) by hosting a one-day stakeholder workshop on June 3, 2016 in Arusha. 68 participants from the public and private sectors attended the workshop to discuss issues related to access to public bred varieties and the impact of the Maize Lethal Necrosis Disease (Annex 8).
- Completed a training on website design, development, and maintenance for key SERA beneficiaries (Annex 9).

Delays were encountered in these activities:

- The SERA Project had planned to support the Bank of Tanzania (BOT) to reform the Secured Transactions Laws and implement a Collateral Registry, but that activity was postponed by the BOT because of internal delays. No further SERA support is planned.
- The data for the Maize Gender Study was found to be incomplete and returned to Taylor Nelson Sofres (TNS) consultants on May 6 for revision and data checking. Revised data was received on June 24.

## INTRODUCTION

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The Tanzania SERA Policy Project assists both the Government of the United Republic of Tanzania and the private sector to enable a broad-based, sustainable transformation of the agricultural sector through policy reform. The vision for this project is twofold: to improve the policy and regulatory environment for agricultural growth and to build a group of public sector institutions, advocacy organizations, and individuals capable of performing rigorous policy analysis and advocating for policy reform. Improving agricultural policies is accomplished by working with the GOT and other stakeholders to identify important policy constraints to growth in the agricultural sector and by helping to alleviate these constraints through policy and regulatory reforms.

The SERA Project conducts and commissions evidence-based policy research to inform the GOT and other stakeholders of the impacts of existing policies and the potential benefits of improved policies. In addition, the SERA Project develops the capacity of individuals, institutions, and organizations to engage in policy analysis and advocate for policy change. At the conclusion of the project, we expect USAID will leave behind an improved policy environment and a legacy of enabling the GOT and other stakeholders to initiate, develop, and utilize evidence-based research in policy decisions and implementation. The SERA Project focuses its activities around priorities identified in collaboration with the Southern Agricultural Growth Corridor of Tanzania initiative.

## OVERVIEW

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The SERA Policy Project has three primary components: Policy Research and Reform, Capacity Building, and Advocacy and Communications. Other important activity areas include collaboration, leadership, monitoring and evaluation.

### **Policy Research and Reform**

The SERA Project's approach to policy reform is to provide evidence-based research on important policy issues to inform GOT and other stakeholders on policy impacts and options. This has proven to be an effective method of encouraging policy debate and achieving policy reforms.

### **Capacity Building**

The SERA Project is engaged in both institutional and individual capacity building in support of policy reform. This includes institutional evaluations and support for strategic planning as well as

formal training for GOT staff. Support to individuals includes financial assistance for research on important policy issues and training for selected individuals.

### **Advocacy and Communications**

The approach to advocacy and communication is to provide information and disseminate research findings rather than to publicly advocate for policy reform. This is consistent with our approach to policy reform which is focused on GOT counterparts for policy reform rather than grass roots organizations or other stakeholders.

## **IMPLEMENTATION PROGRESS**

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### **COMPONENT I: POLICY RESEARCH AND REFORM**

The SERA Project undertakes analysis and research on important policy issues in an effort to provide evidence-based analysis of policy impacts and provide policy options to government. Some of this research is conducted by SERA staff, and some is contracted to consultants. In all cases, high standards are sought. Increasingly, the SERA team is invited to join policy discussions at an early stage to provide input on important policy issues and this has become an effective way to influence policies in the early development stages.

#### **1. Intermediate Result 2: Binding Constraints to Private Sector Investment Reduced**

The SERA Project works to expand markets through improved trade policies, improved market performance, and increased access to credit. Trade policy is an important component of economic policy and the economic environment. The SERA Project has previously focused on two important trade policy issues: the requirement of the Ministry of Agriculture, Food Security and Cooperatives (MAFC) / Ministry of Agriculture, Livestock and Fisheries (MALF) that traders obtain export and import permits from the GOT before undertaking trade, and the ad hoc approach of the GOT to emergency food imports that can disrupt markets and are vulnerable to rent seeking. Both of these efforts are on-going. The SERA Project is also conducting research on the performance of the maize and rice markets, and the impact of gender on maize marketing and production to provide a deeper understanding of these issues and provide support for policy reform recommendations. The proposal for a Transparent Rules-Based System for Emergency Food Imports, first proposed by SERA to the GOT in 2012, has gained strong support within the Government and is the main policy activity of SERA to Expand Markets and Trade during the remainder of the project. This effort will be combined with activities that support the proposed Market Intelligence Unit (MIU) in the Ministry of Agriculture, Livestock and Fisheries.

Improved credit to smallholders and small and medium-sized enterprises (SME) has been a SERA priority since inception, but the BOT informed the SERA Project that it cannot adhere to the agreed timetable and no further support is planned. The activity will be transitioned to other development partners.

## **A. Transparent and Rules-Based Import/Export Permit Policy**

In Year 4, the SERA Project presented a series of recommendations in the Policy Options for Food Security, Agricultural Growth and Poverty Alleviation (Policy Options Paper) for the establishment of a Transparent Rules-Based System for Emergency Food Imports. The final report was completed in Q3 and will be presented to stakeholders in Q4. This activity will transition to Platform for Agricultural Policy Analysis and Coordination (PAPAC).

### **Policy Action Status:**

- Stage 2: Stakeholder consultation/public debate.  
SERA Project proposed recommendations for eliminating the permit systems in the Policy Options Paper presented to GOT at a workshop in February 2014. Since then, there has not been any progress in the status of the export permit policy. No further action has been requested or initiated by the GOT.

### **Tasks completed in Q3 of Y5:**

- Completed the report on a Transparent Rules-Based System for Emergency Food Imports.
- Designed a Transparent Rules-Based System for Emergency Food Imports in preparation for training of the proposed Market Intelligence Unit in the MALF.

### **Tasks planned for Q4 of Y5:**

- Stakeholders' workshop on proposed Transparent Rules-Based System for Emergency Food Imports.
- Draft and implement training on the application of the Transparent Rules-Based System for Emergency Food Imports.

### **Milestones:**

- Transparent Rules-Based System for Emergency Food Imports presented to GOT and other stakeholders (Q4).
- Implementation plan and capacity building action plan created (Q4).
- Capacity building provided (Q4).

### **Resources:**

- SERA Policy Analyst
- SERA Senior Agriculture Policy Advisor
- SERA Senior Advisor
- Short term technical assistance (STTA) Economist Varun Kshirsagar.

**Key Partners:** Michigan State University (MSU), MALF.

### **Contribute to:**

- Intermediate Result (IR) 4.5.1-24 Number of agricultural and nutritional enabling environment policies completing the following process/steps of development as a result of United States Government (USG) assistance in each case: 1: Analysis -- 2: Stakeholder consultation/public debate -- 3: Drafting or revision -- 4: Approval (legislative or regulatory) -- 5: Full and effective implementation.
- Custom Indicator (CI) 4.1.1 Number of research outputs.

## **B. Credit to Smallholders and SMEs /Collateral Registry**

Credit is essential to investments and delivering credit to small- and medium-scale enterprises and small farmers has been a challenge in Tanzania because of the lack of a legal framework governing lending for movable assets. Land cannot generally be used as collateral because all land is owned by the government. Moveable assets have not been used as collateral in Tanzania due to the weak legal structure and undeveloped registry to record liens against such assets. The SERA Project has worked to improve this situation by supporting the Bank of Tanzania to adopt and implement a modern secured transactions/collateral registry. The SERA Project collaborated with the World Bank on this important activity, with the World Bank providing financial support for the necessary computer equipment and software, and SERA providing policy support. Unfortunately, this activity cannot be completed due to internal delays at the Bank of Tanzania and the activity will be transitioned to the USAID-funded ENGINE Project.

### **Policy Action Status:**

- Stage 1: Analysis.

The target policy action for Year 5 is *Stage 4, Approval (legislative or regulatory)*. In Year 3, SERA Project reported delays in attaining targets for this activity and the same delays remained in Year 4. Lack of progress on the draft, presentation, and adoption of the legislations has a direct impact on meeting *IR 4.5.2-30 Number of micro, small and medium enterprises (MSME) including farmers, receiving USG assistance to access loans*.

**Tasks completed in Q3 of Y5:** None.

### **Tasks planned for Q4 of Y5:**

- Draft and submit transition letter to BOT.
- Submit deliverables to World Bank and local partners for activity transition.

### **Milestones:**

- Legislation finalized (Q2).
- Stakeholder events held in support of the Legislation (Q2).
- Legislation presented in Parliament (Q3).

### **Resources:**

- SERA Senior Agriculture Policy Advisor
- SERA Senior Advisor
- SERA Communications and Capacity Building Specialist
- STTA Legal Expert Dale Furnish
- M&N Law Associates (Advocates).

**Key Partners:** BOT, WB, MSU, Agriculture Non-State Actors Forum (ANSAF).

### **Contribute to:**

- IR 4.5.1-24 Number of agricultural and nutritional enabling environment policies completing the following process/steps of development as a result of USG assistance in each case: 1: Analysis -- 2: Stakeholder consultation/public debate -- 3: Drafting or revision -- 4: Approval (legislative or regulatory) -- 5: Full and effective implementation.
- IR 4.5.2-30 Number of MSMEs, including farmers, receiving USG assistance to access loans.

### **C. Improving Performance of Maize and Rice Market Prices**

The SERA Project's research on maize and rice markets efficiency is comprised of two components. The first looked at the domestic and external drivers of maize prices and the report was completed in 2014. That study resulted in a Policy Brief that was disseminated in December 2014 at the 1<sup>st</sup> Annual Agricultural Policy Conference in Tanzania, and a research paper that was presented at the International Conference of Agricultural Economists in Milan, Italy in August 2015. The paper has been submitted for publication to the World Bank's Research journal. The second component of the study looks at the domestic and external drivers of rice prices using the same methodology as the maize study. The rice study was completed in Q3 and a Policy Brief will be prepared.

#### **Policy Action Status:**

- Stage 2: Stakeholder consultation/public debate.

#### **Tasks completed in Q3 of Y5:**

- Completed the study of domestic and external drivers of rice prices (Annex 3).

#### **Tasks planned for Q4 of Y5:**

- Complete Policy Brief.

#### **Milestones:**

- Research results presented to stakeholders (Q3).

#### **Resources:**

- SERA Policy Analyst
- SERA Senior Advisor
- STTA Economist Varun Kshirsagar.

**Key Partners:** Not applicable (NA).

#### **Contribute to:**

- IR 4.5.1-24 Number of agricultural and nutritional enabling environment policies completing the following process/steps of development as a result of USG assistance in each case: 1: Analysis -- 2: Stakeholder consultation/public debate -- 3: Drafting or revision -- 4: Approval (legislative or regulatory) -- 5: Full and effective implementation.
- CI 4.1.1 Number of research outputs.

### **2. Intermediate Result 2.2: Agricultural Productivity and Profitability Increased in Targeted Value Chains**

An enabling environment is essential to a competitive agricultural sector led by the private-sector. The SERA Project completed numerous activities designed to improve the enabling environment, including reviewing food security policies, reviewing operations of the National Food Reserve Agency (NFRA), improving land policies, and improving the business environment and incentives. The reviews of food security policies and the NFRA are complete, the analysis of the agricultural business environment and incentives is complete, and the study of land compensation and valuation is complete and has been disseminated to stakeholders. No further activities are planned.

## **A. Food Security**

The SERA Project worked with the GOT to develop a more comprehensive food security policy, and presented a workshop in Y4 on Policy Options for Food Security, Agricultural Growth and Poverty Alleviation. This Policy Options Paper concluded our research efforts to provide mainland Tanzania with options for a more comprehensive food security policy. A Policy Brief on the Policy Options paper was completed in Q3 (Annex 2). The policy recommendations presented to GOT are discussed further under ***Component II: Individual and Institutional Capacity Building.***

## **B. Agriculture Business Environment Study – Support Concluded**

The business environment facing agriculture in Tanzania is poor and largely accounts for the low level of foreign direct investment in the sector. Several studies have identified factors contributing to the poor business environment and they include: an unreliable and costly power supply, poor infrastructure, lengthy and uncertain procedures for foreign investors to acquire land, and high taxes and operating costs. In response to requests from GOT, the SERA Project began a study of the business environment for Tanzanian agriculture and a comparison with those of Mozambique and Zambia. This study was conducted in collaboration with the staff from MALF, Southern Agricultural Growth Corridor of Tanzania (SAGCOT), President's Delivery Bureau (PDB), and Tanzania Investment Centre (TIC). A workshop to stakeholders and a Policy Brief were completed in Q3 (Annex 1).

### **Policy Action Status:**

- Stage 2: Stakeholder consultation/public debate.

### **Tasks completed in Q3 of Y5:**

- Completed the report on the agriculture business environment in Tanzania.
- Disseminated final report to key stakeholders.
- Completed a Policy Brief.
- Presented report and Policy Brief to collaborators at workshop on April 20, 2016.

### **Tasks planned for Q4 of Y5: None**

### **Milestones:**

- Field research completed (Q1).
- Draft report delivered (Q2).
- Final report delivered (Q3).
- Policy Brief Completed (Q3).

### **Resources:**

- SERA Research Associate
- SERA Senior Agriculture Policy Advisor
- SERA Senior Advisor.

**Key Partners:** SAGCOT, MALF Department of Policy and Planning (DPP), PDB, TIC.

### **Contribute to:**

- IR 4.5.1-24 Number of agricultural and nutritional enabling environment policies completing the following process/steps of development as a result of USG assistance in each case: 1: Analysis -- 2: Stakeholder consultation/public debate -- 3: Drafting or revision -- 4: Approval (legislative or regulatory) -- 5: Full and effective implementation.

- CI 4.1.1 Number of research outputs.

### **C. Land Policy – Support Concluded**

Land policy is very controversial in Tanzania amid concerns that investors will grab land and displace those with informal or insecure land rights. The SERA Project was invited by the Minister of Lands, Housing and Human Settlements Development (MLHSD) to undertake a study on Compensation and Benefits Sharing approaches used in the region. The study was completed and presented to MLHSD for comments. SERA Project has received no further communication from the MLHSD or follow-up from the Commissioner of Lands. No further activities are planned.

#### **Policy Action Status:**

- Stage 2: Stakeholder consultation/public debate.

#### **Contribute to:**

- IR 4.5.1-24 Number of agricultural and nutritional enabling environment policies completing the following process/steps of development as a result of USG assistance in each case: 1: Analysis -- 2: Stakeholder consultation/public debate -- 3: Drafting or revision -- 4: Approval (legislative or regulatory) -- 5: Full and effective implementation.
- CI 4.1.1 Number of research outputs.

### **D. Food Demand**

The SERA Project began research on food demand in Year 4 and will complete the research in Year 5. This study will contribute to a better understanding of the current situation and future trends in food and nutritional demand. The information will in turn be useful in directing resources, such as extension services and marketing, into the rapidly growing segments of food demand and also in guiding government and other stakeholder's interventions in promoting nutritional security in the country. Such information is essential to evidence-based policy decisions and strategic planning. The study uses data from the most recent household budget survey, and an academic expert was identified to provide guidance on the methodology and interpretation of the results. Expected outcomes of the study include:

- Estimates of price, income, and expenditure elasticities for different food groups,
- Estimates of nutrient demand,
- Comparisons of food demand patterns between rural and urban households,
- Identification of socio-economic characteristics that affect consumer food demand.

**Policy Action Status:** Stage 1: Analysis.

#### **Tasks completed in Q3 of Y5:**

- Completed initial estimation of food demand.
- STTA Economist, Professor Chen Zhen, traveled to Tanzania to complete the Food Demand Study.

#### **Tasks planned for Q4 of Y5:**

- Complete the final estimation of food demand and include a nutrition analysis component.
- Complete the Policy Brief.

**Milestones:**

- Draft initial report (Q4).
- Complete and publish final report (Q4).

**Resources:**

- SERA Senior Advisor
- SERA Senior Agricultural Policy Advisor
- SERA Research Associate
- STTA Economist, Professor Chen Zhen.

**Key Partners:** iAGRI, MSU.

**Contribute to:**

- IR 4.5.1-24 Number of agricultural and nutritional enabling environment policies completing the following process/steps of development as a result of USG assistance in each case: 1: Analysis -- 2: Stakeholder consultation/public debate -- 3: Drafting or revision -- 4: Approval (legislative or regulatory) -- 5: Full and effective implementation.
- CI 4.1.1 Number of research outputs.

**COMPONENT II: INDIVIDUAL AND INSTITUTIONAL CAPACITY BUILDING**

The SERA Project's approach to capacity building is twofold. The first approach focuses on institutional capacity building activities of selected organizations that can provide the greatest impact and support the development of an enabling policy environment. The second approach seeks to increase the capacity for research and evidenced-based policy analysis of individuals through training and support.

The SERA Project continues to focus its support on public sector institutions, providing institutional and individual capacity building to support the implementation of policy reforms. Public sector support in Year 4 was extended to include institutional training with the MAFC/MALF Department of Policy and Planning. Policy research activities have expanded opportunities to provide capacity building to individuals representing various GOT institutions through the development of local policy research teams. In addition, SERA Project provided strategic support to the Tanzania Agricultural Seed Traders Association and the Rice Council of Tanzania (RCT).

**A. Ministry of Agriculture, Livestock and Fisheries, National Food Security Department**

SERA Project continued to work with the USDA's Economic Research Service to support the adoption of the Food Basket Methodology (FBM) by the MAFC/MALF National Food Security Department (NFSD). The focus of activities was on the development and implementation of a Food Basket pilot program that would help ensure stakeholder ownership and long-term sustainability.

The Department of Policy and Planning in MAFC/MALF expressed strong interest in the FBM and the implementation of recommendations from the Policy Options Paper. This led to the DPP submitting a proposal for a feasibility study for a Market Intelligence Unit, and training by SERA of the PAPAC unit on the FBM.

## **i. Food Basket Methodology – NFSD**

SERA Project and ERS of the USDA have provided support to the MAFC National Food Security Department for the development of a pilot activity that would provide insights on the feasibility of integrating Household Economy Analysis (HEA) data and retail prices collected at the district level in measuring food access using Food Basket Methodology. USDA ERS returned to Tanzania in February to work intensively with three of the NFSD staff to begin the desk study. NFSD participants gathered monthly prices for 2014 and 2015 for 12 monitored crops from four districts: Bahi District of Dodoma, Kilosa District of Morogoro, Masasi District of Mtwara and Longido District of Arusha.

SERA Project provided continuous technical assistance throughout March to the MALF NFSD team. The team analyzed market prices from the four districts for 2014 and 2015, and for January and February 2016 where available. The team also continued to work on using HEA to estimate monthly income for the pilot districts during the reference years. In April, the team of seven staff started to calculate food basket costs (FBC) and measure access to food in the four pilot districts using retail prices collected by the MALF, and calories and income obtained from HEA.

In May 2016, the pilot team from the DFS participated in field visits to two selected zones: Northern Maasai Pastoral (Longido District) and Mtwara- Lindi plateau (Masasi District). Longido represent pastoral society and Mtwara represent agricultural society. The objective of the field visits was to introduce FBM in the regions and districts, improve data used in the FBM, and streamline FBM in the District Councils. The methodology was well received at the regional and district levels. The next step will be to conduct the food security stakeholder’s workshop and discuss findings of the pilot study. This activity will take place under the direction of USDA. Q3 ends SERA capacity building activities on the FBM to the DFS.

### **Related Policy Action Status:**

- Stage 2: Stakeholder consultation/public debate.  
The target policy status for Year 5 is *Stage 5: Full and effective implementation*. This activity remains in Stage 2.

### **Tasks completed in Q3 of Y5:**

- Completed field visit for the pilot activity.

### **Tasks planned for Q4 of Y5:**

- Transition activity to USDA.

### **Milestones:**

- Pilot activity completed (Q3).

### **Resources:**

- SERA Chief of Party
- SERA Senior Agricultural Policy Advisor
- SERA Communications and Capacity Building Specialist
- SERA Policy Analyst.

**Key Partners:** MALF Department of Food Security, USDA ERS.

**Contribute to:**

- IR 4.5.1-24 Number of agricultural and nutritional enabling environment policies completing the following process/steps of development as a result of USG assistance in each case: 1: Analysis -- 2: Stakeholder consultation/public debate -- 3: Drafting or revision -- 4: Approval (legislative or regulatory) -- 5: Full and effective implementation.
- IR 4.5.2-7 Number of individuals who have received USG supported short-term agricultural sector productivity or food security training.
- CI 4.2.1. Number of institutions receiving USG assistance.

**B. Ministry of Agriculture, Livestock and Fisheries, Department of Policy and Planning****i. Market Intelligence Unit**

In Q4 of Year 4, the DPP requested support for a feasibility study on the creation of a Market Intelligence Unit. Diligent Consulting is leading this study, and in Q3 the team began to conduct interviews with stakeholders at the national and sub-national levels, including both public and private sector entities. Interviews were completed and the team developed a report outline covering five chapters:

1. Introduction: historical background, current agricultural MIS structure and functions, objective of the report, and methodology;
2. Situation Analysis of agricultural marketing information system in Tanzania;
3. Rationale and objectives of establishing an agricultural MIU;
4. Proposed establishment of MIU at MALF: introduction, mission, functions, institutionalization of price data collection in the existing agencies, organizational structure and staffing, capacity needs, legal framework, financing arrangement, expected outputs, and expected risks and challenges;
5. Pros and cons of an independent agency v/s the MAFS housed version;
6. Work plan for period 2016/2017 – 2017 and estimated budget for 2016/2017 – 2017.

The draft report will be delivered in Q4 to key stakeholders, followed by a stakeholder workshop.

**Related Policy Action Status:** NA.

**Tasks completed in Q3 of Y5:**

- Completed kick off meeting with Diligent Consulting, SERA, and David Nyange.
- Completed interviews with stakeholders.
- Completed draft report.

**Tasks planned for Q4 of Y5:**

- Present draft report to key stakeholders.
- Hold stakeholder workshop.
- Transition activity to ENGINE Project.

**Milestones:**

- Study drafted (Q3, revised).
- Study presented to stakeholders (Q4, revised).

**Resources:**

- Diligent Consulting

- SERA Chief of Party (COP)
- SERA Senior Agricultural Policy Advisor.

**Key Partners:** MAFC, MSU, PAPAC.

**Contributes to:**

- IR 4.5.1-24 Number of agricultural and nutritional enabling environment policies completing the following processes/steps of development as a result of USG assistance in each case: State 1, Analysis; State 2, Stakeholder consultation/public debate; Stage 3, Drafting or revision; Stage 4, Approval (legislative or regulatory); Stage 5, Full and effective implementation.
- IR 4.5.2-7 Number of individuals who have received USG support short-term agricultural sector productivity of food security training.
- CI 4.2.1. Number of institutions receiving USG assistance.

## ii. STATA Training

The SERA Project and ASPIRE Project sponsored a training on the use of STATA statistical software. STATA was selected as it is a commonly used statistical software package among researchers and policy analysts for data management, manipulation and statistical analysis, and is also used by the GOT and RGOZ. This training improved policy analysis capacities in the GOT, specifically, in MALF-PAPAC and Zanzibar Food Security and Nutrition Department (ZFSND). The objective of this activity was to provide participants with the skills and ability to use STATA statistical software packages for data management, data manipulation and statistical analysis. ASPIRE provided the training materials and a lead trainer for the first session. SERA provided training assistants for the first session. The training assistants were selected from local training institutions, IFM and REPOA, to develop local training capacity. The training assistants led the second training. The training was provided to a total of 40 participants from eight institutions over two training sessions. 33% of the participants were women.

**Related Policy Action Status:** NA.

**Tasks completed in Q3 of Y5:**

- Delivered STATA Training to 40 participants from GOT and RGOZ agencies.

**Tasks planned for Q4 of Y5:**

- Purchase STATA licenses (Q4).

**Resources:**

- SERA Communications and Capacity Building Specialist
- SERA Policy Analyst
- SERA Research Associate.

**Key Partners:** ASPIRE, IFM, and REPOA.

**Contribute to:**

- IR 4.5.2-7 Number of individuals who have received USG supported short-term agricultural sector productivity or food security training.
- CI 4.2.1. Number of institutions receiving USG assistance.

