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Strengthening and Harmonizing Food Policy Systems to Achieve Food Security

A Case Study and Lessons from Ghana

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The International Food Policy Research Institute (IFPRI), established in 1975, provides evidence-based policy solutions to sustainably end hunger and malnutrition, and reduce poverty. The institute conducts research, communicates results, optimizes partnerships, and builds capacity to ensure sustainable food production, promote healthy food systems, improve markets and trade, transform agriculture, build resilience, and strengthen institutions and governance. Gender is considered in all of the institute's work. IFPRI collaborates with partners around the world, including development implementers, public institutions, the private sector, and farmers' organizations, to ensure that local, national, regional, and global food policies are based on evidence.

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ABSTRACT

Understanding how various entities in a policy system at the national level can contribute to improved use of evidence in policy making. Yet little research has focused in developing countries on how various actors and players in a policy system work together to achieve a set of policy goals. In this paper, we study the factors contributing to the effectiveness of a policy system. The process of policy design, adoption, implementation, and refinement requires an effective policy system as well as a capacitated and supportive institutional structure. External actors both through technical and financial assistance often support policy systems in developing countries. Poor coordination and harmonization of such assistance among various actors and players within the country can often result in undermining the very policy systems they try to strengthen. This is typical in the African agricultural development process. In this paper, we develop a conceptual framework for understanding the policy and institutional architecture of food and agriculture policy system and for improving the coordination and harmonization of the roles of policy actors and players. Applying the framework to Ghana, we map and analyze the organizational contributions of various actors and their functional characteristics. We show how such analysis can aid various policy actors in setting priorities and strategies for increasing their capacity and the effectiveness of their roles. Finally, we draw lessons for strengthening the food policy systems in developing countries through effective coordination among local and external actors**.**

Keywords: food policy system, policy harmonization, strengthening capacity, policy coordination, African agricultural development, Ghana

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ACRONYMS

ACBF	African Capacity Building Foundation
AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
ASWG	Agriculture Sector Working Group
AU	African Union
AUC	African Union Commission
CAADP	Comprehensive Africa Agriculture Development Programme
CEPA	Center for Policy Analysis
CGIAR	Consultative Group on International Agricultural Research
CIDA	Canadian International Development Agency
COCOABOD	Ghana Cocoa Board
CSIR	Council for Scientific and Industrial Research
CSOs	Civil Society Organizations
CSPGs	Cross Sectoral Planning Groups
DAs	District Assemblies
ECOWAS	Economic Community of West African States
FAC	Future Agricultures Consortium
FAO	Food and Agriculture Organization
FASDEP	Food and Agriculture Sector Development Policy
FBOs	Farmer-Based Organizations
FIF	Feed the Future
GIMPA	Ghana Institute of Management and Public Administration
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
GSSP	Ghana Strategy Support Program
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
ILGS	Institute of Local Government Studies
ISSER	Institute of Statistical, Social, and Economic Research
KM	Knowledge Management
KNUST	Kwame Nkrumah University of Science and Technology

MAF	Mutual Accountability Framework
MAFAP	Monitoring African Food and Agricultural Policies
MDGs	Millennium Development Goals
MEST	Ministry of the Environment, Science, and Technology
METASIP	Medium Term Agriculture Sector Investment Plan
MF	Ministry of Finance
MoFA	Ministry of Food and Agriculture
MoFEP	Ministry of Finance and Economic Planning
NDPC	National Development Planning Commission
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
PCFACA	Parliamentary Committee on Food, Agriculture, and Cocoa Affairs
PPMED	Policy, Planning, Monitoring, and Evaluation Directorate
RDs	The regional directorates
RECs	Regional Economic Communities
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
SA	Strategic analysis
SAKSS	Strategic Analysis and Knowledge Support System
SRID	Statistics, Research and Information Directorate
UCC	University of Cape Coast
UDS	University for Development Studies
UG	University of Ghana
UNDP	United Nations Development Programme
UNU	United Nations University
USAID	United States Agency for International Development
WAAP	West Africa Agricultural Productivity
WAAPP	West Africa Agricultural Productivity Programme
WECARD/CORAF	West and Central African Council for Agricultural Research and Development

1. INTRODUCTION

Achieving and sustaining food security requires a harmonized effort at the country level to design immediate, short-term, and long-term policy and program solutions in accordance with a country's national strategies (Pinstrup-Andersen 2014; Poulton 2014; Birner and Resnick 2010). In developing countries, where policy systems are often under-resourced and unable to achieve their economic goals, external actors can provide support by offering resources and expertise that enable local organizations fulfill their roles and responsibilities in the policy system. However, policy systems in developing countries tend to suffer from ineffective organizational structures and power imbalances (ACBF, 2014, ACBF, 2004). Thus, if development partners' efforts are not well coordinated, their assistance may add an extra dimension of chaos rather than cohesiveness. Lack of harmonization, among development partners and between government entities and development partners, can contribute to the erosion of accountability mechanisms within a policy system (Babu 2014; Grindle 2004). Local partners who receive bilateral or multilateral loans have financial incentives to report their actions to their donors, but not to their own country partners, undermining local policy systems. Individual actors within the policy system also have the opportunity to take advantage of development funding for their own self-interest. The conflicts of interest that arise from this, in addition to development partners' scattered efforts, can result in a system that is unable to support development goals and achieve the desired structural transformation (Inter-Parliamentarian Union 2008; Babu and Ergeneman 2005). The food and agricultural policy systems in developing countries face typical challenge.

Effective food and agricultural policy systems can play a critical role in transforming a country's agriculture sector and improving its food security by enabling strategic investment and evidence-based policy making (Resnick et al. 2015; USAID 2013). A strong policy system positions policy actors to participate effectively in the policy process, starting from policy issue identification to policy solution drafting, and finally to evaluation. It provides the architecture that brings together organizations with different expertise, goals, and responsibilities in a way that encourages coordination, mutual accountability, participation, openness, and transparency (USAID 2013). An effective policy system is one where actors' roles are known and responsibilities are carried out with a certain level of accountability. Systems that fail to meet these criteria tend to be ineffective at producing relevant and impactful policies in a timely manner. A strong policy system is also able to create effective policies that enhance sectoral development and are resilient to shocks.

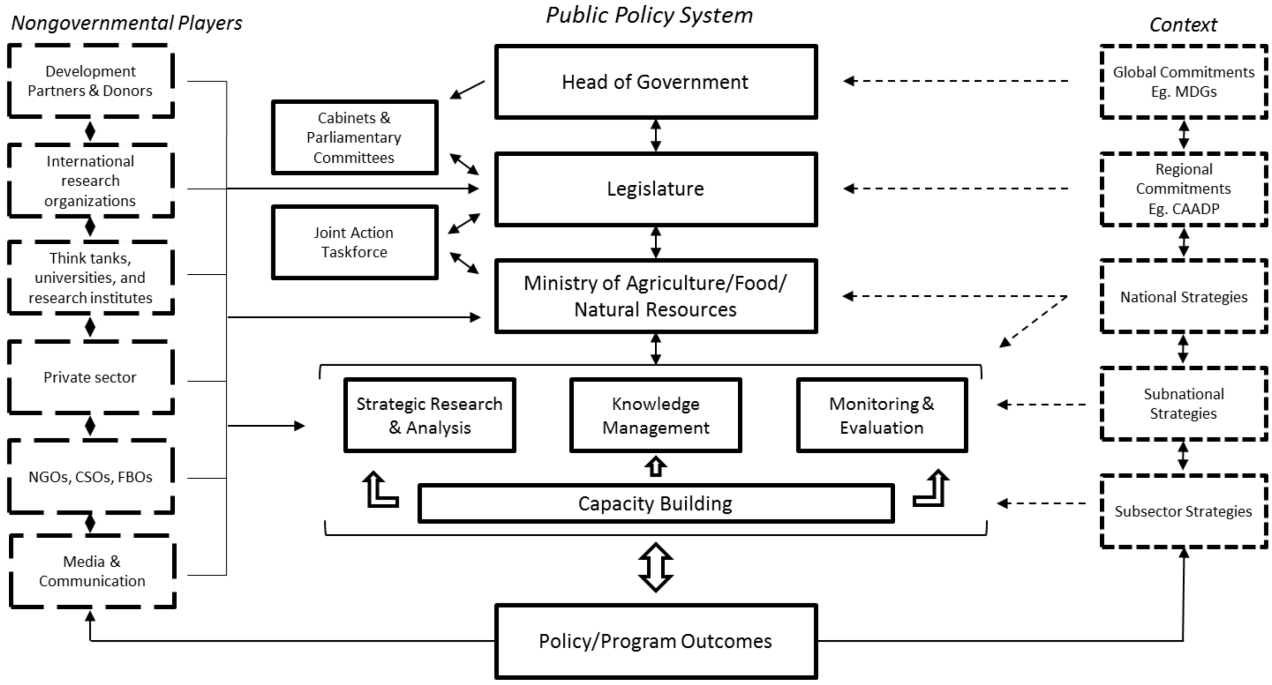
In this paper, we study Ghana's food and agricultural policy system with the aim of understanding how certain weaknesses or inadequacies among local organizations affect the functioning of its policy system in terms of strategic analysis, monitoring and evaluation, knowledge management, and capacity building. Additionally, we look at how the actions of the international development community within the policy system affects local policymaking capacity, with the aim of extrapolating lessons learned for countries facing similar capacity and power imbalances between local and international organizations.

This paper is organized as follows. In the next section, we describe the functional elements of a policy system and the organizational and system characteristics that influence how well each function is carried out within a food policy system. In section three, we present the case study of Ghana in three subsections. The first sub-section presents the methods of the case study and the second describes the organizations involved in the food and agricultural policy system in Ghana and presents a map of the system's structure. In the third sub-section, we analyze the organizations' contributions to each of the system's functions and discuss the relative importance of the different characteristics in the context of each function. This is intended to aid as a prioritization strategy for building capacity to effectively execute each function. In the fourth section, we present lessons learned from the case study of Ghana's food policy system. The last section concludes.

