OPTIMISM FOR AFRICAN AGRICULTURE AND FOOD SYSTEMS

Chairs' Summary

High-Level Dialogue

Harnessing Innovation for African Agriculture and Food Systems:
Meeting the Challenges and Designing for the 21st Century

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Executive Summary

African agriculture and food systems are changing rapidly in positive and exciting ways. Africa has the agricultural potential not only to feed itself but also to grow a surplus to help provide global food security. However, fulfilling this potential requires efforts from both within and outside the continent. It requires a broad perspective – looking at the needs of smallholder farmers as part of food systems and supply chains and considering agricultural productivity, food security, and nutrition in the context of overall economic development and social stability.

Leaders throughout Africa agree that it is necessary to invest in and sustain the momentum of the positive transformations taking place. In that spirit, and in support of the 2014 Year of Agriculture and Food Security in Africa and the 10th Anniversary of the Comprehensive Africa Agriculture Development Programme (CAADP), the African Union Commission (AUC) and the Kofi Annan Foundation, with support from the Bill & Melinda Gates Foundation, convened a select group of distinguished leaders with a deep commitment to agricultural development in Africa to discuss "Harnessing Innovation for African Agriculture and Food Systems: Meeting the Challenges and Designing for the 21st Century." Dr. Nkosazana Dlamini-Zuma, Chairperson of the AUC and former UN Secretary General Kofi Annan chaired the high-level dialogue to reflect on successes and challenges in African agricultural development and engage African leaders in conversation about opportunities for concerted action.

The meeting highlighted the needs of smallholder farmers, emerging transformations in the agriculture and agri-food sectors, the role of the private sector, and other forces of change in Africa. These leaders recognized that scaling, amplifying, and transferring success needs to be done in a way that allows for unique regional and national approaches and that it will require ongoing commitments from all sectors. The dialogue was forward looking and reflected a resolve among participants to help further the progress being seen and promote positive transformation through focused and coordinated leadership. Appendix A lists the participants.

The Evolving Narrative for African Agriculture and Food Systems

The language used to talk about African agriculture and food systems has been shifting in recent years and high-level leaders are paying new attention to the positive role that African agriculture plays in economic development across the continent. This narrative and accompanying leadership vision emphasizes farming as an important business, which, when linked with other enterprises across the food system supply chain, serves both rural and urban communities, not just by providing food security, but also as fuel for local economies, a foundation for cultural and social stability (including important roles for women and young people), and a driver of infrastructure development that benefits all sectors. This exciting and evolving vision is reflected in the findings from the dialogue and draws heavily from the advancements made by the CAADP Results Framework, work being done by CAADP to capture "drivers of success" in agriculture across the continent, and other efforts to build momentum for this positive direction.

Promising Transformations Signal Potential for Rapid Growth in African Agriculture and Food Systems

Presentations[1] by Boaz Keizire-Blackie, African Union Commission, and Professor Thomas Reardon, Michigan State University, illuminated reasons for optimism about the future and underscored the need for a better understanding of the challenges being faced. Their studies indicate that a number of countries are seeing strong growth in food and agriculture and there is potential for rapid

1 www.merid.org/Africanagricultureandfoodsystems/Background_Documents.aspx

growth in the agricultural sector across much of Africa. They see a tremendous opportunity to support and coordinate transformations already underway and to scale successes continent-wide.

Urbanization, Diversification of Food Markets, and Food Systems as Engines for Growth: Africa's population is expected to more than double by 2050 and its urban population is predicted to grow to 60 percent of the total population. Already, urban areas represent the majority (roughly 60 percent) of the African food economy and food security for the urban population has raised concerns as increasing urban food needs and diet diversification are driving rapid increases in demand. However, these demand challenges can also drive development opportunities. Rural-to-urban food supply chains are developing rapidly to meet expanding urban demand. African entrepreneurs, both large and small, are investing throughout the supply chain, from inputs to processing to retail. These entrepreneurs are helping farmers achieve productivity gains and providing the critical functions that link rural economies to expanding urban markets in Africa. The food supply chain functions as a two-way flow of resources, providing sustainable sources of food to urban residents and financial resources back to rural economies.

Government's Critical Role in Creating Enabling Conditions for Growth and Transformation: A number of countries are demonstrating how sound agricultural policy and implementation can result in remarkable growth rates (5 to 7 percent as opposed to a 3.8 average for Africa). Several countries are showing that productivity improvements can have major impacts on food and nutrition, security, and poverty alleviation, while also conserving land and resources. Policy and institutional innovations can encourage appropriate growth and engage the private sector to develop markets and supply chains. However, political leadership and vision, a coordinated strategy, and a long-term commitment are also essential.

Opportunities to Advance Change

Recent studies document agriculture and food systems' contributions to economic growth, employment, and security in many regions of Africa, but these transformational changes need attention to resolve bottlenecks, maintain momentum, and optimize for the greatest benefit to all layers in the economy and society. This is an important time for policy, institutional, technological, and financial innovation. Senior leaders from all sectors have critical roles to guide the development of new policies and strategies that are aligned with and amplify the transformations taking place. A number of themes emerged in the discussion of the key forces of change. These themes also align with the findings emerging from the CAADP's Results Framework (Appendix B) and the CAADP report "Sustaining the Momentum in the Next Decade."[2]

Government-Led Vision for Agricultural Entrepreneurship: African governments are taking leadership roles in setting the vision for what farming and food systems should look like in their countries. Country policymakers are making decisions about the institutional transformations they want to see and the national policies that will create enabling environments for business growth, allowing farmers and agri-food businesses of all sizes to prosper. Government policies and resources are being used to incentivize investment, set appropriate regulations, support communication and planning across sectors, and provide safety nets to manage risks.

The Smallholder Farmer as an Agent of Change: Smallholder farmers are achieving productivity gains and contributing significantly to agricultural growth in some African countries. Many smallholders are women, who play central roles not just on the farm but throughout the food system by helping to ensure household-scale nutrition and community-wide food security. Farmers are building business management skills that help them better manage resources and risks, while access to real-time and better data is resulting in better decisions. Farmers organizations are helping to support cross-cutting functions, share best practices, disseminate innovation, and inform decisions.

Capturing the Potential of Youth in the Labor Force: One of the major challenges facing the African continent is the growing population and its large percentage of young people. Farming and nonfarm rural employment is currently not appealing to young people, but there is tremendous potential to provide opportunities for productive employment, income generation, and a life of dignity. For the desired transformations to continue, farming and the agri-food sector need the creativity, technological skills, and engagement of young people. A myriad of mechanized farming, food processing, transportation, marketing, and other small business opportunities are emerging that need talent and skills to fill their ranks so that they can grow and expand to create meaningful employment for African youth.

2 NEPAD Planning and Coordinating Agency, "CAADP – Sustaining the momentum into the next decade, Implementation Report," July 2012.

Incentivizing Market-Driven Solutions: Market-driven institutions are playing critical roles in transforming rural-urban supply chains. In some countries, the private sector and government or quasi-governmental organizations are filling crucial needs in supply chains. The top tier of farmers who are linked to growing urban and regional markets are investing in better inputs, natural resource conservation, and mechanization (to a more limited extent). Small and medium-sized African businesses are emerging in rapidly growing numbers. Global business also sees tremendous opportunity for growth and is investing in Africa. Governments play an important role in incentivizing these investments.

Increased Access to Financing: Affordable and sustainable financing is expanding and helping to scale up successes in farming and post-farmgate businesses (processors, distributors, and wholesalers). However, rural investors (e.g., farmers, small and medium enterprises [SMEs]) need access to predictable, appropriate, and affordable credit.

Harnessing Science, Technology, and Innovation: Science, technology, and innovation will continue to play an important role in increasing productivity and efficiency across the supply chain, for instance by improving the quality of products relevant to smallholders (including availability of high-quality seeds and fertilizer). Engaging in demonstration projects to test improvements developed in other countries and regional approaches to research and development that create economies of scale across agroecologies could improve cost effectiveness.

Expanding Data and Information: Data and information are critical to good decisionmaking along the entire supply chain and particularly at the farm level. Many examples illustrate how data can be an empowering tool to help make better decisions and mitigate risks associated with natural and market forces. Market demands inform crop selection and livestock products. Supply chain information and data about areas under cultivation will help governments evaluate policies and programs. Policymakers need information to measure the impacts of policy interventions and track the performance of the agri-food sector.

Actions to Drive a New Vision for African Agriculture and Food Systems

Translating individual successes into lasting and positive trends will take leadership and vision coupled with investment and implementation. Leaders need to move beyond commitments to action. The meeting participants shared their thinking about approaches to harness the rich potential of Africa's agriculture and food systems as a driver of economic development. The outset of the 2014 Year of African Agriculture offers a unique opportunity – specific actions are needed around the following priorities to support and improve agriculture and food systems at the national and regional levels and throughout Africa:

- ***Establish metrics to measure performance and achievements:*** A first step in advancing action is to agree on where we need to go and how to measure progress. Although some metrics for measuring progress are known, more information about what is driving the positive changes in agriculture and food systems in Africa is needed to provide baseline understanding, scale up the successes, and guard against unintended consequences. Metrics should enable mutual accountability among governments, farmers, the private sector, civil society, and donors.
- ***Improve information and data availability and access:*** Another foundational element to affect change is good information. A big push is needed to get more and better data into the hands of decisionmakers at all levels. Better information can support fact-based management decisions, policies, and investments and strengthen monitoring and evaluation.
- ***Amplify the voices of African leaders:*** Building on existing structures from CAADP and preparations for "Maputo 2,"[3] African leaders have an opportunity beginning with the 2014

3 In 2003, the AU Assembly of Heads of State and Government adopted the Maputo Declaration on CAADP, setting broad targets of 6 percent annual growth in agricultural GDP and allocation of at least 10 percent of public expenditures to the agricultural sector. The June 2014 AU Summit will be focused on the Year of Agriculture and Food Security in Africa and commemoration of the 10th Anniversary of CAADP. Commonly referred to as "Maputo2," this event will bring Heads of State and Governments together to seek a declaration on "agricultural transformation and inclusive growth for shared prosperity and improved livelihoods."

Year of African Agriculture, to create a galvanizing vision to reengage the agricultural sector and partners that are critical to supporting the positive transformations taking place. Specific policy recommendations may be developed in preparation for high-level events in conjunction with the Year of African Agriculture and Food Security, CAADP's 10th anniversary, and other relevant and high-profile efforts.

- ***Expand private sector engagement and investment:*** Many examples have been identified where private sector investment has generated significant benefits for smallholder farmers, rural communities, and local economic stability. Encouraging private sector investment was highlighted as an important action to help advance change. Commitment is needed at senior levels in government (e.g., to create an enabling environment) and within the private sector (e.g., to scale up successes) to develop new models for Africa and promote additional investment and growth among small, medium, and large businesses.
- ***Engage Africa's youth in agricultural entrepreneurship:*** There is both a great need for and a potential that could be realized from the engagement of youth and women in the agricultural sector. Agriculture offers a mechanism for building skills and accessing education and training opportunities for a generation of youth that is key to the future of Africa. To attract the younger generation, the agri-food sector needs to be redefined to reflect the promise it holds for developing business and mechanical skills as opposed to the work of manual laborers and subsistence farmers.
- ***Promote regional and subregional cooperation:*** Engage national leaders, regional economic cooperation organizations, and other key players in policy discussions to address opportunities and challenges that span national boundaries. These discussions could address a range of issues particularly relevant to agri-food systems at a regional level.

Conclusions

Drawing from the lessons learned about successful interventions to drive agricultural productivity increases and poverty reduction, African leaders are working together to create an enabling environment that will help to catalyze progress in African agri-food systems. Lessons need to be shared more broadly, innovation is needed to adapt lessons to different national contexts, private sector investment needs to expand, and collaboration across sectors and stakeholder groups is required to scale up successes across Africa. Visionary leadership and hard work needs to be supported by relevant data and systems that inform decisions and allow experimentation to determine which interventions work best.

The November 2013 discussion in Ethiopia was clear – African leaders must raise their collective voices in global, continental, regional, and national discussions to articulate a clear vision and agenda that all stakeholders can support and hold each other accountable. Partners at all levels and across the public sector, the private sector, and civil society have key roles to play in implementation and driving success. Together, we are witnessing the dawning of a new era for African agriculture and food systems.