### C. Strategic Support – Advocacy Organizations

Private sector organizations that are key stakeholders in policy reform activities are evaluated for strategic capacity building support in Year 5. Organizations identified for potential support include:

- **TASTA.** In Year 5, SERA continued to provide support to TASTA for stakeholder engagement and public-private sector dialogue with the GOT. SERA Project supported a one-day stakeholder workshop on March 11, 2016 in Arusha with 68 participants from the public and private sectors. The agenda included updates on public access to government seeds and issues related to seed packaging taxation. Also discussed was Maize Lethal Necrosis Disease (MLND), and mitigation efforts. A workshop summary is provided in Annex 8.
- **Rice Council of Tanzania.** The SERA Project continued to provide personnel support for policy analysis in Year 5. It is anticipated that the personnel support will be picked up as a direct cost under RCT at the conclusion of SERA Project.
- **Website Management Training.** The SERA Project organized a training to provide basic skills on website management to key public sector and private sector institutions. The purpose of this scope of work is to build capacity of public and private sector staff on website design, content management, and maintenance for effective food security information communication and dissemination. The training covered, but were not limited to, an overview of Joomla content management system, introduction to Content Management System, and article, menu and media management. Ten participants from the PAPAC, ZDFSN, RCT, and TASTA took part in the training. A training report is in Annex 9.

**Related Policy Action Status:** NA.

**Tasks completed in Q3 of Y5:**

- Provided support for TASTA stakeholders' workshop.
- Continued support for RCT Policy Analyst.
- Supported preparation and delivery of website training course.

**Tasks planned for Q4 of Y5:**

- Complete Website training.

**Milestones:** NA.

**Resources:**

- SERA Communications and Capacity Building Specialist
- SERA Senior Agricultural Policy Advisor.

**Key Partners:** TASTA, RCT.

**Contribute to:**

- IR 4.5.2-7 Number of individuals who have received USG support short-term agricultural sector productivity of food security training.
- CI 4.2.1 Number of institutions receiving USG assistance.

## **D. Sokoine University (SUA)**

Collaboration with iAGRI ended at the end of Q2. No further work is planned on the two activities listed below.

### **i. Policy Seminar Series - *Support Concluded***

SERA, iAGRI, and Michigan State University jointly sponsored a Policy Seminar Series for faculty and students at Sokoine University to encourage agricultural policy research. The second Policy Seminar Series began in Year 4 where the topical research focused on land. Four papers were developed and reviewed for comments. iAGRI will continue to implement this activity.

### **ii. Policy Research Unit – *Support Concluded***

SERA Project and iAGRI have worked together to support the development of a Policy Research Unit (PRU) in the Department of Agricultural Economics and Agribusiness (DAEA) at Sokoine University. The vision is for the PRU to conduct demand driven evidence-based policy analysis for internal and external clients. MSU has joined this collaboration. Discussion resulted in agreement that a feasibility study should be conducted to ensure institutional readiness and demand for services.

## **COMPONENT III: ADVOCACY AND COMMUNICATIONS**

The SERA Project focuses on communication activities that support the policy research agenda and targets public sector institutions. The primary communication instruments are the SERA Project website, policy briefs, and public events such as conferences and stakeholder workshops.

### **A. SERA Website**

The website is the main communications tool for SERA, making available evidence-based research and other key policy information. In Year 5, SERA will begin to transition information and research to local partners.

**Related Policy Action Status:** NA.

**Tasks completed in Q3 of Y5:**

- Updated content and monitor usage.

**Tasks planned for Q4 of Y5:**

- Transition information to local partners.

**Milestones:** NA.

**Resources:**

- SERA Communications and Capacity Building Specialist.

**Key Partners:** OMIS.

**Contribute to:**

- CI 4.1.3 Number of hits/visits to the SERA website.

## **B. Policy Briefs and Policy Research Briefs**

Policy Briefs and Policy Research Briefs summarize specific research and policy recommendations on key issues affecting the agriculture sector. They are meant to inform decision makers and stakeholders.

**Related Policy Action Status:** NA.

### **Policy Briefs completed in Q3 of Y5:**

- Food Basket Costs and Food Security.
- Policy Options for Food Security, Agricultural Growth and Poverty Reduction.
- Agriculture Business Environment and Incentives.

### **Policy Briefs planned for Q4 of Y5:**

- Gender in Maize Marketing and Production.
- Transparent Rules-Based System for Emergency Food Imports.
- Food Demand in Tanzania.
- Drivers of Rice Prices.

### **Milestones:**

- Policy Options for Food Security, Agricultural Growth and Poverty Reduction (Q3).
- Agriculture Business Environment and Incentives (Q3).
- Gender in Maize Marketing and Production (Q4 *revised*).
- Drivers of Rice Prices (Q4 *revised*).
- Transparent Rules-Based System for Emergency Food Imports (Q4 *revised*).
- Demand for Food (Q4).

### **Resources:**

- SERA Communications and Capacity Building Specialist
- SERA Policy Analyst
- SERA Senior Advisor.

**Key Partners:** iAGRI, MSU.

### **Contribute to:**

- CI 4.1.2 Total number of SERA mentions in the press and social media.

## **C. Policy Conferences and Workshops – Support Concluded**

The 2<sup>nd</sup> Annual Agricultural Policy Conference was held February 23-25 at the Serena Hotel in Dar es Salaam. Members of the SERA Project played key roles in the planning and execution of this conference. SERA Project chaired the conference communications committee and provided logistical and administrative support to the event. In addition, SERA Project was active in the technical program of the event. SERA Policy Project participation included:

- Presentations by Senior Advisor, Don Mitchell, on:
  - Updated Policy Options for Food Security
  - Agriculture Business Environment Study
  - Land Compensation Schemes and Valuation Models (study done by Landesa).
- Presentation by STTA Professor Dale Furnish on Secured Transactions/Collateral Registry.
- Session chaired by Senior Agricultural Policy Advisor, Alex Mkindi, on Agricultural Inputs.

**Related Policy Action Status:** NA.

**Tasks completed in Q3 of Y5:**

- The Policy Agricultural Group (PAG)/Policy Action Committee (PAC) meeting planned for Q3 has been postponed to Q4. It is unlikely SERA project will participate.

**Tasks planned for Q4 of Y5:** None.

**Milestones:** NA.

**Resources:**

- SERA Staff
- SERA Senior Advisor.

**Key Partners:** PAPAC, MSU.

**Contribute to:**

- CI 4.1.2 Total number of SERA mentions in the press and social media.

#### **D. Success Stories**

In Q3, success stories were drafted and outlined for the remaining time of the contract.

**Related Policy Action Status:** NA.

**Tasks completed in Q3 of Y5:**

- Drafted Evidence-based research to support policy: Lifting the maize export ban.
- Drafted FBM – Zanzibar: Design and implementation of the food basket methodology, including healthy food basket design.
- Drafted the RCT story.
- Drafted the Annual Agricultural Policy Conference story.

**Tasks planned for Q4 of Y5:**

- Finalize Evidence-based research to support policy: Lifting the maize export ban.
- Finalize FBM – Zanzibar: Design and implementation of the food basket methodology, including healthy food basket design.
- Finalize RCT story.
- Finalize Annual Agricultural Policy Conference story.
- Draft and finalize Rice (Trade Policy) – Transparent Rules-Based System for Emergency Food Imports.
- Draft and finalize FBM – Mainland: Design and implementation of a food basket methodology into the food security early warning system.
- Draft and finalize TASTA story.

**Milestones:**

- Evidence-based research to support policy: Lifting the maize export ban (Q3).
- FBM – Zanzibar: Design and implementation of the food basket methodology, including healthy food basket design (Q3).
- FBM – Mainland: Design and implementation of a food basket methodology into the food security early warning system (Q4).
- Annual Agricultural Policy Conference (Q4).
- Rice – Transparent Rules-Based System for Emergency Food Imports, and the creation of the MIU to support further sustained engagement (Q4).

- The RCT Story (Q4).

**Resources:**

- SERA Staff
- SERA Senior Advisor.

**Key Partners:** MSU, PAPAC, RCT.

**Contribute to:**

- CI 4.1.2 Total number of SERA mentions in the press and social media.

## ACTIVITIES IMPLEMENTED IN ZANZIBAR

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### 1. Intermediate Result 2.1 Binding Constraints to Private Sector Investment

#### A. Zanzibar Department of Food Security and Nutrition – *Support Concluded*

The SERA Project and the USDA’s Economic Research Service are working with the Zanzibar Department of Food Security and Nutrition (DFSN) to support the application of the Food Basket Methodology in the Zanzibar Food Security early warning system. The development of the Food Basket Methodology and training of DFSN staff were completed in Y4, and the DFSN will use the FBM in quarterly presentation of early warning information to the Food Security and Nutrition Committee. In February, USDA ERS met with the DFSN and finalized the composition of the healthy and nutritious food basket. Capacity building and training on the application of the healthy and nutritious food basket was completed for eight members of the DFSN. In March the DFSN began to work with the calculations.

In May 2016, a Nutrition expert from USDA ERS delivered capacity building to 12 staff of the DFSN on basic nutrition concepts related to FBM. The training was successful and improved the staff’s nutrition knowledge, especially those who did not have the nutrition background. The FBM expert also introduced a tool (optifood) which could be used by the DFSN to analyze a healthy food basket; the tool is expected to enable broader analysis of the basket. Currently the DFSN and FBM experts are working on the feasibility of using existing survey data in optifood.

**Policy Action Status:** NA.

**Tasks completed in Q3 of Y5:**

- Training for DFSN on the application of the healthy and nutritious food basket.
- Finalize Zanzibar healthy and nutritious food basket.

**Tasks planned for Q4 of Y5:** None.

**Key Partners:** USDA ERS

**Contribute to:**

- IR 4.5.2-7 Number of individuals who have received USG supported short-term agricultural sector productivity or food security training.
- CI 4.2.1 Number of institutions receiving USG assistance.

## PROJECT MANAGEMENT AND PERFORMANCE

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### 1. Management

In Q3, SERA project submitted the Draft Close-Out Plan to USAID for review. On April 19, SERA COP and Senior Advisor met with USAID Contracts Office and Contracting Officer's Representative (COR) to review the draft Close-Out Plan and discuss any issues or concerns regarding the close-out process. Of note, is the extended leave of the COR starting April 20 through the end of July. An acting COR was designated.

SERA Project initiated the retrenchment process for all local staff. Working with local attorneys, SERA project received approval from USAID for retrenchment packages consistent with Tanzanian Local Labour Law. Notices were sent to subcontractors Aysla Consultants Ltd and Diligent Consulting Ltd.

In June, the COP began a reduced work schedule, which will be maintained through the remainder of the life of the project.

## PROBLEMS / CHALLENGES

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The change in national government continued to cause delays in SERA implementation. The Ministry of Agricultural, Food Security and Cooperatives merged with the Ministry of Livestock and Fisheries. The appointment of new leadership and directors resulted in the delay in the start of the Market Intelligence Unit activity.

## CROSS-CUTTING ISSUES

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### 1. Gender

Gender is an important cross cutting issue and the SERA Project is undertaking research to better understand women maize farmers' input use, yields, and price received compared to male maize farmers.

#### A. Gender in Maize Marketing and Production

Gender is an important cross cutting issue and the SERA Project, in collaboration with the World Bank and the International Finance Corporation, supported research to better understand female maize farmers' input use, yields, and price received compared to male maize farmers. This activity helped to identify key causes of differences in yields and policy constraints for women farmers, and provided policy recommendations to reduce these differences.

**Policy Action Status:** NA.

**Tasks completed in Q3 of Y5:**

- Completed draft report.
- Completed final report.

### Tasks planned for Q4 of Y5

- Complete Policy Brief.

### Milestones:

- Field research completed (Q1).
- Report drafted (Q2).
- Final report delivered to stakeholders (Q3).

### Resources:

- SERA Senior Advisor
- SERA Senior Agricultural Policy Advisor
- TNS Social Research Division.

**Key Partners:** World Bank, Diligent Consulting.

### Contribute to:

- IR 4.5.1-24 Number of agricultural and nutritional enabling environment policies completing the following process/steps of development as a result of USG assistance in each case: 1: Analysis -- 2: Stakeholder consultation/public debate -- 3: Drafting or revision -- 4: Approval (legislative or regulatory) -- 5: Full and effective implementation.
- CI 4.1.1 Number of research outputs.

## B. Gender representation in SERA activities.

SERA Project training activities track the inclusion of women in policy analysis, advocacy, and dialogue. In Q3, women represented 33% of all training participants.

SERA Project staff gender representation is 50% women and 50% men.

## 2. Poverty

Tanzania has made significant progress in reducing poverty in recent years, with rural poverty declining by 15% from 2007 to 2011 according to the National Bureau of Statistics. However, poverty remains high and an estimated 80% of the poor live in rural areas and depend directly or indirectly on the agricultural sector for their livelihoods. The SERA Policy Project has focused on improving agricultural policies through evidence-based research and policy reform that contributes to reducing poverty. An example of the contribution of the SERA Project's research on policy was the Government's decision to lift the maize export ban in 2012 based on SERA policy research. That policy reform provides farmers greater access to foreign markets and the opportunity to receive higher prices for their marketed maize. It also provides greater employment opportunities for labor in rural areas to support expanded exports. The SERA Project has also been actively involved in improving access to high quality inputs that can raise productivity and reduce costs. Since an estimated 80% of Tanzanian farmers produce maize, the impact of improved access to markets and high quality inputs directly contributes to alleviating poverty.

## 3. Climate Change

Climate change is a serious concern for Tanzania because it could lead to increased variability in production and lower crop yields. One way to reduce the reliance on climate is to better utilize

water resources and that should remain a long-term strategy. However, policies can also be used to offset the impacts of climate change and should be utilized as a low-cost approach to dealing with the impacts of climate change. The SERA Project research on Drivers of Maize Prices showed that open border policies reduce maize price variability and can help alleviate the impact of increased production variability on prices due to climate change. Other research presented by SERA Project showed that Tanzania could also face improved export opportunities as neighboring countries increase food crop imports to offset lower and more variable production, and more open trade policies would allow Tanzania to take advantage of these expanded export opportunities.

SERA Project’s work with the Revolutionary Government of Zanzibar on the potential to increase irrigated paddy areas on Zanzibar also contribute to work on Climate Change. The work was part of an effort to develop a strategy to reduce reliance on rain-fed rice due to concerns over climate change. The analysis also considered technologies that could raise irrigated paddy yield and better utilize limited ground water supplies.

## FINANCIAL SUMMARY

QUARTERLY REPORT	SERA YEAR 5 - QTR 3				
	Apr-16	May-16	Jun-16	Quarter Total	Contract Cumulative
Reimbursable Costs	\$219,751	\$155,839	\$155,182	\$530,771	\$6,983,384
Fee	\$17,357	\$12,464	\$12,484	\$42,305	\$560,054
<b>Reimbursable Costs plus Fixed Fee</b>	<b>\$237,108</b>	<b>\$168,302</b>	<b>\$167,666</b>	<b>\$573,076</b>	<b>\$7,543,438</b>
<b>Contract Cumulative</b>	<b>\$7,207,470</b>	<b>\$7,375,772</b>	<b>\$7,543,438</b>		

## PERFORMANCE MANAGEMENT PLAN

**Table 1. USAID Standard Indicator and Required if Applicable Indicator Targets for Life of Contract**

Indicator		Baseline	Y5 Target	Q1 Actual	Q2 Actual	Q3 Actual	Q4 NA	Y5 Total	LIFE OF CONTRACT TARGET
IR 4.5.2-7. Number of individuals who have received USG supported short-term agricultural sector productivity or food security training (RiA) (WOG).	New	0	80	0	NA	NA			1,700
	Continue	0	100	0	NA	NA			
	Male	0	60	2	12	42		56	
	Female	0	30	0	9	8		17	
IR 4.5.2-36 Value of exports of targeted agricultural commodities as a result of USG assistance (\$).	Maize	\$20,820,000	\$34,990,000	NA	NA	NA		0	\$56,749,200
	Rice	\$37,050,000	\$38,500,000	NA	NA	NA		0	NA
IR 4.5.2-30 Number of MSMEs, including farmers, receiving USG assistance to access loans (\$).	Medium	0	0	0	0	0		0	2,400
	Small	0	0	0	0	0		0	350
	Micro	0	0	0	0	0		0	250
IR 4.5.1-24 Number of agricultural and nutritional enabling environment policies completing the following process/steps of development as a result of USG assistance in each case (\$):	NA								
	• Stage 1: Analysis	0	1	0	0	0		0	2
	• Stage 2: Stakeholder consultation/public debate;	0	0	0	4	3		4	3
	• Stage 3: Drafting or revision;	0	1	0	0	0		0	3
	• Stage 4: Approval (legislative or regulatory).	0	0	0	0	0		0	0
	• Stage 5: Full and effective implementation.	0	0	0	0	0		0	6

**Table 2. Project/Custom Level Indicator Targets for Life of Contract**

Indicator	Baseline	Y5 Target	Q1 Actual	Q2 Actual	Q3 Actual	Q4 NA	Y5 Total	LIFE OF CONTRACT TARGET
1.1.1 Volume of improved seed available in domestic market	26,545 tons	5,000 tons	NA	NA	NA		NA	36,000 tons
4.1.1. Number of research output	0	4	0	0	1		1	7
4.1.2 Total number of SERA mentions in the press and social media	0	5	0	0	0		0	40
4.1.3 Number of hits/visits to the SERA website	0	1,800	734*	210	800		1,744	9,000
4.2.1 Number of institutions receiving USG assistance	0	4	2	10	11		23	15

*\*Google Analytics is used to track this indicator. Tracking began on 2 December 2014.*

## ANNEXES

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### **Annex 1. Policy Brief - Business Environment and Incentives for Tanzanian Agriculture**

Please see attachment *SERA Year 5, Quarterly Report 3, Annex 1.*



**Annex 2. Policy Brief – Policy Options for Food Security, Agricultural Growth, and Poverty Reduction in Tanzania**

Please see attachment *SERA Year 5, Quarterly Report 3, Annex 2.*

**USAID**  
FROM THE AMERICAN PEOPLE

**FEED THE FUTURE**  
The U.S. Government's Global Hunger & Food Security Initiative

April 2016, Policy Brief No. 5

**SERA Policy Brief**  
*Policy Options for Food Security, Agricultural Growth,  
and Poverty Reduction in Tanzania \**

### **Annex 3. Summary - Rice Market Efficiency Study**

Please see attachment *SERA Year 5, Quarterly Report 3, Annex 3.*

## **The Cross-Border Transmission of Price Shocks Evidence from Tanzanian Food Markets\***

**John Baffes<sup>†</sup>    Varun Kshirsagar<sup>‡</sup>    Donald Mitchell<sup>§</sup>**

May 22, 2016

### **Abstract**

We estimate external and domestic food market linkages in Tanzania to better understand the cross-border transmission of shocks. We employ a market-network approach to show that i) The largest city is not a major source of influence; ii) Demand shocks emanate from border markets that may serve as conduits for informal trade and iii) Prices in the high potential areas are especially sensitive to systemic shocks. Taken together, our analysis suggests that an interventionist trade policy is not an alternative to remedying the inefficiencies that stem from inadequate rural infrastructure.

## Annex 4. Report – Impact of Global Food Crisis

Please see attachment *SERA Year 5, Quarterly Report 3, Annex 4*.

### Food Costs during the Food Crisis: The Case of Tanzania

by Donald Mitchell, Aneth Kayombo, and Nancy Cochrane<sup>1</sup>

June 12, 2016

The global food crisis of 2007-2008 led to social and political unrest in many countries, including food riots in some, and contributed to the uprising in the Middle East that toppled several governments. Food prices rose in many countries and the FAO estimated that global hunger rose by 75 million (FAO 2009). Ivanic and Martin (2008) estimated that global poverty could have increased by 105 million during the global food crisis based on their assumed rates of international price transmission to domestic markets and an extrapolation of their results from ten low-income countries to all low-income countries. Wodon and Zaman (2008) used a similar approach to consider the impact of the global food crisis on the poor in Sub-Saharan African countries and concluded that the poor would have been significantly affected by the food price increases associated with the global food crisis. These estimates focused primarily on staple food crops that are heavily traded in global markets. Using a different approach, the Gallup World Poll of self-assessed food insecurity found that Sub-Saharan Africa was hardest hit and that Tanzania topped the list as having the largest increase in self-assessed food insecurity (Headey 2013). But, how were domestic food costs and food prices actually affected? We consider the case of Tanzania and examine the actual cost of the typical food basket and key

## Annex 5. Report - Maize Gender Study

Please see attachment *SERA Year 5, Quarterly Report 3, Annex 5*.

### Gender Effects on Agricultural Productivity, Marketing and Incomes: Evidence from Maize Farmers in Southern Tanzania

SERA Policy Project and World Bank/International Finance Corporation<sup>1</sup>  
June 30, 2016

Maize is grown by an estimated 80% of farmers in Tanzania and about 20% of those farmers are in female-headed households. Most of these females were widowed or divorced and are disadvantaged compared to male-headed households with respect to knowledge of production practices, land holdings, use of improved inputs, yields, and prices received for marketed maize. Better understanding of these female maize farmers and their characteristics and endowments could help Government, NGOs, and donors provide better services such as extension, access to inputs, and information on marketing and business practices with the objective of raising incomes and reducing poverty. Higher incomes would also contribute to increased food security among this vulnerable segment of the rural population.

The USAID-funded Tanzania SERA Policy Project and the Finance & Markets Global Practice of the World Bank Group engaged TNS Social Research in Nairobi, Kenya to survey 600 male and 600 female maize farmers in four regions of southern Tanzania's maize producing regions. The results of that survey are presented in this report along with recommendations of how to better support female maize farmers. The findings may have implications for female farmers producing other crops in Tanzania who face similar circumstances and for female farmers throughout the region.

Baffes (2009) reported the existence of a large productivity gap between male and female cotton farmers in Uganda, thus highlighting the importance of gender in understanding productivity. Baffes

## Annex 6. Report – Rules-Based Transparent System for Emergency Food Imports

Please see attachment *SERA Year 5, Quarterly Report 3, Annex 6*.

### Rules-Based Transparent System for Emergency Food Imports

Tanzania SERA Policy Project<sup>1</sup>

June 30, 2016

Tanzania imports large quantities of basic food staples such as palm oil, rice, sugar, and wheat and occasionally has large imports of maize. While imports are needed to meet local demand, they often disrupt domestic markets when quantities imported exceed market requirements or when large imports are authorized by the Government but not anticipated by the private sector. This can lead to price volatility and increased risks for producers, traders, and stockholders. A more transparent and predictable staple foods import policy could encourage increased development of the staple food crops sectors, provide additional tariff revenue to Government, and reduce market uncertainty. It would also reduce the need for ad hoc policy decisions that can lead to regional trade disputes, and provide a more stable market environment for the commodity exchange that is currently being developed.

One of the challenges of implementing an effective staple foods import policy is the difficulty of controlling illegal imports that enter Tanzania from neighbouring countries and through major Tanzanian sea ports. They are illegal in the sense that they don't have import permits as required, and they don't pay the import tariff. The magnitude of these illegal imports is unknown, but they

## **Annex 7. Training Report - Healthy Food Basket Training in Zanzibar**

### **TRAINING REPORT Healthy Food Basket 8-11 May 2016, Zanzibar**

by Josephat Kanyunyu, Communication and Capacity Building Specialist, SERA Project

Following the February 2016 training, the Zanzibar Department of Food Security and Nutrition adjusted the Zanzibar food basket in a way that satisfied most nutritional requirements, but it was still deficient in a few key nutrients, such as calcium. The participants requested a training to cover some general nutritional concepts. They also requested assistance in building a linear programming model that can automatically generate a low-cost healthy diet.