2. CONCEPTUAL FRAMEWORK FOR THE ANALYSIS OF A FOOD POLICY SYSTEM

Understanding a policy system involves, most fundamentally, correctly identifying all of the actors and players that are involved, or could be involved, in the policy theme of interest (Resnick et al. 2015; Babu 2014. A democratic policy system is not only comprised of political players and government ministries and agencies, but also civil society organizations, private sector enterprises, media, policy committees, academia, development partners, and the international community (Grindle 2004; Freeman 2005). A stylized framework to identify all of the relevant players is illustrated in Figure 2.1 below. The extent to which each organization de facto contributes to the policy system depends on the actor's own capacity to contribute and the capacity of the system to facilitate each actor's participation. In other words, both supply and demand factors affect involvement of an actor in a policy system.

Figure 2.1 Conceptual framework for the analysis of a food policy system



Source: Authors' compilation.
Note: NGOs = nongovernmental organizations; CSOs = civil society organizations; FBOs = farmer-based organizations; MDGs: Millennium Development Goals; CAADP: Comprehensive Africa Agriculture Development Programme.

Each organization contributes to the policy system in different ways and to different degrees. Contributions to the policy system can be broadly categorized by involvement in any of these four functions: strategic analysis, monitoring and evaluation, knowledge management, and capacity building (Ragasa et al. 2014). While other related functions could be identified, for the purpose of this paper and tractability of the analysis we will work with these four broad functions.

Strategic analysis refers to the development of evidence that suggests that a specific issue requires a policy-based solution and/or that compares and contrasts policy alternatives to a policy problem. In general, a high level of technical capacity is required to undertake strategic analysis as it requires expert knowledge and analytical skill in an area (or areas) such as economic analysis, modeling or forecasting, mapping, nutrition, or agricultural science. Monitoring and evaluation complements strategic analysis in two ways. First, monitoring a country's agricultural sector, including production, food consumption,

market prices, and related food and agricultural data will help identify trends that require immediate intervention. Second, monitoring and evaluating policies and programs allows policymakers to assess the extent to which they were able to address a policy issue. Knowledge management involves collecting, cleaning, and organizing the compiled data and statistics generated from monitoring and evaluation efforts (and to some extent strategic analysis) to share information among organizations and with the public. Lastly, all organizations must undertake some degree of institutional and organizational capacity building for self-renewal and for ensuring that they are able to adapt to emerging issues and remain relevant contributors and players within the policy system. This capacity building could also lead to improved system effectiveness as it enhances each organization's effectiveness within the system.

In our framework for policy system analysis, the execution of each function described above is determined by the strength of six characteristics of individual, organizational, and system capacity (Baser and Morgan 2008; Babu 2014). The first is the quality of the work undertaken by each organization. Is the work quality sufficient for evidence-based policymaking? The second characteristic is an organization's capacity for research and analysis in terms of its individual-level capacities—skills, knowledge, and attitude—to undertake high quality analysis. Individual capacities are a necessary, but not a sufficient condition to produce high quality research. An organization must be able to effectively utilize the capacity of its members to reach its goals. The third characteristic is the relevance of an organization's work and its alignment with the current needs of the policy system. An organization's ability to communicate with other organizations, to disseminate information and to discuss and debate policy issues and solutions is the fourth. Relatedly, the fifth characteristic is an organization's efforts to coordinate its activities in order to effectively and efficiently proceed through the stages of policymaking. Mutual accountability within the policy system is the final characteristic; can each organization be relied upon to fulfill its role within the system? Does it contribute to holding other organizations responsible for their parts? (CAADP 2014).

In the next section, we present the case study of Ghana's food policy system to describe how we map the policy system and assess each organization with respect to the above functions and characteristics in order to draw lessons for improving the capacity and effectiveness of the food policy systems in developing countries.

3. CASE STUDY OF GHANA'S FOOD POLICY SYSTEM

The policy system needs strengthening to be able to design a set of policies and strategies that will foster agricultural development. In general, both internal and external actors poorly understand policy systems in developing countries. Well-functioning policy systems require basic capacities to collect data, analyze policy options, monitor and evaluate policies, and to prepare for unforeseen challenges (ASARECA 2013). It also requires well-organized institutional architecture that recognizes procedures and processes to guide the aforementioned functions, including policy design, implementation, and enforcement (USAID 2011; USAID 2013). Finally, policy systems involve enabling environment or institutions of a system that respects the formal rules and regulations as well as the cultural and social norms that govern how various entities operate internally and externally in a system (North 1990). Ghana is no exception. Transforming Ghana's agriculture sector to achieve food security first requires a transformation of the food and agricultural policy system (ONE 2014; Al-Hassan and Poulton 2009; Breisinger et al. 2011; Kolavalli 2013).

Despite strong economic growth in the past fifteen years and laudable progress toward the Millennium Development Goals (MDGs), Ghana continues to suffer from regional disparities in food security and development outcomes (NDPC 2010). Its northern region has seen little to no progress on poverty reduction, and women and food crop farmers remain the poorest groups (NDPC and UNDP 2010; GSS 2008). High level been little improvement in the stunting rates of children under five continues, suggesting that providing nutritious food remains a challenge for many families (USAID 2016). The Ghanaian government and myriad development partners and donors are working to combat these numbers using a variety of approaches. However, despite similar overarching goals (for example, poverty reduction, improved food security, and increased agricultural productivity), the short-term goals and objectives of these entities could be conflicting. As in any developing economy, political economy plays a role in shaping the policy system. Policymakers are only incentivized to develop programs that yield demonstrable impacts within the election cycle, and development partners must demonstrate impact within their donors' timeframes. Not all players may participate effectively in the policy system. For example, there is little evidence of long-term planning or stakeholder involvement, especially from the private sector, such as agri-businesses, without whom sustainable agricultural development would not be achievable. Interviews with private sector actors indicate that Ghana's food policy processes are largely organized by public entities with minimal involvement from the private sector, despite the fact that their policies will directly impact private enterprises (Chhokar, Babu, and Kolavalli 2014).

Although Ghana exhibits characteristics of strong state capacity (the World Bank's 2012 Worldwide Governance Indicators place Ghana among the best countries in Africa south of the Sahara), its high level of democracy serves as a double-edged sword. Active participation of opposition parties and civil society place extensive time and resource demands on the party in power, thereby distracting from coordination efforts across ministries and with development partners and donors. Aid accounts for ten percent of Ghana's gross domestic product (MoFEP 2010). Over 500 donor projects and programs were listed in Ghana's 2005 budget with a total value over $500 million (Freeman 2005) and more than forty percent of budget receipts were from donor contributions. Hence, the Ghanaian government faces high demands with respect to cooperation with both local and international players. Al-Hassan and Poulton (2009) suggest that some of the earliest food aid programs in Ghana were characterized by poor coordination at the central level and that the programs were unsuccessful at influencing social policymaking. This suggests that it is high time to focus on improving coordination of the players in the policy system.

In its 2011–2015 Ghana Aid Policy & Strategy, the Government of Ghana recognizes that poor coordination and lack of accountability are major challenges to aid effectiveness (MoFEP 2010). "At present, the Government of Ghana is accountable to DPs through a series of un-harmonized, overlapping, and duplicative assessments, reviews, audits, missions, and consultations… In addition, currently no corresponding mechanisms are in place to ensure that DPs are accountable to the Government of Ghana,

also contributing to the exacerbation of other challenges in aid effectiveness, such as non-alignment and fragmentation of aid, non-usage of country systems, and the restricting of capacities" (MoFEP 2010, 14). Now at the end of its coverage years, it remains unclear if Ghana has the capacity to implement the strategies it outlines to rectify its coordination challenges. How can the Ghanaian food policy system be strengthened and transformed from its current state of weak coordination between development partners and local entities, to a harmonized system with country-led processes, mutual accountability, and complementary efforts? (CAADP 2014).

In this paper, following the conceptual framework presented in the last section, we disaggregate key functions of Ghana's food policy system into four broad categories: strategic analysis, knowledge management, monitoring and evaluation and capacity building, and analyze them through six characteristics of organizational and system capacity: quality, capacity, relevance, communication, coordination, and mutual accountability. We assess how development partners have either helped or hindered local organizations in effectively engaging in each policy system function and we determine the relative importance of the six characteristics in the context of each system function. Finally, we draw from Ghana's experience a set of lessons to improve the way development partners' can engage with local organizations within the food policy system.

Methodology

This case study builds on a 2007 capacity needs assessment of Ghana's agricultural food and agricultural policy system (Babu, Mensah, and Kolavalli 2007; Babu and Kolavalli 2013). Information for this particular case study was gathered over the last eight years through several rounds of discussions with individuals in the organizations that are part of the Ghana's food policy system. Additionally, a recent set of interviews conducted with policy makers on the broad agricultural development issues and the process of food policy change has been used for the preparation of this case study (Chhokar et al. 2014).

To identify all relevant organizations involved in Ghana's food and agricultural policy system, we asked relevant organizations to identify all other organizations with whom they interact. Using results from these interviews and consultations with policy system experts and external observers, we determined the ratings and classifications of organizations by function and characteristic as well as by level of influence in the policy system, degree and type of interaction with other system entities, and primary constraints. The recorded interviews conducted for the Chhokar et al (2014) study, were transcribed for content analysis. The content of the interviews helped identify patterns, and commonalities in responses, which were further useful in drawing specific conclusions on the role of the actors in the policy system (Strauss 1987; Strauss and Corbin 1998; Blee and Taylor 2002; Hajer 2002).

A key set of interviewees and their affiliated institutions are given in Appendix Table A.1. These interviewees are part of the Ghana's agricultural policy process coming from various organizational settings. We used a specific set of leads and prompts that helps them to address the issues related to how their role in using information they gain from the evidence is used to support their work. Further specific individuals who are running projects related to strategic analysis, monitoring and evaluation, knowledge management, and capacity strengthening were targeted in the research institutions, academic institutions and the think tanks. The key metrics that were followed in the interviews included the following: awareness of the interviewees on how their contribution is taken and used in the policy process; how they could play their role better in the po0licy process; how the actors and players in the policy process should harmonize their activities; and what potential solutions they have for improving the effective functioning of the policy systems in Ghana.