Introduction

Over the past 40 years, there has been tremendous progress in global agriculture. The performance of Africa's agriculture sector has been encouraging – with annual agricultural gross domestic product (GDP) growth averaging nearly 4 percent since 2003, well above the agricultural share of GDP growth rates for the past several decades. While Africa has experienced benefits from increased agricultural growth, the past decade's successes have been felt most by only a handful of countries. Across Africa, formidable challenges remain. Africa still has the highest prevalence of undernourishment, with an estimated one in four people without enough food. In Sub-Saharan Africa, 54 million children under five years of age lack the nutrition necessary for proper health and development. These serious challenges are being magnified by profound shifts in demographics, the global economy, and the environment. Africa's population is expected to more than double by 2050. The continent's growing middle class is increasing demand for protein-intensive foods. Water scarcity and other natural resource constraints are making it harder to intensify agricultural production while climate change is causing variability in weather patterns and more frequent extreme weather events. These shifts could have devastating consequences for global food and nutrition security, and particularly damaging impacts in Africa.

Despite these sobering trends, African agriculture and food systems are undergoing significant transformations with the potential to reshape the global food security system for the better. Africa has the agricultural potential to feed not only itself but also to grow a surplus to export and help tackle global food insecurity. Fulfilling this potential requires heightened efforts from both within and outside the continent. It requires putting the needs of smallholder farmers and a multitude of processors, transporters, and other supply chain actors at the heart of an effort to increase African agricultural productivity and to achieve food and nutrition security in a way that will drive wider economic and social development while preserving the environment.

The African Union Assembly of Heads of State and Government, during its 19th Ordinary Session, held from 15-16 July 2012, in Addis Ababa, Ethiopia, declared 2014 to be the Year of Agriculture and Food Security in Africa in conjunction with the 10th Anniversary of African Heads of State and Governments' adoption of the Comprehensive Africa Agriculture Development Programme (CAADP). This landmark event has helped generate increased attention and focus on these critical issues.

High-Level Dialogue Reflects Optimism for Year of African Agriculture

Notwithstanding the encouraging progress being seen, African agriculture and food security concerns remain high. It is necessary to invest effort to sustain the momentum of positive change taking place in Africa and engage the voices of visionary leaders to help fuel a transformation. In that spirit and to support the Year of Agriculture and Food Security in Africa and the 10th Anniversary of CAADP, the African Union Commission (AUC) and Kofi Annan Foundation, with support from the Bill & Melinda Gates Foundation, convened a select group of distinguished guests with a deep commitment to agricultural development in Africa on 25-26 November 2013, in Addis Ababa, Ethiopia. Under the leadership of Dr. Nkosazana Dlamini-Zuma, Chairperson of the AUC, and former UN Secretary General Kofi Annan, the high-level dialogue brought together visionary leaders from Africa and beyond who are recognized as champions of African agricultural development and actively engaged in advancing progress. Senior representatives from government ministries, global institutions, the private sector, and civil society participated. The event was planned and facilitated by Meridian Institute and Mandi Rukuni. For a full list of participants, please refer to Appendix A.

The meeting highlighted the needs of smallholder farmers, emerging transformations in the agriculture and agri-food sectors, the role of the private sector, and other forces of change in Africa. These leaders recognized that scaling, amplifying, and transferring success needs to be done in a way that allows for unique regional and national approaches and that will require ongoing commitments from all sectors.

The dialogue was forward looking with an eye toward acting on what is known to be working well. The conversation reflected a resolve among participants to continue to prioritize agriculture and food security and a desire to increase concrete results and impacts. Recognizing the important work conducted to date, the discussion focused on ideas that could help harness the rich potential of Africa's farmers and farming systems. It emphasized the importance of a successful course for the next generation of CAADP, taking into account the complexity of agriculture and food systems, the relationship between

urbanization and rural development, institutional innovations for advancing African agricultural and food systems (e.g., establishing institutional mechanisms for coordination across ministries and sectors), and how agriculture ministries can build wider partnerships within and outside government to improve support for African farmers and ag-entrepreneurs. Specific meeting objectives included:

- Identify opportunities to build on the strengths of African institutions, including the African Union Commission and the New Partnership for Africa's Development (NEPAD) Agency, as leaders of change in the implementation of the CAADP framework and other actions to strengthen national and regional agricultural and food systems.
- Discuss ways to catalyze action by governments to implement agricultural development commitments, develop and scale-up innovative mechanisms for progress, and secure additional funding and investment – including from the private sector.
- Explore emerging challenges, including demographic shifts, population growth, climate change, and evolving dietary preferences.

The Evolving Narrative for African Agriculture and Food Systems

As Africa's agriculture and food systems transform in positive and exciting ways, a new narrative is emerging in the way that leading voices are discussing and framing issues. CAADP has taken a leadership role in redefining a vision for agricultural development with a forward-looking emphasis on economic development and broader food systems (see Appendix B, the CAADP Results Framework). Below are examples of how the narrative and vision for African agriculture are shifting:

- ***From poverty to prosperity and from aid obligations to promising business pursuits:*** a focus on providing food evolves to reflect an opportunity for entrepreneurship and wealth creation, but the need to achieve food and nutrition security persists.
- ***From "his struggle" to "her value proposition":*** women are central to all aspects of farming and food systems, from food security to household-scale nutrition, with an orientation toward entrepreneurial approaches and value-added products.
- ***From an aging workforce to thriving new career paths:*** agriculture is no longer characterized by an aging male farmer but instead is dominated by images of young men and women pursuing modernized careers.
- ***From rural farmers to diverse food systems:*** the agriculture sector expands beyond a focus on production to include diverse supply chains and food systems that span and link rural and urban economies.
- ***Governments shift their roles from "subsidizers" and "providers" to "incentivizers" and "enablers":*** as a range of actors are stepping up efforts to provide goods and services to farmers and linking farmers to markets, governmental institutions will continue to play important – but evolving – roles in driving and guiding the desired transformations.

The messages that define the sector need to appeal to the actors and partners that will play key roles in the food systems of the future. The narrative and vision needs to encompass the whole agri-food system and present it as a promising driver of economic growth. Sample messages are presented in Figure 1.

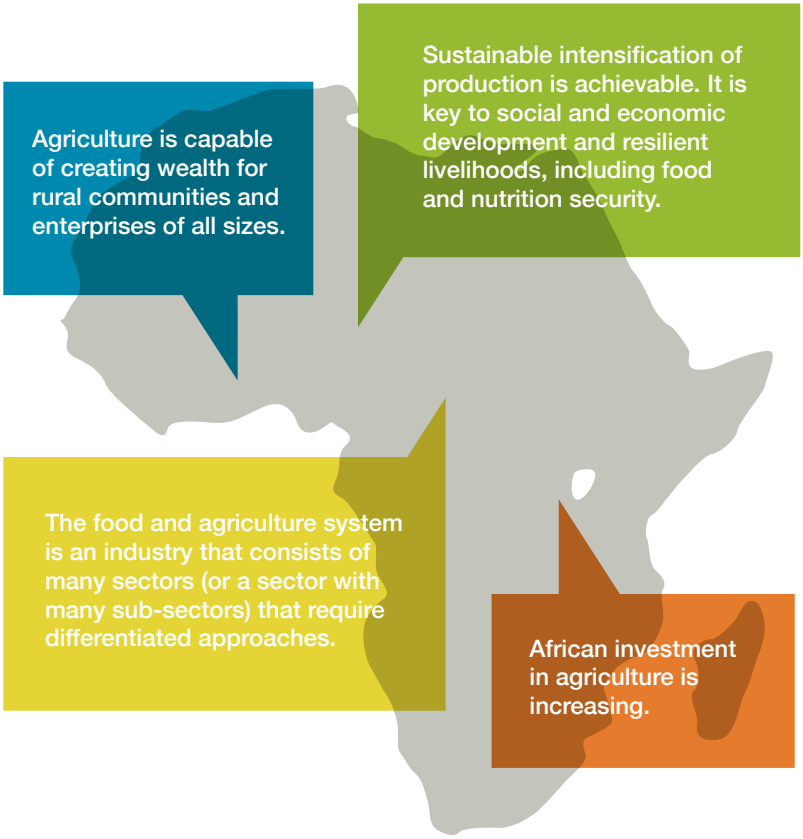


Figure 1: Sample Messages Being Heard Across Africa

Promising Transformations in African Agriculture and Food Systems: Potential for Rapid Growth

Significant transformations are taking place in African agriculture that have broad implications for farmers and agricultural entrepreneurs along food and agriculture supply chains, policymakers, donors and investors, and others. Market forces and supply chain actors are influencing the shape and direction of African agriculture through broad investment in diversified production, processing, and distribution channels as well as regional and international trade. This investment is in response to urban growth and diversified diets in Africa, among other factors. At the same time, country governments are making significant investments as well. Although African countries are at different stages in their agricultural development, a number of countries have successfully increased agricultural production. Smallholder farmers are playing important roles in agricultural growth (in staple crops, cash crops, and livestock) as they increase cultivated areas and productivity. Productivity-driven growth in particular is improving food and nutrition security and poverty alleviation. Through CAADP, African governments have made commitments to increase public investments in agriculture, raise agricultural productivity, and coordinate efforts to promote agriculture-led development. African governments are implementing innovative policy and institutional changes to guide and support agricultural transformation. These market-based and government investments are significant forces of change that are underway across the continent. However, to ensure that the benefits of these transformations reach rural populations, much work remains to be done to scale up implementation of policy, institutional, investment, and technical innovations across Africa.

Briefing Presentations: Critical Trends Show Reasons for Optimism

Two presentations set the stage for the discussions. Based on recent work to understand drivers of success and trends that are shaping African agriculture and food systems, the presentation of Boaz Keizire-Blackie of the African Union Commission,[4] "Drivers of Success for CAADP Implementation: Lessons Learned in African Agriculture since the Maputo Declaration," described the drivers of significant agricultural growth in seven African countries. Since 2000, agricultural growth rates in Nigeria and Ethiopia have been above 6 percent per year and rates in Burkina Faso, Sierra Leone, Tanzania, and Ghana have been between 4.0 and 5.2 percent. This contrasts with a continental average of 3.8 percent. Agriculture is a major contributor to GDP in these countries – 26 percent in Ghana and as much as 46 percent in Ethiopia – compared with 14 percent on average across the continent.

The presentation underscored the policy, institutional, and supply chain shifts underway in Africa as reflected in the CAADP Results Framework. As explained in "CAADP – Sustaining the Momentum into the Next Decade, Implementation Report,"[5] wealth creation has become the main force to eradicate poverty and hunger. The main cause of hunger is poverty, and the long-term solution to poverty is wealth creation and economic growth. Africa's agricultural and economic policies should therefore keep focus on long-term economic development while putting in place safety nets for the poor. Evidence shows that African farmers are diversifying into higher-value crops (e.g., milk, eggs, herbs, oilseeds, vegetables, pulses) in response to a rapidly urbanizing society and related commercial opportunities. This diversification provides new sources of growth while creating new jobs and opportunities as well as reducing poverty and hunger. These are areas for growth, wealth, and job creation while simultaneously increasing productivity of traditional staple crops. The structure developed by CAADP looking to the future reflects these shifts in both the language and action of agricultural development (see Box 1).

Professor Thomas Reardon of Michigan State University illuminated reasons for optimism about the future as well as opportunities for coordinated action as he presented key themes and findings from

4 Presentation based on the report "African Agriculture: Drivers of Success for CAADP Implementation," November 2013. Executive Summary of the report is included in Appendix C.

5 NEPAD Planning and Coordinating Agency, "CAADP – Sustaining the momentum into the next decade, Implementation Report," July 2012.

Box 1: CAADP Framework for Action

Strategies:

1. Institutions, policies, and leadership
2. Financing agricultural development
3. Knowledge support

Outcome targets:

Last decade: Minimum 10 percent of public investment in agriculture and 6 percent annual average growth.

Next decade: Outcome targets will include increases in productivity, competitiveness, and regional integration.

Impact Goals:

- Wealth creation
- Job creation
- Food security
- Economic growth
- Resilience

his paper, "The Emerging 'Quiet Revolution' in African Agrifood Systems."[6] Urbanization, income increases, and diet diversification are providing major opportunities as drivers of growth for rural areas in Africa. Small and medium enterprises are at the heart of a revolution in rural-urban food supply chains across Africa, linking farmers to growing urban markets. These agri-food systems are now key to the food security of African countries.

This document draws heavily from the examples and data provided by these two technical experts and their supporting documents. Summaries of their papers are provided in Appendices C and D.[7]

6 T. Reardon, D. Tschirley, B. Minten, S. Haggblade, C.P. Timmer, and S. Liverpool-Tasie, "The Emerging 'Quiet Revolution' in African Agrifood Systems," November 2013. A summary of the paper is included in Appendix D.