#### **Training on Nutritional Concepts**

To address the general nutritional concepts, a nutrition expert from USAID's Bureau of Global Health was invited to provide the training. The training covered the following:

- How do nutrition and agriculture link to improve nutrition outcomes?
  - Malnutrition is closely linked to major causes of death and disability worldwide
  - The causes of malnutrition are directly related to inadequate dietary intake
  - Improve nutrition around the lifecycle
  - Improve nutrition through improved food production.
- Programmatic approaches to address malnutrition: the United States Women, Infants and Children (WIC) Program
  - Population served
  - Nutrition assessment
  - Supplemental food packages.
  - Breastfeeding promotion, and nutrition education
- Monitoring and evaluation of maternal and child nutrition
  - Overview
  - Understanding nutrition indicators
  - Anthropometric measures
  - Identify nutrition interventions.

#### **Linear programming model for generating a low-cost healthy diet.**

To address the second request, participants were introduced to Optifood program, a software program that uses linear programming and mathematical optimization to generate and test diets (i.e. the lowest cost, nutritionally best diet) for specific population.

It is possible to use Optifood to analyse diets at the household-level and determine nutritionally optimal food baskets.

## **Annex 8. Meeting Report – TASTA Workshop, Arusha, 3 June 2016**

### **MEETING REPORT Access to Public Bred Varieties and Impact of MLND 3 June 2016, Arusha by Alex Mkindi, Senior Agricultural Policy Advisor**

The workshop was organized by Tanzania Seed Trade Association (TASTA) while funding for the workshop came from USAID under its SERA project and AGRA under its MIRA project. The workshop brought together key players in the Seed Industry as well as other stakeholders in agricultural value chain, and was attended by 78 participants representing different categories like Ministry of Agriculture Livestock and Fisheries (MALF), TASTA, seed companies, other input suppliers, research institutions, regulatory bodies, extension services, farmers, and the media.

The workshop was facilitated by Mr. Patrick Ngwediagi. Mr. Twahir Nzallawahe the Director for Crop Development in the MALF, who represented the Permanent Secretary for MALF, introduced and welcomed Honourable William Tata Ole Nasha, Minister for Agriculture Livestock and Fisheries to officially open the workshop. Introductory remarks were made by representatives of various institutions responsible for workshop organization.

A major activity undertaken was local companies signing agreements with the Government to use seed materials that public research scientists developed using tax payers' money. Hence, the local seed companies have the right to obtain such inventions and develop business plans to produce/market/promote seed and pay royalties to the government in an acceptable manner.

In the past, production and marketing of Pre-Basic and Basic seed of Public Varieties were done through Government Agricultural Seed Agency (ASA). During the workshop, three (3) seed companies signed the Agreement and were handed certificates by the Deputy Minister for Agriculture, Livestock and Fisheries, Hon. William Ole Nasha to commemorate the launching and beginning of a new era in seed industry of Tanzania, demonstrating a true spirit of public-private partnership (PPP). The companies were Agri Seed Company of Kilosa, Beula Seed Company of Arusha, and Namburi Seed Company of Moshi.

The second part of the workshop involved deliberations of a maize disease, Maize Lethal Necrosis Disease (MLND), which could be dangerous to food security and have negative economic impact to value chain stakeholders. The following papers were presented and discussed during the workshop:

1. The Research Experiences and Agenda of IITA on MLN
2. The Research Experiences and Agenda of SARI on MLN
3. The Research Experiences and Agenda of MARI, on maize diseases (especially MLND)
4. Research Experiences and Agenda of WEMA Project on Maize Lethal Necrosis Disease in Tanzania

5. Maize Lethal Necrosis (MLN) in Eastern Africa –Tackling a Major Challenge
6. Syngenta Perspective on MNLD Interventions in Tanzania
7. Status and Progress Activities on Maize Lethal Necrosis Diseases

Several key issues arose based on the papers presented, whereby the key issue addressed strategies to make sure that maize seeds are produced in areas which are free from MLN disease. It was resolved a task force should be formed to ensure the nation is containing the disease which was proposed on the spot. Also, that awareness on the disease should be increased. Moreover, farmers should be trained on how to diagnose the disease, and reporting mechanism to relevant authorities should be set up. Seed companies and other seed dealers were requested to adhere to quarantine measures which forbid production of seed from endemic areas and selling it in areas not affected, especially the Southern highlands Regions.

The workshop was closed by Bob Shuma the Executive Director of TASTA by requesting more cooperation among stakeholders to ensure our country's food security is not compromised. He re-iterated the need for maintaining trust among the partners in the seed industry and the government, and that the farmer deserved quality seed for his money, something we should all strive to achieve.

## Annex 9. Training Report - Website Content Management

### TRAINING REPORT Website Content Management 27 June – 1 July 2016, Dar es Salaam.

by Josephat Kanyunyu, Communication and Capacity Building Specialist

The **objective** of the training is to provide knowledge and skills on website content management systems (CMS) to the staff from Zanzibar Department of Food Security and Nutrition (ZDFZN), Rice Council of Tanzania (RCT), Platform for Agricultural Policy Analysis and Coordination (PAPAC) and Tanzania Seed Trade Association (TASTA) who are using or intend to use website as a medium for communication.

A web content management system (WCMS) is a software system that provides website authoring, collaboration, and administration tools designed to allow users with little knowledge of web programming languages or markup languages to create and manage website content easily.

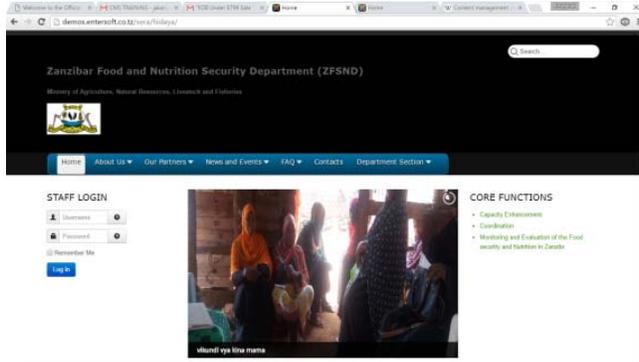
**Participants** came from ZFSND (2), RCT (3), PAPAC (2), TASTA (1), and SERA (2).

**Training Assessment.** Participants admitted that the training was relevant and will be applied when they go back to their offices. Most of the participants managed to design their website by using temporary server provided by the trainer. These websites (links below) will online until Friday, July 8, 2016.

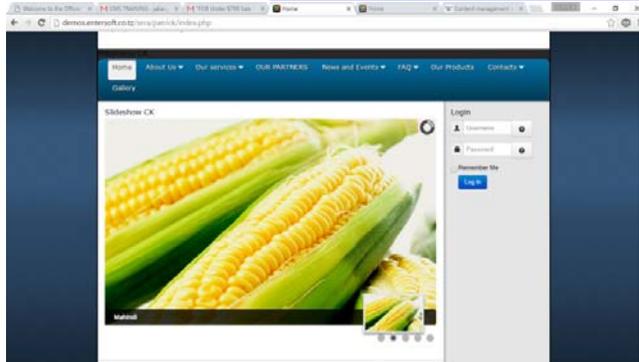
Ahmed Gharib from ZDFSN, <http://demos.entersoft.co.tz/sera/ahmed/index.php>



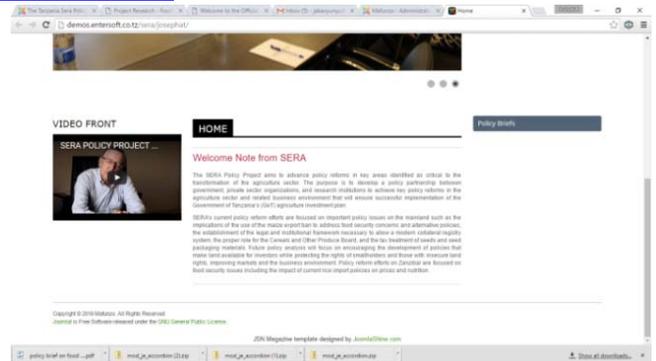
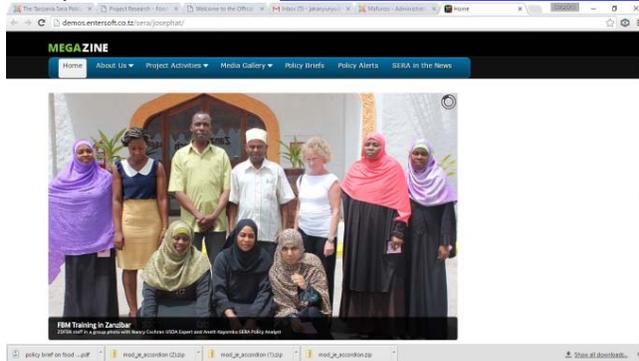
Hidaya from ZDFN, <http://demos.entersoft.co.tz/sera/hidaya/>



Patrick from TASTA, <http://demos.entersoft.co.tz/sera/patrick/index.php>



Josephat from SERA, <http://demos.entersoft.co.tz/sera/josephat/>



**Conclusion and Way forward.** Participants were grateful to SERA for organizing the training. It has helped them to understand website designing and management, how to work with the web administrators in their offices or website service providers.

RCT is mobilizing resources and planning to engage the same consultant to design their website.

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April 2016, Policy Brief No. 4

## SERA Policy Brief

### *The Business Environment and Incentives for Tanzanian Agriculture<sup>1</sup>*

**Tanzania has had difficulty attracting large foreign investors into the agriculture sector because of the lengthy and uncertain procedures for acquiring land, high corporate and local taxes, and high operating costs. Incentives available to foreign investors are not sufficient to offset these constraints. Restrictions on the occupation of land by majority-owned foreign companies, while intended to prevent land speculation, may discourage legitimate foreign investors. In contrast, the business environment and incentives in Mozambique and Zambia are more favourable for foreign investors. Procedures for acquiring land in Mozambique are similar to those in Tanzania, and they have also made it difficult for Mozambique to attract foreign investors; while land use rights can be purchased without government approval in Zambia and that has helped Zambia to attract a large number of foreign-owned enterprises to the sector. If Tanzania is to attract large foreign investors to the agricultural sector; it will need to make land more easily available, provide more favourable incentives, reduce corporate and local taxes, and reduce restrictions on occupation of land by majority-owned foreign companies. A better alternative might be to concentrate on attracting medium-sized domestic investors to the sector as has been done in Mozambique.**

Agriculture accounts for about three-quarters of employment in Tanzania and increasing the number of large agricultural enterprises would increase wage employment in the sector and provide more opportunities for outgrowers. Employment is one of the main benefits of attracting large agricultural enterprises, but these enterprises can also expand the tax base, provide produce for the domestic market, contribute to export earnings, and support services to local communities such as schools and clinics. They can also bring needed capital, technology, management skills, and marketing linkages. Attracting foreign investors to develop large

<sup>1</sup> This Policy Brief was prepared by Don Mitchell and Edith Lazaro, Senior Advisor and Research Associate of the SERA Project, respectively, in collaboration with Daktari Hango from the Ministry of Agriculture, Livestock and Fisheries, James Ngwira of the President's Delivery Bureau, Emmanuely Lyimo of the SAGCOT Centre, and Martin Masalu of the Tanzania Investment Centre. The SERA Policy Project is a USAID-funded Feed the Future Project that seeks to improve agricultural policies in Tanzania and build capacity for policy analysis and advocacy. It is implemented by Booz Allen Hamilton.

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agricultural enterprises has been the cornerstone of Kilimo Kwanza, SAGCOT, and Big Results Now; but Tanzania has not been successful in attracting large foreign investors largely due to the poor business environment. The SERA Policy Project of the USAID Feed the Future Initiative in collaboration with the Ministry of Agriculture, Livestock and Fisheries (MALF), the President's Delivery Bureau (PDB) for Big Results Now (BRN), the Southern Agricultural Growth Corridor (SAGCOT) Centre, and the Tanzanian Investment Centre (TIC) undertook a study of the agricultural business environment and incentives and compared them with the business environment in Mozambique and Zambia. The study found a wide range of outcomes, with Zambia having more than 1,000 large commercial farms while Tanzania has struggled to attract even a few. Mozambique has been more successful than Tanzania at attracting foreign investors, but trails Zambia by a wide margin. A comparison of the business environment and investment incentives showed some similarities between the three countries but also large and important differences. Access to land and the ability of an investor to capture land value appreciation emerged as important factors in attracting foreign investors, while other aspects of the business environment and incentives were more important to operating profitability and sustainability. This Policy Brief compares these countries with respect to corporate and local taxes, the cost of selected inputs, availability and access to land, agricultural and land policies, and incentives.

## Comparing Tanzania, Mozambique, and Zambia

The three countries are similar in many respects, with all dependent on agriculture for a large share of employment and all having a large smallholder sector with average land holdings of less than two hectares. All three countries have had rapid GDP growth over the past decade, but Tanzania has had slower growth than Mozambique or Zambia by about one percentage point in GDP and per capita GDP (Table 1). Per capita GDP varied from USD586 in Mozambique to USD955 in Tanzania and USD1,722 in Zambia. The share of agriculture in GDP varied from a high of 31.5% in Tanzania to a low of 18.0% in Zambia.

**Table 1: Country Comparisons.**

	----- Tanzania -----	---- Mozambique----	----- Zambia-----
<i>GDP Growth Rate 2005-14 (%)</i>	6.6	7.5	7.7
<i>Population Growth Rate</i>	3.2	2.8	3.1
<i>Per Capita GDP Growth Rate 2005-14 (%)</i>	3.3	4.5	4.5
<i>Per Capita GDP (USD) 2014</i>	955	586	1,722
<i>Agr. Share of Employment (%)</i>	75	75-80	80
<i>Agr. Share of GDP 2014 (%)</i>	31.5	25.2	18.0

**Sources:** World Bank, Tanzania NBS, Instituto Nacional de Statistica Mozambique, Central Statistics Office, Zambia.

## Access to Land and the Potential to Benefit from Land Value Appreciation

Tanzania has an estimated 44.0 million hectares of arable land suitable for crop production, and only one-quarter of that is cultivated. Mozambique and Zambia also have large areas of arable land suitable for crops that are not being cultivated and together these three countries account for one-half of the arable land in Sub-Saharan Africa that is uncultivated, with high agricultural potential, and low population density. <sup>i</sup>However, uncultivated does not mean unclaimed, and most of the land is under community control and cannot be easily

<sup>i</sup> World Bank (2011), *Rising Global Interest in Farmland*, page xxxiv.

or quickly accessed by investors. As arable land becomes scarcer in other regions, investors will increasingly turn to Tanzania for cropland. This interest is driven partly by the potential for land price increases which are an important part of the total return to investments in agriculture. In the U.S., for example, net cash income (cash income minus cash expenses) provided an average return on assets of 5.2% per year from 2000 to 2015 while increases in land values accounted for an additional 5.5% of returns per year.<sup>ii</sup>

The ability of a foreign investor to benefit from land value appreciation in Tanzania is limited because the Land Act (1999) restricts the rights of majority-owned foreign companies and specifies that the land rights revert to the Tanzania Investment Centre or other authority prescribed by the Ministry at the expiry, termination, or extinction of the right of occupancy or derivative right.<sup>iii</sup> How this provision would be applied is not clear, but it may limit an investor's opportunity to benefit from the appreciation in land values. The Land Act further states that unexhausted improvements may be compensated under this Act but the mechanism is not described. While the intent of the restriction on majority-owned foreign companies is to discourage land speculation, it also discourages legitimate investors. By comparison, Zambia has an active land market that allows investors to acquire and sell land quickly. Since land use rights can be sold in Zambia, an investor can capitalize on its increase in value. This has helped to attract a large number of commercial farms, especially from neighbouring Zimbabwe and South Africa. There are about 1,000 commercial farms with 1,000 hectares or more and about 10 with more than 40,000 hectares.<sup>iv</sup> Without the potential to benefit from land value appreciation and the capture of the value of improvements made to the land, the business environment becomes much more important in attracting large commercial agricultural enterprises.

## Corporate Income Taxes

Corporate income taxes are an important part of the business environment, and Tanzania applies the standard corporate income tax rate of 30% to agricultural processing and production (Table 1). In contrast, Mozambique applies a reduced rate of 10% on farming and cattle breeding, and Zambia applies a 10% corporate tax rate on agricultural production and processing (field and factory operations). The implications of the different corporate income tax rates on profitability can be shown with an example of a hypothetical sugar company operating in each of the three countries.<sup>v</sup> Profits for the identical sugar company in Tanzania are 78% of those in Zambia and 89% of those in Mozambique just due to the differences in corporate tax rates. However, corporate tax rates are only one of the many differences in taxes and expenses encountered by a corporate investor in Tanzania.

**Table 2: Corporate Income Tax Rates.**

	----- Tanzania -----	---- Mozambique----	----- Zambia-----
<i>Standard Rate (%)</i>	30	32	35
<i>Agro-Processing (%)</i>	30	32	10
<i>Agr. Production (%)</i>	30	10	10

**Source:** KPMG, PWC

<sup>ii</sup> Net Cash Income is from USDA/ERS Farm Income and Wealth Statistics.

<sup>iii</sup> Land Act (1999). Page 26, para 20, section (5)

<sup>iv</sup> The uncertainty of land security in Zimbabwe also encouraged many farmers to migrate to Zambia.

<sup>v</sup> Field and factory costs are about equal in a typical sugar company and are set equal in this example. The differences in profits then depends only on the corporate tax rate on field and factory operations.

## Local Taxes

Local Government Authorities (LGAs) in Tanzania are allowed to collect taxes by the Local Government Finance Act (1982), and the largest of these taxes is the crop produce cess which accounts for 43% of rural LGA's revenues.<sup>vi</sup> The crop produce cess is a tax on the gross value of production, and it is primarily directed at traditional export crops but also affects food crops. The crop produce cess varies by district and is typically levied when crop produce is moved from one district to another. Corporate producers are more visible than smallholders and it is more difficult for them to avoid the tax, although some have been able to negotiate reduced rates. The tax rate was capped at 5% by the central government in 2003. By comparison, Mozambique does not have a crop produce cess and Zambia has one at the rate of .03%. Since the crop produce cess is a tax on production, it can have a very large impact on corporate profits especially when profits are low. In addition to the crop produce cess, there are many other local taxes and fees in Tanzania and they include: OSHA, Fire, Business License, Billboard Fee, Environmental Fee, Waste Management Fee, Business Registration and License Fee, Workers' Check-up Fee, Weights and Measures Levy, and Fuel Levy. There is also a Service Levy of 0.03% of gross turnover collected by local communities. Unfortunately, the study team was not able to obtain a comparable list of local taxes in Mozambique and Zambia.

## Other Taxes and Operating Expenses

In addition to high corporate and local taxes, the Value Added Tax in Tanzania is 18%, compared to 17% in Mozambique, and 16% in Zambia. Lending interest rates are 16.3% in Tanzania, compared to 14.3% in Mozambique, and 11.6% in Zambia. Electricity rates are 16.7 U.S. cents per kilowatt hour in Tanzania compared to 7.0 in Mozambique, and 4.8 in Zambia. Other taxes and fees include workers' compensation (1% of wages), skills development levy (5% of non-farm wages), and corporate contribution to the National Social Security Fund of 10% of wages compared to 5% in Mozambique and 4% in Zambia. The combined effects of these taxes and fees is to further reduce profitability of corporate enterprises in Tanzania compared to Mozambique and Zambia.

**Table 3: Other Taxes, Fees and Expenses.**

	----- Tanzania -----	---- Mozambique----	----- Zambia-----
VAT (%)	18.0	17.0	16.0
Interest Rates (%)	16.3	14.3	11.6
Electricity (U.S. cents/kwh)	16.7	7.0	4.8
National Social Security Fund (% of wages)	10.0	4.0	5.0
Skills Development Levy (% of non-farm wages)	5.0	0.0	0.0

**Source:** KPMG, PWC, World Bank, Various Country Statistical Reports. Lending interest rate <http://data.worldbank.org/indicator/FR.INR.LEND>

<sup>vi</sup> The United Republic of Tanzania, "Agricultural Produce Cess in Tanzania: Policy Options for Fiscal Reforms"

## Agricultural Policies

Agricultural policies and their implementation are an important component of the business environment and frequent changes or ad hoc government interventions increase risk for investors and discourage investment. For example, the Government of the United Republic of Tanzania (GoT) recently announced a cap on sugar prices and threatened to prosecute companies found to be withholding sugar from the market in an effort to increase prices. <sup>vii</sup> Such interventions are rarely effective, but signal to investors that government is ready to intervene rather than rely on market forces to solve problems.

The agricultural policies of Tanzania, Mozambique, and Zambia are similar in their basic approach. All three countries protect selected sub-sectors with tariffs and quantitative controls. Marketing in all three countries is primarily done by the private sector, with the exception of staple food crops which are primarily produced by smallholders. Tanzanian and Zambia have large input subsidy programs for smallholders while Mozambique does not. Tanzania and Zambia have a national food reserve which also serve a dual role of holding large food reserves and intervening in markets to influence prices. Policy coherence and stability are a challenge in all countries.

Trade policies are similar in all three countries, with all countries relying on export and import permits, tariffs, and quantitative controls to protect sensitive crops. In Tanzania, rice and sugar have high tariffs and permits are required for imports. Marketing in all three countries is largely done by the private sector, with the exception of maize which has varying degrees of government marketing involvement.

## Investment Facilitation and Incentives

Tanzania, Mozambique, and Zambia all have one-stop investment centres to assist investors to establish their business and identify investment opportunities. Tanzania has the Tanzania Investment Centre (TIC) which is an agency of the Ministry of Industries, Trade, and Investments; Mozambique has the Centro de Promoção de Investimentos (Investment Promotion Centre) which is under the authority of the Ministry of Economy and Finance; and Zambia has the Zambia Development Agency which is a semi-autonomous institution under the authority of the Minister of Commerce, Trade, and Industry. Mozambique also has an Agricultural Promotion Centre (CEPAGRI) which is a government institution under the authority of the Ministry of Agriculture to assist investors in agriculture. All provide incentives to investors, and special incentives to strategic investors of a certain size.

In Tanzania, a local investor must invest at least USD100,000 and a foreign investor must invest at least USD500,000 to qualify for the certificate of investment incentives. To qualify as a Strategic Investor, which allows additional incentives, a local investor must invest at least USD20 million and a foreign or joint venture investor must invest at least USD50 million. A Super Strategic Investor must invest at least USD300 million and can negotiate a special package of incentives. In Zambia, the largest category of investor is a Major Investor who must invest at least USD10 million and can negotiate the package of incentives. <sup>viii</sup> In Mozambique, an investor who invests about USD88,000 (depending on the exchange rate) is eligible for general investment incentives and a Large Scale Investor who invests at least USD500 million or an investor in a priority sector receives additional investment incentives.<sup>ix</sup>

<sup>vii</sup> Draft Report, October 2014.

<sup>viii</sup> The Citizen, "Govt order on sugar price flops" Thursday, 10 March 2016.

<sup>ix</sup> Zambia Development Agency: Investor Guide Book February 2013.  
Mozambique Investment Guide, February 2013.

## Conclusions and Recommendations

Tanzania, Mozambique, and Zambia are land abundant countries which together account for one-half of the high-potential, underutilized crop land in Sub-Saharan Africa. This has led to a surge of investor interest in establishing agricultural enterprises, and attracting such large agricultural enterprises has been the cornerstone of Tanzania's Kilimo Kwanza, SAGCOT, and Big Results Now Initiatives. However, Tanzania has not been successful in attracting such enterprises despite government efforts and initiatives such as SAGCOT. In contrast, Zambia has been very successful in attracting such large-scale agricultural enterprises and Zambia has more than 1,000 farms with 1,000 hectares or more and 10 farms with more than 40,000 hectares. The largest, ZAM-BEEF, has more than 80,000 hectares of land and is listed as a share company on the national stock exchange. Mozambique has not been able to attract the mega-farms like Zambia, but it has been able to attract medium-sized domestically-owned farms into the sector while Tanzania has not been successful in attracting either. The agricultural business environment largely explains the differences with Zambia providing favourable incentives, an attractive business environment, easy access to land, and an active land market where an investor can sell their land rights. Mozambique has provided favourable incentives and an attractive business environment, but not easy access to land and makes the sale of land rights illegal. Tanzania provides neither favourable incentives nor a favourable business environment, and does not provide easy access to land. It also restricts the rights of majority foreign-owned enterprises to transfer land rights. If Tanzania is to attract large- or medium-scale agricultural enterprises, it will need to make land more easily available to investors, improve the business environment, and provide greater incentives to the sector.