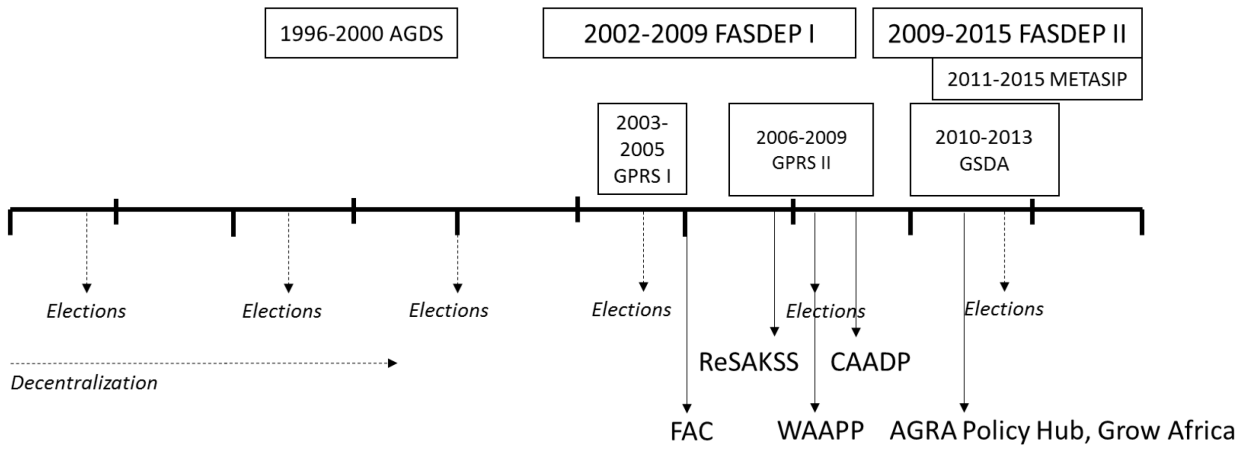
Two sets of interviews were conducted. The first set reported in Chhokar et al. (2014), used a semi structured questionnaire and the interviewer took notes and recorded the interviews. In the second set, an open ended discussion was conducted without any recording equipment but only had written notes taken, due to sensitivity of issues discussed. After transcribing the recorded interviews, the contents of the interviews were analyzed for common issues, and patterns to draw conclusions (Straus 1987; Straus and Corbin 1998). Authors looked for common set of constraints and challenges they face in strengthening the

capacity of the policy systems with particular reference to the four functions analyzed in the paper (Blee and Taylor 2002).

Mapping Food Policy System Organizations

There are multiple policy-oriented entities, both Ghanaian and international, working on different programs that aim to enhance productivity and strengthen the agricultural sector. The Ministry of Food and Agriculture (MoFA) sits at the helm of the food policy system. Its current guiding strategy is the Food and Agriculture Sector Development Policy (FASDEP) II, developed by inter-ministerial teams with support from CIDA and the World Bank. FASDEP II follows from an earlier strategy of the same name (FASDEP I) and its goals are aligned with the Ghana Poverty Reduction Strategies I and II, and the Ghana Shared Growth and Development Agenda (GSGDA), which were developed by Ghana's National Development Planning Commission (NDPC). FASDEP II was also designed to meet the targets established by the Economic Community of West African States (ECOWAS), the Comprehensive Africa Agriculture Development Programme (CAADP) framework, and the MDGs (MoFA 2010; MoFA 2013). The development of FASDEP II followed an in-depth consultative process where stakeholders were invited to provide advice and feedback both formally and informally. There is general agreement that this process was successful in including government, academic, and NGO stakeholders, however, it did not engage vulnerable and marginalized groups (stakeholder consultation, 3 December 2013). Figure 3.1 below illustrates the historical context of agricultural strategy development in Ghana and international intervention.

Figure 3.1 Timeline of strategies, plans, and the entrance of development programs in Ghana



Source: Authors' compilation.
Note: ReSAKSS: Regional Strategic Analysis and Knowledge Support System; CAADP: Comprehensive Africa Agriculture Development Programme; FASDEP: Food and Agriculture Sector Development Policy; FAC: Future Agricultures Consortium; WAAPP: West Africa Agricultural Productivity Programme; AGRA: Alliance for a Green Revolution in Africa.

FASDEP II is solely carried out by MoFA and is implemented through the Medium Term Agriculture Sector Investment Plan (METASIP). This is despite the fact that many of the METASIP programs are highly relevant to other Ministries that may be better equipped to lead their implementation (Dittoh, 2013). Their exclusion as implementing agencies has decreased their sense of ownership of FASDEP II, and has limited their interest in coordinating with MoFA to implement METASIP.

Within MoFA is a dedicated development partner coordinator whose responsibilities include liaising between MoFA and development partners to minimize overlaps and identify areas where development partners can be most effective. A coordinating group, the Agriculture Sector Working Group (ASWG), has also been established to bring together development partners and representatives of relevant MDAs on a monthly basis. The ASWG meets monthly to support FASDEP II and METASIP implementation, strengthen the connection between agriculture and industry, and enhance communication between development partners and Ghanaian entities.

The Policy, Planning, Monitoring, and Evaluation Directorate (PPMED), one of four MoFA directorates, guides the Ghanaian agricultural policy process. The functions of the PPMED is described in detail elsewhere (Chokkar et al 2014; Dittoh 2013). MoFA guides the Research and Extension Linkage Committees (RELC), which aims to enhance Ghana's agricultural extension system through improved trainings of extension workers and bridging the gap between farmers and researchers via participatory research. MoFA also oversees the Northern Rural Growth Programme, an initiative funded by the African Development Bank (AfDB) and the International Fund for Agricultural Development (IFAD) to lead in the development of commodity value chains, rural infrastructure, and access to financial services as well as provide managerial, coordination, and monitoring and evaluation support in Northern Ghana.

The Ministry of the Environment, Science, and Technology (MEST) is also a key player in Ghana's agricultural policy system. In particular, it oversees the Council for Scientific and Industrial Research (CSIR), which undertakes research in the areas of agriculture, food, forestry, animal science, soil, water, plant genetics, and crops, among others. The CSIR has been and continues to be the entry point for international organizations interested in undertaking scientific research in Ghana.

The regional directorates (RDs) are one administrative level below the central ministries. In the late 1980s, Ghana's decentralization reforms transferred much of the RDs' power to the District Assemblies (DAs). The DAs now have a higher level of influence compared to the years prior to the reforms, and in comparison to the more centralized systems in many other developing countries. Of all the Ghanaian Ministries, Departments, and Agencies (MDAs), the DAs are most directly linked to farmers. Other important players within the agricultural policy system in Ghana include the President of Ghana, the Cabinet, the Ministry of Finance, and the Parliamentary Committee on Food, Agriculture, and Cocoa Affairs (PCFACA). Finally, there is the Ghana Cocoa Board (COCOABOD), a governmental entity mandated with supporting the cocoa, coffee, and sheanut industries through market regulation, research, extension, and production for export.

The Ghana Statistical Service (GSS), under the office of the President, is intended to be an autonomous body that collects and compiles statistical data, conducts censuses and surveys, advises the Government on matters related to statistics in Ghana, and coordinate all statistics sources within the country. The responsibilities related to M&E is detailed in Dittoh (2013). GSS publishes its data online for public access and use.

Four universities contribute to the agricultural policy system through research and training of the next generation of agricultural researchers and policy analysts in their faculties of agriculture and departments of agricultural economics, extension, rural development, or equivalent. These are the University for Development Studies (UDS), the University of Ghana (UG), Kwame Nkrumah University of Science and Technology (KNUST), and the University of Cape Coast (UCC). The Ghana Institute of Management and Public Administration (GIMPA) is also an educational institute that offers undergraduate and graduate programs as well as training courses for public servants - its original mandate. The Institute of Local Government Studies (ILGS) is a similar training organization, offering short-term and graduate courses to public sector workers since its establishment by Parliament under the Ministry of Local Government and Rural Development.

The Institute of Statistical, Social, and Economic Research (ISSER), situated in the Faculty of Social Sciences in the University of Ghana, is a prominent research institute that undertakes policy-relevant socioeconomic research and participates in the monitoring and evaluation programs and policies. The Center for Policy Analysis (CEPA) is a non-governmental think tank that generates analyses of Ghanaian policy issues, especially those related to macroeconomic and fiscal policy issues. As part of its

vision to impact poverty reduction through policy, CEPA's research also covers the agricultural sector and marginalized groups. Non-Ghanaian organizations also operate research institutes within the country, including the Consultative Group on International Agricultural Research (CGIAR) centers, such as the International Food Policy Research Institute (IFPRI), which operates out of an Accra office to implement its Ghana Strategy Support Program (GSSP).

Finally, there are varieties of non-governmental, non-academic organizations that play different roles within the Ghanaian agricultural policy arena. Citizens are represented by advocacy, service-oriented, or interest group-type non-governmental organizations (NGOs), civil society organizations (CSOs), and farmer-based organizations (FBOs). Salifu et al (2010) estimate that there are approximately 10,000 FBOs in Ghana to support farmers when social services, NGOs, or the private sector fall through. The private sector, in the form of agri-businesses, also operates in the policy system to advocate for regulation to support their growth and development. Lastly, the media has a potentially powerful role as a communicator to bring unaddressed policy issues into the spotlight, to disseminate research and statistics to both farmers and politicians, and to communicate policy solutions and alternatives as they are debated in Parliament. Chhokar et al (2014), provide the current state of interaction between the private sector, media and policy makers, and related constraints in the policy process.

Key Development Partners

In 2003, the New Partnership for Africa's Development (NEPAD), a program of the African Union Commission (AUC), established the Comprehensive Africa Agriculture Development Programme (CAADP) to eliminate hunger and reduce poverty through agriculture. CAADP, which is an African-led and African-owned initiative aims to achieve this by increasing public investment in agriculture to at least ten percent of the national budget and increase productivity in agriculture by six percent. The CAADP Compact (2007) has been signed by more than 26 countries. Ghana signed the Compact in October of 2009. The recent Malabo declaration has revived the commitment of the policy makers to agricultural development for the next 10 years (CAADP 2014)

The Alliance for a Green Revolution in Africa (AGRA) is an internationally funded, Africa-wide organization that awards grants for country-level programs in the areas of soil, seeds, policies, and markets. In 2011, MoFA and AGRA collaboratively launched the Ghana Policy Hub and Policy Nodes program, based in the CSIR. The intention of the Hub is to support private sector development of agricultural inputs, especially seeds and soil health technologies. Since the privatization of the seeds sector in the early 1990s, private companies have not yet been able to fully serve the needs of farmers. The Hub is intended to support the input sectors through policy action.