7 The papers are available at www.merid.org/Africanagricultureandfoodsystems/Background_Documents.aspx.

The presentations and ensuing discussion highlighted lessons that could be learned from the experiences of individual countries while also recognizing that policies and programs will vary from country to country. While ambitious continent-wide goals are important, countries need to set their own targets and develop measures and implement policies and programs to achieve those targets. Country-specific needs are an important feature of CAADP. Country investment plans allow for local development solutions and national leadership in developing the vision for success at the country level.

Urbanization and Diversification of Food Markets: A Critical Economic Driver

Africa's population is expected to more than double by 2050 and its urban population is predicted to grow to 60 percent of the total population. Already, urbanization in Africa has caught up with all developing countries based on the average urban share of population and it is growing at a faster pace in Africa than in the rest of the developing world. Urban areas already represent the majority (roughly 60 percent) of the African food economy (in terms of total purchased food), which means that the rural-urban food supply chain is central to food security.

The nature of African urbanization is more "decentralized" relative to some regions of the world. While large cities (above 1 million people) are proliferating, urban populations in secondary cities and rural towns are also growing rapidly. This is good news for African farmers in surrounding rural areas that find smaller cities and towns more accessible as markets than large cities, with more direct beneficial impact on surrounding rural areas through rural nonfarm employment generation and growing markets for fruit and vegetable growers and meat, fish, and dairy producers. By leveraging increasing urban food demand and diet diversification, leaders can benefit rural economies, farmers, and farming systems. Urban centers can serve as major financiers of rural economic development and offer stable food markets for agricultural products. They represent a tremendous opportunity to boost the transformations underway in African agriculture while simultaneously overcoming rural poverty.

Supply chains are developing rapidly to meet expanding urban demand (see Figure 2). The post-farmgate segments of the supply chain (e.g., transportation, storage, processors, distribution) and downstream (retail and food stalls) together form 50-70 percent of food costs to urban Africans. That means these roles in the supply

chain are as important as those of farmers in providing a dependable food supply to urban centers and controlling the rising cost of food. Increasing efficiencies, decreasing waste and food loss, and many other post-farmgate factors can help to improve conditions at both ends of the supply chain – for both farmers and consumers. As highlighted in Dr. Reardon's paper and presentation, these agri-food supply chains function as a two-way flow of resources, providing a sustainable source of food to urban residents and financial resources back to rural economies. There is tremendous activity along the agricultural supply chain; innovations are emerging along with expansion of capacity, particularly in the middle of the supply chain. Thousands of small- and medium- scale firms in trucking, wholesale, warehousing, cold storage, first and second stage processing, local fast food, and retail are making major investments.

Well-functioning farming and agri-food systems serve important roles beyond providing food security and alleviating hunger, because they:

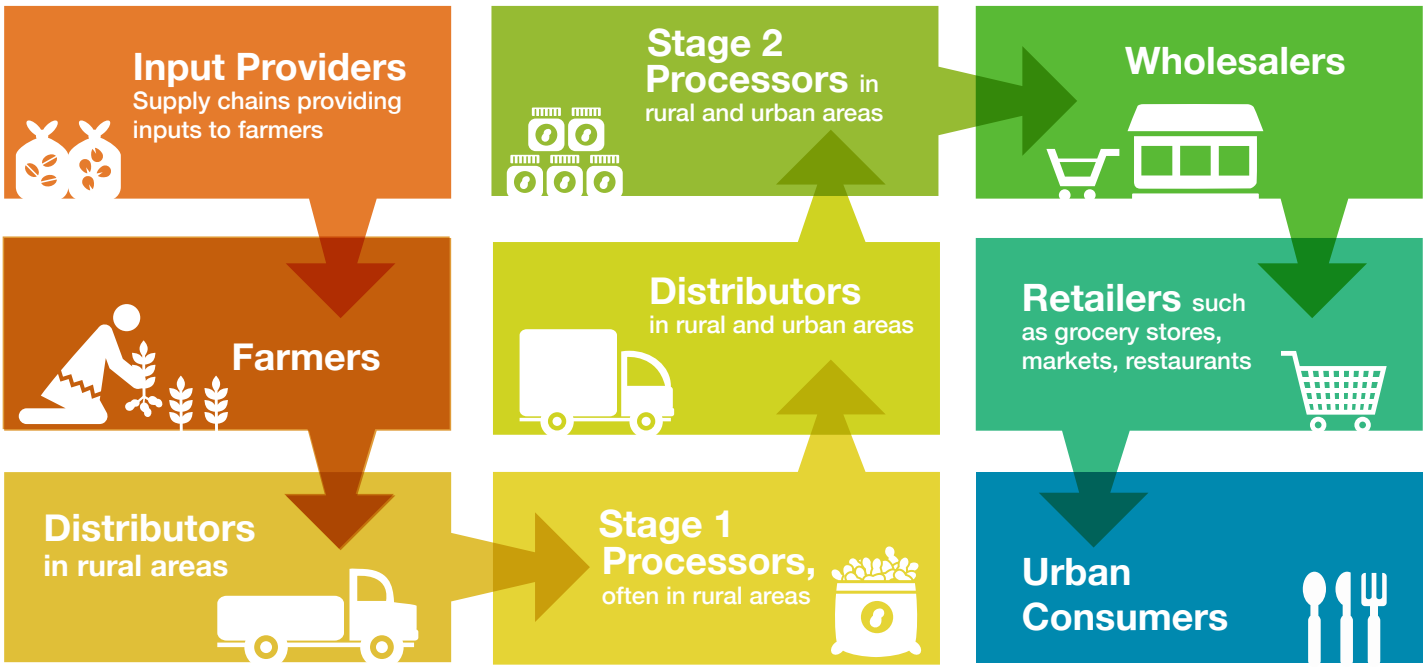
- Contribute significantly to the economic growth of nations;
- Build resilient and vital rural economies;
- Support the prosperity of smallholder farmers;
- Contribute to the nutritional security of all people; and
- Serve as a vital element of environmental sustainability.

Well-functioning supply chains, plans for priority investments, and enabling policies and programs ensure efficient flows of capital, information, and nutritious food and fiber between rural economies and urban centers.

Government's Critical Role in Creating Enabling Conditions for Growth

In African countries that have experienced agricultural growth, governments have stimulated growth by creating an enabling environment. An enabling environment includes improvements to rural infrastructure and support in sharing the risks associated with delivering commercial services to the "bottom of the pyramid." Elements of an enabling environment include: well-designed policies that improve farmers' access to inputs (e.g., seed and fertilizer); knowledge and technology to increase their yields and/or cultivate new areas; agricultural research systems that produce new technologies that are valuable to farmers; risk insurance that helps farmers manage risk; agricultural advisory services and extension systems that exchange information with farmers to improve production levels; investments in roads and other rural infrastructure to improve access to goods

Figure 2: Sample Agri-Food System Supply Chain



and services; and access to markets, storage, and processing facilities. Finally, agricultural growth is also enabled by public management of land use and investments in natural resources to address soil erosion, restore forests and woodlands, protect water resources, and adapt to climate change.

Governments that create an enabling environment for the private sector can unleash private sector investments that help farmers access inputs and markets. This has policy and budgetary dimensions. For instance, it may involve government interventions in national tax policy, changes in import and export regulation, and establishment of national standards and certification systems. In addition, governments need to invest in public infrastructure, research and extension services, and supporting national-level financial institutions and ensure that cooperatives and smallholder farmers have access to appropriate financial instruments (e.g., credit, insurance). Government intervention may also be needed to ensure that private sector investments in agriculture are balanced and do not result in negative or unintended outcomes such as crowding out smallholder participation in new markets.

Institutions need to be strengthened to meet the challenges of the very dynamic and rapidly changing agriculture and food sectors. Innovative approaches are needed to drive agricultural success (and address institutional barriers to agricultural growth), including creating structures that encourage broad participation in policy processes; building capacity and giving more control at the local level; putting in place effective accountability mechanisms; establishing a culture of learning; and supporting effective vertical and horizontal coordination across all systems (e.g., coordination along agri-food supply chains, coordination between agriculture, energy, and infrastructure Ministries).

Political leadership at the highest levels of government is required to make these public investments and institutional changes. It requires political leadership to offer a common vision for agricultural transformation that inspires and guides ongoing improvements and food system evolution. Creating durable institutions should support consistent and adaptive approaches that exceed short-term election cycles (see Box 2).

Box 2: Tools for Intervention

- Public and private investment in infrastructure (e.g., roads, power).
- Public and private investment in soft infrastructure (e.g., information systems and extension, credit, communications).
- Fiscal policies (e.g., incentives, taxes)
- Public investment in research, extension, and education.
- Organizational policies (e.g., development of farmers associations, unions)
- Institutional policies (e.g., regulations, contract laws, land policies)
- Education reform to get young people interested in agriculture and build a workforce for modern agriculture and agribusiness.

Opportunities to Advance Change

While agriculture and food systems are contributing to economic growth, employment, and security in many regions of Africa, current efforts need urgent attention to resolve bottlenecks, maintain momentum, and optimize for the greatest benefit to the economy and society. Significant opportunities exist for policy, institutional, technological, and financial innovations all along the supply chain to enable healthy business climates that support vibrant food systems. Appendix E presents a matrix of African agri-food system elements and thematic areas of intervention. It is intended to show the types of interventions that are available to governments, the private sector, and civil society and how they are being applied across the supply chain to build more robust systems. These examples are illustrative of experiences across Africa but by no means suggest a standard recipe for success. Varying local, regional, and national conditions need to be taken into consideration. While every country will customize innovations and interventions for its unique needs, lessons can be learned from the experience of others. Using examples of recent successes, the group discussed cross-cutting principles driving growth and the emerging forces of change. In this section, country-based and regional efforts described in "African Agriculture: Drivers of Success for CAADP Implementation,"[8] the draft report of the African Union Commission in 2014, are provided as illustrative examples of approaches being undertaken across the food and agriculture system.

8 See Appendix C and www.merid.org/Africanagricultureandfoodsystems/Background_Documents.aspx

Forces of Change

Leaders at all scales and across sectors have critical roles to guide the direction of strategies and drive development of new policies that promote growth in the food and agriculture sectors. Numerous themes emerged in the discussion of the key forces driving change.

Government-Led Vision for Agricultural Entrepreneurship: Transformation in the agricultural sector, as with all change, is destabilizing. Therefore, national leaders must play a critical role in establishing a country vision for agriculture and food systems and sending clear and consistent messages. A national vision can catalyze engagement of all sectors and stakeholders from agriculture and beyond. A systems approach is needed that empowers partners to focus on their piece while knowing that they are working in a systematic, coordinated way with others. Diversified strategies are needed to support the subsectors in agriculture and food systems, including the input sector, farmers, post-farmgate actors, and the food industry (see Box 3). These strategies should encourage the development of robust supply chains and bolster private sector engagement in key and/or lagging subsectors. Clear metrics are needed to monitor and report on progress toward the national vision and to promote mutual accountability among sectors.

Box 3: Staple Crop Processing Zones

Nigeria is taking a new approach to building post-harvest processing and value addition that aims to encourage private sector investment through the creation of staple crop processing zones (SCPZs) in selected "food baskets" around the country. SCPZs aim to create incentives for private sector investment across Nigeria. Incentives include tax breaks on processing equipment, tax holidays for food processors, and public investment in infrastructure – electricity, irrigation, flood control, road, rail, and telecommunications. In Tanzania, state purchase of large-volume cultivation machinery (e.g., power tillers, tractors, planters, and harvesters) is providing equipment to producers to support national goals for increasing cultivation.

Box 4: New Kinds of Couscous

In Dakar, Senegal, supermarkets are driving demand for branded, packaged millet and sorghum products produced by local farmers. Processors are using available equipment to produce millet and sorghum couscous. Successful food businesses have branded these products and made them attractive to urban consumers.

Capturing the Potential of Youth in the Labor Force: The involvement of young people in farming and food systems is vital for the prosperity of all of Africa's people and nations. One of the major challenges facing the African continent is the growing population and the overall share of young people. According to a 2010 study, 92 percent of the African population is under age 55 and 51 percent is age 19 or younger. Farming and nonfarm rural employment can provide opportunities for productive employment, income generation, and a life of dignity that is appealing to young people (see Box 5). For example, meaningful employment opportunities can be created by mechanizing farming and by enabling the growth of post-farmgate enterprises. For the desired transformations to continue, both farming and the agri-food sector will need the creativity, technological skills, and engagement of young people. Education systems should be redesigned to build skills and knowledge – including business training, information and communication technology – for a new era of farming and agribusiness in Africa.