Access to land seems to be the most important factor determining where an international investor will locate within the region. Zambia has large tracts of land titled to individuals that can be leased to investors on a short- or long-term basis and sold or leased to another investor without government approval. That makes it possible for an investor to acquire land quickly if they are prepared to pay market prices. There is an active land market in Zambia which allows an investor to benefit from the appreciation of land values when they sell their lease, and the appreciation of land values is an important part of the total return to agriculture. Mozambique does not provide easy access to land and even makes it illegal to sell land. Land titles cannot be sold or transferred and revert back to the government upon termination of the lease, and a new investor is required to apply for a new title from the Ministry of Land. That effectively prevents an investor from selling their title and benefiting from land value appreciation or improvements made to the land. Acquiring land by an investor in Tanzania is also difficult and the title reverts to the government upon expiration or termination which limits an investor's ability to transfer the title to another investor and benefit from the appreciation of land values. Without the ability to transfer the land lease, an investor cannot sell their investment and that discourages investment, especially by foreign investors.

The agricultural business environment is also an important determinant of where an international investor might choose to locate in the region and is critical to the profitability and sustainability of an agricultural enterprise. Tanzania has the least favourable business environment of the three countries studied because of high taxes and high operating costs. The standard corporate income tax in Tanzania is applied to all corporations while Mozambique and Zambia offer preferential rates to agricultural investors. Tanzania also has numerous local taxes and fees, including the crop produce cess which is a tax of up to 5% on the gross value of crop

production, while Mozambique and Zambia have fewer and small local taxes and fees. The crop produce cess in Tanzania is especially burdensome when profits are low as is often the case. Other taxes and operating expenses are also higher in Tanzania, with the VAT at 18% in Tanzania, compared to 17% in Mozambique, and 16% in Zambia. Interest rates, electricity rates, and corporate contributions to pensions are also higher in Tanzania than in the other countries. These various factors combine to create an unfavourable business environment for agricultural producers in Tanzania compared to Mozambique and Zambia.

Large agricultural enterprises can make valuable contributions to agricultural development and the government has shown its commitment to attract foreign investors. However, Tanzania is not competitive at attracting large foreign investors into the agricultural sector. If Tanzania wants to attract large foreign investors, it will need to make land more easily available, reduce corporate taxes, reduce or eliminate the crop produce cess, and improve other aspects of the business environment. Current land laws prevent a foreign investor from recouping investments made to the land or benefiting from land value appreciation which removes one of the main sources of returns to agricultural investors. The process for acquiring land is also long and uncertain and most investors would not have the financial resources or persistence to acquire land from either the central government or local communities. Opportunities to attract medium-sized domestic investors into the sector are greater than attracting large foreign investors and that is the approach being taken in the Beira Corridor in Mozambique. These investors can more easily acquire land and are more familiar with the business environment. A similar approach should be considered by SAGCOT, and additional incentives might be provided such as reduced corporate income taxes and VAT exemptions.

## References and End Notes:

- (i) World Bank (2011), Rising Global Interest in Farmland, page xxxiv.
- (ii) Net Cash Income is from USDA/ERS Farm Income and Wealth Statistics.
- (iii) Land Act (1999). Page 26, para 20, section (5).
- (iv) The uncertainty of land security in Zimbabwe also encouraged many farmers to migrate to Zambia.
- (v) Field and factory costs are about equal in a typical sugar company and are set equal in this example. The differences in profits then depends only on the corporate tax rate on field and factory operations.
- (vi) The United Republic of Tanzania, "Agricultural Produce Cess in Tanzania: Policy Options for Fiscal Reforms"  
(vii) Draft Report, October 2014.
- (viii) The Citizen, "Govt order on sugar price flops" Thursday, 10 March 2016.
- (ix) Zambia Development Agency: Investor Guide Book February 2013.  
Mozambique Investment Guide, February 2013.



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April 2016, Policy Brief No. 5

## SERA Policy Brief

### *Policy Options for Food Security, Agricultural Growth, and Poverty Reduction in Tanzania \**

Tanzania has a unique opportunity to improve food security by increasing agricultural growth and rural incomes through exports of food crops to the East Africa region. Tanzania has an abundance of natural resources that can be used to increase food crops production, and it faces a regional market that is food deficit and expected to remain food deficit for the foreseeable future. Tanzania's exports will depend mostly on its ability to increase production and access regional markets. Enabling policies are essential for Tanzania to achieve its export potential both in order to provide incentives to farmers to increase production and in order to maintain access to regional export markets. These policies should focus on private sector-led growth, encouraging exports, and allowing market forces to guide the economy. Key policy areas include policies to: Increase Food Crops Production, Encourage Exports of Food Crops, Improve Systems to Identify Food Insecure and Vulnerable Groups, Hold Adequate Food Grain Reserves for Emergencies, and Establish a Transparent Rules-Based System for Emergency Food Imports. If Tanzania can make the right policy choices in these key areas, it can expect to improve long-term food security, experience more rapid growth in the agricultural sector, and reduce rural poverty.

### **Increase Food Crops Production**

Increasing food crops production is an important component of improving food security and policies to support increased production should focus on market-based economic incentives, adoption of improved technologies, and increasing the availability of improved inputs. Investments by the Government should focus on improving infrastructure and supporting public goods such as research and extension. Direct support to producers should be well targeted and have defined limits and purpose. Stable and transparent policies reduce uncertainty and encourage the private sector to invest and produce, and it is important to

<sup>1</sup>This Policy Brief was prepared by Don Mitchell, Senior Advisor of the SERA Project. It summarizes analyses and recommendations of the SERA Project, Associates for International Resources and Development (AIRD), and the Economic Research Service of the USDA that were presented to the Government at workshops. Thanks are expressed to the Ministry of Agriculture, Livestock, and Fisheries and the Prime Minister's Office for valuable comments on a prior draft. Thanks are also extended to the Feed the Future NAFKA Staples Value Chain Project for supporting the AIRD team. Any errors or omissions remain the sole responsibility of the author. The SERA Policy Project is a USAID-funded Feed the Future Project that seeks to improve agricultural policies in Tanzania and build capacity for policy analysis and advocacy. It is implemented by Booz Allen Hamilton.

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communicate policy changes and the details of current policies to Government officials and the private sector so they are well informed and advised of future policy changes.

**Recommendation: Follow stable and transparent policies to provide incentives to increase food crops production and exports, and communicate current policies and future policy changes.**

**Action: Ministry of Agriculture, Livestock, and Fisheries to publish agricultural policies on their Ministry website.**

Access to improved inputs such as high quality seeds, fertilizers, and agro-chemicals are essential to a competitive agricultural sector and policies should focus on making these inputs available at competitive prices. While much has been done by the Government to improve seed policies in recent years, improved seed use in Tanzania is still among the lowest in the region at approximately 20 percent of total seeds sown. Seeds produced by publicly-funded Agricultural Research Institutes need to be made more readily available to farmers at competitive prices by allowing the private sector greater access to basic (foundation) seeds (SeedCLIR, 2013). Procedures for approving new seed varieties, fertilizer blends, and agro-chemicals are long and costly; and a more streamlined and less costly approval process is needed. Eliminating the crop produce cess on seeds and reducing taxes on seed packaging materials would reduce costs and reduce seed prices to farmers.

**Recommendation: Improve access to improved seeds, fertilizers, and agro-chemicals.**

**Action: Allow private seed companies greater access to protected varieties from publically-funded research. Streamline the process and reduce the costs of approving new seed varieties, fertilizer blends, and agro-chemicals. Eliminate the crop produce cess on seeds and reduce taxes on seed packaging materials.**

Improved access to credit by smallholders is an essential component of increasing the commercialization of agriculture in Tanzania and the Collateral Registry System being developed by the Bank of Tanzania (BoT) with SERA Project and World Bank support provides such a credit system. It will allow financial institutions greater certainty in using movable assets as collateral on loans and, thereby, reduce lending costs and expand credit to agriculture.

**Recommendation: Implement a modern Collateral Registry System to make credit more easily available to agriculture.**

**Action: Fast track the development and implementation of the Collateral Registry System being developed by the Bank of Tanzania with SERA and World Bank support.**

Closing the gap between actual and potential yields is one way that Tanzania can increase food crops production and take advantage of regional export opportunities as well as raise incomes of farmers. The USAID-funded NAFKA Project has worked closely with maize and rice farmers to adopt modern technology with outstanding success. Rice farmers using the System of Rice Intensification (SRI) and other improved technologies were able to more than double yields and profitability compared to farmers using traditional technology, and maize farmers were able to increase yields by almost 30 percent on rain-fed areas.

**Recommendation: Support smallholders to access technology.**

**Action: Institutionalize the efforts to close the yield gap, through greater involvement of Government extension officers.**

Attracting foreign investment into agriculture has been a cornerstone of Kilimo Kwanza, the Southern Agricultural Growth Corridor (SAGCOT), and Big Results Now (BRN) initiatives. In order to attract foreign investors, it is essential that Tanzania be competitive with other countries in the region on the business environment and investment incentives.

**Recommendation: Align investment incentives with other countries in the region.**

**Action: Review investment incentives for agricultural investors, develop special incentives as needed, and seek approval for a competitive package of incentives for investors in agriculture.**

Access to conflict-free land is essential to encourage agricultural investments in Tanzania, and this is only possible when local communities are supportive and benefit directly from such investments. That can best be achieved by making local communities partners in such investments.

**Recommendation: Improve land policies to allow underutilized land to be used for crop production while protecting the rights of local communities and those with informal land use rights.**

**Action: Clarify the legal authority of local communities to retain control of village lands while leasing or partnering with investors on productive activities.**

Timely granting of licenses, permits, and other required documents by Government Ministries and Agencies is essential for investors to implement their projects. Delays in obtaining such approvals have financial consequences, and create uncertainty for investors and their domestic partners. Potential investors also learn of such delays and may decide not to invest in Tanzania. Conditions for obtaining approvals should be clear and transparent and, once met, approval should be granted promptly. An effective high-level committee should be established to ensure that approvals are granted once requirements have been satisfied.

**Recommendation: Expedite Government's granting of licenses, permits, and other required documents once specified criteria have been satisfied.**

**Action: Establish a high-level committee to follow-up on Government approvals with the authority to establish and enforce deadlines.**

## Encourage Exports of Food Crops

Tanzania's total agricultural export growth (in USD) has been very impressive in the past decade, averaging 7.3% from 2000 to 2011. The growth has been led by food crops which grew by 9% per year during this period compared to traditional export crops (cashews, coffee, cotton, tea, and tobacco) which grew by 3.2% per year. Fully capitalizing on Tanzania's export opportunities required policies that support rather than restrict exports. Tanzania lifted the maize export ban in 2012, but still requires export permits for food crops such as maize and rice. Such permits increase the cost of exporting and are widely circumvented.

**Recommendation: Promote private-sector led agricultural exports by reducing trade barriers and streamlining export approval requirements.**

**Action: Remove export permits and streamline granting of other permits required for exports.**

Other impediments to trade include frequent road blocks to inspect produce and collect crop cess or transit fees

which add to transport costs. The crop produce cess should be reduced in accordance with the Government's commitment under the G8's "New Alliance for Food Security and Nutrition" declaration.

**Recommendation: Reduce or remove export trade barriers such as the crop produce cess.**

**Action: Reduce the crop produce cess and increase the efficiency of collection in order to support Local Government Authorities' revenue collection.**

Monitoring of food crop exports is a legitimate need of Government and improvements are needed to make such information more reliable. Customs is mandated to collect data on exports, and they should be the focus of efforts to improve the data. In addition to underreporting of exports crossing official border points, there are also unrecorded exports and imports along both land routes and seaports. Imports that do not comply with East Africa Community (EAC) protocols and collect the Common External Tariff (CET) can lead to trade conflicts with neighbouring countries which undermine efforts to export food crops in the region. It is important to increase the capacity of Customs to collect and communicate such data to MALF in a timely manner.

**Recommendation: Improve monitoring of food crop exports.**

**Action: Engage with Customs to develop a plan to improve monitoring of food crop exports.**

Food crops imports are reported to enter Tanzania unrecorded and duty-free. This deprives Tanzania of needed tariff revenues and undermines local producers. Improved monitoring and enforcement of agreed tariffs could provide revenue to allow Customs to modernize its systems, provide support for the Government budget, and reduce disruptions to the local markets.

**Recommendation: Strengthen monitoring of food crop imports and collect appropriate tariff revenues.**

**Action: Engage with Customs to develop a plan to improve monitoring of food crop imports and tariff enforcement.**

## Improve Systems to Identify Food Insecure and Vulnerable Groups

Monitoring food costs, identifying the food insecure, and delivering food or financial assistance are essential parts of a comprehensive food security program. The Ministry of Agriculture, Livestock, and Fisheries has historically monitored key food prices such as maize and rice to assess food costs. This approach can over-emphasize the prices of key food items and can lead to food aid assistance or policy action when they may not be needed. A more comprehensive approach would be to monitor the cost of a typical food basket using the Food Basket Methodology developed by the Economic Research Service of the U.S. Department of Agriculture for use by the MALF's Department of Food Security.

**Recommendation: Monitor food basket costs in each region using the Food Basket Methodology.**

**Action: Ministry of Agriculture, Livestock, and Fisheries to calculate food basket costs in each region and disseminate results to other Ministries for their own use.**

MUCHALI is the multidisciplinary operational framework designed to provide actionable knowledge to stakeholders in food security. It does not exist as a government department in its own right, but operates on the basis of cooperation amongst the various stakeholders who allocate the resources that allow the MUCHALI frame-

work to function. However, limited resources affected its ability to fulfil its mandate and formalizing it as an institutional entity would provide a dedicated source of finance and strengthen its ability to fulfil its mandate

**Recommendation: Formalize MUCHALI into an institutional entity and increase resources for its activities.**

**Action: Begin efforts to institutionalize MUCHALI and obtain dedicated financing.**

The estimation of food basket costs can be integrated into the MUCHALI framework to better identify vulnerable groups through regular monitoring of food basket costs in all regions. Such monitoring can provide MUCHALI with a regular overview that facilitates focusing on key regions when food security concerns are identified. However, the chronically food insecure in each region will not be identified by this approach and community-based efforts are needed to identify such groups and individuals and provide targeted support through TASAF or other programs.

**Recommendation: Integrate food basket costs into MUCHALI framework.**

**Action: MUCHALI should coordinate with the MALF to integrate the Food Basket Methodology into their analysis.**

Good agricultural data is essential to good policy decisions and efforts are underway to improve the estimates of food crop production, stock levels, and prices. This effort is led by the National Bureau of Statistics (NBS) with support from USAID and other donors, and an implementation team that includes the U.S. Department of Agriculture. An annual survey of agriculture has been designed, and completing it is a high priority. There are other data priorities as well. Retail prices collected by NBS and wholesale prices collected by the Ministry of Industry and Trade (MIT) do not differentiate crop quality or variety, and providing this detail is also a high priority.

**Recommendation: Improve agricultural data.**

**Action: The NBS should prioritize the completion of the survey of agriculture, and NBS and MIT should expand their price collection activities to include prices for different crop varieties and qualities.**

## Hold Adequate Food Grain Reserves for Emergencies

Tanzania is a surplus food crops producer in most years, and the magnitude of the surplus is expected to increase in the future. However, Tanzania is also vulnerable to droughts and other weather disturbances that can lead to production shortfalls. The National Food Reserve Agency (NFRA) is mandated to hold food grain reserves to offset the impacts of such production shortfalls and also provide stocks for disaster relief and food aid to vulnerable groups. Approximately 100,000 metric tons of food purchased by NFRA each year at the time of harvest and held seasonally until distributed as food assistance or sold on the market will normally be sufficient for the food assistance program over a normal five-year period.

**Recommendation: The NFRA should procure 100,000 MT of grain annually to be used for the food assistance program and distributed according to need or sold before the next harvest.**

**Action: Ministry of Agriculture, Livestock, and Fisheries should establish a target of 100,000 MT of grain to be purchased annually for food assistance or to be sold before the next harvest.**

Additional reserves may be held for less frequent shortfalls depending on budgetary resources that are available, the degree to which the Government is willing to pay more for the security of having GMO-free stocks compared with imports, and the degree to which additional evidence suggests there is greater risk than is shown by food production data.

**Recommendation: Determine and apply the target level of additional carryover stocks.**

**Action: The Prime Minister's Office and the Ministry of Agriculture, Livestock, and Fisheries should jointly determine the target level of carryover stocks beyond the 100,000 MT annual procurement which are to be used primarily for emergency food assistance.**

One low-cost approach for NFRA to hold larger reserves is by designating these reserves as available for sale on a seasonal basis to WFP or through exports. However, care must be taken to avoid building up large carryover stocks in order to remove surplus grain from the market to support the market price. Even more threatening would be to build additional storage capacity for the purpose of storing most of the surplus grain that is produced.

**Recommendation: Expand secure NFRA sales outlets as well as external sources of supply.**

**Action: The NFRA should work towards integrating itself into a secure and reliable grain trade network within Eastern and Southern Africa, which will allow it to dispose of its surpluses and supplement its sources of supply as determined by market conditions.**

Subsidized purchases and sales are disruptive to markets and generally involve the allocation of rents to selected sellers and buyers. NFRA transactions are not large enough to establish effective price floors or ceilings, and instead they disrupt the market, transfer rents to favoured parties, and reduce NFRA's profitability.

**Recommendation: The NFRA should operate in a transparent and rules-based manner in its purchases and sales of grain.**

**Action: NFRA establish and adhere to transparent rules for the buying and selling of grain that ensure that these operations do not involve favouritism and rent-seeking.**

NFRA's procurement and storage costs are very high, and that makes it difficult to compete with the private sector. One way these costs could be reduced is for NFRA to close its buying stations and procure only at the warehouses. Inefficiencies in handling and storage due to the lack of proper equipment could also be reduced in order to reduce operating costs.

**Recommendation: Reduce NFRA operating costs.**

**Action: Close most NFRA buying stations and buy directly from farmers and traders at NFRA warehouses.**

## Establish a Transparent Rules-Based System for Emergency Food Imports

Despite increasing food surpluses, there will occasionally be need for emergency food imports. These imports should be done in a transparent way based on agreed rules to avoid unduly disrupting local markets and creating trade disputes. These rules should be predictable and widely disseminated in order to reduce uncertainty of private traders and stock holders.

**Recommendation: Under normal market conditions, allow the East Africa Community's Common External Tariff to regulate food imports and stabilize domestic prices.**

**Action: Customs should ensure that the East Africa Community's Common External Tariffs are applied consistently.**

On rare occasion, imported food prices may be above the level that would provide incentives for private sector imports and the domestic price may be higher than desired by Government. In such cases, the Government could intervene by reducing the EAC Common External tariff rates.

**Recommendation: When domestic market prices exceed a predetermined trigger level and private sector imports are not profitable, the GoT could reduce the East Africa Community Common External Tariff by an amount required to make imports profitable in order to cap domestic price increases.**

**Action: Pursue changes to the EAC procedures to create a region-wide rules-based system that is pro-active and allows member countries to efficiently change EAC tariff rates under extreme food security conditions.**

When world market prices are above levels that allow profitable imports even with a zero EAC tariff, Tanzania could take several actions, including obtaining approval from the EAC to reduce the import tariff to zero. Tanzania could also request support from the donor community and development agencies for financial assistance for emergency food imports (as was done by many countries in 2008 and 2009). This would allow limited imports of key food items. Tanzania could also reduce import tariffs on other food crops such as wheat (with EAC approval) to provide consumption alternatives to consumers.

**Recommendation: In extreme circumstances, when world market prices are above the levels that allow profitable imports even with a zero EAC import duty, approach the international community for financial assistance for market imports, and request approval from the EAC to reduce the import tariff on related food items.**

**Action: Ministry of Agriculture, Livestock, and Fisheries, the Prime Minister's Office, and Ministry of Finance and Economic Affairs jointly determine the combination of short-term subsidy, food aid, and tariff reduction on related food items.**

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# The Cross-Border Transmission of Price Shocks Evidence from Tanzanian Food Markets<sup>\*</sup>

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May 22, 2016

## **Abstract**

We estimate external and domestic food market linkages in Tanzania to better understand the cross-border transmission of shocks. We employ a market-network approach to show that i) The largest city is not a major source of influence; ii) Demand shocks emanate from border markets that may serve as conduits for informal trade and iii) Prices in the high potential areas are especially sensitive to systemic shocks. Taken together, our analysis suggests that an interventionist trade policy is not an alternative to remedying the inefficiencies that stem from inadequate rural infrastructure.

**JEL CLASSIFICATION:** E31, O13, Q02, Q13, Q18

**KEY WORDS:** Price transmission, Market integration, Tanzania, Food prices, Market networks, Trade policy

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## Conclusions

In this paper, we show that the sources of exogenous demand shocks (to local food markets) originate outside Tanzania. We also show that markets in areas most suitable for crop production are the ones that are also most vulnerable to systemic shocks. Consistent with these sets of results: price levels are the lowest, and volatility the highest, in these areas. We show that this is true for both maize (which has been subjected to frequent export bans and therefore has a negative net protection) and rice (which is protected). Taken together, our analysis suggests that an interventionist trade policy is not an alternative to remedying the inefficiencies that stem from inadequate rural infrastructure. Our framework also addresses the need to identify a market that may serve as a reference (i.e. benchmark) price for traders and other participants in Tanzania. We show that this benchmark will vary by season and commodity. For local Tanzanian maize markets, the price in Nairobi may serve as the benchmark during the Tanzanian harvest season. However, during the lean season, Nampula is the primary reference market. For rice, Bukoba (an important Lake Victoria port) is the primary market during the harvest season, while Arusha is also important. However during the lean season, despite restrictions on formal rice imports, international markets (Vietnam and Pakistan) are the appropriate price benchmarks.

Our results also speak to the substantial information requirements associated with properly regulating cross-border food trade, in particular, and markets with a large number of buyers and producers more generally. The complexity arises from changes in demand and supply that are difficult to anticipate in advance. We are not suggesting that market forces unleashed by laissez-faire policies will alleviate all the constraints impeding the development of Tanzania's agrarian economy. In fact, markets - as has been often argued - under-provide "public goods" like agricultural R&D and rural infrastructure. The rationale for public intervention in these, and related areas, rests on a fairly robust empirical and analytical foundation. In contrast, the case for an interventionist staple food trade policy is less secure.

In the case of rice, policy makers need to weigh the benefits engendered by the stronger incentives to producers, based on the prices they actually receive in the surplus-high potential areas during the harvest season, against the costs to consumers in the better connected urban markets. By itself, holding constant the trade policies of other countries, is not an estimate that even an experienced analyst can derive with any degree

of confidence. This is because the main channel through which the benefits are hypothesized to accrue (i.e. the productivity improvements from irreversible household-level investments) involves a gradual process. The benefits are therefore plausibly generated over long time spans. In addition, and this is perhaps what makes the cost-benefit analysis especially challenging, the outcomes of food trade policies depend on trade policies conducted by both Tanzania's neighbours and major world exporters. For example, the trade agreements that its neighbors have with world exporters will influence domestic rice prices in Tanzania. This is because substantial price spreads will engender cross-border food trade, regardless of official trade policies.

While the benefits are elusive and difficult to estimate, the costs are both more obvious and more immediate. Consumers in better connected urban markets face higher price levels, and all market participants face greater price uncertainty, engendered by unpredictable trade policies. Consequently, protectionist food trade policy is perhaps not the most reliable instrument through which public interventions may drive improvements in rice productivity.

Tanzania typically produces a surplus of food staples. In addition, it borders eight countries and the Indian Ocean. Further, it is a democracy, and is not affected by international or civil conflict. Therefore, our results are clearly not relevant to all developing countries. However, while our answers are perhaps specific to Tanzania, our questions are rather more general. In this paper, and our earlier study (Baffes et al. (2015), we have moved away from attempting to directly answer a question that has been the leading concern of the food market integration literature: "Do markets work well?" We believe that the question itself is poorly defined. In contrast, our objective is to simply understand the reasons for local price changes.