ECOWAS developed a ten-year program, the West Africa Agricultural Productivity Programme (WAAPP) to generate and disseminate commodity-specific technologies in thirteen West Africa countries, (the 13 participating countries of WAAPP are: Benin, Burkina Faso, Côte d'Ivoire, The Gambia, Ghana, Guinea, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo). Following a 2006 study conducted by IFPRI, roots and tubers became part of the focal commodities in Ghana as they could yield the highest returns to the region through enhanced research and development. MoFA's Projects Division coordinates WAAPP and CSIR implements the program. WAAPP began in March of 2008 (MoFA 2013).

Grow Africa aims to emulate a private-public partnership model developed specifically for agriculture by the World Economic Forum to meet three goals: increase private sector investment in African agriculture, enable multi-stakeholder partnerships to attract such investments, and expand knowledge and awareness of best practices and existing initiatives. African Union, NEPAD, and the World Economic Forum provide leadership to *Grow Africa* to support countries in achieving their CAADP goals. Ghana was one of first wave of *Grow Africa* partner countries (2011–2012). One of its programs has facilitated the organization of over 10,000 cocoa farmers into groups of 25 farmers with one designated lead farmer who receives training from Grow Africa and then returns to his/her community to

train the rest of the group. Grow Africa has also helped cement a $1.5 million investment from a multinational fertilizer company, which has enabled small scale farms to triple yields (Grow Africa 2013)

The Regional Strategic Analysis and Knowledge Support System (ReSAKSS) is an African network established to bring together analysts and researchers involved in policymaking and to share resources and analytical skills to support CAADP implementation at the country level. ReSAKSS is supported by IFPRI and other CGIAR centers based in Africa, NEPAD, the AUC, and Regional Economic Communities (RECs).

The Future Agricultures Consortium (FAC) is a UK-funded, Africa-based network of researchers and research organizations that aims to generate high quality information to inform agricultural policymaking in Africa. The FAC undertakes research on the political economy of policy decision-making in African countries, invests in enriching social science and policy research capacity, supports CAADP implementation, communicates, and facilitates better communication of, policy information. One of the four FAC hubs is located in Ghana.

IFPRI operates its Ghana Strategy Support Program (GSSP) on the CSIR campus to provide research and capacity building support to Ghanaian researchers and government organizations. It focuses on strengthening data and knowledge management, analytical capacity, monitoring and evaluation, and policy debates and dialogues.

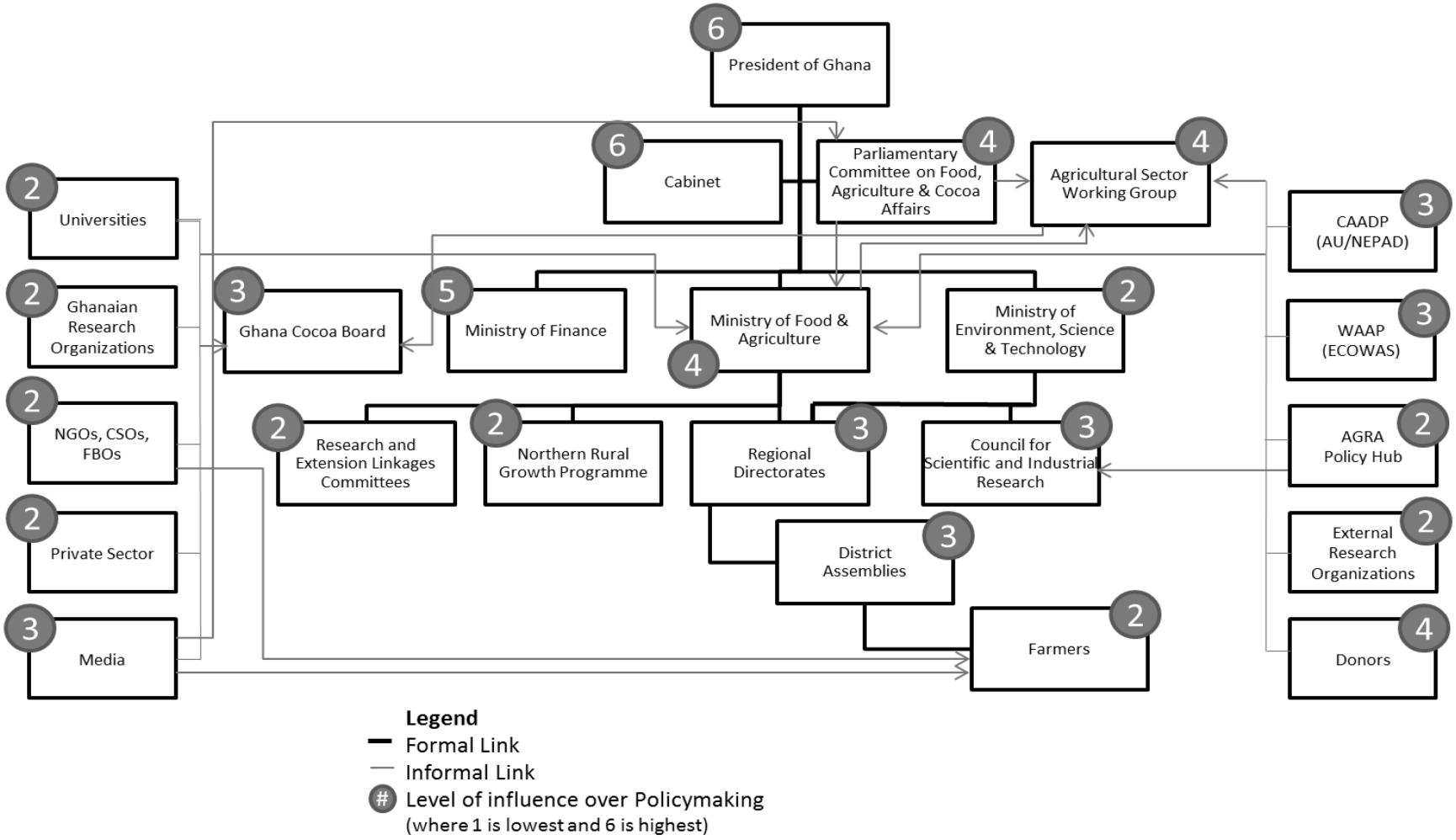
Africa Lead is the component of the USAID-funded Feed the Future program that organizes capacity-building activities to support CAADP implementation. It aims to coordinate training resources across public, private, academic, and civil society agriculture sectors to develop in-country leadership that will guide development in the future.

The FAO has developed a framework to monitor and compare policies on agricultural commodities across African countries in order to objectively evaluate policies and guide investments in the sector. The program, Monitoring African Food and Agricultural Policies (MAFAP), is in its initial stages and currently works with the PPMED, the Statistics, Research and Information Directorate (SRID) within MoFA, and CSIR to undertake preparatory policy analysis.

The West and Central African Council for Agricultural Research and Development (WECARD/CORAF) is an organization that brings together the agricultural research organizations of 22 West and Central African countries with the aim of decreasing poverty and food insecurity. It focuses on four functions: coordinating agricultural research of its partner countries, building capacity, managing knowledge, and advocating for resource mobilization.

Figure 3.2 below presents a map of the Ghanaian food and agricultural policy system. Thick and thin lines respectively indicate formal and informal links between organizations. Table 2.1 below lists, the (intended) contributions of the development partners to each of the four policy system functions.

Figure 3.2 Ghanaian food policy system and the level of influence on policy outcomes



Source: Authors.
Note: NGOs = nongovernmental organizations; CSOs = civil society organizations; FBOs = farmer-based organizations; CAADP: Comprehensive Africa Agriculture Development Programme; AU: African Union; NEPAD: New Partnership for Africa's Development; WAAP: West Africa Agricultural Productivity; ECOWAS: Economic Community of West African States; AGRA: Alliance for a Green Revolution in Africa.

Table 3.1 Charting the roles of policy knowledge support organizations and programs

Development Partner: *Program*	Strategic analysis	Monitoring and evaluation	Knowledge management	Capacity building
African Union (AU)/New Partnership for African's Development (NEPAD): *Comprehensive Africa Agriculture Development Programme (CAADP)*	Encourages African countries to allocate 10% of their national budget to agriculture to achieve an agricultural growth rate of 6%	Monitors continental wide progress on CAADP compact goals	CAADP documents and publications available online	Capacity building to improve trade negotiation skills and improve competitiveness of agri-businesses
Alliance for a Green Revolution in African (AGRA): *Policy Hub*	Undertakes research on policy issues related to seeds and soil health technologies	N/A	N/A	N/A
Economic Community of West African States (ECOWAS): *West Africa Agricultural Productivity Programme (WAAP)*	Researches specific commodities determined by preliminary studies that identified crops with high potential to benefit from increased R&D	M&E only of impact of own R&D	N/A	N/A
Grow Africa	N/A	N/A	Works to share information and best practices among agri-businesses and private investors primarily through annual conventions	Technical assistance to enhance agricultural investment
Regional Strategic Analysis and Knowledge Support System (ReSAKSS)	Conducts joint sector reviews and CAADP roundtables	Monitors cross-country agricultural investment	Creates network of researchers and analysts specifically to share knowledge and resources	Capacity building at the regional level, regarding national-level agricultural investment and priority setting
Future Agricultures Consortium (FAC)	Researches how to improve policymaking and program implementation with respect to cash crops, livestock/pastoralism, and farm size	N/A	Research is published in different formats (for policymakers and researchers) and available online	Focus on early career professionals: small research grants, post-docs, and training fellowships

Table 3.1 Continued

Development Partner: *Program*	Strategic analysis	Monitoring and evaluation	Knowledge management	Capacity building
CGIAR/IFPRI: *Country Office*	Studies specific policy issues as mandated by MOFA	N/A	Hosts its research content on a publicly-available, web-based system	Trains collaborating Ghanaian partners as necessary to collect data or undertake research
United States Agency for International Development/Feed the Future (USAID/FTF): *Africa Lead*	N/A	N/A	N/A	Identifies individuals for leadership training to become agribusiness professionals
Food and Agriculture Organization (FAO): *Monitoring African Food and Agriculture Policies (MAFAP)*	N/A	Supporting establishment of a system to monitor food and agriculture policies at the county level	Works toward sharing information on policy impacts between countries	N/A
West and Central African Council for Agricultural Research and Development (CORAF/WECARD)	Only a coordinating body	N/A	Connects agricultural research institutes across West and Central Africa and provides KM through an innovative platform approach by value chain, from researcher to farmer.	Focus on improving institutional culture of country NARS by strengthening leadership, interactions, relationships, trust, and incentives.