Incentivizing Market Driven Solutions: Markets are driving transformations in rural-urban supply chains (see Box 4). Small and medium African businesses are emerging in rapidly growing numbers – particularly as the processors, distributors, and other critical roles at the middle of the supply chain. Global businesses are also recognizing tremendous opportunity for inclusive growth and they are investing in Africa. In the long run, supply-chain efficiency represents a significant opportunity for African producers in their efforts to be competitive with food importers. Governments are increasingly focusing on creating the enabling environment for market-driven actions rather than filling the gaps themselves. For example, in some countries the private sector has significantly improved access to input supplies (e.g., seeds, fertilizers). Farmers who are recognizing the link between market access, productivity growth, and natural resource management are investing in their farms, for instance, by taking measures such as soil conservation, building organic matter in their soils, using productivity enhancing seeds and breeds and fertilizer, and investing in irrigation and machines. However, at all levels, these investments need national leadership to give investors the certainty they need to expand their operations.

Box 5: Youth Agripreneurs

The International Institute of Tropical Agriculture (IITA) Youth Agripreneurs are a group of young college graduates involved in agribusiness, who aim to be role models to other young people planning careers in the field. In just one year, they have planted maize, cassava, and soybean and also established plantain and banana fields. Their gender balance (11 men and 10 women) is encouraging as they work to bridge the gender gap for women in agribusiness disciplines.

The Smallholder Farmer as an Agent of Change: Smallholder farmers represent the majority of farmers in many African countries, contributing up to 90 percent of agricultural output. They are responsible for most of the agricultural growth, particularly of staple foods, such as cassava, yam, maize, and rice. Smallholders have also driven growth in cash crop production where policies and investments have been supportive (see Box 6). Most smallholders are women, who play central roles not just on the farm but in food systems. They are helping to ensure household-scale nutrition and community-wide food security, and are increasingly oriented toward entrepreneurial approaches and value-added products. Farmers are key players in broader food systems and supply chains, and they are trying to harness their expanding potential to gain prosperity and success. Farms are businesses and farmers with business management skills are better prepared to contribute as an integral and informed player in the overall food supply chain. Supply chain development should engage smallholder farmers in private sector investments and commercial value chains.

Increased Access to Financing: Affordable and sustainable financing is expanding and helping to scale up the successes in farming and post-farmgate businesses (processors, distributors, and wholesalers). Factor markets as well as credit markets and rural, nonfarm employment are key to making intensification happen (see Box 7). For access to finance, rural investors (farmers, SMEs) need access to the right quality of credit at the right price. However, markets need constancy, consistency, and policy reforms to unlock further investment, so there is an important link to national policy, leadership, and vision.

Box 6: Smallholder Support

Smallholders have been largely responsible for increasing the production of major cash crops in Burkina Faso (cotton, sesame), Ghana (cocoa), and Sierra Leone (cocoa). In Rwanda, 80 percent of producers are subsistence farmers, many of whom grow coffee and tea. Supportive policies and investments encouraged more farmers to start growing cash crops, and, in the case of cocoa in Ghana, helped farmers increase their yields.

In Sierra Leone, the Ministry of Agriculture, Forestry and Food Security (MAFFS) established a Small Holder Commercialisation Programme, which encourages smallholder farmers to form Agriculture Business Centres (ABCs). ABCs are envisioned to become limited liability companies to support commercialization and value addition, and are supported by the Government of Sierra Leone and development partners through improved inputs and access to farm machinery and processing equipment.

Box 7: Ghana's Agricultural Financing Scheme

Ghana has an agricultural financing scheme that extends credit to marketing and production groups through the Ministry of Food and Agriculture and the Agricultural Development Bank. Success in ventures across diverse supply chains has been attributed in part to these efforts to link producers to financial institutions.

Harnessing Science, Technology, and Innovation: Science, technology, and innovation will continue to play an important role, particularly in service to increasing productivity and efficiency across the supply chain. This will continue to be an important area for government investment and a key element in creating an enabling environment for further investment by farmers, SMEs, and global agribusinesses to promote agricultural growth and economic goals. For instance, innovation is needed to help bring to market grains that are hard to clean, process, and store, but have good nutritional properties (e.g., teff, fonio, and millet). Expanding markets for such crops would incentivize plant breeders' involvement and thus spur innovation. The quality and availability of inputs (including availability of high quality seeds and better quality fertilizers containing micronutrients) should also improve. Engaging in demonstration projects in collaboration with extension systems to test improvements already developed in other countries as well as regional approaches to research and development (R&D) to develop economies of scale across agroecologies could improve cost-effectiveness (see Box 8).

Box 8: Agricultural Research in Africa

Overall funding levels per researcher – one indicator of motivation and capacity for high- quality research – are high in Nigeria, Ghana, and Rwanda. Ghana's investment in agricultural research is reflected in the output of Ghana's research institutes, which have developed and released 38 new crop varietals since 2000, including crops with improved drought tolerance, higher yields, disease resistance, and improve nutritional quality.

Ethiopia's National Agricultural Research System (NARS) includes 67 research centers plus 7 research centers run by higher learning institutions. Rust-resistant bread wheat varieties developed through the NARS averted near-complete loss of bread wheat production in half of the wheat cultivated in the country. Over the past 10 years, research centers have also contributed to increased farm-level productivity of chick peas from 0.8 to 1.7 metric tons per hectare (MT/ha); lentils from 0.6 to 1.2 MT/ha; and teff from 0.8 to 1.2 MT/ha.

Box 9: Ethiopian Commodity Exchange

One example of improving data and information flows is the Ethiopian Commodity Exchange (ECX) that disseminates real-time information on central wholesale prices of commodities. It helps farmers with farm-level forecasting and production, technology adoption, and marketing decisions.

Expanding and Improving Data and Information: Data and trusted information are vital to good decisionmaking, particularly at the farm level, but also by governments and all actors along the supply chain. Better information and access to real-time data about weather, natural resource limitations (e.g., water, fertilizer, soil improvements), and markets is supporting better decisionmaking by farmers (see Box 9), but information systems need to be further strengthened. Farmers' organizations are helping support improved information exchange with farmers, and they are building skills and knowledge to support farmers' participation in supply chains. Farmers, companies, and governments alike need supply chain information and information about areas under cultivation to assess what investments to make, and what policies and programs to develop. Policymakers need information to measure the impacts of policy interventions and track the performance of the agri-food sector. Data and information are critical components of a systems approach to developing the agricultural and food sectors in Africa. The right data and information helps all stakeholders make better decisions and supports risk mitigation associated with natural and market forces.

Actions to Drive a Vision for African Agriculture and Food Systems

Translating individual country successes into lasting and positive trends across Africa will take the powerful combination of vision coupled with investment and follow-through. Participants in the Addis Ababa dialogue identified potential areas for actions to move beyond commitments to implementation and harness the rich potential of Africa's agriculture and food systems as a driver of economic development. The outset of the Year of African Agriculture offers a unique opportunity to target specific actions needed to support and improve agriculture and food systems at the national and regional levels and throughout Africa. The following suggested actions focus efforts to carry the discussions beyond the event itself, catalyzing the meeting's positive energy and translating it into forward momentum to deliver results.

Establish Metrics to Measure Performance and Achievements

A first step in advancing action is to agree on where we need to go and how to measure progress getting there. CAADP has taken important steps in that direction and there is value in broadening the effort. Starting in 2014, countries will be doing robust joint sector reviews involving the private sector, civil society organizations (CSOs), farmers, donors, and government agencies to develop score cards.

Although some of the metrics for measuring progress are known, more information about what is driving the positive changes in agriculture and food systems in Africa is needed to provide baseline understanding, scale up the successes, and guard against unintended consequences. Africa also needs to take into account mistakes of the past to avoid slipping backwards. A set of consistent metrics will allow countries to compare how they are performing over time and relative to others. Metrics should enable mutual accountability between governments, farmers, the private sector, and CSOs.[9] Participants noted that:

- CAADP institutions are already working to develop new, refined targets for African heads of state to propose during the July 2014 AUC Summit. In addition, they are engaging stakeholders in developing the metrics CAADP should use in the next 10 years (e.g., regarding youth and gender) to measure progress. They are further putting in place mechanisms for monitoring, reporting, and mutual accountability with the focus on delivering results and impact.
- A joint sector review is being populated as an instrument for mutual accountability. This will involve setting and agreeing on targets for each of the key stakeholders at the country level – mainly score cards for private sector actors, CSOs, farmers, development partners, and governments. While this will facilitate joint commitment, measurement, and reporting, it will also better underscore mutual accountability based on transparency and impact.
- Governments are developing benchmarks to track progress and improvements to measure and monitor what matters most – impacts on the economy, community wellbeing, and the health of the population.
- At the farm level, there is a need to better measure farmers' investments in capital and improvements in the quality of life on their farms.

These metrics and goals will be discussed as part of the CAADP "Evidence Meeting on Validation of Key Drivers of Agricultural Transformation" in Addis Ababa, Ethiopia, in May 2014.

Improve Information and Data Availability and Access

Another foundational element is good information. A big push is needed to get more and better data into the hands of decisionmakers at all levels. Better information can support fact-based management decisions, policies, and investments and strengthen monitoring and evaluation. For example, there is a need for better data targeted at and readily accessible by:

- Governments to inform policy;

9 Examples of indicators include: agriculture and food systems as a percentage of total GDP, total agricultural exports, the size of the private sector role in food systems, lending values in the agricultural sector, nutrition and poverty metrics.

- Banking institutions to inform lending decisions and rates; and
- Farmers to improve on-farm decisionmaking and risk management.

Some countries are starting innovative reforms such as country strategic and knowledge support systems (SAKSS) and working with bureaus of statistics to ensure that the data is accurate, high quality, representative, and robust. Expanding these efforts beyond the handful underway is needed to ensure broad impact.

Amplify the Voices of African Leaders

Building on existing structures from CAADP and efforts to prepare for "Maputo 2," African leaders have an opportunity beginning with the Year of African Agriculture to create a galvanizing vision to reengage the agricultural sector and partners that are critical to supporting the positive transformations taking place. Specific policy recommendations may be developed in preparation for high-level events in conjunction with the Year of African Agriculture and Food Security, CAADP's 10th anniversary, and other relevant and high-profile efforts. Key events include, for example:

- The 10th CAADP Partnership Platform Meeting, 19-23 March 2014, Durban, South Africa
- The Joint AU Conference of Ministers Responsible for Agriculture and Rural Development, April/May 2014, Addis Ababa, Ethiopia
- Evidence Meeting on Validation of Key Drivers of Agricultural Transformation, AUC, May 2014, Addis Ababa, Ethiopia
- World Economic Forum for Africa and Grow Africa Investment Forum, 7-8 May 2014, Abuja, Nigeria,
- The African Agribusiness Forum, June 2014, Addis Ababa, Ethiopia
- AU Summit, June 2014, Malabo, Equatorial Guinea
- Africa Green Revolution Forum (AGRF), September 2014, Addis Ababa, Ethiopia

Some of the participants have expressed interest in playing a role in carrying forward the messages from the dialogue into global, continental, regional, and national discussions. Other initiatives that may provide a platform for amplifying the voices of African leaders on these issues include:

- UN Open Working Group on Sustainable Development Goals
- Africa Progress Panel
- Aspen Food Security Strategy Group

Expand Private Sector Engagement and Investment

Many examples have been identified where private sector investment has generated significant benefits for smallholder farmers, rural communities, and local economic stability. Encouraging private sector investment was highlighted in the discussions as an important action to help advance change, with goals that included:

- Encouraging investment in the smallholder farmer to reduce poverty;
- Promoting investment in small and medium enterprises in the middle of the supply chain to increase food security and encourage rural economic development;
- Incentivizing opportunities for growth and economic development; and
- Creating centers for agribusiness.

Action is needed at senior levels to expand market-based mechanisms for investment, both through appropriate financial products and direct entrepreneurial investments to realize these goals. Representatives from the private sector have indicated strong interest in playing more of a role in advancing change. A first step identified was the need to engage in more targeted conversations with senior private sector leaders to better understand key concerns and opportunities such as:

- Barriers to private investment in agri-food supply chains and how to overcome them;
- Opportunities for reducing risk;
- The role of the private sector in local infrastructure investments; and
- Demand-side management opportunities.

These conversations can take place at the local, regional, national, and global levels to help understand and define the right role for the private sector in individual countries and across Africa.