We believe that there are, at least, four questions that are worth asking in the context of food market analysis. First, where are local factors important? Markets that are strongly influenced by weather shocks and harvest cycles are structurally different than urban food-deficit markets. As such, the influence of local factors cannot be ignored in any explanation for pronounced price changes in these markets. Second, for a given country, it is worth delineating the relevant external markets, from both a demand and supply perspective, across commodities and seasons. Third, it is useful to ask whether markets in the high-potential areas really benefit from protectionist trade policies. Fourth, and this is an area that we have alluded to, but not examined in detail, it is instructive

to examine the potential for risk diversification. For Tanzania, the diversification of production risk may constitute an additional benefit associated with cross-border maize trade, while for rice this is plainly not the case.

An improved understanding of local food price movements will, in concert with other types of analyses, clarify the mechanisms through which dynamic factors exert an influence on rural economies and rural populations. While our understanding of food price movements remains incomplete, perhaps our main contribution is to suggest - and begin to operationalize - lines of inquiry that may engender a more complete understanding.

## **Food Costs during the Food Crisis: The Case of Tanzania**

**by Donald Mitchell, Aneth Kayombo, and Nancy Cochrane<sup>1</sup>**

**June 12, 2016**

The global food crisis of 2007-2008 led to social and political unrest in many countries, including food riots in some, and contributed to the uprising in the Middle East that toppled several governments. Food prices rose in many countries and the FAO estimated that global hunger rose by 75 million (FAO 2009). Ivanic and Martin (2008) estimated that global poverty could have increased by 105 million during the global food crisis based on their assumed rates of international price transmission to domestic markets and an extrapolation of their results from ten low-income countries to all low-income countries. Wodon and Zaman (2008) used a similar approach to consider the impact of the global food crisis on the poor in Sub-Saharan African countries and concluded that the poor would have been significantly affected by the food price increases associated with the global food crisis. These estimates focused primarily on staple food crops that are heavily traded in global markets. Using a different approach, the Gallup World Poll of self-assessed food insecurity found that Sub-Saharan Africa was hardest hit and that Tanzania topped the list as having the largest increase in self-assessed food insecurity (Headey 2013). But, how were domestic food costs and food prices actually affected? We consider the case of Tanzania and examine the actual cost of the typical food basket and key food prices using monthly retail price data and representative consumption shares obtained from consumer surveys.

The impact of the global food crisis on food costs and prices in developing countries is important for several reasons. First, the poor in developing countries spend a large share of their incomes on food and a rise in food prices can push many into poverty. Second, developing country governments often respond quickly to changes in food prices and take policy actions, such as export bans, that may partially alleviate food security concerns in the short run, but reduce producer incentives in the long run. Thirdly, the international community responded quickly to assist developing countries to cope with the 2007-2008 global food crisis, and it is important to consider whether that response was appropriate. The World Bank, for example, launched the Global Food Crisis Response which mixed fast-track funding with trust fund grants totalling US\$1.6 billion to 49 countries mostly in Africa (World Bank 2013). Could that response have been more beneficial if used for other purposes? This paper looks at food costs in Tanzania during and after the food crisis. This effort is intended to contribute to a better

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understanding of how global food markets affected domestic food costs and food prices in Tanzania, which may lead to better policy responses in the future.

The impact of the global food crisis on the cost of food in the domestic market depends first on the degree to which domestic food markets are integrated with global markets for tradeable foods, and second on the importance of these tradeable foods in the food basket. With respect to market integration in Tanzania: Delgado, Minot, and Tiongco (2005) examined the relationship of Tanzania's monthly retail prices of maize, rice, and cassava to international prices and found that rice prices were connected to international rice prices with a 20-40 percent transmission, while maize prices were less closely linked to global maize prices, and cassava prices showed almost no relationship to global market prices of major food crops. Minot (2011) extended that analysis and showed that African food markets in general were weakly integrated with global markets. Baffes, et. al (2015) found that Tanzanian maize prices were primarily driven by domestic factors rather than global or regional prices. These results suggest that the global food crisis should not have been significantly transmitted to Tanzania.

The analysis of the impact of global food prices on Tanzania's food staples prices by Delgado, et al. and Minot did not take into account the fact that the basic staples that were most affected by the global food crisis – maize, oilseeds, wheat, and rice comprise a relatively small share of the cost of the typical diet in Tanzania. When the composition of the diet is considered, the impact of the global food crisis should have been even less than suggested by the linkages of global staples food prices to domestic staples prices. Maize, for example, accounts for less than 15 percent of the cost of the typical diet in Tanzania despite being the basic staple food which accounts for 40 percent of total calories. Maize, wheat and rice, which bore the brunt of the global food crisis, account for only a combined 23 percent of food costs in Tanzania, while locally sourced fish and meats account for a combined 28 percent of food costs. Since these basic staples account for a relatively small share of food costs in Tanzania and if the prices of these staples were weakly integrated with prices in global markets, then the impact of the global food crisis on Tanzanian food costs should have been small. Non-tradeable foods such as cassava, meat, and fish account for the lion's share of food costs in Tanzania and the prices of these foods should not have been greatly affected by the global food crisis. It is also possible, however, that the prices of these non-tradeables were affected through other channels such as fuel and fertilizer prices or simply by contagion.

Tanzania imports relatively large quantities of wheat, sugar, and vegetable oils, but these foods account for less than ten percent of the cost of the typical food basket. Tanzania's food markets are isolated from global markets by border controls. As a member of the East Africa Community, Tanzania applies the Common External Tariff of the Community and also uses quantitative controls to further limit imports. The tariff on rice and sugar, for example, are

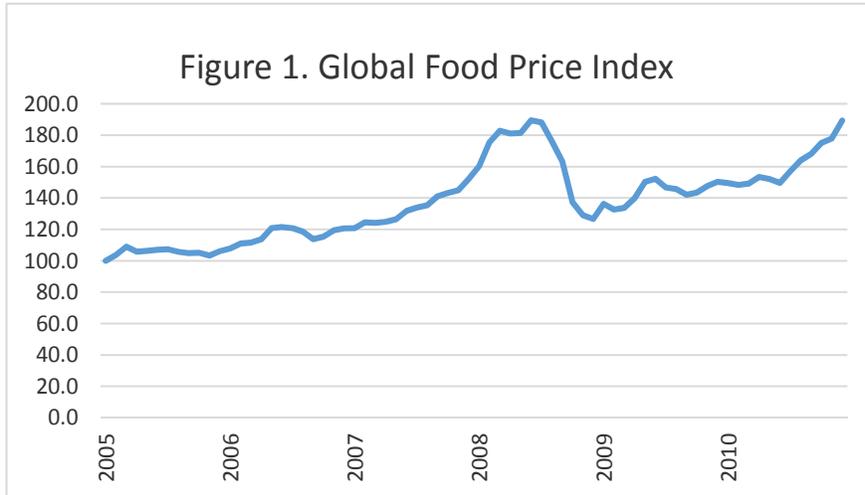
75 and 100 percent, respectively, and the combination of high tariff and quantitative controls should limit the transmission of global food prices to the domestic market. However, there is also a lucrative trade in smuggled rice and sugar through Zanzibar, which has tariffs on rice and sugar of 10 percent and that may undermine high tariffs and border controls measures.

This paper will examine the monthly cost of the typical food basket and food prices in Tanzania during 2005-2010 based on domestic retail food prices and domestic consumption patterns derived from household surveys. The cost of the typical diet will then be compared with global food prices to try and determine how food costs in Tanzania were affected by the global food crisis. Prices of basic staples will also be examined to determine how they responded to the global food crisis. The first section of the paper looks at the global food crisis and Tanzanian imports of globally traded food crops. The second section looks at the composition of the typical diets in Tanzania and the cost of that diet from 2005 to 2010 and computes a consumption weighted food cost index in constant local currency for 20 regions. The third section compares those costs with global food costs during and after the global food crisis. The final section summarizes the finding and draws conclusions.

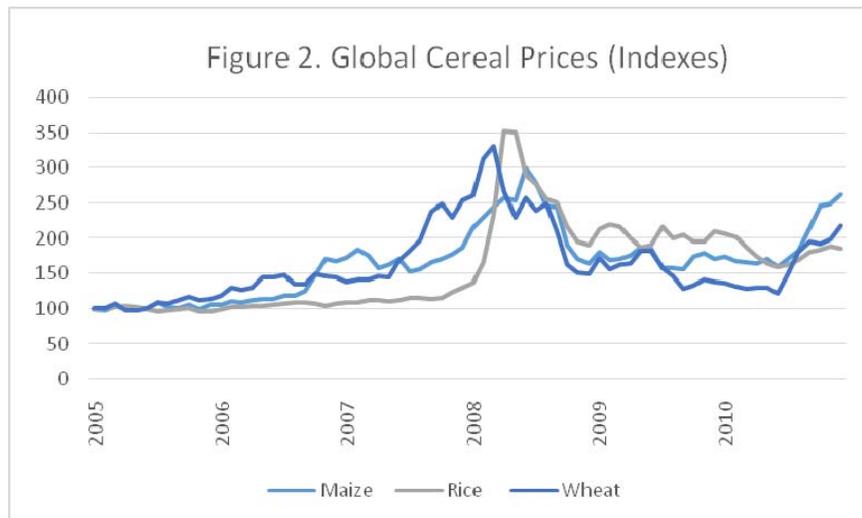
### **The Global Food Crisis**

The prices of basic staples rose sharply in 2007 and 2008 in response to a confluence of factors including a rapid increase in biofuels production from food grains and oilseeds, the weak dollar, and high energy prices (Mitchell 2008). At their peak in 2008, relative to January 2005, maize and wheat prices more than doubled, palm oil and rice prices more than tripled, and sugar prices rose by roughly 50 percent. Prices then fell sharply in response to the global recession, but prices rose again in 2010. The increase in rice prices was largely a delayed reaction to the increase in maize and especially wheat prices when concerns over food security caused some countries to ban rice exports and others to increase rice imports in an effort to secure supplies (Heady and Fan, 2010).

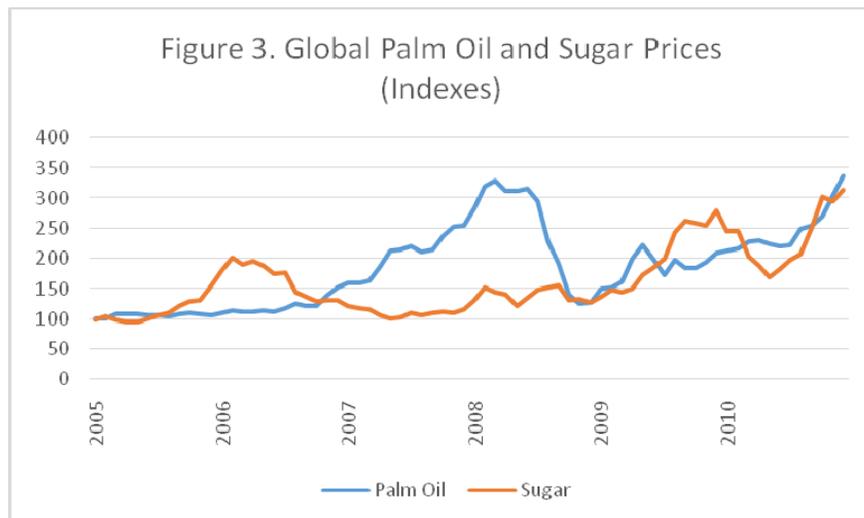
The international organizations (FAO, IMF, and World Bank) monitor global food prices and report monthly prices for internationally traded food crops in U.S. dollars. They also compute trade weighted indexes of food prices that include cereals, vegetable oils, meats, seafood, sugar, and tropical products (IMF 2016). The IMF's monthly food price index in nominal U.S. dollars is shown in Figure 1 from January 2005 to December 2010, with January 2005=100. The IMF's index rose steadily from January 2005 until mid-2008 and then fell by one-third during the balance of 2008 in response to the global financial crisis before rising again in 2010. The indexes of heavily traded cereal crops (maize, wheat, and rice) are shown in Figure 2 and non-cereals crops (palm oil and sugar) in Figure 3 (January 2005=100). They show similar price movements during 2007-2008 with the exception of sugar which was not as much affected by the global food crisis as the other globally traded commodities.



Source: Based on IMF commodity price data with calculation by authors.



Source: Based on IMF commodity price data with calculations by authors.



Source: Based on IMF commodity price data with calculations by authors.

Tanzania is not a large importer of its basic staple foods and price linkages are historically weak as already noted. However, Tanzania depends on the global market for a large share of its sugar, wheat, and vegetable oil consumption and has occasional large imports of rice. It also exports maize and rice to neighboring countries and some foods imported are transhipped formally or informally to neighboring countries. Imports and exports from the global market as reported by Tanzanian customs and by customs of trading partners are shown in Table 1 for the average of 2005-2010 in thousand metric tons. The data reported by Tanzania and its trading partners are not always consistent, but on balance they show Tanzania to be a small net importer of maize during 2005-2010. Tanzania is also shown to be a net importer of wheat, sugar, and palm oil. Based on these trade figures, we would expect domestic wheat, sugar, and palm oil prices to be more closely linked to global prices than other foods including maize and rice.

**Table 1. Tanzanian Imports and Exports of Major Foods, 2005-2010 (thousand metric tons).**

<b>Food Item</b>	<b>--Reported by Tanzania--</b>		<b>--Reported by Trade Partners--</b>	
	<i>Imports</i>	<i>Exports</i>	<i>Imports</i>	<i>Exports</i>
Maize	54	38	59	34
Rice	51	17	95	27
Wheat	709	54	538	8
Sugar	47	24	109	27
Palm Oil	263	11	222	4

Source: UN Comtrade.

### **Composition and Cost of the Typical Diet**

Consumer surveys in Tanzania provide estimates of consumption patterns that can be combined with retail prices to estimate the typical food basket costs. The Tanzania National Panel Survey (TZNPS) conducted by the National Bureau of Statistics (NBS, Tanzania National Bureau of Statistics, 2011) was part of the World Bank's Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA). It was conducted in three waves: 2008/09, 2010/11 and 2012/13. The research in this paper draws on data from the 2010/11 survey. The sample size of that survey was 3,924 households. The second wave survey was conducted over fourteen months in order to take into account the seasonal variation in consumption patterns typical of households relying on agriculture as their primary source of income, as is the case in Tanzania. Statistically reliable estimates are obtained for each of the four primary strata: Dar es Salaam (DSM), other urban areas in mainland, rural areas in mainland, and Zanzibar and also for urban and rural strata in seven zones (North, Central, Eastern, South, Southern Highlands, West and Lake). The household questionnaires included detailed questions on food consumption

inside and outside the household as well as key demographic information. The food consumption section asked respondents about consumption (in kilograms or liters) and expenditures (in Tanzanian Shillings) on 59 foods by the household over the previous week from purchases, own-production, gifts, and other sources. The consumption estimates presented in this paper are for in-home consumption and only for mainland Tanzania. A separate questionnaire asked details on the demographic structure of the household: number of members, gender, and ages. This information was combined with the consumption data to derive food consumption per adult equivalent. Using standard calories per kilogram coefficients, daily calorie consumption per adult equivalent was estimated for each stratum and income group.

This study used a food basket methodology to estimate food costs that is documented in a U.S. Department of Agriculture report (Cochrane and D'Souze 2015). That study used the TZNPS data to construct a representative food basket on a per capita basis in a way that provided a daily average calorie intake of 2,137 calories, a target based on the United Nations Food and Agricultural Organization's Tanzania Food Balances (FAO 2013). In order to derive an estimate of per capita consumption, the USDA study calculated calorie shares for each food and used those shares to construct a per capita food basket that provides the target daily calorie intake.

Of the 59 foods monitored in the TZNPS, 17 foods were selected to represent the food basket and these 17 foods accounted for 88 percent of average daily calorie intake at the national level. Of those, three foods—maize, rice, and cassava—accounted for 65 percent of total calories in the Tanzanian diet and 40 percent of the costs of the food basket at the national level. The remaining 42 foods covered in the survey accounted for the remaining share of calories in the diet and would be difficult to monitor since prices are not available for many of those foods.

Using monthly retail prices collected by the National Bureau of Statistics (NBS), it was possible to calculate the monthly cost of the 17 food items. In order to estimate the cost of a basket providing 100 percent of daily calorie intake, the cost was scaled up by dividing the cost of the 17 items by the residual calorie share (0.12 for the national food basket). The ratio of the food basket cost to average per capita income gives a measure of access (ability to purchase) to food.

The calorie shares and costs shares of these 17 foods are shown for Dar es Salaam (DSM) and the national average for 2011-2014 (Table 2) from Mitchell and Kayombo (2015). Comparable data for 2005-2010 were not available. While these foods account for 88 percent of total calories at the national level, they make up just 74 percent for DSM, reflecting greater diversity in the diet in DSM compared to the national average. The 17 foods accounted for 89

percent of the cost of the typical food basket at the national level compared to 74 percent in Dar es Salaam. As computed by Mitchell and Kayombo, the cost of the typical food basket was 44,020 Tanzanian Shillings per month in DSM (US\$0.91 per day) compared to 32,486 Tanzanian Shillings per month (\$0.67 per day) for the national average over the 2011-2014 period.

**Table 2. Calorie and Cost Shares of Foods in the Typical Tanzanian Diet, 2011-2014.**

Food Item	----Calorie Shares----		-----Cost Shares-----	
	Dar es Salaam	National Average	Dar es Salaam	National Average
Maize	23.1	40.6	7.7	14.5
Rice	20.9	10.5	13.9	8.6
Cassava	1.3	9.3	0.7	7.5
Beans	5.4	6.1	3.6	5.8
Cooking Oil	8.4	4.9	8.7	4.9
Sugar	5.5	3.5	3.9	4.0
Millet/Sorghum	0.8	3.0	0.5	0.7
Bananas	1.2	2.7	1.2	2.6
Dairy	1.0	2.0	3.1	6.1
Sweet Potatoes	0.4	1.4	0.4	1.5
Fish	1.1	1.1	12.6	16.7
Beef/Goats	1.5	1.0	10.0	8.0
Mangoes/Other Fruits	1.0	0.7	3.3	2.8
Potatoes	0.8	0.4	1.2	0.8
Poultry	0.5	0.4	2.1	3.5
Ripe Bananas	0.6	0.4	1.0	0.9
Wheat/Other Grains	0.7	0.2	0.3	0.1
Total Shares	74.2	88.2	74.2	89.0

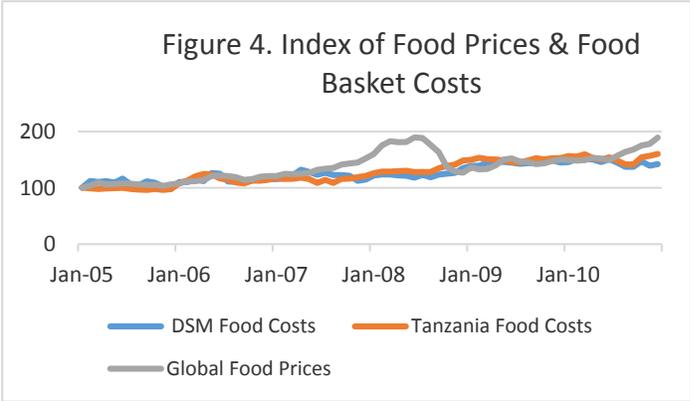
Source: Data from Tanzania National Bureau of Statistics, National Panel Survey, 2010/11, with computation by Mitchell and Kayombo (2015).

Dar es Salaam is the commercial capital of Tanzania and is located on the Indian Ocean coast. Average per capita GDP is more than double the national average. The higher cost of the DSM food basket is in part the result of the high cost of transport from surplus producing regions, but also to the larger shares of higher-valued foods in the food basket. The typical diet in Dar es Salaam consists of smaller shares of starchy staples such as cassava and sweet potatoes, and larger shares of higher-valued foods such as rice, sugar, and cooking oil. For example, rice accounted for 20.9 percent of the average daily calorie intake in Dar es Salaam, compared to 10.5 percent in the national average. In contrast maize, which accounts for an average of 40.6 percent of daily calories at the national level, accounted for just 23.1 percent in

Dar es Salaam. These high-valued foods have higher import shares in consumption than most other foods in Tanzania; consequently the food costs in Dar es Salaam are expected to be more affected by global food prices than the national average diets.

The cost shares of the foods in the typical diet also varied widely between Dar es Salaam and the national average and differed considerably from the calorie shares. Foods contributing the most to daily calorie intake typically accounted for much smaller shares in the total food basket cost. Maize, for example, accounted for 23.1 percent of calories in DSM and 40.6 percent in the national diet, but only made up 7.7 percent of the costs of the typical DSM diet and 14.5 percent of costs of the typical national diet. In contrast, fish accounted for 12.6 and 16.7 percent of costs of the typical diet in DSM and nationally, respectively, but contributed only 1.1 percent of the total calories in the typical diet. Meats (beef/goats/poultry) made up 12.1 percent of the cost of the typical DMS diet but only 2.0 percent of daily calories; and the contribution to costs in the national average diet was 11.5 percent compared to a contribution of only 1.4 percent of total calories. The high costs of fish and meats compared to their calorie contributions provide opportunities for coping strategies for consumers when food prices rise.

The indices of real food costs in Dar es Salaam and the national average in local currency, and global food prices in US\$ are shown in Figure 4 (January 2005=100). Real food costs in Tanzania increased by 50-60 percent from 2005 to 2010 for DSM and nationally. It is apparent that Tanzanian food costs did not rise in proportion to global prices, nor did they fall at the rate that global prices declined in the latter half of 2008. It does, however, appear that Tanzanian prices may have increased with a delayed response to the global food crisis in 2008 and 2009. The increase in Tanzanian food costs may have been caused by reduced domestic production, but that is not apparent from the data on maize and rice production which increased by 20.4 and 78.7 percent, respectively, from 2005/06 to 2010/11 (Table 3).



Source: Data from IMF and NBS, with analysis by authors.

**Table 3. Tanzanian maize and rice production, 2005/06-2010/11.**

	Maize	Rice
2005/06	3.423	0.805
2006/07	3.302	0.872
2007/08	3.556	0.886
2008/09	3.326	0.886
2009/10	4.475	1.700
2010/11	4.122	1.439
Increase 2005/06-2010/11 ((%)	20.4	78.7

Source: Ministry of Agriculture, Livestock and Fisheries.

Table 4 and 5, which show real food prices and costs in constant local currency for 2005-2010, provide a more detailed look at Tanzanian food prices and food basket costs. Table 4 shows that real food costs in 20 regions increased rapidly, with average price increases of individual foods of 48.9 percent, relative to the non-food component of the national consumer price index. These increases were concentrated in 2006, 2008, and 2009. The increases in 2006 occurred before the global food crisis, but the increases in 2008 and 2009 may have been due, at least in part, to the global food crisis. There appears to be little difference between the price increases for traded versus non-traded foods. The price of cassava, which is not heavily traded because of its low value-to-weight, increased 55 percent from 2005 to 2010 while the price of cooking oils, which is mostly imported, rose by the same percentage. Wheat and maize prices both rose by 48 percent, although wheat is primarily imported into Tanzania, while maize is primarily domestically produced. Sugar and dairy prices both rose by 46 percent during the same period. Imports make up a large share of sugar consumption in Tanzania, while dairy products are not heavily imported.