Source: Authors.

Note: AU = African Union; NEPAD = New Partnership for Africa's Development; NGOs = nongovernmental organizations; CAADP = Comprehensive Africa Agriculture Development Programme; AGRA = Alliance for a Green Revolution in Africa; ECOWAS = Economic Community of West African States; WAAP = West Africa Agricultural Productivity; CSOs = civil society organizations; FBOs = farmer-based organizations; ReSAKSS = Regional Strategic Analysis and Knowledge Support System; FAC = Future Agricultures Consortium; CGIAR = Consultative Group on International Agricultural Research; IFPRI = International Food Policy Research Institute; USAID = United States Agency for International Development; FTF = Feed the Future; FAO = Food and Agriculture Organization; MAFAP = Monitoring African Food and Agricultural Policies; CORAF/ WECARD = West and Central African Council for Agricultural Research and Development; KM = knowledge management; III c = Analysis of the food policy system functions.

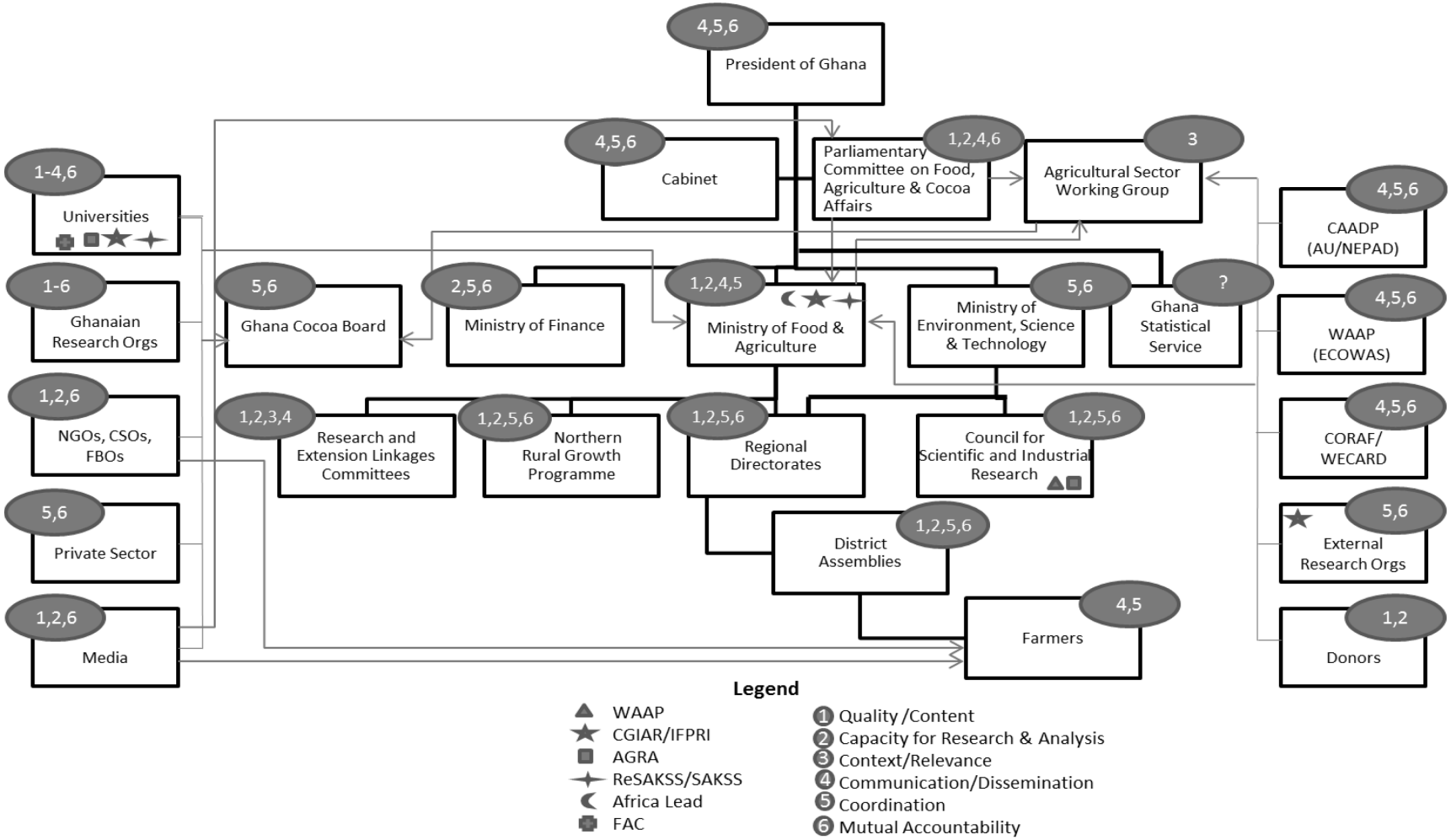
In this section, we discuss the relative importance of each of the six characteristics for each policy system function. We ask which organizations are currently active in each system function, which could be more involved, and what are the overall strengths and weaknesses of the policy system, especially with respect to the involvement of the DPs in each function. In Table 3.2 below, we suggest the relative importance of the six characteristics with respect to each of the four policy system functions, according to our analysis. In Figure 3.3, we indicate the weakest characteristics of each organization (or group of organizations) and where the DPs exert influence.

Figure 3.3, shows that the DPs' external interventions are clustered within the policy system. Three types of intervention strategies have emerged over the years. The first is for DPs to work directly with government ministries— within MoFA, either specifically in the PPMED, or within MEST's CSIR. Both entities are overwhelmed with international funding for projects that fulfill the requirements of the DPs' intervention projects, but that do not necessarily serve the needs of the ministries, or worse, detract resources from the ministries' own initiatives. The second strategy that DPs have taken is to establish their own policy-relevant organizations within the country, such as IFPRI's Accra-based research office. Although this strategy may be effective at providing locally relevant policy research that politicians and policymakers may pay heed to (because of the international reputation of these organizations) this strategy runs the risk of undermining local policy research capacity as it detracts from the already minimal demand for research evidence from local researchers. Some of these deficiencies are addressed through active collaboration with local researchers and regular capacity development activities. The third strategy, also part of the second strategy above, is for DPs to directly partner with local universities to conduct collaborative research. This partnership increases the local content of the research, challenges Ghanaian researchers to improve the quality of their research to meet international publication standards and exposes researchers to new analytical techniques and policy ideas. However, Ghanaian and international researchers and professors have no incentive to increase the relevance of their research to current policy issues, or to improve communication of research results to policymakers, unless they are actively engaged in the policy process on a regular basis.

Strategic Analysis

Strategic analysis (SA), which includes all research and policy analysis-oriented tasks, serves several functions within a simple policy process. First, SA may be undertaken to determine if an issue warrants attention from policymakers. In other words, it determines if a problem is actually a policy issue, and the extent of the problem. Such SA may arise from detection of trends or anomalies in monitoring and evaluation data or because of vocal advocacy to address an issue or event beyond civil society's control. SA must be undertaken to determine possible policy solutions, including the effectiveness, cost-efficiency, equity, and sustainability of each option. In the broader scope of policymaking, SA is carried out to determine long-term development goals and national strategies for achieving them. This SA differs from short-term analysis, which focuses on determining the specifics of a policy or evaluating the outcomes of a new program. A country may rotate through a longer-term cycle of policy agenda setting every five to ten years. Thus, the type of SA required by a policy system depends on what stage it is at in the long-term policy cycle.

Figure 3.3 External interventions on Ghanaian policy organizations and the weakest policy-related characteristics of each organization



Source: Authors.
Note: NGOs = nongovernmental organizations: CSOs = civil society organizations; FBOs = farmer-based organizations; CAADP = Comprehensive Africa Agriculture Development Programme; AU = African Union; NEPAD = New Partnership for Africa's Development; WAAP = West Africa Agricultural Productivity; ECOWAS = Economic Community of West African States; CORAF/WECARD = West and Central African Council for Agricultural Research and Development; CGIAR = Consultative Group on International Agricultural Research; IFPRI = International Food Policy Research Institute; AGRA = Alliance for a Green Revolution in Africa; ReSAKSS = Regional Strategic Analysis and Knowledge Support System; SAKSS = Strategic Analysis and Knowledge Support System; FAC = Future Agricultures Consortium.

Table 3.2 Relative importance of six organization-level characteristics with respect to four functions of the policy system

Functions	Organizations Currently Involved	Organizations that could be Involved more effectively	Characteristics					
			Quality/ Content	Capacity for research and analysis	Context/ relevance	Communication/ dissemination	Coordination	Mutual accountability
Strategic Analysis	University faculties PPMED (MoFA) ISSER GIMPA IFPRI	Newly emerging think tanks, global regional organizations operating in Ghana; UNU; international and local NGOs	★★★	★★★	★★★	★★	★★	★★
Monitoring and Evaluation	ReSAKSS MoFA, MEST, and MF Regional directorates District assemblies	CSIR, regional research institutions; Private sector; NGOs in selected project areas	★★★	★★	★★★	★★★	★★	★★
Knowledge Management	ISSER GSS GIMPA ASWG	PPMED, MoFA, CSIR, Development Think Tanks, private sector	★★★	★	★★	★★★	★★★	★
Capacity Building	University faculties GIMPA Think tanks	Regional universities and new private universities	★★★	★★★	★★	★★	★★	★

Source: Authors.