Financial institutions have an important role in creating action around private sector investment at all scales, particularly through risk reduction. National governments were also identified as a key catalytic force for change. Overall, new partnership models may be needed for Africa. Whether they are public-private partnerships, innovative ventures among partners along the supply chain, or partnerships between private sector investors and CSOs, new models can promote additional investment and growth among

small, medium, and large businesses in Africa. It was noted that these models may look different from those seen in other regions of the world.

Engage African Youth in Agricultural Entrepreneurship

There is both a great need for and a potential that could be realized from the engagement of youth in the agricultural sector. Agriculture offers a mechanism for building skills and accessing education and training opportunities for a generation of youth that is key to the future of Africa. One action necessary to attract youth is to redefine the agri-food sector to reflect the promise it holds for business and mechanical skills, rather than for the manual labor of subsistence farmers. A concentrated effort to rebrand the opportunities, update educational curricula, and engage the younger generation workforce is needed. Specific actions identified include:

- Setting up demonstration farms (including fish and poultry farms) to show how money can be made in agriculture;
- Replicating existing youth "agripreneur corps" that are growing in the private sector;
- Conducting focus groups to interact with young people and explain how they could enter into agriculture;
- Promoting the development of relevant skills starting at the high school level; and
- Modernizing educational programs, including integration of business skills into existing coursework.

Promote Regional and Subregional Cooperation

Engage national leaders, regional economic cooperation organizations, and other key players in policy discussions to address opportunities and challenges that span national boundaries. These discussions could address a range of issues that are particularly relevant at a regional level, such as:

- Cooperating on research and development across agroecological zones;
- Encouraging intra-African food and agriculture trade, particularly to address times of surplus and deficit;
- Developing regional investments in infrastructure in support of food systems, particularly for small and medium enterprises; and
- Exploring opportunities for efficiencies of scale, for example for regional data collection on soil health, water availability, and other natural resource information needs.

A next step is to identify one or more regions that are interested in exploring some of these opportunities.

Conclusions

This is a time of great excitement about the potential of African agriculture. Multiple African countries are demonstrating how to unlock this potential and realize the tremendous opportunities for agriculture and agri-food systems to provide food and nutrition for Africa, to provide economic opportunities for Africa's population including its women and youth, to contribute to the growth and stability of national economies, and to play a strong long-term role in the future challenges of feeding a growing global population.

During this Year of Agriculture and Food Security in Africa, African leaders have come together to refocus and recommit to measurable progress in agricultural and agri-food transformation, and stakeholders across Africa can unite around a set of concrete actions. The next phase of CAADP should continue to support, accelerate, and strengthen transformations at the national and regional levels.

Drawing from the lessons learned about successful interventions to drive agricultural productivity increases and poverty reduction, African leaders are working together to create an enabling environment that will help catalyze progress in African agri-food systems. Lessons need to be shared more broadly, innovation is needed to adapt lessons to different national contexts, private sector investment needs to expand, and collaboration across sectors and stakeholder groups is required to scale up successes across Africa. Visionary leadership and hard work needs to be supported by relevant data and systems that inform decisions and allow experimentation to determine which interventions work best.

The November 2013 discussion in Ethiopia was clear – African leaders must raise their collective voices in global, continental, regional, and national discussions to articulate a clear vision and agenda that all stakeholders can support and hold each other accountable. Partners at all levels and across the public sector, the private sector, and civil society have key roles to play in implementation and driving success. Together, we are witnessing the dawning of a new era for African agriculture and food systems.

Appendix A: Participant List

Akinwumi Adesina
Minister of Agriculture and Rural Development,
Federal Republic of Nigeria

Aggrey Ambali
Director, Policy Alignment and Programme Development Directorate and Advisor, NEPAD Science and Technology,
New Partnership for Africa's Development
(NEPAD)

Kofi Annan
former UN Secretary General and Chairman,
Kofi Annan Foundation

Ousmane Badiane
Director for Africa,
International Food Policy Research Institute
(IFPRI)

Khalid Bomba
Chief Executive Officer,
Ethiopian Agricultural Transformation Agency

Arne Cartridge
Director,
Grow Africa

Guang Zhe Chen
Country Director for Ethiopia,
World Bank

Dyborn Chibonga
Chief Executive Officer,
National Smallholder Farmers' Association of Malawi (NASFAM)

Sean de Cleene
Senior Vice President, Global Initiatives, Strategy and Business Development,
Yara International

Sir Gordon Conway
Chair in International Development and Director, Agriculture for Impact,
Imperial College London

Nkosazana Dlamini-Zuma
Chairperson,
African Union Commission

Ian Donald
Chief Executive Officer,
Nestlé Equatorial Africa Region

Sam Dryden
Senior Fellow,
Bill & Melinda Gates Foundation

Chris Elias
President, Global Development Program,
Bill & Melinda Gates Foundation

Eleni Gabre-Madhin
Chief Executive Officer,
eleni LLC

Daniel Gad
Managing Director,
Omega Farms

Clement Kofi Humado
Minister of Food and Agriculture,
Republic of Ghana

Jane Karuku
President,
Alliance for a Green Revolution in Africa (AGRA)

Mitiku Kassa
Ethiopian State Minister of Agriculture,
Federal Democratic Republic of Ethiopia

Michael Mack
Chief Executive Officer,
Syngenta

Adam Malima
Deputy Minister for Agriculture, Food and Cooperatives,
United Republic of Tanzania

Strive Masiyiwa
Board Member,
Alliance for a Green Revolution in Africa (AGRA)

Tjada McKenna
Acting Assistant Administrator, Bureau for Food Security,
U.S. Agency for International Development (USAID)

Sipho Moyo
Africa Director,
ONE

David Nabarro
Special Representative,
UN Secretary General for Food Security and Nutrition

Jay Naidoo
Chair,
Global Alliance for Improved Nutrition (GAIN)

Rebecca Nelson
Professor of Plant Pathology, Plant Breeding and International Agriculture,
Cornell University

Kanayo Nwanze
President,
International Fund for Agricultural Development (IFAD)

Gary Quince
Head of Delegation,
Delegation of the European Union to the African Union

Maria Helena Semedo
Deputy Director General and Regional Representative for Africa,
Food and Agriculture Organization of the United Nations (FAO)

Susan Sikaneta
Zambian Ambassador to Ethiopia

Sheila Sisulu
former Ambassador of the Republic of South Africa to the United States; former Deputy Executive Director for Hunger Solutions, World Food Programme

Ishmael Sunga
Chief Executive Officer,
Southern African Confederation of Agricultural Unions (SACAU)

Tesfai Tecle
Senior Advisor to the Chair,
Kofi Annan Foundation

Modibo T. Traore
Sub-regional Coordinator for Eastern Africa, Food and Agriculture Organization of the United Nations (FAO) and FAO Representative to the African Union and the Economic Commission for Africa

Rhoda Peace Tumusiime
Commissioner for Rural Economy and Agriculture,
African Union Commission

Presenters

Boaz Blackie Keizire
Senior Advisor and Team Leader, Pan African Agricultural Reform Program, Comprehensive Africa Agriculture Development Program (CAADP),
African Union Commission

Thomas Reardon
Professor, Department of Agricultural Economics,
Michigan State University

Facilitation Team

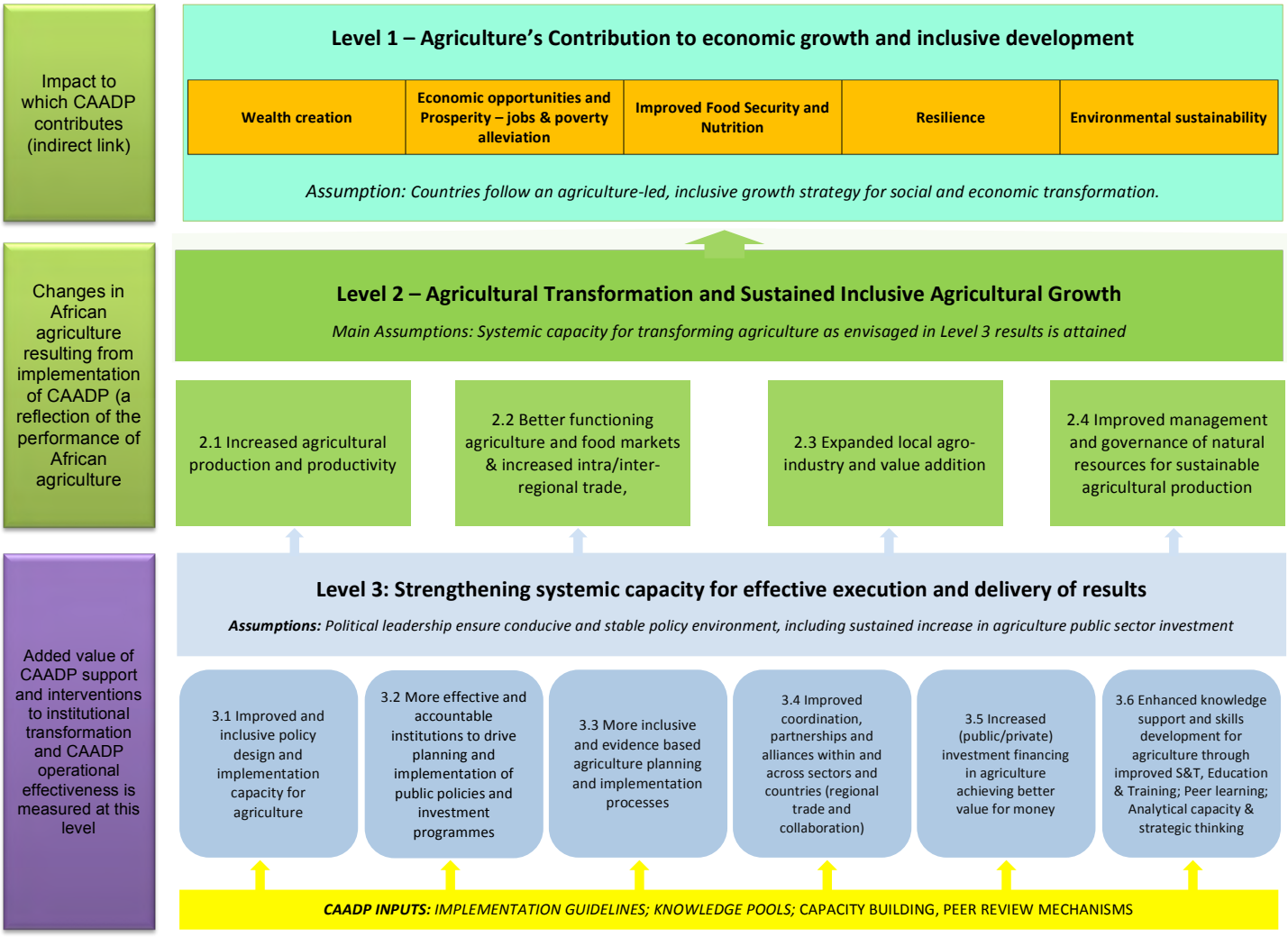
Mandivamba Rukuni
Professor,
Barefoot Education Afrika Trust (BEAT)

Molly Mayo
Partner,
Meridian Institute

Rex Raimond
Senior Mediator and Program Manager,
Meridian Institute

Danielle Youngblood
Project Coordinator,
Meridian Institute

Appendix B:
CAADP Results Framework



Appendix C:
DRAFT "African Agriculture: Drivers of Success for CAADP Implementation," Preliminary Findings Presented by Boaz Keizire-Blackie of the African Union Commission (November 2013)

The following draft Executive Summary was circulated to meeting participants on 22 November 2013 to accompany the presentation made by Mr. Keizire-Blackie on 26 November 2013. The draft herein presents preliminary findings under development as part of a study by the AU to better understand the drivers of success for African agricultural development at the country level. The ideas have been updated since the meeting and the final report will be available for download once finalized at: www.merid.org/Africanagricultureandfoodsystems/Background_Documents.aspx

Draft Executive Summary (November 2013)

The Comprehensive Africa Agricultural Development Programme (CAADP established by the AU Assembly in 2003 focuses on improving food and nutrition security, and increasing incomes in Africa's largely farming based economies. It aims to do this by raising agricultural production by at least 6% per year and increasing public investment in agriculture to 10% of national budgets per year.

Ten years after its introduction thirty-five countries have successfully signed up to country-level agricultural policy and strategy commitments called, CAADP Compacts, and a good proportion have followed through to investment. The seriousness with which agricultural growth is being pursued is intensifying. In four of our seven countries the real attention to agriculture has come since 2007. In one (Tanzania) there is still a pressure on execution. Understanding the nature of what is driving agricultural growth is still elusive and the pace appears to be slow, indeed a good proportion of countries have not fulfilled their Maputo commitments. If indeed the process is underway, then how can it be sustained to enable growth that translates into food and nutritional security, poverty alleviation, less hunger and undernourishment and more sustained use of our environmental resources?