**Table 4. Real Food Prices, National Average, 2005-2010.**

Year	2005	2006	2007	2008	2009	2010
Maize	233	317	254	312	338	345
Rice	577	733	635	736	867	780
Cassava	186	221	219	254	299	287
Beans	576	652	676	838	863	851
Cooking Oils	1,409	1,353	1,668	2,084	2,013	2,183
Sugar	771	900	968	945	1,027	1,122
Bananas	244	321	307	291	379	387
Dairy	340	348	512	425	483	496
Sweet Potatoes	216	246	223	264	311	297

<b>Year</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Fish	1,683	1,855	2,054	2,241	2,633	2,777
Beef/Goats	1,818	1,809	1,958	2,380	2,796	2,667
Mangoes/Other Fruits	400	422	397	472	610	540
Potatoes	267	346	361	374	437	400
Poultry	3,382	3,502	4,345	4,722	5,382	5,376
Ripe Bananas	366	454	474	508	573	548
Wheat/Other Grains	482	535	599	777	793	714
Average						

<b>Year</b>	-----Percent change from previous year-----					<b>Increase</b>
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2005-2010</b>
Maize	36	-20	23	8	2	48
Rice	27	-13	16	18	-10	35
Cassava	19	-1	16	18	-4	55
Beans	13	4	24	3	-1	48
Cooking Oils	-4	23	25	-3	8	55
Sugar	17	7	-2	9	9	46
Bananas	31	-4	-5	30	2	59
Dairy	2	47	-17	14	3	46
Sweet Potatoes	14	-10	19	18	-4	38
Fish	10	11	9	17	5	65
Beef/Goats	-1	8	22	17	-5	47
Mangoes/Other Fruits	6	-6	19	29	-11	35
Potatoes	29	4	4	17	-9	50
Poultry	4	24	9	14	0	59
Ripe Bananas	24	4	7	13	-4	50
Wheat/Other Grains	11	12	30	2	-10	48
Average	15.0	5.7	12.3	14.0	-1.8	48.9

Source: Author's calculations based on monthly retail price data from the Tanzanian National Bureau of Statistics.

**Table 5. Real Food Costs Tanzanian Shillings/Month, 2005-2010.**

<b>Region/Year</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Dodoma	6,038	6,780	6,761	8,797	9,862	9,391
Arusha	14,129	15,170	15,731	17,900	20,176	18,549
Kilimanjaro	11,742	12,958	12,101	14,536	16,392	17,421
Tanga	8,400	9,603	9,221	11,288	13,030	12,276
Morogoro	9,508	11,204	10,932	13,000	14,071	14,944
Pwani	11,454	12,473	13,424	15,695	18,430	17,086
DSM	12,600	13,355	14,215	14,442	16,863	16,998
Lindi	8,554	9,063	10,103	11,248	12,624	12,807
Mtwara	8,068	9,561	11,822	12,291	14,625	16,017

<b>Region/Year</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Ruvuma	7,466	9,172	8,264	11,414	11,266	11,799
Iringa	8,896	11,007	10,250	11,212	13,083	13,113
Mbeya	7,355	9,288	8,671	10,174	12,047	11,012
Singida	7,112	9,404	8,517	9,633	10,169	11,143
Tabora	8,263	8,308	7,841	9,389	11,325	11,719
Rukwa	6,575	8,075	8,613	9,995	10,655	12,038
Kigoma	7,999	10,548	10,779	11,297	11,731	11,711
Shinyanga	8,181	9,880	9,752	11,643	13,143	13,846
Kagera	8,819	12,016	11,748	13,131	15,633	15,821
Mwanza	9,815	12,264	12,141	14,141	16,657	16,220
Mara	7,602	8,786	9,076	9,902	11,495	13,934
Average	8,929	10,446	10,498	12,056	13,664	13,892
Percent Change		17.0	0.5	14.8	13.3	1.7

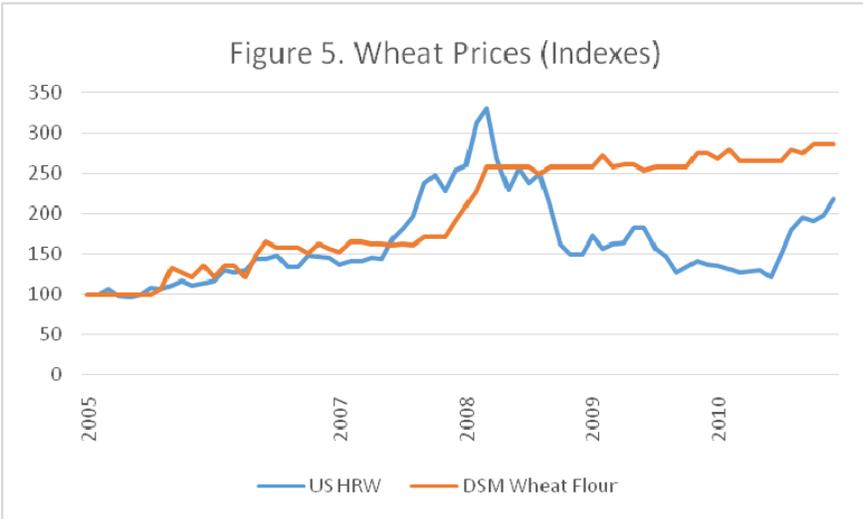
  

<b>Region/Year</b>	-----Percent change from previous year-----					<b>Increase</b>
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2005-2010</b>
Dodoma	12.3	-0.3	30.1	12.1	-4.8	55.5
Arusha	7.4	3.7	13.8	12.7	-8.1	31.3
Kilimanjaro	10.4	-6.6	20.1	12.8	6.3	48.4
Tanga	14.3	-4.0	22.4	15.4	-5.8	46.1
Morogoro	17.8	-2.4	18.9	8.2	6.2	57.2
Pwani	8.9	7.6	16.9	17.4	-7.3	49.2
DSM	6.0	6.4	1.6	16.8	0.8	34.9
Lindi	6.0	11.5	11.3	12.2	1.5	49.7
Mtwara	18.5	23.7	4.0	19.0	9.5	98.5
Ruvuma	22.9	-9.9	38.1	-1.3	4.7	58.0
Iringa	23.7	-6.9	9.4	16.7	0.2	47.4
Mbeya	26.3	-6.6	17.3	18.4	-8.6	49.7
Singida	32.2	-9.4	13.1	5.6	9.6	56.7
Tabora	0.5	-5.6	19.7	20.6	3.5	41.8
Rukwa	22.8	6.7	16.0	6.6	13.0	83.1
Kigoma	31.9	2.2	4.8	3.8	-0.2	46.4
Shinyanga	20.8	-1.3	19.4	12.9	5.3	69.2
Kagera	36.3	-2.2	11.8	19.1	1.2	79.4
Mwanza	24.9	-1.0	16.5	17.8	-2.6	65.3
Mara	15.6	3.3	9.1	16.1	21.2	83.3
Average	18.0	0.4	15.7	13.1	2.3	57.6
Percent Change						

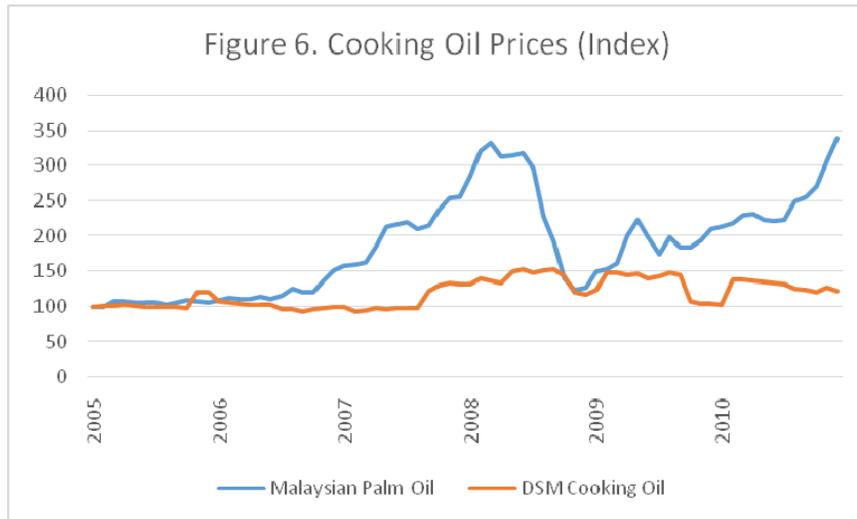
Source: Author's calculations based on monthly retail price data from the Tanzanian National Bureau of Statistics.

Real food basket cost increases were largest in more remote regions and regions with poor transportation linkages to global and national food markets. That suggests that better opportunities for trade may have moderated food cost increases. For example, food basket costs in Dar es Salaam located on the coast with good port access, increased by 34.9 percent from 2005 to 2010, and food basket costs in Arusha, which is a major urban center with good transportation linkages, were 31.3 percent over the same period. In contrast, food basket costs in Kagera and Rukwa, which are more remotely located in western Tanzania, increased by 79.4 and 83.1 percent, respectively, during the same period. Mtwara, which is a coastal region in southern Tanzania with poor transport linkages to national markets, suffered the largest increase in food basket costs of 98.5 percent from 2005 to 2010. Food basket costs in Mbeya and Iringa, which are both major maize producing regions in the Southern Highlands, had increases of 49.7 and 47.4 percent, respectively. That was very similar to the increase in national average maize prices and average food prices.

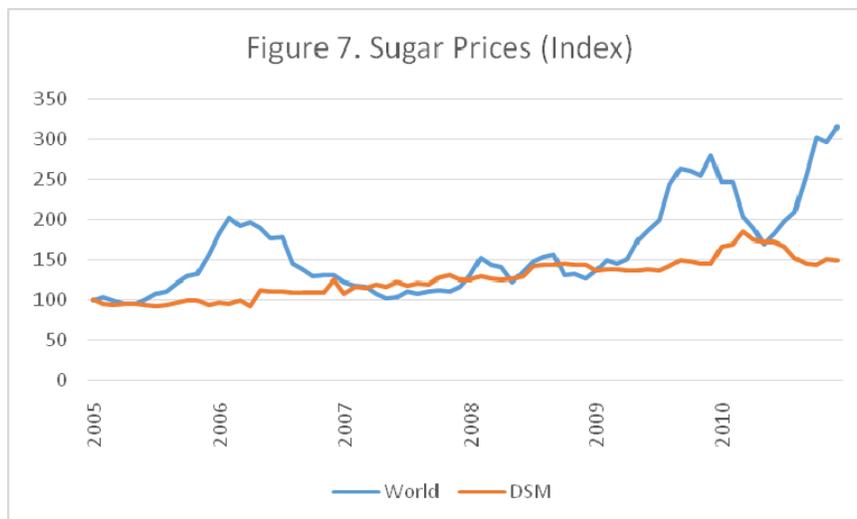
Wheat flour prices in Tanzania (Figure 4) began to rise four months after global wheat prices increased sharply in 2007 and continued to rise until the increases reached parity with global wheat prices in 2008. The increase in global wheat prices appears to have led to a 60 percent increase in real wheat flour prices in Tanzania, and that increase remained even after global wheat prices fell. Other heavily imported foods in Tanzania, such as cooking oil and sugar, did not show much response to global market prices. Cooking oil prices in Dar es Salaam rose steadily through the 2005 to 2010 period, but do not appear to have strong links with Malaysian palm oil prices (Figure 6). The apparent lack of response of Dar es Salaam sugar prices to the rise of global sugar prices is somewhat surprising given that one-third of domestic consumption that is imported (Figure 7). There was a mild spike in Dar es Salaam sugar prices in 2010 which might have been a delayed response to the global spike in 2009. But since then DSM prices have fallen despite a subsequent surge in global prices.



Source: Data from IMF and NBS, with analysis by authors.



Source: Data from IMF and NBS, with analysis by authors.



Source: Data from IMF and NBS, with analysis by authors.

## Conclusions

Tanzania was less affected by the global food crisis of 2007-2008 than many other countries due to the limited imports of staple food, high tariffs, and quantitative restrictions on imports. Domestic production of maize and rice increased significantly from 2005 to 2010 which further insulated Tanzania from the impacts of higher global prices. However, there were also substantial real food price increases over this period and some of these may have been influenced by the increases in global prices. Wheat flour prices, for example, increased in response to the increase in global wheat prices and remained at the elevated level even after global wheat prices declined. The increases in real food prices in Tanzania were widespread

both with respect to individual food prices and across 20 regions of Tanzania. Average real retail food price increased by almost 48 percent from 2005 to 2010 and food basket costs increased by 58 percent. In contrast, the trade weighted index of global food prices increased by 53 percent over this period. There was considerable diversity among regions, with food costs in the more heavily urbanized regions of Arusha and Dares Salaam having the lowest percentage increases from 2005 to 2010 (31.2 and 34.9 percent, respectively), while the largest increases were in the more remote regions of Rukwa, Mara, and Mtwara (83.1, 83.3 and 98.5 percent, respectively). Surplus food producing regions of the Southern Highlands (Iringa, Mbeya, Rukwa, and Ruvuma) fared no better than the average region with food costs that rose almost identical to the average of all regions. A policy implication of these findings is that disruptions in global food markets may get reflected in domestic food prices and food basket costs even when imports are not large. How these price increases are transmitted is not explored in this paper but deserves further investigation. A further policy implication is that more remote regions may be more affected by disruptions in food market price increases than more urban and accessible regions because they have less opportunity for trade.

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## **Gender Effects on Agricultural Productivity, Marketing and Incomes: Evidence from Maize Farmers in Southern Tanzania**

SERA Policy Project and World Bank/International Finance Corporation<sup>1</sup>  
June 30, 2016

Maize is grown by an estimated 80% of farmers in Tanzania and about 20% of those farmers are in female-headed households. Most of these females were widowed or divorced and are disadvantaged compared to male-headed households with respect to knowledge of production practices, land holdings, use of improved inputs, yields, and prices received for marketed maize. Better understanding of these female maize farmers and their characteristics and endowments could help Government, NGOs, and donors provide better services such as extension, access to inputs, and information on marketing and business practices with the objective of raising incomes and reducing poverty. Higher incomes would also contribute to increased food security among this vulnerable segment of the rural population.

The USAID-funded Tanzania SERA Policy Project and the Finance & Markets Global Practice of the World Bank Group engaged TNS Social Research in Nairobi, Kenya to survey 600 male and 600 female maize farmers in four regions of southern Tanzania's maize producing regions. The results of that survey are presented in this report along with recommendations of how to better support female maize farmers. The findings may have implications for female farmers producing other crops in Tanzania who face similar circumstances and for female farmers throughout the region.

Baffes (2009) reported the existence of a large productivity gap between male and female cotton farmers in Uganda, thus highlighting the importance of gender in understanding productivity. Baffes and Maratou-Kolias (2013) undertook a subsequent two round survey in 2009 and 2010 and found that female cotton farmers had smaller plots with lower quality soils and less secure land tenure arrangements than male cotton farmers and received slightly lower prices. Their survey included 491 households in 2009 and 460 households in 2010 equally divided between male and female cotton growing households. The average age of female-headed households in the survey was 51 for females and 45 for males. The proportion of female headed households who finished primary school was 22% for females and 51% for males. Female-headed households were smaller than male-headed households (6 versus 7 persons, respectively), and male-headed households had 23% and 26% higher yields than female-headed households in 2009 and 2010, respectively.

Additional studies were undertaken on the survey of Ugandan cotton farmers by Zhang (2010) and Vasilaky (2013) to quantify the reasons for the productivity gap. Zhang examined the impact of land characteristics on cotton yields and found that soil quality, soil type, plot size, land tenure and the way land was acquired (inheritance, gift, or through customary rights) affected yields. Vasilaky used data from the survey to examine the impact of social network-based training compared to conventional extension training and found that social network-based training had a significant impact on increasing yields of the poorest subsistence farmers, which included most female farmers, whereas conventional extension training favoured larger farmers with higher productivity.

The reasons for the lower cotton yields by female-headed households in Uganda were attributed to four differences: human capital, access to credit, land characteristics, and labor availability. Human

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<sup>1</sup> The team leaders for this study were by Don Mitchell, Senior Advisor of the USAID-funded SERA Policy Project, and Panos Varangis and Valeriya Goffe of the Finance & Markets Global Practice, World Bank Group.

capital includes education and knowledge of cultivation practices. Access to credit affects the ability to purchase inputs, use mechanization, and hire labor. Land characteristics affect yields, and labor availability, both family and hired, affects production and productivity.

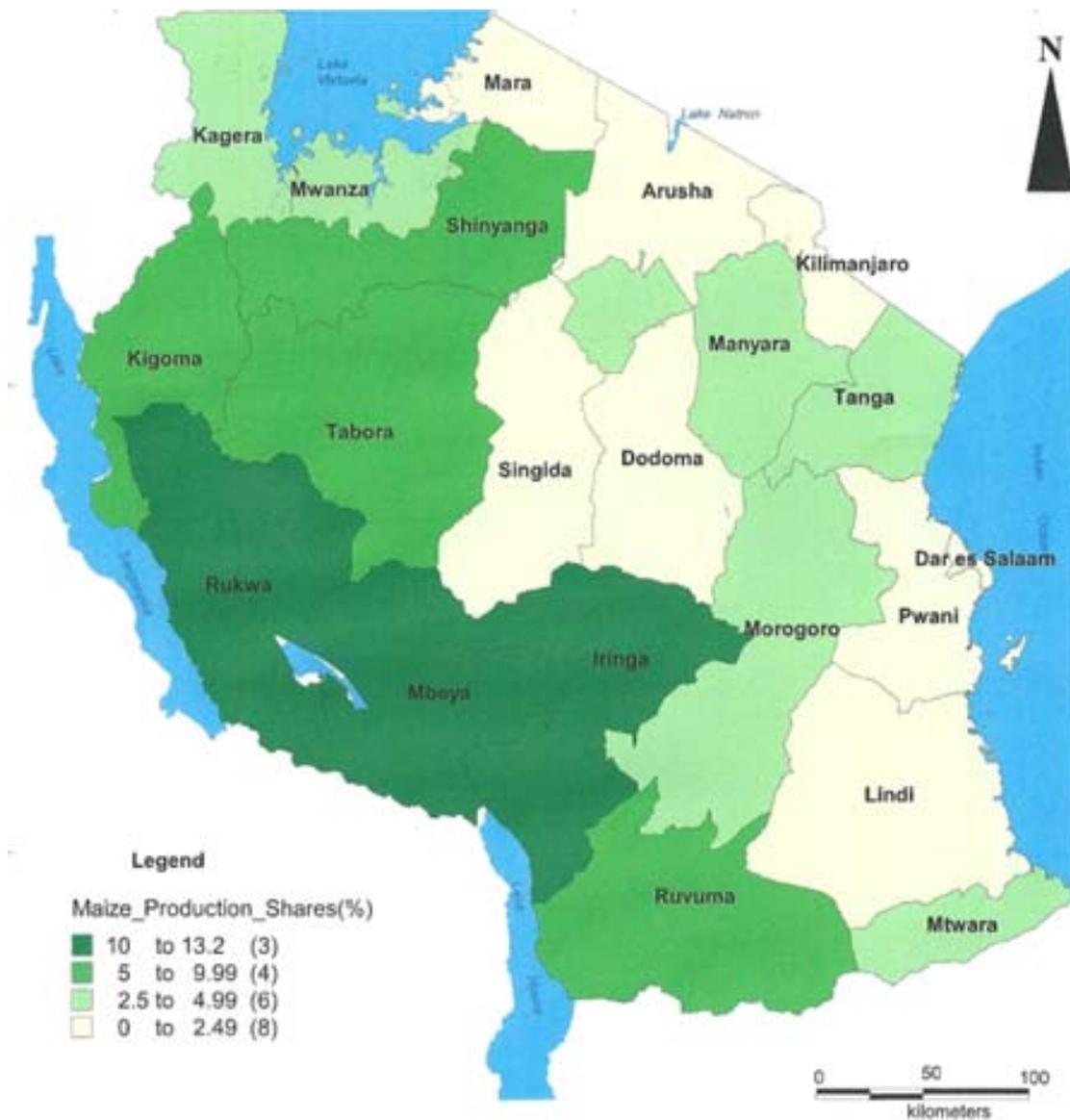
Many of the differences between male and female cotton farmers in Uganda were also found in this study of male and female maize farmers in southern Tanzania. Female maize farmers had less land, used less inputs, and had lower yields. Female maize farmers were also found to receive lower prices compared to male maize farmers. On average, male cotton farmers in Uganda earned almost twice as much as female cotton farmers in the 2009 and 2010 survey, with most of the difference due to plot size and yields. Similar differences in earnings per household were found in this study. The study of Uganda cotton farmers concluded that two policy interventions that were likely to enhance the welfare of female cotton farmers were to enhance the information dissemination channels that reach females and strengthening property rights.

### **Survey of Maize Farmers in Southern Tanzania**

A survey of maize farmers in the main producing regions of southern Tanzania was conducted in 2015 to compare male and female maize farmers and identify differences that could be addressed through policy interventions. A total of 1,219 maize farmers were surveyed in two rounds, the first in July during the harvest in Mbeya and Rukwa regions, and the second in Iringa and Ruvuma regions in October after the harvest. The regions were selected to reflect those well connected to the national and regional markets by transportation (Iringa and Mbeya) and those more remote without good transportation linkages to national or regional markets (Rukwa and Ruvuma). The survey in July included 613 maize farmers, of which 314 were male and 299 were female, and the survey in October was of 606 maize farmers, of which 314 were male and 292 were female. Maize producing districts were selected randomly in each region and two or three wards were randomly selected to survey within each district. Local leaders were engaged to identify concentrations of maize producing households, and a random procedure was used to select households to be surveyed. In addition to the household surveys, key informants were interviewed to gain an understanding of the overall situation and focus groups were conducted to refine the questionnaires and obtain qualitative information. The study considered female-headed households as those that were run and represented by a widowed, divorced, or single woman without a husband, father, or male relative involved in the routine day-to-day activities of the household. Male-headed households were those where a husband was present and was the final decision maker on the important issues of the household. Survey results are presented for each region and a weighted average of all regions based on the number of households responding to the survey in each region.

The four regions selected for the survey are located in the main maize producing regions of southern Tanzania and account for approximately 50% of national production (Figure 1). Iringa and Mbeya are better served by roads to urban markets in Tanzania and export markets in Kenya and Mozambique while Rukwa and Ruvuma are less well connected to those markets. The average wholesale maize price during the 2015 harvest was about 60% higher in Iringa and Mbeya than in Rukwa and Ruvuma (MIT 2015). That difference would affect profitability of maize production and input use. Consequently, input use was expected to be lower in Rukwa and Ruvuma than in Iringa and Mbeya and that should be reflected in yields.

Figure 1. Maize producing regions of Tanzania and production shares.



Source: USAID.

### Demographic Characteristics and Endowments

The characteristics of households obtained from the surveys are shown in Table 1 along with the number of households surveyed in each region. Female-headed households were on average 48 years old compared to 42 years olds for male-headed households. Seventy-one percent of the male maize farmers had completed primary education compared to 53 percent of female maize farmers. Only 7% of males on average had finished secondary education compared to 4% of females. Educational attainment was similar for all regions except Rukwa where the percentage of male and female maize farmers completing primary education was substantially lower.

Ninety percent of male farmers were married as compared to 2% of female maize farmers and this was similar in all regions. Agriculture was reported as the primary occupation of more than 90% of farmers. Sixty-nine percent of women maize farmers were widowed compared to 3% of male maize farmers. A slightly higher percentage of female than male maize farmers reported agriculture as their primary occupation, and only 4% of male and 3% of female maize farmers reported business as their primary occupations. The more well connected regions of Iringa and Mbeya had more male and female maize farmers reporting business as their primary occupation than the more remote regions of Rukwa and Ruvuma and that difference may reflect better off-farm opportunities in Iringa and Mbeya.

**Table 1: Demographic Characteristics of Male and Female Maize Farmers.**

	----- Total -----		--- Iringa---		---- Mbeya----		-----Rukwa-----		---Ruvuma---	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Number of households surveyed</b>	628	591	162	140	158	153	156	146	152	152
<b>Demographic Characteristics</b>										
<i>Age of household</i>	42	48	41	49	43	48	40	46	43	47
<i>Primary education (%)</i>	71	53	73	49	74	50	59	51	76	62
<i>Secondary education (%)</i>	7	4	12	3	4	2	9	3	4	8
<i>Married (%)</i>	90	2	88	3	89	1	89	3	94	1
<i>Widowed (%)</i>	3	69	3	72	1	72	6	69	1	62
<i>Primary Occupation</i>										
<i>Agriculture (%)</i>	93	96	81	91	96	95	99	99	98	99
<i>Business (%)</i>	4	3	10	7	4	5	0	1	0	0

Notes: Age of household is the age of the household head. Primary and Secondary education is the percent of the household heads that have completed primary and secondary education. Marital status is the percent of household's heads who are in each category, and primary occupation is the percent of household heads who list agriculture and business and their primary occupations.