Note: Legend: ★ Least important; ★★ Somewhat important; ★★★ Most important PPMED = Policy, Planning, Monitoring, and Evaluation Directorate; MoFA = Ministry of Food and Agriculture; ISSER = Institute of Statistical, Social, and Economic Research; GIMPA = Ghana Institute of Management and Public Administration; IFPRI = International Food Policy Research Institute; ReSAKSS = Regional Strategic Analysis and Knowledge Support System; MEST = Ministry of the Environment, Science, and Technology MF = Ministry of Finance; GSS: Ghana Statistical Service; GIMPA = Ghana Institute of Management and Public Administration; ASWG = Agriculture Sector Working Group; CSIR = Council for Scientific and Industrial Research; NGOs = nongovernmental organizations; UNU = United Nations University

The policy analysis unit within the coordinating ministry is responsible for leading the system's SA, which in Ghana is the PPMED within the MoFA. However, as donors fund 60% of the MoFA budget, there is ample room for policy agenda to be heavily influenced by development partners. As a result, some of the resources of the DPs for in-country SA are spent on research and analysis that support DPs' priorities and programs that may not be directly relevant for the national strategies such as FASDEP. Although all parties have committed to supporting CAADP implementation, their implementing strategies differ. This could become problematic unless a strong effort is made to harmonize donor ideas and strategies to address larger national strategies and planning activities.

The secondary players in SA in the Ghanaian food policy system include universities and the local think tanks such as ISSER and CEPA and externally funded think tanks such as IFPRI. These organizations tend to undertake broader forms of SA than PPMED, in identifying food and agricultural issues and undertaking analysis to support policy-based solutions. However, as is the case in all countries, the incentives of secondary organizations are such that their researchers may conduct studies that are not directly relevant to the food policy system in Ghana. For example, university researchers are incentivized to research issues that will yield publishable papers, that may or may not be in line with issues facing the PPMED or MoFA in general, or are relevant for the implementation of the FASDEP. The challenge for coordination is aligning the opportunities that research organizations have, with the evidence and information needs of the national policy system. This is true of both Ghanaian and international organizations.

High quality analysis is a necessary, although not a sufficient condition for high quality policy discourse. In theory, good analysis if used well in policy process could help prevent a suboptimal policy decision; however, it requires that decision-makers have a correspondingly high level of analytical ability to correctly interpret analysis and recognize its inherent value. If a system's strategic analysts are effective in meeting information needs of the decision-makers who are capable of discerning quality, they can demand and enforce the production of high quality analysis. Conversely, if the decision-makers are averse to a democratic, evidence-based policy process, the quality of the policy debates can easily deteriorate. Thus, the quality of analysis is dependent on the system's demand for it, and the capacity of the organizations to produce it.

The quality of the contribution that each organization makes to SA also varies according to each organization's incentive system. Poor organizational structure in the government, for example, facilitates a culture of underperformance, and makes it difficult to fire individuals that produce low quality work. The difficulty in measuring quality of work translates into difficulty in monitoring an individual's effort l. The peer review process that precedes journal publications ensures a certain level of quality is attained and academic researchers and professors are evaluated according to this metric. However, a peer-review evaluation system does not exist in the analytical departments of ministries for several reasons. First, it requires colleagues to evaluate each other's work in a public manner that is not culturally acceptable. Second, turnaround time for analyses varies considerably, and when the time allotment tips to the lower end of the scale, there is little time to validate the quality of the analysis via peer review. Lastly, the same monitoring problem that necessitates peer review in the first place will also plague the peer review process: it is difficult to verify the quality of the work produced, in terms of both the original analysis and the evaluation thereof, or the level of effort exerted for either task.

Two types of capacity affect the quality of research and analysis produced. First, a researcher must have the basic skills and knowledge to perform the needed analysis, including a thematic understanding of the issue and its underlying factors, IT skills, and technical/analytical skills. The second type of capacity dictates how this individual capacity is used. Termed organizational capacity, this includes human resources management, resource allocation, leadership, hierarchy, and incentives. Access to data, finances, literature, and the technology and software required for the analysis, also fall under the purview of organizational capacity. These elements control how effectively individual capacity is used.

While the presence or absence of technical skills can be detected with minimal effort, determining which organizational factors contribute to underutilization of individual capacity requires a careful assessment of the organization. From interviews and conversations with employees and outside observers, we have delineated a number of factors that have hindered the effective application of skills to policy analysis.

The regulations governing the public sector in Ghana, like most public sectors, facilitate a work culture of minimal effort as opposed to an environment that fosters innovation and entrepreneurship Although employees are present at the office, they take advantage of the trust of their supervisors and take extended breaks resulting in reduced productivity. The Ministry has a fund for capacity building of its employees, allowing employees to obtain certificates of technical competency, bachelor degrees, and graduate degrees after a few years of service. However, once employees attain their desired level of education, they leave their government post for higher paying jobs in the private sector or in international NGOs.

To rectify the low salary problem, attract and retain entrepreneurial individuals that are able to work in fast-paced environments, government must pay its employees' salaries commensurate with private sector wages. However, increasing salaries is not fiscally feasible in developing countries and previous efforts where donors topped up salaries of ministry workers who were involved in donor-driven projects caused a misalignment of incentives and failed to bolster public sector functioning in a desirable manner. Some examples include the dream team put together by Arap Moi in Kenya two decades ago and the coordinators of value chains in implementing Agricultural transformation Agenda in Nigeria (Babu et al. 2014).

We must therefore look to non-pecuniary incentives to motivate a stronger work ethic, stimulate creativity, and encourage cooperation and coordination. This falls within the scope of organizational capacity. Personnel managers could formulate a performance-based rewards system that incentivizes higher levels of effort through increased responsibility for a project or more choice over what projects to take on in the future rather than promotions or raises. To effectively utilize a system's aggregate capacity for strategic analysis, there must be clear communication channels occurring in multiple dimensions. Communication is vital for strategic analysis to raise issues requiring analysis and to disseminate the results thereof. Policymakers and researchers must be in constant dialogue to balance this supply and demand of evidence for policymaking. There must be open dialogue between the public, private, and third sectors to raise policy issues and initiate the process of research and analysis. Federal, regional, and district administrations must communicate with each other to determine the geographic level of analysis required for various issues. There could be formal communication channels to ensure regular interaction for each of the aforementioned links, supplemented by informal discussion, which will vary by policy issue. In Ghana, there are strong communication ties between the development partners and the MOFA officials at the headquarters. However, as expressed by some of the interviewees, the communication between the researchers and policy makers remain weak (Choker et al. 2014).

In addition to communication channels for research, analysis discussion and dissemination, organizations must interact to coordinate their efforts. This is especially vital when there are multiple agencies that serve the same function within a system. Ideally, each organization has its own comparative advantage in some area of analysis or in a particular subfield of food policy, and all entities recognize each other's specialties and coordination is only a formality. However, in Ghana, not only are there multiple domestic organizations undertaking research and analysis for policymaking, but there are also myriad international players who conduct research within Ghana.

The policy analysis unit within the primary ministry holds the responsibility of coordinating the work of the different organizations. The PPMED could be the coordinating unit for the food policy system in Ghana; however, due to the overwhelming presence of multiple development partners, a separate entity, the Agriculture Sector Working Group (ASWG), was established to serve as a coordinating role. Led by MoFA officials and development partners to encourage country-ownership of development programs, the ASWG has succeeded in bringing together the different entities working in the area of food and agriculture, but it is unable to exert authority over its members to coordinate

activities. The ASWG could guide donors and development partners in how and where to provide support. For example, it could require partners to align their programs directly with government strategies and in accordance with Ghana-generated analysis. This will increase government ownership over the implemented programs and increase individual accountability to work quality. More directly, the ASWG could coordinate the partners' research activities with the research agendas of Ghanaian organizations in a way that supports rather than undermines Ghanaian-led research.

For domestic SA, the PPMED could serve as the coordinator between domestic research entities to ensure that the allocation of research capacity is balanced between immediate, short-term, and long-term policy issues, addresses the plethora of issues relating to food security, and meets the needs of the long term policy cycle. Although it cannot directly dictate the research agendas of autonomous organizations, it could bring together groups working in similar sub disciplines and regularly inform researchers about the policy agenda so that they can decide what research to take on.

The coordinating actors for SA also have the responsibility of promote a culture of mutual accountability, where all participating food policy system members are accountable to each other to achieve the goals and objectives of FASDEP and CAADP. A Mutual Accountability Framework (MAF) was developed for CAADP implementation to facilitate this, as development partners, despite their best intentions, are primarily accountable to their donors, regardless of whether or not their work is in conflict with that of the stated objectives and goals of government of Ghana.

Monitoring and Evaluation

Monitoring and evaluation systems primarily serve two functions. First, systematic data collection of agricultural production, environmental and weather conditions, markets and prices, and food consumption allows analysts to assess historical data to predict future trends and anticipate periods of food insecurity. It allows analysts to monitor current trends in different agroecological zones and identify areas that are consistently weak requiring long-term policy intervention versus areas that are prone to short-term shocks for which emergency policy intervention must be at the ready. Second, effective monitoring and evaluation systems collect data to assess the outcomes and impacts of specific policies and programs. They could provide complete, comprehensive data sets that are regularly updated and that are made publically available so that researchers are able to access them. Within the policy process, an M&E system provides information to help identify issues to be placed on the policy agenda, and to some extent, their priority, as well as information to determine if policy solutions could be revised, discarded, or continued.

Three entities are responsible for M&E in Ghana: the NDPC, the GSS, and the Ministry of Finance and Economic Planning (MoFEP). At the national level, Cross Sectoral Planning Groups (CSPGs), comprised of relevant MDA representatives as well as private sector and civil society representatives, guide the development of Annual Progress Reports. Responsibilities for different components of M&E differ by administrative level. The PPMED has oversight responsibilities, RDs are in charge of validating and verifying data, while DAs conduct the actual data collection (Senadza and Laryea 2012). However, weak capacity and resources to collect all the data needed for such analyses, and delays in the release of the needed data constraints the ability of the planning departments to undertake the analyses needed for evidence-based policy making (stakeholder consultation, December 4, 2013).