Many studies have focused their efforts on looking at particular commodity successes such as hybrid maize in East and Southern Africa, Mali's cotton sector and cassava in West and Southern Africa. Others have focused on technological innovations such as conservation farming methods and improved soil fertility. Recent initiatives such as the New Alliance for Food Security and Nutrition have corralled policy support for private sector investment in agricultural value chains through improved country level leadership, cooperation frameworks, coherent monitoring and evaluation, and ensuring that institutional pace and the necessary capacity are joined up. Building on this work and the CAADP philosophy of country led solutions, the African Union commissioned a series of studies that seek to analyse the level of public expenditure committed to agriculture, and to identify thematic investment areas that may drive agriculture related growth, and to analyse the key drivers of success in a number of selected countries, including the public management capacity to implement agricultural strategies as well as the political drives behind them.

This report represents the latter of these studies and presents a synthesis across seven country case studies of Burkina Faso, Ethiopia, Ghana, Nigeria, Rwanda Sierra Leone and Tanzania. The study

provides examples of agricultural success and the drivers for it in specific contexts. It examines the proximal drivers of this success, efforts to build public management capacity for policy development and implementation and the political factors that have contributed to agricultural success.

The seven countries were selected based on high growth in agricultural production, along with initial comparative data and expert opinion suggesting a variation in their starting points, key value chains, geographic regions and types of farmers involved in agriculture. The study approach put an emphasis on critically analysing the success stories and identifying examples of both success and limited progress within countries. The definition of 'success' was provided by the CAADP Results Framework that defined success where increasing agricultural production is associated with increased food access and food and nutrition security, wealth creation, poverty alleviation and improved resilience including better functioning markets, trade and increased private sector engagement. Country case studies explored the following questions:

i. What is the nature of success in agricultural transformation, in the selected countries, over the period 2000-2013?

ii. What are the key changes in agricultural growth, public investment, and public sector management during this period, which are able to explain the levels of agricultural growth and associated welfare outcomes that are observed?

iii. What are the key political factors that encouraged commitment to agricultural development, in response to emerging opportunities?

Drivers of Agricultural Success

1. Fastest Agricultural Growth

Clearly countries in which case studies were carried out are all at different starting points in their agricultural development cycles. In some cases the differences in context may relate to the presence of mineral exports (Nigeria, Tanzania, Sierra Leone) or post-conflict economic conditions (Sierra Leone). Despite these differences, all seven case study countries are high achievers, in terms of agricultural growth. All seven have experienced greater agricultural growth since 2000 than most other African countries. Agricultural growth rates in Nigeria and Ethiopia have been above 6% per annum and Burkina Faso, Sierra Leone, Tanzania and Ghana between 4.0 and 5.2%. The average across the continent since 2000 is 3.8%.

Agriculture is a major contributor of GDP in the countries selected for study with 26% contributed in Ghana and as much as 46% in Ethiopia, compared to a 14% average across the continent. Whilst this is encouraging, the share of agriculturally contributed GDP is falling as a proportion of the economy. This precisely follows the development path and illustrates the transitional nature of a number of these economies.

2. Countries can be divided according to whether increases in the cultivated area of crops or increases in crop yields were the primary source of agricultural growth.

Crop production subsectors account consistently for 75% agricultural GDP. In three of the case study countries (Burkina Faso, Sierra Leone, Tanzania), the increase in staple food production is primarily due to increases in the area under cultivation of these crops rather than increasing yields. By contrast, in Ethiopia, Ghana and Rwanda the increase has been driven primarily by increasing yields within smallholder staple crops.

3. Livestock are growing due to increases in Livestock Populations rather than more productive or efficient breeds and fisheries play a small but increasingly important role in agricultural food and nutritional security systems.

From case study information post-harvest processing and value-addition added comparatively little to agriculture GDP growth.

4. Smallholder farmers have driven agricultural growth.

Smallholder farmers represent the majority of farmers in case study countries contributing up to 90% of production. They are therefore responsible for most of the agricultural growth emanating mainly from staple foods – from cassava and yam to maize and rice. Smallholders have also driven growth in cash crop production where policies and investments have been supportive – in countries such as Burkina Faso, Ghana and Sierra Leone. In Tanzania and Ethiopia large commercial farms actively participate in cash crop production and production of cut flowers. The private sector can also enable smallholders to contribute to and benefit from commercial value chains throughout-grower schemes.

5. Where agricultural growth is driven by productivity improvement, it is most clearly associated with improved food security, nutrition and poverty alleviation.

Indicators for rural poverty, hunger, adult undernourishment and underweight children have all improved significantly since 2000 for Ghana, Rwanda and Ethiopia, the countries where

agricultural growth has been most clearly driven by productivity improvement. By contrast, Burkina Faso has achieved good progress in rural poverty reduction, but has made the least progress in nutrition indicators. Tanzania, Nigeria and Sierra Leone have made moderate to good progress in nutrition indicators, but performance on rural poverty reduction has been weak in Tanzania and Nigeria. Case studies found evidence that growth has provided greater availability of food and self-sufficiency in Rwanda and Sierra Leone. Obviously, interventions in sectors other than agriculture also influence poverty and nutrition outcomes. Nevertheless, the association between agricultural productivity growth and desirable welfare outcomes is consistent with broader international experience.

6. **Agricultural growth has been enabled by a number of proximate drivers.** The case studies identified a number of opportunities for governments to stimulate agricultural growth:

   a) **Improved access to inputs:** Farmers need access to inputs (seed and fertilizer), knowledge, and the fruits of research and development to increase their yields and/or cultivate new areas. Evidence suggests that fertilizer use is increasing in Ethiopia, Ghana and Burkina Faso illustrating that input policies in these countries are working but in some cases there are still challenges related to its affordability and limited uptake in dry arid areas. In Nigeria innovative e-wallets are now being used to stimulate private enterprise development in domestic supply chains, but it remains to be seen if this is a more effective way of getting fertiliser to the majority of smallholder farmers than governments being more closely involved in input provision and distribution efforts.

   b) **Research and extension:** Investing in the development of global public goods through research.

   - Agricultural research is required to produce new technologies that are valuable to farmers. Over the study period there were significant increases in research investment in Nigeria, Ghana and Tanzania. Overall funding levels per researcher – one indicator of motivation and capacity for high quality research – are much higher in Nigeria, Ghana and Rwanda than in the other countries. The Ghana case study shows an impressive list of new varietal releases across a variety of crops as an indicator of the effectiveness of the research effort.
   - Agricultural Advisory Services and Extension Systems appear to be key to getting information to farmers that they can use to improve their production levels. Ethiopia has invested heavily in extension with beneficial results, and Rwanda has also prioritized extension. However, figures on the number of extension workers per unit of population are currently inadequate or non-existent.

   c) **Rural infrastructure:** Access to these goods and services, and the ability to exchange outputs – staple foods and cash crops – rests on the ability to access markets, storage and processing facilities. This means investing in roads and other rural infrastructure.

   d) **Enabling environment for the private sector:** The private sector can play a role in helping farmers access these, but they also rely on rural infrastructure and support in sharing the risks associated with delivering commercial services to the 'bottom of the pyramid' – both types of public goods.

   e) **Natural resource management:** Finally, agricultural growth is also enabled by investing in natural resources to address soil erosion, restore forests and woodlands, protect water resources and adapt to climate change. This may become more important in the future as agricultural growth sees an increase in the use of inputs and cultivation of more land.

Public Institutions and Investment for agricultural growth

The study investigated commonalities and differences in the public management of how governments have pursued investment, how bureaucratic structures and procedures are working to support implementation of agricultural policies and efforts or initiatives that have improved these structures and procedures. Strategies to drive agricultural growth are highlighted as well as common institutional constraints. State institutions in the delivery of CAADP represent a number of bureaucratic models, which differ in their degree of centralization or decentralization and their approaches to agricultural development. Within the seven countries studied there are both centralized and liberal models at play. The latter model is represented by two different types which differ in growth led by the private sector (e.g. Ghana) or where the state takes a pro-active, strategic role such as in market development (e.g. Burkina Faso).

7. **Public Institutions.** Centralized bureaucratic models for implementing agricultural growth (Ethiopia, Rwanda) tend to have a higher capacity for policy design and implementation, public investment, and political control. However policy-making processes may be less inclusive and the private sector generally

lacks incentives to engage effectively in agricultural development, thereby compromising the potentially greater gains to be had if both inclusive policies and private sector incentives were in place. Liberal models may feature a proactive state role for market development and regulation or employ a laissez-faire approach. Strategic policies and public-private partnership are necessary to facilitate private sector engagement and to ensure that areas with low agricultural potential also benefit from agricultural growth initiatives. However these require state-guided policy and institutional reforms that are sensitive and supportive of private sector and smallholder farmer needs. Coordination and cohesion are challenges in structures where multiple agencies have responsibility for the same functions, which leads to challenges in management, resource efficiency, and accountability.

8. **Public Investment in Agriculture.** Public goods are non-targeted investments (infrastructure, research, extension, capacity building) viewed as key to increasing productivity and as having a greater impact on sustainability. Transfers and subsidies include direct or indirect support (for farm inputs, mechanization, and irrigation) and are associated with shorter-term outcomes and reduced sustainability. A balance of public goods investments and transfer/subsidy expenditures are needed to promote agricultural growth. Their appropriate combination and timing depends on local needs, capacities, and the nature of public versus private involvement in achieving agricultural growth.

9. **State Strategies for Agricultural Growth.** Creating an enabling environment for the private sector to engage in agricultural growth has policy and budgetary dimensions. It may involve interventions at the level of national tax policy, import and export regulation, and establishing national standards and certification systems. It may also include investments in public infrastructure necessary for both large and small holders to access inputs and participate in markets. Research and extension services are also key to strengthening access and utilization of high quality farm inputs and improved agricultural practices and technologies. Access to credit is essential for both large-scale and small holder farmers to invest in capital improvements to increase agricultural yields and engage in processing, storage, and marketing activities. The state has a role to play in supporting national-level financial institutions and also in ensuring that cooperatives and small holders have access to appropriate financial instruments (e.g., credit, insurance). State intervention is needed especially in private-sector-driven models to ensure that investments in large and small holder agriculture are balanced and do not result in negative unintended outcomes such as crowding out.

10. **Institutional Drivers for Agricultural Growth.** Across the seven case studies a number of institutional drivers have been identified that lead to agricultural growth. These include: creating an enabling environment for the private sector; encouraging broad participation in policy processes; building capacity and giving more control at the local level; putting in place effective accountability mechanisms; establishing a culture of learning; and supporting effective vertical and horizontal coordination systems – all of which are principles enshrined in CAADP.

11. **Institutional Barriers to Agricultural Growth.** The seven case studies also gave insights regarding the key barriers to growth. These include: inadequate or poorly executed budgets; weak accountability systems; low managerial and technical capacity among government staff; limited investment in agricultural research; insufficient investment in infrastructure and public goods; and poor vertical and horizontal coordination.

The Political Context of Agricultural Growth

The final section of the paper seeks to understand the political dynamics and incentives that have supported agricultural growth – and, perhaps even more importantly, broad-based, productivity-led agricultural growth – in the seven case study countries. It makes two distinctions for purposes of analysis:

- Countries where competitive electoral pressures are either strong or increasing (Ghana, Tanzania, Sierra Leone and Nigeria) vs. those where they are more limited (Ethiopia, Rwanda), with Burkina Faso intermediate between the two. This distinction relies on pre-existing databases and indicators;
- Countries that have demonstrated high political commitment to invest in agriculture throughout the past decade (Burkina Faso, Ethiopia, and Ghana) vs. those where an increase in commitment to the sector has been observed more recently (Nigeria, Rwanda, Sierra Leone and Tanzania). This distinction is based on data on public expenditure on agriculture as a share of national budget, plus qualitative insights from the country case studies.

Earlier sections of the report have emphasised the importance of public goods investments to support increases in productivity amongst smallholder agricultural producers and hence achieved desired poverty reduction and nutrition outcomes. However, a key attribute of many public goods investments – whether they be in agricultural research, enhancing the performance of extension systems or building the capacity of state institutions to design,

evaluate and adapt policy – is that they take several years to show a clear payoff. It could take 7-10 years from the beginning of work on a new crop variety for that variety to end up in farmers' hands. Systemic reforms to an extension system may take a similar period before farmers see a sustained improvement in service. These timeframes are well beyond those of most electoral cycles. If such investments are to be made, therefore, either a government needs to have a medium-term perspective (implying a sense of security about its prospects at the forthcoming election) or institutional mechanisms need to be in place to insulate investment in key public goods from the most acute pressures of short-term electoral politics.