Land quality, size, and tenure arrangements were found to be important determinants of productivity for Ugandan cotton farmers, and many of the differences found among male and female cotton farmers in Uganda were also found among male and female maize farmers in southern Tanzania (Table 2). Female-headed maize growing households in southern Tanzania had only 60% as much land as male-headed households, had less land planted to maize, and slightly fewer female maize farmers had land titles than their male counterparts. There were significant regional differences, with larger land holdings for both male and female maize farmers in Ruvuma region, and more land planted to maize. On average, female maize farmers planted 67% of their land to maize compared to 54% for male maize farmers. Farmers in Mbeya had the smallest land holdings and were relatively diversified with 53% of their land planted to maize for male and 60% for female farmers. Only 13% of male maize farmers and 10% of female maize farmers reported renting land, and the average acres rented for male maize farmers was 2.0 acres compared to 1.7 acres for female maize farmers. A higher percentage of male and female maize farmers in Mbeya and Iringa rented land compared to Rukwa and Ruvuma which may reflect the relative abundance of land for maize growing in Rukwa and Ruvuma compared to Mbeya and Iringa and therefore the need to rent land in order to expand their farming.

**Table 2: Land Holding of Male and Female Maize Farmers.**

	----- Total -----		---- Iringa----		----- Mbeya-----		-----Rukwa-----		----Ruvuma----	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Land characteristics</b>										
<i>Land Size (acres)</i>	3.5	2.1	3.3	2.2	1.9	1.5	2.9	2.0	5.8	2.8
<i>Land Planted to Maize (acres)</i>	1.9	1.4	2.3	1.8	1.0	0.9	1.7	1.3	2.7	1.7
<i>Land Planted to Maize (%)</i>	54	67	70	82	53	60	59	65	47	61
<i>Land owned (acres)</i>	3.5	2.2	3.3	2.2	1.9	1.5	2.9	2.2	5.8	2.8
<i>Rented land (%)</i>	13	10	18	11	19	13	10	9	6	7
<i>Land rented (acres)</i>	2.0	1.7	2.7	2.1	1.0	1.1	1.7	1.3	2.5	2.6
<i>Land Title Deed (%)</i>	12.5	11.3	19	12	16	14	5	7	10	12

Note: Land rented is the average acres rented for the 13% of male maize farmers and 10% of female maize farmers who rented land.

### Input Use

Female maize farmers reported using less improved inputs of all types (Table 3). For seed use, for example, 76% of female maize farmers reported using local varieties compared to 62% of male maize farmers. Only 13% of female maize farmers reported using hybrids compared to 17% of male farmers. The use of hybrid seeds among female maize farmers was especially low in Ruvuma, where only 4% of female maize farmers reporting using hybrids compared to an average of 15% in other regions.

A smaller percentage of female maize farmers used urea and DAP fertilizers than male maize farmers and those female maize farmers who reported using fertilizer reported using less fertilizer per acre. The combined results reported for all four regions were that about half of maize farmers used urea fertilizer compared to about 15% who used DAP. For those farmers who reported using urea or DAP, the average application rate was about 40 kilograms per acre, with female maize farmers using slightly less per acre than male maize farmers. The percentage of farmers who reported using DAP in Rukwa and Ruvuma was too low to allow an accurate estimate of application rates.

More than 90% of farmers reported hiring labor and a slightly smaller percentage of female maize farmers reported hiring labor than males. Only 3% of male maize farmers reported using irrigation compared to 2% of female maize farmers. More female farmers used a hand hoe for land preparation and a smaller percentage used animal traction than male farmers and almost none of the female farmers used tractors for land preparation while some male farmers used tractors. Female maize farmers were less likely to intercrop than male maize farmers which may reflect greater reliance on maize for household food security among female-headed households compared to male-headed households and the importance of achieving adequate production for household food security. Overall the survey results are consistent with the conclusion that female maize farmers have more limited resources than male farmers and that is reflected in lower input use. Further, input use among both male and female maize farmers in more remote Rukwa and Ruvuma was lower than in Iringa and Mbeya.

**Table 3: Input Use of Male and Female Maize Farmers.**

	----- Total -----		---- Iringa----		----- Mbeya-----		-----Rukwa-----		----Ruvuma----	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Seed Use</b>										
<i>Local Varieties (%)</i>	62	76	69	78	49	67	61	80	68	81
<i>Improved OPV (%)</i>	31	22	17	8	53	37	33	29	18	14
<i>Hybrids (%)</i>	17	13	16	14	20	15	21	17	12	4
<b>Fertilizer Use</b>										
<i>Urea (%)</i>	52	45	57	51	49	47	n.a.	n.a.	49	38
<i>DAP (%)</i>	18	11	42	32	16	11	6	1	5	1
<i>Urea (kg/acre)</i>	43	40	33	35	52	45	n.a.	n.a.	43	38
<i>DAP (kg/acre)</i>	42	39	33	35	55	n.a.	n.a.	n.a.	n.a.	n.a.
<b>Hired Labor</b>										
<i>Hired Labor (%)</i>	92	90	98	96	85	83	87	84	98	98
<b>Land Preparation</b>										
<i>Hand Hoe (%)</i>	76	82	62	65	91	95	56	66	98	99
<i>Animal Traction (%)</i>	20	16	30	26	6	5	41	33	0	1
<i>Tractor (%)</i>	3	0	8	1	2	0	0	0	2	0
<b>Irrigation</b>										
<i>Use Irrigation (%)</i>	3	2	4	6	3	1	3	0	1	0
<b>Cropping Pattern</b>										
<i>Intercropped (%)</i>	77	70	57	46	96	90	91	85	66	59
<i>Pure Stand (%)</i>	23	31	42	53	8	16	10	16	29	39

Note: n.a. (not available) indicates that the number of farmers reporting was too small to provide reliable estimates or that no survey results were available.

### Credit

Credit is available to smallholder farmers in Tanzania from a range of institutions and programs (Table 4). However, only 9% of male and 4% of female farmers applied for credit. There were large differences between regions with farmers in Iringa and Ruvuma more likely to apply for credit than farmers in Mbeya and Rukwa. About one-third of both male and female farmers reported no need for credit as the reason for not applying for credit. However, this varied greatly among regions. In Mbeya, for example, 61% of male and 54% of female maize farmers reported no need for credit, and only 6% of male and 3% of female farmers applied for credit. In Rukwa, 16% of male and 13% of female farmers reported no need as the reason for not applying for credit and 42% of male and 35% of female farmers reported that credit services were not available as the reason for not applying for credit. Only 3% of male and female farmers applied for credit in Rukwa. Of those farmers who applied for credit, most were successful. Among the four regions 95% of male and 83% of female farmers who applied for credit were successful. The two regions where applications were highest also had highest approval rates. In Iringa and Ruvuma, 95-100% of applications were approved while in Mbeya and Rukwa, approval rates were lower which may suggest that lenders in those regions were less strict in their lending requirements.

**Table 4: Access to Credit.**

	----- Total -----		---- Iringa----		----- Mbeya-----		-----Rukwa-----		---Ruvuma---	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Applied for Credit (%)</b>	9	4	19	19	6	3	3	3	11	7
<i>Successful (%)</i>	95	83	100	95	80	100	80	75	95	100
<b>Received Credit (%)</b>	8	3	19	18	5	3	2	2	10	7
<b>Source of Credit (%)</b>										
<i>Groups (%)</i>	26	40	17	28	20	50	40	50	27	33
<i>SACCO (%)</i>	12	23	16	25	10	25	0	25	21	17
<i>VICOBA (%)</i>	15	6	33	12	0	0	0	0	25	10
<i>Commercial Banks (%)</i>	9	4	5	8	10	0	n.a.	n.a.	0	0
<b>Purpose of Credit</b>										
<i>Agriculture (%)</i>	44	38	23	43	30	50	60	25	63	33
<i>Business (%)</i>	34	12	15	18	40	0	20	25	16	8
<i>Household Needs (%)</i>	17	12	20	15	n.a.	n.a.	n.a.	n.a.	13	10
<i>School Fees (%)</i>	12	21	7	27	30	25	0	0	0	30
<b>Reasons for Not Seeking Credit</b>										
<i>No Need (%)</i>	36	33	36	34	61	54	16	13	21	28
<i>No Collateral (%)</i>	17	22	21	38	2	5	25	26	20	20
<i>Service Unavailable (%)</i>	27	20	16	11	6	3	42	35	46	30
<i>Outstanding Loan (%)</i>	10	11	5	4	12	17	20	20	4	3

Note: n.a. (not available) indicates that the number of farmers reporting was too small to provide reliable estimates or that no survey results were available.

Commercial banks accounted for less than 10% of loans to farmers surveyed and there was little difference between male and female farmers. Informal financial service providers, such as the Village Community Banks (VICOBA) and Savings and Credit Cooperatives (SACCOs), offer loans and SACCOs were more popular with female farmers while male farmers were more likely to borrow from VICOBAs. There are also donor programs and non-profit organizations, such as One Acre Fund, that offer inputs and training to smallholders. The Alliance for Green Revolution (AGRA) offers financing through the Innovative Financing Program and the Farmer Organization Support Centre for Africa (FOSCA). The Agriculture Inputs Credit Fund established by government is another agricultural finance facility available to farmers. However, formal and informal groups accounted for the largest share of loans to farmers and the survey results indicated that those farmers that received credit from groups most often obtained it through religious groups. Groups were popular among female farmers (accounting for 40% of lending) while male farmers received 26% of their credit from groups, but were also more diversified in their borrowing than female farmers. There were also differences between regions, with Iringa and Mbeya regions having more diversified credit sources than the relatively more remote regions of Rukwa and Ruvuma.

The primary use of credit was for agriculture, with 44% of male farmers and 38% of female farmers listing agriculture as the purpose of the credit. Male farmers borrowed more often for business (34%) than female farmers (12%) while both male and female farmers borrowed for household needs and school fees. Regional differences were apparent, with male farmers in the more remote regions of

Rukwa and Ruvuma more likely to borrow for agriculture than those in Iringa or Mbeya where borrowing for agriculture was a smaller percentage of borrowing and business was a larger percentage.

About one-third of male and female farmers reported no need for credit and both male and female farmers in Mbeya gave this as the main reason for not seeking credit while a much smaller percentage of farmers in Rukwa and Ruvuma gave this reason for not applying for credit. Lack of collateral accounted for 17% of the reasons given for not seeking credit for male farmers and 22% for female farmers. The unavailability of credit services was the most common reason given by both male and female farmers in Rukwa and Ruvuma for not seeking credit but was that was less commonly reported in Iringa and Mbeya.

### **Sources of Information**

Other farmers were reported as the source of information on production, market information, and prices by 52% of female maize farmers and 45% of male farmers (Table 5). Radio was the second most common sources of information followed by mobile phones, but a lower percentage of female farmers received information from those sources than male farmers. Female farmers in more remote Ruvuma reported receiving information from input dealers, NGOs, and Government/Farmer Organizations less often than female farmers in Iringa and less often than male farmers in Ruvuma.

The preferred source of information for both male and female maize farmers was radio, with 69% of male maize farmers and 64% of female maize farmers reporting that as their preferred source of information. The second most commonly reported preferred source of information was face-to-face communication, with 40% of female and 35% of male maize farmers reporting this as a preferred source of information. Farm visits were reported as the preferred source of information by 20% of male and 22% of female maize farmers, respectively, and group discussions, field days, and newspapers, and group meetings were less popular with each accounting for roughly 10% of male and female farmer's survey responses.

The survey responses on marketing reflect the different periods of the surveys with Mbey and Rukwa regions having been surveyed during harvest and Iringa and Ruvuma regions having been surveyed in October which was after the harvest. Responses showed that farmers had little knowledge of prices or buyers during harvest but acquired that knowledge prior to marketing. Sixty-nine percent of male maize farmers in Iringa and 58% of male farmers in Ruvuma reported having advanced knowledge of prices compared to 52% and 49% of female maize farmers, respectively, in those regions. Prior to harvest, only 5-10% of farmers reported having advanced knowledge of maize prices and no more than 5% reported knowing the buyer.

Regional differences were apparent and farmers in the more remote region of Ruvuma had less knowledge of market prices and were less likely to know the buyer prior to selling. In Iringa, for example, 60% of male and 55% of female maize farmers reported arranging sales in advance compared to 42% and 44% of male and female maize farmers, respectively, in Ruvuma. These lower percentages in more remote Ruvuma may indicate fewer regular buyers who were known to farmers and perhaps the greater prevalence of buyers who came only during harvest periods. Three-quarters of the male farmers reported negotiating prices compared to 70% and 93% of female maize farmers in Iringa and Ruvuma, respectively.

**Table 5: Sources of Production and Market Information and Knowledge of Prices.**

	----- Total -----		---- Iringa----		----- Mbeya-----		-----Rukwa-----		----Ruvuma----	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Sources of Information</b>										
<i>Other Farmers (%)</i>	45	52	49	60	30	35	58	60	41	52
<i>Radio (%)</i>	43	34	44	40	40	30	35	27	51	38
<i>Mobile Phones (%)</i>	20	18	27	21	13	10	12	12	28	28
<i>Input Dealers (%)</i>	8	5	17	13	5	3	4	1	8	3
<i>NGOs (%)</i>	6	6	10	16	2	1	3	3	9	3
<i>Government/Farmer Organizations (%)</i>	6	6	9	12	1	3	6	5	5	3
<b>Preferred Source of Information</b>										
<i>Radio (%)</i>	69	64	76	78	66	58	62	52	70	68
<i>Face to Face (%)</i>	35	40	48	47	20	31	27	34	44	47
<i>Mobile Phone (%)</i>	36	28	40	24	26	23	40	24	38	39
<i>Farm Visits (%)</i>	20	22	31	39	8	10	8	5	34	32
<i>Group Discussions (%)</i>	11	12	23	24	1	1	8	12	7	14
<i>Field Days (%)</i>	10	13	15	22	7	16	10	12	7	13
<i>Newspapers (%)</i>	11	6	15	6	4	2	5	8	20	9
<i>Group Meetings (%)</i>	8	10	15	19	1	0	7	11	6	9
<b>Knowledge of Buyer and Prices</b>										
<i>Advance Knowledge of Price (%)</i>	74	48	69	52	10	11	5	4	58	44
<i>Knows Buyer (%)</i>	42	57	52	61	4	5	3	2	32	54
<i>Negotiated Price (%)</i>	76	82	75	70	13	14	8	6	77	93
<i>Arranged Sale in Advance (%)</i>	50	49	60	55	10	7	3	3	42	44

Note: The Total results are for Iringa and Ruvuma regions only since the survey in those regions was conducted after the harvest and responses were more reflective of knowledge of buyers and prices when farmers were ready to market their maize.

### Maize Production and Yields

The reduced use of improved input, and more limited access to credit and information were expected to contribute to lower yields per acre by female maize farmers than male farmers and the survey results supported that expectation (Table 6). Female maize farmers had average yields that were 74% of maize yields of male farmers in the four regions, and this varied from a low of 63% in Mbeya to a high of 79% in Rukwa. Farmers in more remote Rukwa and Ruvuma were also expected to have lower yields per acre than farmers in Iringa and Mbeya because of less access to improved inputs and lower output prices and that was generally true with the exception of female farmers in Ruvuma who had higher yields than female farmers in Iringa and Mbeya. Female maize farmers in Rukwa and Ruvuma had yields that were 79% and 82%, respectively, of male farmers yields which was higher than the comparable yields of female versus male farmer yields in Iringa and Mbeya. Female maize farmers also planted only 74% as much land to maize as male farmers. Maize production of female farmers averaged 55% of male maize farmers across the four regions as a result of both less land planted to

maize and lower maize yields. The share of production of female farmers compared to male farmers varied from 51% in Ruvuma to 60% in Rukwa.

**Table 6: Maize Yields, Land Planted to Maize and Implied Production.**

	----- Total -----		---- Iringa----		----- Mbeya-----		-----Rukwa-----		----Ruvuma----	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<i>Yields (kg/acre)</i>	706	522	706	521	766	480	659	518	694	567
<i>Yields (kg/hectare)</i>	1,651	1,222	1,745	1,287	1,689	1,058	1,454	1,143	1,715	1,401
<i>Land Planted to Maize (acres)</i>	1.9	1.4	2.3	1.8	1.0	0.9	1.7	1.3	2.7	1.7
<i>Implied Production (kg/acre)</i>	1,341	731	1,624	938	766	432	1,120	673	1874	964
<i>Female Yield(% of Male)</i>		74		74		63		79		82
<i>Female Land Planted to Maize (% of Male)</i>		74		78		90		77		63
<i>Female Prod (% of Male)</i>		55		58		56		60		51

Notes: Production was not reported in the survey, but was calculated from survey reports of average land planted to maize and yields per survey respondent.

### Marketing Maize

On average female maize farmers in Iringa reported receiving 93% of the prices received by male farmers and female farmers in Ruvuma reported received 92% of the prices received by their male counterparts (results were not available for Mbeya and Rukwa). Male and female farmers in more remote Ruvuma received also only 87% and 86% of the prices, respectively, for their marketed maize of male and female farmers in Iringa. Female maize farmers sold only 42% as large of volumes as male farmers in Iringa and 63% in Ruvuma. The combination of lower volumes sold and lower prices resulted in female maize farmers in Iringa receiving 60% as much revenue as male maize farmers and female farmers in Ruvuma received only 47% of the sales revenue received by their male counterparts. Many factors contributed to these substantial differences and the lower prices received by female farmers in Ruvuma were certainly a major contributor, but lower volumes accounted for an even larger share of the decline in female sales revenue compared to their male counterparts. The quality of marketed maize was reported to be slightly higher for male farmers than female farmers, with 38% of male farmers reporting high quality compared to 31% of female farmers.

Access to market information may partially account for lower prices received by female maize farmers compared to their male counterparts, but other factors such as the type of buyer, the quality of the maize and the volumes sold may also influence the prices received. Female farmers reported lower quality for the maize sold and were more likely to sell to consumers than traders than were male farmers. Perhaps this contributed to lower prices received by female farmers if these sales were less commercially oriented or provided as partial payment for services received. Since Mbeya and Rukwa regions were surveyed in July, few households in those regions responded to survey questions on marketing. However, the survey in Iringa and Ruvuma occurred one to two months after harvest and the response rate to the marketing questions was good. Other attributes of maize marketing are reported in Table 7.

**Table 7: Maize Marketing, Prices and Sales.**

	----- Total -----		---- Iringa----		----- Mbeya-----		-----Rukwa-----		----Ruvuma----	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Maize Prices</b>										
<i>Prices Received (TZS/kg)</i>	342	317	364	339	n.a.	n.a.	n.a.	n.a.	316	290
<i>Female Share (%)</i>		93		93						92
<b>Quality of Maize Marketed</b>										
<i>High (%)</i>	38	31	30	26	n.a.	n.a.	n.a.	n.a.	44	36
<i>Medium (%)</i>	52	58	65	64	n.a.	n.a.	n.a.	n.a.	41	50
<i>Low (%)</i>	10	12	5	10	n.a.	n.a.	n.a.	n.a.	15	14
<b>Volume Marketed</b>										
<i>Per HH (kg)</i>	1,491	743	1,731	721	n.a.	n.a.	n.a.	n.a.	1,221	773
<i>Female Share (%)</i>		50		42						63
<b>Buyer</b>										
<i>Small Trader (%)</i>	68	62	67	60	n.a.	n.a.	n.a.	n.a.	69	63
<i>Consumer (%)</i>	20	28	23	25	n.a.	n.a.	n.a.	n.a.	17	30
<b>Maize Price Received</b>										
<i>Small Trader (TZS/kg)</i>	374	347	425	402	n.a.	n.a.	n.a.	n.a.	332	303
<i>Consumer (TZS/kg)</i>	369	378	405	377	n.a.	n.a.	n.a.	n.a.	328	379
<b>Sales</b>										
<i>Marketed Maize (Th TZS)</i>	507	267	499	300	n.a.	n.a.	n.a.	n.a.	513	241
<i>Female Share (%)</i>		53		60		n.a		n.a		47

Note: Results were only available for Iringa and Ruvuma which were surveyed after the maize harvest. n.a. indicates that the number of farmers reporting was too small to provide reliable estimates.

### Conclusion and Recommendations

A survey of approximately 1,200 maize farmers in southern Tanzania's maize producing region was conducted in July and October of 2015. The survey targeted an equal number of male and female farmers to allow an evaluation of the impact of gender on productivity, marketing and incomes. The results showed that female-headed households were disadvantaged in resource endowments, input use, and access to credit compared to their male counterparts. On average they had only 60% as much land as male farmers and planted 74% as many acres to maize. They had lower input use and were more likely to use local seed varieties rather than improved OPVs or hybrids. Fertilizer use was about 75% of that of their male counterparts and they were less likely to apply for credit. They had less education and less access to information from those other than farmers. Their yields were approximately three-quarters of male maize farmers. They produced less maize, sold less maize and received lower prices for the maize they sold. On average they received about 92% of the price for the maize they sold as male farmers and the combination of lower land planted to maize, lower yields, and lower prices meant that their revenue from the sale of maize was about half of that of male farmers. Although the study focused on the differences between male and female maize farmers, important observations can be made between the two more well connected regions (Iringa and Mbeya) and the less well connected regions (Rukwa and Ruvuma). The less well connected regions

had lower availability of financial services, less information about prices, less prior contact with buyers, and farmers in those regions received lower prices.

Erasing these differences will be nearly impossible, but there are policy actions that can help to reduce the differences and raise yields and revenue from maize for female farmers. More secure land rights would make it possible to benefit from investments in the land without concern that the land use rights are fragile and investments are risky. Social-network based training has been successful in raising yields of low-income farmers in other countries and may help raise female maize farmer's yields in Tanzania. Better market information systems could increase bargaining power of female maize farmers who now receive most of their information from other farmers. Improved investment opportunities, higher demand for improved inputs and adoption of better technologies through training increase yields would stimulate demand for credit. In addition, programs to promote financial literacy and education, as well as strengthening local financial institutions to better reach farmers will contribute to increasing access to finance by both male and female farmers, but even more by female farmers. Finally, the findings of this survey of male and female maize farmers may provide insights into the gender difference that exist in other crops in Tanzania and the region.

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## **Rules-Based Transparent System for Emergency Food Imports**

### **Tanzania SERA Policy Project<sup>1</sup>**

**June 30, 2016**

Tanzania imports large quantities of basic food staples such as palm oil, rice, sugar, and wheat and occasionally has large imports of maize. While imports are needed to meet local demand, they often disrupt domestic markets when quantities imported exceed market requirements or when large imports are authorized by the Government but not anticipated by the private sector. This can lead to price volatility and increased risks for producers, traders, and stockholders. A more transparent and predictable staple foods import policy could encourage increased development of the staple food crops sectors, provide additional tariff revenue to Government, and reduce market uncertainty. It would also reduce the need for ad hoc policy decisions that can lead to regional trade disputes, and provide a more stable market environment for the commodity exchange that is currently being developed.

One of the challenges of implementing an effective staple foods import policy is the difficulty of controlling illegal imports that enter Tanzania from neighbouring countries and through major Tanzanian sea ports. They are illegal in the sense that they don't have import permits as required, and they don't pay the import tariff. The magnitude of these illegal imports is unknown, but they can be estimated by comparing the reported exports to Tanzania from other countries to the imports reported by Tanzania. For example, exports of rice to Tanzania reported by all exporting countries were two to three times as large as imports reported by Tanzania during 2011-2015. That suggests that large imports were unrecorded, but even that may underestimate actual imports because some exports going to neighbouring countries actually get diverted to Tanzania. A similar situation existed for sugar, with exports to Tanzania being reported as about twice as large as imports reported by Tanzania (Table 1). Other staple food crops showed less divergence between reported exports and reported imports.