Dittoh (2013) reports that although MoFA developed an elaborate M&E system, it failed to deliver for a number of reasons. First, M&E training for MoFA staff was inadequate; only a few centrally located staff received training. Second, the M&E system was not designed to demonstrate cause and effect. The indicators were not classified to follow the input-output-outcome-impact progress, nor were staff adequately trained to be able to identify these elements for their own analysis. Additional problems reported include lack of demand for M&E information to guide policymaking and the ubiquitous lack of funding constraint.

Monitoring and evaluation of donor-led programs, the results of which could provide direction for future policymaking, arguably suffers from the weakest coordination both among and between DPs and Ghanaian entities in all four-policy system functions. There are disjoint data collection processes that have been put in place to assess the success of a particular DP program or a specific area of interest as per a DP's development agenda. Freeman (2012) notes that DPs have been reluctant to transfer M&E responsibilities to the government. For example, USAID's Feed the Future's monitoring and evaluation strategy relies primarily on its own previous M&E initiatives to assess the impact of its programs (USAID 2011). The only mention of integrating M&E with initiatives that will benefit Ghana's data collection system in its 2011-2015 Multi-Year Strategy is its plan to align with IFPRI to build local capacity to collect agricultural production data.

Joint sector reviews (JSRs), sector-wide assessments conducted by a partner country with support from DPs, are intended to rectify the above problems by developing the general M&E capacity of the country itself and mapping all of the projects and programs of both the country and the DPs. They are simultaneously intended to act as a mechanism to improve mutual accountability across the sector while generating the information required for measuring progress against sector goals. They are supposed to align with existing M&E platforms. Ghana's MoFA has undertaken five JSRs since 2008 with guidance from the ASWG. Senadza and Amarquaye Laryea (2012) remarked that the recommendations stemming from the JSRs tend to be similar to the previous year's, suggesting that accountability mechanisms to ensure follow up are insufficient. They also noted that despite these JSRs and their influence and role in the policy process, donors continue to use their own M&E systems.

High quality of the data collected through an M&E system is crucial for the system's effectiveness. Using incomplete or low quality data to conduct policy analysis could lead to the implementation of, at best, ineffective policies, and at worst, policies that exasperate the original problem. An M&E system may appear to be a large undertaking, requiring a significant quantity of capacity at decentralized levels; however, relative to research and analysis, it does not require as high a level of capacity. Thus, an effective monitoring and evaluation system can be developed within a relatively short period. At the moment, however, even routine data collection is suboptimal, requiring researchers to set up their own data collection systems, resulting in an inefficient use of resources.

The relevance of indicators and data collected by an M&E system is as important as the quality of data collected. The type of data to be collected, as well as the frequency and level at which it is collected must be determined in partnership with policymakers and researchers. This will ensure that the needed indicators will be tracked to answer both long-term and short-term research questions, and both a priori and ex post analyses can be conducted as needed. Senadza and Amarquaye Laryea (2012) note that the indicators for Ghana's two main agricultural plans—FASDEP II and the agricultural strategy of the GSGDA—are not harmonized, thus straining the agricultural M&E system in Ghana. They also point out that the interdisciplinary nature of the food and agriculture sector, especially in the context of agricultural trade, needs stronger coordination among ministries, particularly MoFA, Ministry of Trade and Industry, and Ministry of Finance.

M&E systems require strong skills in survey development; data collection, processing, and cleaning; and preparation of user-friendly data files. Although capacity for research and analysis is not a priority, consultation with researchers and analysts is important to ensure that data collected is relevant and meets analytical needs, such as frequency, level of data collection, whether data should be quantitative or qualitative, and from whom data could be sourced. In that context, coordination between the M&E system and the research and policymaking communities is important, and the system should be held accountable for the quality and relevance of the data it produces.

The task of communication and dissemination of information could lie on the shoulders of the M&E system as well. The importance of open data has become a hot topic in recent years and Ghana is no exception. Open data, that is, publically available datasets in user-friendly formats with basic descriptive statistics, should be the key function of the M&E community. This allows researchers and analysts to easily access the data they need for their work rather than wasting time and resources to build their own datasets or request special access. It also allows for duplication of studies, which has the

additional benefit of increasing accountability of researchers to the quality of the work. It will allow Ghanaian students to undertake relevant research that can be useful for the policy system and will expose them to actual policy issues facing Ghana, potentially stimulating interest in careers in public service. Lastly, open data will provide NGOs, CSOs, and FBOs with the opportunity to advocate for their respective causes with the backing of data, increasing their credibility in the policy sphere.

Knowledge Management (KM)

Knowledge management systems are virtually absent in most developing countries; there is rarely a single focal entity that aggregates data, research projects, tools, technologies, and policy analytical-relevant materials, nor a coordinating group that tracks research projects and development programs that are either completed, in-progress or up-coming. Because of this, well-intentioned DPs and local partners unintentionally repeat research studies every few years. As with an ineffective monitoring and evaluation system, poor knowledge management results in an inefficient use of resources, adding extra costs to an already overburdened system. High turnover among public employees and in-country DP staff further contributes to poor knowledge management, as there is minimal institutional memory regarding past research and their policy implications.

An effective KM system has similar characteristics to an effective M&E system, that is, the content, quality, and relevance of its contents are critical to the system's ability to serve the needs of the policy research and analysis community. Capacity for research and analysis is not crucial to an effective KM system, however, a strong communication strategy is essential. Because policy makers are not accustomed to having access to research materials, the KM system must simultaneously act as a supplier of knowledge and as a stimulator of demand. To do so effectively, the KM system could coordinate with all of the policy organizations to ensure that the system is regularly supplied with new information and meets the needs of the KM system users. Its wide range of potential users, from researchers to policymakers to advocators requires a multiuser-friendly format that offers datasets, detailed research reports, as well as policy briefs.

Once established, a KM system could be relatively self-governing, fed by organizations interested in sharing their resources and by researchers interested in making novel strides in policy research. As the KM system is itself a portal to improve the effectiveness and efficiency of Ghanaian food and agricultural research, it is not so much accountable to its users as much as it is an opportunity for enhancing mutual accountability between its users, especially with respect to the quality of work. When information and resources are shared freely among colleagues, its creators are under social pressure to ensure their research methods are robust. This will aid in raising research quality norms in Ghana.

The M&E and KM systems should not operate disjointedly; both are important components of a successful research system. All information generated by the M&E system could automatically feed into the KM system and be linked to any research outputs that have used the same M&E data or that answer similar research questions. Coordination between the two systems, with input from the user community regarding content and format, is important for the two systems to be effectively integrated and operate successfully. The main coordinator of a KM system could be outside of the government to ensure impartiality of resources. It would also be beneficial if the coordinator was well-established with a reputation for excellence within the policy sphere and has significant ICT experience.

It is increasingly common practice among the development community to make research reports and publications publically accessible on their websites. Technologically advanced Ghanaian organizations are also increasingly publishing their research reports online. However, there is not yet one source where all of these materials have been compiled. Having one aggregated source of data, research results, tools, programs, technologies, and other relevant research inputs and outputs would improve the efficiency of the system, as researchers would be able to quickly ascertain the uniqueness of their research interest and its potential to add value to agricultural knowledge. An online, regularly updated, searchable database for all items related to food and agriculture policy research, analysis, and development is currently absent from the Ghanaian policy system. Such a system could interact with the

researcher/analyst community, stimulating demand for its services by promoting its contents through regular email updates that detail newly uploaded materials and summarize key research outcomes.

One KM initiative currently underway in Ghana is the development of a Strategic Analysis and Knowledge Support System (SAKSS). The SAKSS was envisioned as a policy support system to aid countries in meeting their CAADP targets. In addition to knowledge management, they are also expected to support M&E and information generation. The node has six thematic research groups, which are aligned with the six programmatic areas outlined in METASIP. Each theme area has a leader who facilitates meetings with relevant researchers to discuss current research projects and identify knowledge gaps. There is an effort underway to present these knowledge gaps to students as research ideas for thesis projects. This way, students will learn about pressing policy issues that will better prepare them for policy analysis jobs in Ghana and at the same time, fill a critical knowledge gap.

A key weakness of the SAKSS is one that has also been identified by Dittoh (2013) in relation to the METASIP Steering Committee and by MoFA and MEST employees during a December 2013 stakeholder consultation in relation to climate readiness for agriculture. This weakness is that contributions (of time, effort, and finances) are dependent on members' interest and motivation. Involvement in committees, cross-ministerial working groups, and similar initiatives is in addition to employees' regular duties. The lack of accountability to fulfil commitments that are not explicitly mandated in one's job assignment is a continuous struggle. A report produced by Africa Lead (2013) on Ghana's institutional architecture for food policy change suggests that the METASIP Steering Committee is ineffective in coordinating implementation. There is minimal participation from implementing entities outside of the MoFA and Committee meetings only have a low (20% as one interviewer mentioned) attendance rate.

Capacity Building

Capacity building for policy research, analysis, and formulation is necessary to ensure the flexibility and adaptability of the policy system to the various challenges faced by the food and agriculture sector, ensure the sustainability of the system, and to continuously stimulate innovative, high quality policy making. Capacity building, vis-à-vis professional development, is a common investment made by any successful company to encourage innovative thinking and push boundaries. It can also act as an incentive or benefit as it offers a break from the usual work routine and rewards participants with a broad range of useful skills and knowledge. In the public sector of many developing countries, including Ghana, investing in training programs, may have the opposite effect: many employees work for public institutions that provide them with higher education training opportunities, however, upon receiving the desired level of credentials, they transfer to higher paying jobs in the private sector. Because of the weak judicial system, organizations cannot enforce contracts that require employees to stay on for a predetermined period following completion of training.

A second major constraint to building capacity in Ghana is the absence of sufficiently high capacity to lead the desired trainings. As such, many of the DPs provide capacity development programs as part of their development interventions, specifically to improve the implementation of their programs or to check off the box requiring that they invest in lasting capacity. However, these programs are often ineffective for myriad reasons. First, they may be too specific, that is, the knowledge participants' gain may only be useful for the specific DP program. Second, they may not be locally relevant; for example, the skills gained may not be useful for analyzing local problems. Third, the new training may require additional inputs, such as technology or financing that the local partner cannot afford. Fourth, the DP may not provide continued support to reinforce lessons learned or to clarify the information in different contexts. Fifth, the DP may not provide sufficient training to enable the trainees to also become trainers. Sixth, the training program may be ill targeted, especially if a capacity needs assessment was not initiated to identify the true constraints or challenges. Thus, until the dominating capacity needs are met, the training will not be useable (Babu et al. 2007). These challenges suggest that the capacity to build

capacity could be locally sourced and that an oversight body could be created to ensure the relevance and location of future capacity building activities.