In Rwanda and Ethiopia the strong incentives for investment in agriculture are attributed in part to the fact that both governments have faced credible armed threats from within and/or outside their borders. Broad-based growth has been (and remains) vital for them to establish their legitimacy in the eyes of their populations and undermine any latent support amongst their populations for these armed threats. Both governments also have ambitious plans for economic transformation as a key contributor to political transformation. This means that both are also in a hurry to achieve agricultural growth. These conditions - combined with the fact that both governments are currently fairly firmly established in power - are conducive to public goods investment, as this is the most efficient way to stimulate rapid, medium-term growth. Examples of this are the long-standing commitment to investment in agricultural extension in Ethiopia (unparalleled in Africa) and the nationwide effort to terrace hillsides and rehabilitate valley bottoms for irrigation in Rwanda. However, the high priority given to agricultural development in Rwanda is a more recent phenomenon than in Ethiopia: two poor harvests in the early 2000s followed by disappointing poverty figures in 2006 catalysed the government to translate previous policy statements about agriculture into concerted action.

Burkina stands out as a country where producers' organisations have agitated for effective service delivery from the state. In Ghana civil society is increasingly vigilant regarding state behaviour. This trend can be expected in most of the case study countries in the future.

The governments of Ghana, Nigeria, Sierra Leone and Tanzania are all subject to strong competitive electoral pressure. In the last three of these, the focus on delivering services to smallholder farmers is a fairly recent phenomenon. However, we argue that the current emphasis on agricultural investment and growth in all four countries is driven in part by competitive electoral pressures. The governments in all four countries now recognise the need to make an appeal to their electorates on the basis of their ability to deliver growth and the agricultural sector is important not just to the macro economy, but also to the livelihoods of a large proportion of the electorate.

We suggest that one of the reasons why leaders in these countries – but not plenty of others - have decided to pursue agricultural growth as a basis for appealing to the electorate, is that there are stable, institutionalised political parties in all four countries. This means that competitive politics is a "repeated play game" and gives parties and their representatives an incentive to establish a reputation for delivering growth.

If a party or government decides to present itself as one that will deliver agricultural growth, the biggest obstacle that it has to confront is low state capacity to implement policies and deliver effective services. In all the countries in this study, efforts have been made in recent years to enhance the state's capacity to design and/or implement effective agricultural policies. The challenge of low capacity means that governments have to identify "quick wins" to improve the design and/or implementation of effective agricultural policies. However, in order to sustain growth performance, they also have to embark on the more challenging tasks of reforming internal systems and processes and building the personnel and skills base of state agencies.

A second challenge is how to protect public goods investments – that may take several years to deliver clear benefits - from the inevitable pressures to think "short-term" that accompany competitive electoral politics. The Ghana case study suggests that institutional arrangements can be devised to accomplish this, although the precise nature of these is likely to vary from country to country

Finally, whilst the section narrates the case study countries' agricultural performance in terms of the particular incentives (and threats) facing their governments, this is not intended to diminish the role of political leadership in the success that has been achieved. Rather, the role of political leadership is to discern the opportunities and threats facing their country and their party, to define a vision and strategy that responds to these and then to lead others to take the steps necessary to implement the vision and strategy. Over the coming decade we can expect African electorates to become more demanding of their political representatives, as education levels rise, civil society groups become stronger and voters learn from cumulative electoral experience. The opportunities are thus there for political leaders to establish reputations with rural voters (still the majority in most of the case study countries) as those who deliver on agricultural transformation.

Appendix D: "The Emerging 'Quiet Revolution' in African Agri-Food Systems" Presented by Thomas Reardon of Michigan State University (November 2013)

T. Reardon[a], D. Tschirley[a], B. Minten[b], S. Haggblade[a], C.P. Timmer[c], S. Liverpool-Tasie[a]

a, Michigan State University, b, IFPRI, c, Harvard

The following document was provided to meeting participants to accompany the presentation made by Professor Thomas Reardon. The document can also be downloaded at: www.merid.org/Africanagricultureandfoodsystems/Background_Documents.aspx

Brief for "Harnessing Innovation for African Agriculture and Food Systems: Meeting Challenges and Designing for the 21st Century"; 25-26 November 2013, African Union Conference Centre, Addis Ababa, Ethiopia

1. Introduction: the central need to leverage urbanization and diet diversification to promote rural-urban supply chains and rural growth as solutions to rural poverty

a) The well-known problems. It is common knowledge for decades that rural Africa faces formidable problems of poverty and malnutrition, inadequate farm yields, low use of fertilizers, certified seed, and irrigation, and often poor roads and other infrastructure. We acknowledge those problems.

b) The emerging opportunity. Broad-based rural economic growth offers Africa's best opportunity for overcoming the problems of rural poverty. To do that rural suppliers need to sell to sources of dynamic, growing demand: typically rural purchasing power is too limited to propel a rural area out of poverty by rural suppliers just producing for themselves and their local market alone. This brief focuses on the new opportunity of farmers, via rural-urban food supply chains, to link to the massive and growing and diversifying urban food market in Africa. Those supply chains are two way super-highways – bringing food and fiber one way, and an avalanche of money the other way, back to the producers at every step in the chain – to the farmers, truckers and wholesalers, warehouse and cold store operators, and processors. This avalanche of income fuels – and will fuel far more as time goes on – grass-roots investments (much of it in rural areas or rural towns) by these millions of small and medium producers in the midstream and downstream segments of the rural-urban supply chains, in farming, and in the input supply chains. This can lead to rural growth that spreads out in ripples to the poorest of those in the dynamic areas and also over time to the hinterlands. African policymakers have a major new opportunity in leveraging and encouraging this enormous development.

c) The process: African agrifood systems are transforming as part of "five interlinked transformations":

1. urbanization,
2. diet diversification,
3. food supply chain transformation,

4. factor market change, and
5. emerging intensification of farming.

We treat these in turn.

2. **Urbanization in (Sub-Saharan) Africa has caught up with the average urban share in population of all developing countries – and urbanization in Africa is growing faster than in the rest of the developing world.** Of course sub-regions differ; Eastern and Southern Africa's (ESA) urbanization is only at South Asia's rate in the 1980s, Central Africa and West Africa's is at Southeast Asia's today. This rapid urbanization took place before in a context of stagnant economies, but since around 1998, it has been paired with robust economic growth. The combination of these two dynamics is a game-changer for African development.

3. **Surprisingly and very importantly for agriculture, viewed from the perspective of total marketed-food markets, African urban areas are already the majority of the African overall food economy:** in West Africa, the urban share in overall population is about 50%; we calculated that urban share in all food consumption (purchased/marketed and home-consumption/production) is about 60%, and urban share in purchased/marketed food is roughly 70%, - like Southeast Asia currently. In ESA, the respective shares are 30% (population), 40% (total food), and 50% (marketed food), roughly. For overall Africa then it appears to be roughly 40%-50%-60% - similar to developing countries in Asia. That is, African farmers face a majority-urban market when selling food! This means that the rural-urban food supply chain went from an interesting but marginal story in the 1980s to a major fundamental food security theme in the 2010's. It is also surprising to think about how important the local and African regional urban market is compared with the global export market: the global export market is roughly 5% or at most 10% of marketed food supply, compared to the 60% that is the urban share. That is a signal for policymakers to see the urban market as at least as much an opportunity as the export market, and more accessible to small farms and local food processing firms.

4. **The first piece of good news about the nature of African urbanization is that while large-cities (above one million population) are proliferating, their share in total urban population in Africa is declining – with secondary cities and rural towns making up most of the difference.** This is good news because it is closer to the Taiwan urbanization path of "de-centralized urbanization" that can more effectively "spread the wealth" around to surrounding rural areas that find smaller cities and towns more accessible markets than large cities, with more spin-off effects to surrounding rural areas for rural nonfarm employment generation and growing markets for fruit and vegetables as well as meat, fish and dairy.

5. **The second piece of good news about the nature of African urbanization is that it is accompanied by rapid growth in urban incomes and the middle class itself, and by urban (and to a lesser extent rural) diet diversification. These trends are similar to those found in Asia, with Asia just somewhat ahead in the same trends below.**

a) On one hand is diet diversification beyond basic grains. Of course Africa is no newcomer to diet diversification. Maize, cassava, yams, potatoes, bananas, tomatoes, and chilies are all non-African in origin, non-traditional, brought relatively recently to Africa from South America and Asia; only teff, millet, sorghum, watermelons, okra, palm oil are big "originally African" items. But the new wave in the past several decades of diversification is a major thrust beyond grains as incomes grow – into yams and potatoes, into fruits and vegetables, into poultry and beef and mutton and fish, into dairy and eggs, and into edible oils. This diet diversification means new and more sources of caloric energy, but also micronutrients. On the supply side, it means major income gains for farmers, as producing and selling to towns and cities their meat or dairy or fruit earns a farmer 5 to10 times more per hectare than grains. This is a major source of income for rural development.

b) On the other hand is diet diversification, with African consumers buying processed foods in a substantial way, and shopping at supermarkets in an emerging way. As in other developing regions, this shift is led by urban consumers. It is driven by the quest for convenience as women enter the labor force, adding thus to family incomes but also reducing their time for preparation and shopping, and men work away from home. The challenge of this trend is that without care for methods and nutritional quality of ingredients, the shift to processed foods (and more meat) can and already is leading to problems of obesity and related health concerns, as in the rest of the world. The opportunity of this trend is that the value-added income from processing is an important boost to agrifood economy incomes. We find that technology improvements in processing also bring more efficiency and lower food prices, and opportunity for some firms to expand from backyard/backroom enterprises to medium and small enterprises that become a backbone to supply chains as we discuss next.

6. The third piece of good news is that rural-urban food supply chains are developing rapidly to meet urban demand.

a) The post farmgate segments of the supply chain – the midstream segment (processing and wholesale/transport) and downstream (retail and food stalls) - together form 50-70% of food costs to urban Africans. That means that these actors are as important as farmers for national food security.

b) Where this post farmgate supply chain has failed or been constrained, this has blocked the success of well-designed rural and crop development efforts, such as a famous case where cowpea production in Senegal was promoted by government, NGO, and donor efforts, but the cowpeas rotted on the side of the road for lack of a link to market.

c) By contrast, we have found that – seemingly largely "under the radar" of the development debates - there is emerging a "Quiet Revolution" in supply chains, with 10's of 1000s of small and medium scale enterprises (SMEs) in trucking, wholesale, warehousing, cold storage, first and second stage processing, local fast food, and retail, making major investments in recent years! We have been surprised to see how similar this is – and similarly not yet central in the national debates – to what we recently observed in Asia (often occurring just in the past 5-7 years), which is somewhat ahead of Africa, but going in the same direction of grass-roots revolution supply chains. Exciting examples have been cited to illustrate explosive growth in only 5-10 years:

- ***Teff in Ethiopia:*** An explosion of growth has occurred in only the past 5-10 years in the teff value chain to Addis Ababa, with the proliferation of SME mills-cum-retailers in Addis and rapid transformation all along the teff supply chain leading to: (i) increasing adoption of modern inputs (chemical fertilizer, improved varieties, and herbicides) by farmers, especially by those living close to urban centers; (ii) rising quality demands and important shifts from the cheap red varieties to the more expensive white ones; (iii) increasing willingness-to-pay by consumers for convenience in urban areas, with rapid emergence of one-stop retail shops that provide sales, cleaning, milling, and transport services, as well as by a sizable foodservice industry; (iv) the share of rural–urban marketing, urban distribution, and milling margins in final retail prices is declining, indicating improved marketing efficiency over time.[1]
- ***Wheat and maize flour mills, and wholesale markets and transport SMEs, in Ethiopia:*** (1) In the past decade there has been an explosion of growth in private commercial flour mills in Ethiopia. Until the early 1990s, all commercial flour mills were owned by the government and there were no private sector-owned flour mills; private mills started to emerge in the early 2000s. By 2008, there were 65 large commercial flour mills, together milling about 30% of marketed grain; a third of these mills are in Addis.[2] (2) The government built a new modern wholesale market outside the city (the Ashwa Meda market). It is estimated that a significant part of the cereal trade has been diversified to this wholesale market. Existing markets have also often expanded. In a study on dynamics of cereal wholesale markets in Ethiopia over the last decade, focus groups reported that the number of the trucks increased over the ten year period by 67 percent and 79 percent in the peak period and lean period, respectively. The number of traders and brokers that operate on these markets also increased significantly. They were reported to have increased by respectively more than 100 and 200 percent over that period, possibly suggesting increased trade as well as greater competition and lower turnover per trader and broker compared to ten years ago.[3]
- ***SME maize processors in Kenya, Zambia, and Zimbabwe:*** Over the past two decades there has been the emergence of thousands of SMEs, driving down maize processing margins.[4]
- ***Fertilizer SMEs in Kenya:*** Fertilizer market liberalization in the early 1990s initiated the rapid emergence of SMEs in the fertilizer supply chain – with 500 fertilizer private wholesalers and 7000 fertilizer private retailers by 2008, inducing a 50% fall in fertilizer marketing margins and 60% decrease in distance from farms to fertilizer retail points over the 1990s and early 2000s.[5]

1 Bart Minten, Seneshaw Tamru, Ermias Engida and Tadesse Kuma. 2013. "Ethiopia's Value Chains on the Move: The Case of Teff." Ethiopia Strategy Support Program II Working Paper 52, April 2013, International Food Policy Research Institute, Ethiopia.