Controlling illegal imports is difficult because Tanzania has long and porous land borders with neighbouring countries and a long coast which allows easy access for small quantities of food staples. Illegal imports also enter the mainland Tanzanian market through other channels, including transit goods that remain in country and improperly labelled imports that are not detected by customs. However, large quantities of illegal imports are also reported to enter through Tanzania's major sea ports. The loss in tariff revenue from illegal imports is substantial

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and could provide funding for upgrading customs as well as general budget support. The loss of tariff revenue from rice was approximately 60 million USD per year during 2011-2015 based on the difference between reported exports and reported imports, and the loss of tariff revenue on sugar was approximately 62 million USD per year over the same period. If only one-half of this tariff revenue could be collected in the future, it would be a substantial contribution to the Tanzanian budget.

**Table 1: Tanzania’s Imports of Staple Foods.**

	Years	----- Average Imports (metric tons)-----	
		<i>Reported by Tanzania</i>	<i>Reported by Exporters</i>
<b>Maize</b>	2005-2010	53,936	58,811
	2010-2015	44,358	30,062
<b>Palm Oil</b>	2005-2010	262,931	221,619
	2010-2015	286,789	325,130
<b>Rice</b>	2005-2010	51,402	95,343
	2010-2015	50,747	149,045
<b>Sugar</b>	2005-2010	47,472	109,050
	2010-2015	127,793	275,263
<b>Wheat</b>	2005-2010	708,731	538,193
	2010-2015	855,514	738,117

Source: UN Comtrade.

Tanzania has higher import tariffs on food staples than many of its neighbouring countries and that creates incentives to import staple food crops into neighbouring countries and sell them in the Tanzanian market without paying the tariff. Kenya, for example, has a 35 percent tariff on rice imported from Pakistan while Tanzania has an import tariff of 75 percent. That provides incentives for Kenyan traders to import at the lower tariff and sell in Tanzania. Zanzibar also has a lower import tariff of 12.5% on rice compared to the mainland and that encourages traders to import more than is required for Zanzibar’s consumption and sell the surplus on the mainland. The approximate magnitude of these surplus imports in Zanzibar can be estimated and have been as much as 30,000 tons of rice per year beyond the quantities required to meet domestic demand in Zanzibar.

With such large tariff differentials and the relative ease with which illegal imports can enter by land and sea, it is very difficult to control illegal imports from neighbouring countries. In response to this situation, the Government of the United Republic of Tanzania (GoT) has often relied on quantitative controls and occasional bans on imports of rice and sugar (The Citizen, March 15, 2016) in an effort to control illegal imports. Quantitative controls are implemented by restricting

the issuing of import permits; however, Tanzania has not been very effective in monitoring and controlling illegal imports. In some cases, import permits were issued for a specified quantity but actual imports exceeded the quantities authorized. This occurred in 2013 when duty-free rice imports were authorized, but the actual imports were much larger than the quantities authorized and the imports disrupted the domestic market causing prices to fall sharply. There are also reports of import permits being issued for larger quantities than required to balance the market (The Daily News, February 19, 2016) which also disrupts local markets. The longer term consequences of such disruptions are to cause greater price volatility and greater uncertainty for producers and other stakeholders and therefore less investment.

A staple food import policy that relies on established tariffs would be less disruptive to domestic markets, generate greater tariff revenue to Government, and would operate automatically under normal market conditions. It would also be more compatible with policies of the East Africa Community and less likely to create regional trade disputes. However, in order for such a policy to operate effectively, it would be necessary to control illegal imports. Some illegal imports would continue, but more effective monitoring and enforcement of staple foods import policies and tariffs could reduce illegal imports especially through major sea ports.

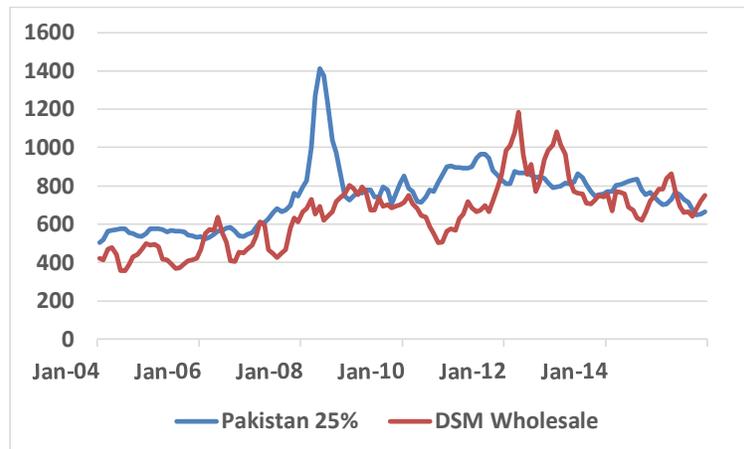
### **A Market-Driven Staple Foods Import Policy**

To illustrate how such a market-driven policy would operate, consider the case of rice imports. Figure 1 shows the domestic wholesale price of rice in Dar es Salaam (DSM) compared to the duty-paid landed price of rice from Pakistan, which is the largest exporter of rice to Tanzania.<sup>2</sup> The Pakistan import price is higher than the DSM price in most periods and imports would have been unprofitable for the private sector in those periods. However, when the Tanzanian price increased in 2011 and 2012, imports of Pakistan rice would have been profitable and imports would have moderated the domestic price increases in rice. The margin between the domestic rice prices and imported Pakistan rice prices reached USD 170 per metric ton in January 2012 and should have been sufficient to encourage imports and moderate further domestic price increases. Instead, domestic rice prices continued to rise and the margin between domestic and imported rice rose to USD 320 per ton by April 2012.

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<sup>2</sup> The Pakistan rice price is FOB Karachi for 25% broken white rice plus ocean freight, insurance, and handling to achieve a landed Dar es Salaam price in U.S. dollars. The Tanzanian price is the wholesale price from the Ministry of Industry and Trade expressed in U.S. dollars and adjusted for quality to allow comparability with imported Pakistan rice.

**Figure 1. DSM and Pakistan Rice Prices.**



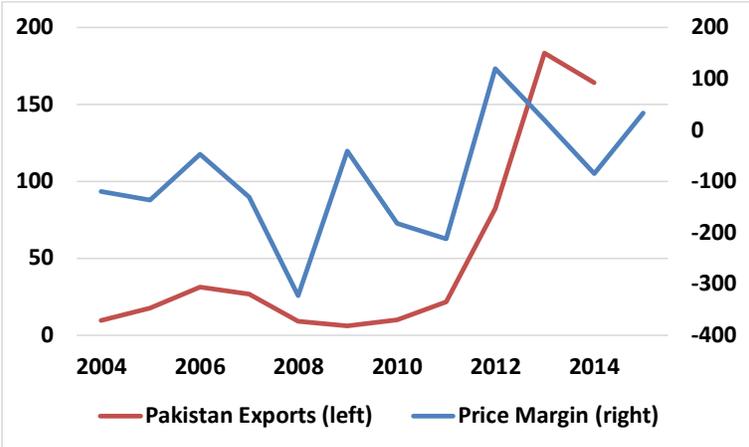
Source: SERA based on Ministry of Industry and Trade and FAO data.

A similar situation occurred in 2013 when domestic prices rose, and the margin between domestic and imported rice rose to USD 285 per metric ton in January 2013. The private sector would have had the incentive to import to moderate the increase in domestic prices and could have done so profitably while paying the 75 percent import tariff. They would have also been cautious to not import more than the market required because that could have caused the price to fall below the level where imports were profitable. The Government would not have needed to intervene in the market and prices would have been moderated by imports. Figure 2 shows Pakistan's rice exports to Tanzania (left axis in thousand metric tons) and the margin between the DSM rice prices and the Pakistan duty-paid landed prices (right axis in USD). When the price margin exceeds USD 100 per metric tons, Pakistan's rice exports increased from less than 20,000 tons to more than 100,000 tons.

The Government responded to the rise in rice prices in 2012 by inviting the private sector to apply for authorization to import rice duty free. More than 70 firms applied and nine were selected and authorized to import 30,000 tons of rice (MAFC 2013). However, actual imports far exceeded the authorized imports and led to sharp price decreases just prior to the domestic harvest. Domestic rice prices continued to rise until April when large imports arrived and then declined by 35 percent over the following four months. Some of the imported rice was sold to neighbouring countries which led to trade disputes and countervailing import tariffs. If the private sector had been allowed to import at the prevailing tariffs, actual imports would have been smaller and more timely and prices would not have increased as much or fallen as far. It would not have been necessary to reduce the tariff, and the disruption to the market would have been less since the private sector would have been aware of the market conditions in both the domestic and international market. The experience of rice imports in 2013 illustrates the difficulty of

implementing an ad hoc policy decision and the importance of careful analysis to understand market demand. A more transparent rules-based policy would have been more effective in moderating the rise in domestic prices and caused less disruptions to the market. And, a better understanding of domestic market requirements and global and domestic food prices would also have shown that it was not necessary to allow duty-free imports.

**Figure 2. Pakistan Rice Exports (thousand tons) vs. Import Price Margin (USD/ton).**



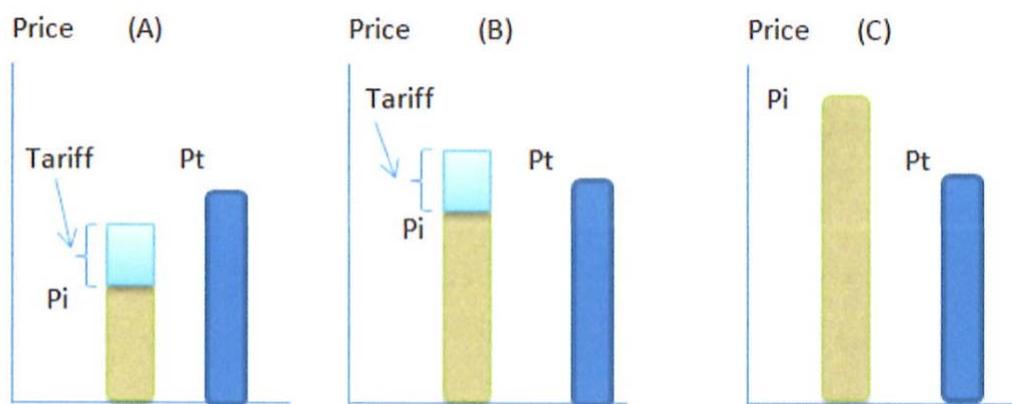
Source: SERA based on Ministry of Industry and Trade and FAO data.

**Market Situations**

There are three market situations that can exist between Tanzanian and world market prices. The duty-paid import price could be below the domestic Tanzanian price and imports would be profitable; the duty-paid import price could be above the domestic price and imports would only be profitable at a reduced tariff; or the import price could be above the domestic price even with a zero tariff and imports would be unprofitable even without tariff. These three situations are shown in Figure 3. The import price includes all transport costs and adjustments for quality differences and is shown as  $P_i$  in Figure 3. The import tariff is then added to  $P_i$  to obtain the total import price of  $P_i + \text{Tariff}$ . The domestic Tanzanian price is denoted as  $P_t$  in Figure 3. As noted,  $P_i + \text{Tariff}$  can be: 1) low enough that imports are profitable after paying the tariff (Figure 3 A), 2) high enough that imports are not profitable at  $P_t$  unless the tariff is reduced (Figure 3 B), or 3) above  $P_t$  even when the import tariff is zero (Figure 3 C). In the first case, imports are profitable when the import tariff is paid and imports will enter the domestic market if allowed and drive down the domestic price to the level where the import price is equal to the domestic price including the tariff. In the second case, imports will not be profitable unless the import tariff is reduced. In the third case, imports from the world market will not be profitable because the world market price exceeds the domestic price even with a zero import tariff (this situation existed in 2008 when world market rice prices rose sharply during the global food crisis).

The normal market situation for most staple foods is depicted by Figure 3A and 3B. Both the import price and the domestic price fluctuate in response to changing demand and supply conditions and imports may be profitable in one period and not in the next. When importers are able to evade the tariff, imports will be profitable most of the time and that is why there is rice from many other countries in the domestic market even when reported imports are zero. The situation depicted in Figure 3C is very unusual and prior to 2008 had not occurred since the 1970s.

**Figure 3. Relationship between import and domestic prices.**



Source: SERA.

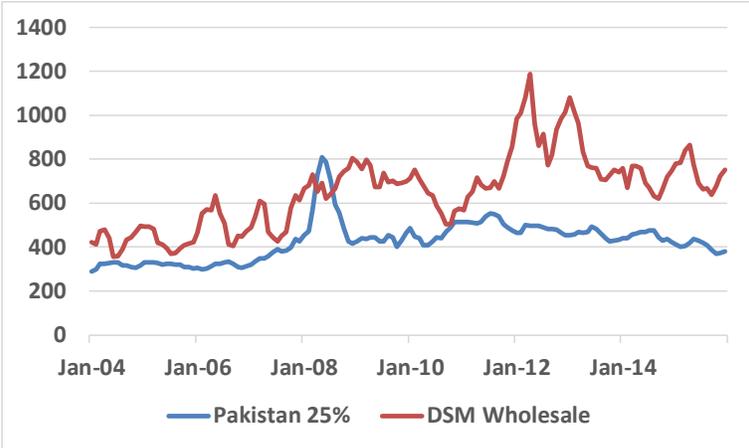
Emergency food imports are not needed in case 1) (Figure 3A) when the world market price plus tariff is below  $P_t$ , because imports will be profitable by the private sector and, if permitted, they will lower domestic prices and eliminate the need for emergency food imports. At the other extreme, case 3) (Figure 3C), imports will not be profitable even when the import tariff is zero and extreme measures will be required to protect consumers from high prices. This occurred in some countries in 2008 but not in Tanzania because domestic prices did not rise significantly. The situation where emergency food imports should be considered is case 2) (Figure 3B). In that case, imports will not be profitable for the private sector unless the tariff is reduced and the challenge for government is how to reduce the tariff to make imports profitable without unduly disrupting the domestic market or causing a trade dispute with neighbouring countries.

There are two policy instruments that can be used to allow emergency imports in case 2. The import tariff can be reduced and import quantities can be limited through quantitative restrictions, such as import permits. If the reduction in the tariff is just sufficient to allow imports, but not so large as to encourage excessive imports, then the quantitative restrictions may not be needed because imports will cause the domestic price to fall until imports are no longer profitable. However, if the reduction in the import tariff is larger than required to allow sufficient imports to cap the price increases then the quantitative restrictions will be needed to limit

imports and prevent disrupting local markets. These two policy instruments can be combined to allow emergency imports without unduly disrupting domestic markets. Regardless of which policy instruments are used, it is important to obtain approval for the use of these instruments from the East Africa Community to avoid trade disputes as occurred when rice was imported duty-free in 2013 and then exported to neighbouring countries. Such approval should be agreed before the emergency food imports are needed in order to avoid delays in implementing the rules-based system for imports. Figure 4 shows the Pakistan rice prices landed in Dar es Salaam without duty. Imports would be profitable in all periods except during the global food crisis in 2008.

The reduction in the import tariff that is sufficient to encourage imports without unduly disrupting the domestic market or causing trade disputes should be based on the differential between the domestic price and the import price. It should be large enough to encourage imports but not so large and to disrupt the domestic market. As shown in Figure 2, rice imports from Pakistan surged when the price differential exceeded USD 100 per ton and that should be sufficient to encourage imports. The tariff reduction should be for a specified period such as three months and renewed if necessary.

**Figure 4. DSM and Pakistan Rice Prices (Ex Tariff).**



Source: SERA, based on Ministry of Industry and Trade and FAO data.

The third case as shown as Figure 3C is when the import price  $P_i$  is above the Tanzanian domestic price  $P_t$  with a zero import tariff as occurred in 2008. In such a situation, imports are not profitable for the private sector. This is unusual and occurred during the global food crisis in 2008-2009. In such cases, Tanzania should rely on its own food reserves, and appeal to the international community for assistance. Such assistance will quickly become available as was the case during the global food crisis of 2008-2009, when the World Bank launched the Global Food Crisis Response which mixed fast-track funding with trust fund grants totaling US\$1.6 billion to

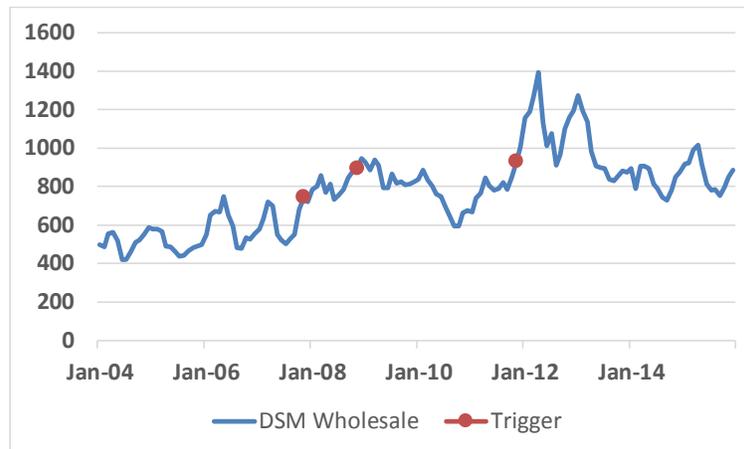
49 countries mostly in Africa (World Bank 2013). There are also other measures that can be taken to reduce the burden of higher prices on consumers, including increased food assistance to the lower income segments of society and reducing tariffs on other food crops such as wheat.

### **A Government Regulated Staple Foods Import Policy**

A market-driven staple foods import policy is preferred for many reasons, but it requires that the Government be able to control illegal imports especially through major sea ports. If that is not possible, then an alternative approach is for the Government to use quantitative controls to limit imports instead of tariffs. Under this approach, the Government would authorize imports only when needed to meet domestic demand and prevent large price increases. Better monitoring of domestic demand, supply, and prices would be required; and the decision to authorize imports would need to be made in a timely manner to ensure imports arrive when needed without depressing prices in the following season. It would still be important to prevent illegal imports, but authorizing imports only during certain periods or circumstances would make that easier. The Government would need to decide 1) when to authorize imports, 2) the quantity of imports to authorize, and 3) the tariff and other conditions that applied. Improved monitoring of domestic, regional, and global markets would be important. The mechanism (trigger) that would be used to authorize imports should be based on both domestic prices and an assessment of the demand-supply situation. The quantities of imports to authorize should be based on an assessment of the market shortfall, and the import tariff that would apply should be based on the prices in the global or regional markets and quantities required to meet domestic demand.

The mechanism (trigger) that would indicate that imports are needed should include an analysis of prices since they reflect market conditions and are available on a timely basis. If prices are rising following harvest, that is an indication that production was not adequate to meet market demand for the following year and that imports may be required. Figure 5 shows an example of a price trigger that would have signaled the need for imports in several cases when prices were rising. It is computed as the average of September to November wholesale prices compared to the average of January to August wholesale prices for Dar es Salaam. When this ratio increases by 10 percent it signals that a market shortage is likely and imports may be needed. It is not sufficient to rely exclusively on this price mechanism without further analysis, but is a signal that a potential shortage may develop and it should be followed with a review of the market situation. Since a price trigger cannot be relied upon exclusively, further analysis will be needed. However, such a price trigger could be an early warning tool worth monitoring.

**Figure 5. DSM Rice Price and Trigger Price.**



Source: SERA.

### **Complying with East African Community Regulations**

The Common External Tariffs (CET) of the East African Community (EAC) are published in the Import Duty Rates of the EAC CET and are adopted by the Council of Ministers. However, under the Duty Remissions Scheme, a member state can apply for a stay of the prevailing CET. If granted by the Council of Ministers, the member state is given a waiver that allows it to apply a rate that is different from the CET. A waiver is normally granted for a fixed period of time such as one year. The official notification of a waiver is published in June. Once a waiver is granted, a request can be made to extend it and that is normally approved on an annual basis. Goods imported at the lower import duty under the waiver and then re-exported to other EAC members are subject to the import tariff rate applicable in the importing country. This may be the CET rate, or if the importing country has its own waiver, the prevailing rate of the country. The process through which waivers or an extension of a waiver are requested is through the pre-budget consultation meeting of the Ministers of Finance.

Food security related waivers are handled differently from waivers on other goods. When there is a food security concern, the Coordinating Ministers of a member country writes to the secretariat and requests an extraordinary meeting of the Council of Ministers to be convened. The written request specifies the product and the proposed change to the CET or waiver. This request is copied to the Coordinating Ministers in the other member countries so that they are aware of the issues. The secretariat then arranges for an extraordinary meeting, which can take from one to three weeks. The Council of Ministers almost always approves the request for a waiver if food security concerns are the justification. Countries applying for a waiver will specify a time period and specific rate (usually zero) and a specified quantity. If products imported under the food security concern are re-exported, the importing country will apply whatever rate it

applies to imports from outside the EAC. When a country imports food under the food security concerns, there is some question about when it is free to export to the rest of the Community without paying the tariff that would apply to re-exports. The secretariat is working to improve the audit schemes in order to address this problem.

### **Conclusions**

A transparent rules-based system for staple food imports would have several advantages for Tanzania. It would reduce the need for ad hoc policy decisions on staple food imports that are subject to influence from powerful business and political interests. It would reduce uncertainty and price risk about the magnitude and timing of food imports and thereby encourage investments in staple food crops production, trading, and storage. It would provide more stable food prices and more reliable food supplies for consumers, and it would increase tariff revenue collections for Government. It would also reduce the risk of trade disputes with neighbouring countries resulting from staple food imports, and it would provide a more stable business environment for the commodity exchange that is currently being developed.

There are several ways that such a system could operate. However, it is essential that large-scale illegal imports be controlled or it will not be possible to operate any transparent rules-based system effectively. According to international data sources, imports of some staple foods, such as rice and sugar, were two to three times larger than reported by Tanzanian customs during 2011-2015. Those imports represent the large-scale imports that come through major sea ports, but there are many other sources of illegal imports that are not recorded such as imports across porous land borders with neighbouring countries, imports through established border posts that are unrecorded, imports brought on small dhows from countries with lower tariffs, and transit goods that remain in country. It will not be possible to eliminate illegal imports, but greater efforts are required in order for a transparent rules-based system to operate. The focus should be on the large-scale imports that enter through sea ports while monitoring cross border and small dhow traffic will be much more difficult.

If large-scale illegal imports can be controlled and the designated tariffs collected on legal imports, then imports could be at the discretion of the private sector under normal market conditions. When the margin between domestic prices and landed imports from the world market are favourable, the private sector will have an incentive to import to supply the domestic market and that will moderate domestic price increases. Decisions on the timing and magnitude of imports will be made by the private sector and the Government's role would be to monitor markets and the operation of the private sector. An alternative approach would be for the Government to take responsibility for determining the magnitude of imports and issuing import

permits for the required quantities. This would require the Government to monitor domestic food markets and develop better procedures for estimating food import requirements. It would also need to devote additional resources to monitoring regional and global markets in order to anticipate future market developments.

On occasion global food prices will be too high to allow the private sector to import food staples profitably. In those conditions, the Government should be prepared to reduce the import tariff in order to increase incentives for imports and ensure national food security. Such actions should be coordinated with the East Africa Community and prior approval negotiated on the grounds of food security. If the reduction in tariffs is not sufficient to make imports profitable for the private sector (which has only occurred once in the past 40 years) then domestic food reserves should be used, and the Government should approach the international community for assistance. Such assistance was provided during the global food crisis of 2008-2009 and would likely be available in the event of a similar global food crisis.

### **Next Steps**

In order for the Government to adopt a rules-based system for staple foods imports, it must strengthen its ability to monitor and control illegal imports, and develop the capacity to monitor regional and global food markets. Controlling illegal imports should focus initially on large-scale imports through major sea ports and border posts. This must involve customs and get Government support for new procedures to control illegal imports. Once this is done, efforts should focus on reducing imports through informal panya routes and coastal trade using dhows from neighbouring countries and Zanzibar. A Market Intelligence Unit should be created and tasked with analysing domestic and regional staple food markets and prices in order to support a rules-based system. Then the specific approach and rules of operation must be developed and procedures agreed to with the East Africa Community.

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