2 Shahidur Rashid and Asfaw Negassa. 2011. "Policies and Performance of Ethiopian Cereal Markets." Ethiopia Strategy Support Program II, Working Paper 21, May 2011, International Food Policy Research Institute, Ethiopia.

3 Bart Minten, David Stifel, and Seneshaw Tamru. 2012. "Structural transformation in Ethiopia: Evidence from cereal markets." Ethiopia Strategy Support Program II, Working Paper 39, May 2012, International Food Policy Research Institute, Ethiopia.

4 Thomas S. Jayne, et al. 2010. "Patterns and Trends in Food Staples Markets in Eastern and Southern Africa: Toward the Identification of Priority Investments and Strategies for Developing Markets and Promoting Smallholder Productivity Growth." International Development Working Paper 104, Michigan State University, East Lansing.

5 Joshua Ariga and Thomas Jayne. 2009. "Private sector responses to public investments and policy reforms: The case of fertilizer and maize market development in Kenya." IFPRI Discussion Paper. International Food Policy Research Institute, Washington, D.C.

- ***Millet value chains in Senegal:*** There has been a rapid transformation in the millet supply chain in Senegal with the rise in the past 5 years of branded packaged millet and millet-cum-dairy products for the Dakar market (importantly in supermarkets as drivers of demand for this) and even into export markets.[6]
- ***Chicken supply chains in Nigeria and Mozambique:*** There has been a rapid transformation of the chicken supply chain into urban Nigeria with the rise of companies like Zartech who in turn link to small farmers,[7] and into urban Mozambique with a wide range of local and regional poultry companies.[8]
- ***Sorghum beer brewing SMEs in Southern Africa:*** There has been a rapid rise and transformation of the sorghum beer market with backyard brewers transforming into wide-ranging small and medium companies in several countries in Africa. Note that government investment in food technology research was important to this transformation – with South Africa's Council for Scientific and Industrial Research CSIR) playing a key role in study of sorghum malting and brewing, enabling factory brewers to scale up production to industrial scale.[9]
- ***Dairy related SMEs in Kenyan and Zambia:*** There has been a rapid rise of dairy input and processing companies, linked to small farmers, in Kenya and Zambia in the past decade. SMEs have emerged to supply improved feeds, artificial insemination and veterinary services, and processing and packaging facilities and in raw milk distribution systems.
- ***SMEs processing cassava in Nigeria and Ghana:*** There has been a rapid rise of gari/cassava and palm oil small and medium companies in Ghana and Nigeria; today, SME's (traders, artisans, food processors) sales of gari (pre-cooked convenience food from cassava) constitute half of cassava output in West Africa; in turn, cassava is the largest single source of calories in West Africa; during the 2000s, as hand peeling has become an increasing bottleneck to growth, private cassava processors have adapted continuous-flow abrasion systems used in European potato starch-processing equipment to automate and scale up cassava processing to 5 tons per hour. Moreover, there is new initiative by the Nigerian government to support small/medium second stage processors of cassava.[10]
- ***Horticultural product processing SMEs in Rwanda:*** There has been an explosion of SMEs in fruit and vegetables processing and trading in Rwanda in the past decade, for the local and the regional market.[11]

d) We think these rapidly emerging agrifood SMEs are often neglected (the "ignored middle") in the African food debate. They have long thought by researchers and policymakers to be a negligible group, too small a force to count; this perception has gone along with laments from governments and donors of the lack of African grass-roots investments. This widespread view was largely responsible, we think, for turning attention to seeking investment from either parastatals or to multinationals, rather than rely on grass-roots local firms to invest.

e) But, we find (as in the 10 cases above) that there is a surge in African grass-roots companies investing in wholesale, trucking, processing, and storage, and in the medium-long run we think that as in Asia, these will form the backbone of the Quiet Revolution in food systems in Africa. A number of the emerging and already established small and medium food firms will also develop into Africa's Lions in the global food arena, large private companies that will be region-wide and eventually important globally. They will be key to African competitiveness.

f) However, in the words of Ousmane Badiane,[12] these rapidly emerging supply chain actors are only "flying at 20% of their potential altitude". They urgently need major attention to resolve hard and soft infrastructural bottlenecks they face, such as rural wholesale markets, industrial-strength electricity grids, surfaced roads; and regulation and policy reforms to improve their "business climate."

6 Ousmane Badiane, IFPRI, personal communication, 2013.

7 Saweda Liverpool-Tasie, Michigan State University, personal communication, 2013.

8 David Tschirley, Michigan State University, personal communication, 2013.

9 Steven Haggblade. 2011. "Modernizing African agribusiness: reflections for the future," Journal of Agribusiness in Developing and Emerging Economies 1(1): 10-30.

10 Akin Adesina, Minister, Nigerian Federal Ministry of Agriculture, personal communication. 2013. Felix Nweke, Steven Haggblade, and Ballard Zulu, 2004, "Building on Successes in African Agriculture, Recent Growth in African Cassava." Focus 12, Brief 3 of 10, April 2004. International Food Policy Research Institute, Washington, D.C.

11 Ellen Verhofstad and Miet Maertens. 2013. "Processes of modernization in horticulture food value chains in Rwanda." Outlook on Agriculture, Volume 42, Number 4, December 2013, pp. 273-283(11).

12 Ousmane Badiane, IFPRI, personal communication, 2013.

7. **The final piece of good news – but still a very mixed story because of continued challenges – is that farmers are making, in the aggregate, massive, investments in using inputs and irrigation.**

   a) We have found that where farmers are linked to growing urban and regional markets (such as teff in Ethiopia, vegetables in Mali and Senegal, potatoes in Rwanda, dairy in Kenya), they are making investments in soil conservation, building organic matter in their soils, using productivity enhancing improved seeds and breeds and fertilizer, and even investing in irrigation and sometimes machines. We find the farmers growing for subsistence or for just local rural markets often having much less capacity to make these investments. We also find that asset-poor farmers are less able to make the investments needed to keep up for the market; it is probably about the top tier of smallholder farmers that are making such investments.

   b) We found that rural nonfarm employment (about 40%-50% of rural incomes within Africa) is a major purveyor of funds for farm investments. Promotion of this employment will be a major means of helping farmers to fund productivity investments. In fact, this source of cash far exceeds what credit markets purvey.

   c) The continuing challenge is to develop rural factor markets for irrigation, fertilizer, seed, pesticides and herbicides, credit, land preparation services, spraying services, and others. These input supply chains are obviously of extreme importance for the farm supply base of urban supply chains to be vibrant and inclusive.

8. **Overall Implications**

   a) Urban markets now form roughly 60% of the purchased and marketed food market in Africa. That means they are major financers of rural development as this is a river of funds back to rural areas. Rural-urban supply chain actors form 50-70% of food prices in urban markets. So rural-urban food supply chains have become central to food security of African countries. Investment in these chains is as important as investment in farming for food security.

   b) Urbanization combined with income increases and diet diversification provides major opportunities as "motors of growth" for rural areas of Africa. In Asia this major trend has been leveraged to meet the growth and poverty alleviation targets in rural areas.

   c) The small and medium enterprises involved in the distribution and processing segments of the supply chains – are in the midst of launching a "Quiet Revolution" in food supply chains in Africa. They have been the "missing middle" in the food debate and now deserve major attention and help. A lesson from Asia is that they greatly reduced or eliminated the role of large parastatals and instead created a great enabling environment for the private sector food firms to emerge and develop quickly; and it has been especially the small and medium firms in Asia who have been the heroes in the agrifood "Quiet Revolution."

   d) International agribusinesses – from Brazil, Asia, Europe and America – have taken note of Africa's rapidly growing domestic food markets. Africa's growing imports of cereals, soybeans, milk powder and poultry reflect the increasing competitiveness of agricultural imports into Africa. In order to compete successfully with imports in their own growing domestic and regional agribusiness markets, African farmers and agribusinesses will need to improve value chain efficiency at all levels.

   e) It is important to note that the local domestic food economy and the intra-regional market are at present the main opportunities. About 95% of the African food market (in value terms) is domestic (local and regional); exports and imports constitute the rest. Inter-country and inter-region "corridors" and networks, to expand the opportunities for regional trade by SMEs in processing and services, are crucial. But over time the global export market will also grow as an opportunity.

   f) Of course these transformations and developments are very uneven, over countries, over zones of dynamic areas near to towns and cities versus hinterlands, over asset poor and asset adequate farmers. There needs to be differentiated strategies for these different segments for overall inclusive transition to the urbanized African food economy.

   g) It will be important to help a broader set of farmers access inputs and rural services and extension information to take advantage of this growing market. At first this will be an issue of volume and cost, and increasingly over time of quality differentiation and food safety.

   h) There will be need for a number of kinds of coordination – cooperatives of farmers to achieve scale, clusters of small and medium food supply chain firms with training and market-linking assistance to maximize efficiency and innovation, and coordination over agriculture ministries, energy ministry, commerce ministry, infrastructure ministries, to bring about integrated solutions to bottlenecks holding up this emerging dynamic transformation.

Appendix E: A Matrix of African Agri-Food System Elements and Thematic Areas of Intervention

This table is intended to show the types of interventions that are available to governments, the private sector, and civil society and how they are being applied across the supply chain to build more robust African supply chains and food systems. The list is by no means exhaustive; these are merely examples to prompt discussion.

	Input supply chains ending in inputs supplied to farmers	Farmers	First-stage distributors in rural areas (brokers/ wholesalers & truckers/ transporters, cold storage, warehouses, commodity exchanges)	First-stage processors, usually in rural areas (e.g., grain ground into flour, rice dehusked/ polished)	Second-stage processors in both rural and urban areas (e.g., bakeries)	Second-stage distribution in rural & urban areas (e.g., traditional retail, supermarkets, restaurants, hotels)
Public and public-private investment in hard infrastructure		e.g., irrigation systems, state purchase of large volume cultivation machinery	e.g., construction of roads and storage facilities, power supply	e.g., post-harvest processing investment, rural electrification		e.g., wholesale markets
Public & public-private investment in soft infrastructure (e.g., information systems/ extension, credit, communications)	e.g., input credit delivery systems that leverage microfinance institutions to reduce risk	e.g., farmer training centers	e.g., commodity exchanges enabling buyers to contract directly with farmers, warehouse receipt system that allows farmers to use stored commodities as collateral		e.g., low interest loans to entrepreneurs	e.g., development of market information systems *(this assists the entire supply chain)*
Fiscal policies such as subsidies and taxes	e.g., national standards and certification systems	e.g., fertilizer subsidy; one cow per family; waived taxes on farm machinery and equipment, seeds	e.g., national tax policy, import and export regulation, and other regulatory and policy reforms to create incentives and reduce risk for entrepreneurs	e.g., staple crop processing zones (tax incentives to locate in designated food-producing areas)	e.g., tax incentives	
Public investment in research	e.g., improved varieties (pest or disease resistant, processing ease)			e.g., new processing technologies		e.g., improved nutritional content
Organizational policies		e.g., policies that support farmers organizations		e.g., regional chambers of commerce to represent rural workers		
Institutional policies that affect all segments, such as commercial, land, and energy policy	e.g., seed approval policy	e.g., price transparency for rural producers, land tenure and rights	e.g., regulations governing trading practices, contract law	e.g., coordinating body that facilitates agricultural development efforts across ministries *(this assists the entire supply chain)*	e.g., food safety regulations	

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