Universities tend to be the location of the highest trained professionals within a country and hence the best source of trainers. Moreover, their experience in formal education suggests that universities would also be the optimal focal point for post-graduation training. However, universities appear to be the most disjoint from the policy process, and their skills the least applicable to training programs intended for policy researchers, analysts, and formulators. GIMPA and ILGS have stepped up to the fill the gap between the formal education that universities offer and the specific policy skills needed by Ghanaian ministries. However, the capacity of these organizations to train policymakers and analysts is insufficient given the variety of challenges faced by the food and agriculture sectors. They require backstopping to enhance the quality and relevance of their capacity development programs through capacity building of their own research and analysis trainers (Staphenhurst 2004).

In Ghana, many of the DPs' capacity building programs and state reforms have taken place at the central level. However, since Ghana's decentralization reforms and the increased role of districts in planning, implementation, and M&E of programs, there has not been simultaneous efforts to foster capacity development at lower levels. Freeman (2012) suggests that positive aggregate indicators of performance hide the fact that districts are underperforming, especially in their ability to deliver services to rural Ghanaians and to improve engagement of the rural poor.

A country-level capacity building system must demonstrate good communication and coordination skills, and must be able to assess the aggregate capacity of the system and develop programs to strengthen the system's weakest areas and levels. Babu, Mensah, and Kolavalli (2007) find there to be little coordination between development partners' capacity building programs. Although they are effective at improving skills, more coordination is needed between DPs and organizations to prioritize capacity building priorities at the systems level and to ensure that policies are in place to retain and utilize the newly built capacity effectively. The Ghana Aid Policy & Strategy (2011–2015) acknowledges that the "absence of a national strategy for capacity development has been a major impediment to harnessing the full potential of external aid, in particular technical assistance" (MoFEP 2010, 13). Efforts to address this need continues to be limited.

A comprehensive needs assessment is essential to developing an effective capacity building agenda (Babu and Kolavalli 2013). The assessment must be system-wide and must distinguish between weaknesses in different types of capacity, for example, between an individual's lack of technical skills and an organization's inability to effectively utilize its employees' skills. Correctly identifying the bottlenecked or weak areas of capacity requires the capacity assessors to communicate effectively with other players in the policy system to understand the true constraints and to ultimately coordinate capacity development strategies that yield system-wide improvements (Dittoh 2013).

4. LESSONS LEARNED

The case study above provides several lessons for the strengthening of the food policy system and the coordination of the development partners to this objective.

There is a need for concerted effort on the part of the government to organize the inputs and support provided by the development partners in the process of policy change, change and tracking. Developing a coordinating mechanism and strengthening it is fully in the interest of the development partners. While taskforces and special committees have been established, the mechanisms are rarely reviewed seriously form the policy system perspective. In some instances, when such mechanisms are not fully functional, other aspects policy system identified in this paper becomes less effective.

Strengthening the policy system requires development partners to invest in strengthening all elements of the system in an integrated manner. This will require a concerted effort from all development partners. Policy makers rarely demand policy evidence. Investment in the development of the capacity and culture for evidence based policy-making needs to be nurtured. The linkage between the policy research and analysis groups and the policy makers continue to be tenuous. This is partly due to mistrust between policy makers and the research community. Unless their own units within the ministries conduct policy research, policy makers assume that researchers have an external agenda them. Even internally produced research by universities are increasing mistrusted by the policy makers because of the fear that they could be motivated by special interests or are instigated by opposition parties. Thus, trust between the research community and policy makers' needs to be, strengthened by increase the credibility of the research entities in the policy systems.

Peer review mechanism for the policy analysis conducted by government analysts is not well coordinated. Analytical units of the ministries need to be separated from the planning units with due responsibilities and the incentive for analytical work in the ministry is minimal as the benefits form organizing workshops and retreats funded by the donors is much higher than undertaking the analytical work. There is the need for team effort in generating evidence. Research from universities or think tanks could be, tied with an analyst in the ministry to make research more rewarding and impact making. This will also increase the ownership and develop strong capacity for such analysis in the public sector.

The role of private sector, NGOs, and farmer based organizations in the policy process remains ad hoc and with minimal participation. Involving these entities in a systematic manner will mean giving them the responsibilities for information generation and make them accountable for their role. An expansion of the policy system to include more organizations representing a wide range of players will increase the dynamism of the policy process making it more transparent and inclusive.

The quality of the knowledge generated by research entities varies depending the data used, assumptions made by the researchers, and the policy options recommended. Multiple development partners often conduct research on the same topical issues. For example, at least four development partners through four different local research entities sponsored research on policy issues related to soil fertility. These development partners all relied on the same set of individuals in the ministry to collect and coordinate their research, a situation that could be, avoided with better coordination. Ministry officials normally do not say "no" to these multiple requests for collaboration as they see this as additional source of income and further as one, interviewee put it "We do not know who do high quality work and we will can take the best research among them to use for our policy and strategy purposes."

Often, the context and relevance of research and evidence generated determines its use in the policy making process. Research and analysis conducted by think tanks and university researchers often do not meet the daily information needs of policy makers. Strategic analysis is thus essential because it not only addresses the long-term issues, but also provides policy relevant information for the issues at hand. Effective and timely communication of research and analysis among participants in the policy process is necessary for effective functioning of the policy system. Information asymmetry among the various groups within the policy system often creates lopsided debates and uninformed parties tend to stick with their original stance on issues despite new evidence and policy options.

Finally, enforcing mutual accountability among the actors and players of the policy system requires follow up on the decisions made collectively and follow through on the implementation of specific policies and program interventions.

5. CONCLUDING REMARKS

Ending hunger, under nutrition, and extreme poverty requires a well-capacitated and harmonized food policy system at the national level. A strong and well-coordinated food policy system can help in nurturing a transparent policy environment. It can also bring multiple sectors and actors from public, private civil society and development partner institutions together to provide support for developing and implementing a holistic set of food nutrition security policy and program interventions (USAID 2016). Yet, developing country governments and development partners face a number of coordination and harmonization challenges as they attempt to properly assess, the operation of a country's food policy system with the intention of strengthening it. Despite the extent of these challenges, very few studies have closely examined how the architecture of organizations involved in the food policy system to facilitate the advancement of the policy process.

In this paper, we have attempted to develop a framework to analyze the process of strengthening the food policy system in the context of Ghana's food and agriculture sector, and document selected lessons for other developing countries. We focused on the capacity for generating the evidence necessary for the policy system to function effectively, and on how to coordinate such evidence generation. We examined the need for strengthening the knowledge management systems to share the evidence and the corresponding analyses. We recognized the supporting role of monitoring and evaluation systems in identifying areas in need of policy intervention and determining the effectiveness of already implemented policies. It is evident that there is an urgent need to enable a culture of mutual accountability and nurturing to improve the efficiency of the food policy system. Finally, strategic efforts are needed to strengthen the institutional and organizational capacity of the actors and players in the policy system and increase their effectiveness within the policy system.

Addressing these challenges require country specific interventions as part of the broader policy processes. In the context of the African agriculture sector, implementation of CAADP's Malabo declaration requires guiding the countries through effective organization of their food and agricultural policy systems. Better understanding of the various elements of the policy systems, their functions and roles, and the need for improving the coordination and harmonization of their contributions can greatly enhance the food policy process in developing countries. The continuous engagement of development partners and the country governments in facilitating such coordination cannot be overemphasized.

APPENDIX: SUPPLEMENTARY TABLE

Table A.1 Institutional affiliations of interviewees

Category	Institutional affiliations of the interviewees

Government	• Parliamentary Committee on Food, Agriculture, and Cocoa Affairs
	• Ministry of Food and Agriculture
	  ○ *Monitoring and Evaluation Focal Point*
	  ○ *Policy, Planning, Monitoring, and Evaluation Division*
	  ○ *District director of agriculture*
	• District Chief Executive

Research and advocacy	• University of Ghana, Lagon • University of Cape Coast • University of Development Studies • Council for Industrial and Scientific Research • Savannah Agriculture Research Institute • Ghana Institute of Management and Public Administration • Ghana Strategic Support Program • Alliance for Green Revolution in Africa • Institute of Statistical, Social, and Economic Research
Civil society	• Farmers
Private sector	• Seed producer • Tomato Processor
Donors	• USAID • Food and Agriculture Organization –Monitoring African Food and Agriculture Policies • World Bank

Source: Authors' compilation.

REFERENCES

ACBF (African Capacity Building Foundation). 2004. *Reconstruction and Capacity Building in Post-conflict Countries in Africa: A Summary of Lessons of Experience from Mozambique, Rwanda, Sierra Leone & Uganda.* Occasional Paper No. 3. Harare, Zimbabwe.

ADB (African Development Bank). 2014. *Capacity Building on Value for Money, Sustainability and Accountability in Social Sectors for ECOWAS Member State Parliamentarians*. Concept Note. www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Concept_Note_-_20-6-2014.pdf.

Al-Hassan, R and C. Poulton. 2009. *Agriculture and Social Protection in Ghana.* Future Agricultures Consortium Working Paper No. SP04. Brighton, UK: Future Agricultures Consortium.

ASARECA (Association for Strengthening Agricultural Research in Eastern and Central Africa). 2013. "Millennium Development Goals of Food Security: Issues, Challenges, Lessons." *Policy Analysis and Advocacy Programme: Electronic Newsletter* 16 (19).

Babu, S. C. 2014. "Policy Processes and Food Price Crises: A Framework for Analysis and Lessons from Country Studies." In *Food Price Policy in an Era of Market Instability: A Political Economy Analysis*., edited by Per Pinstrup-Andersen, 102–132. Oxford, UK: Oxford University Press.

Babu, S. C., and A. Ergeneman. 2005. "Food Policy Dialogue with Indian Parliamentarians." *Journal of International Communication* 11 (1): 41–54.

Babu, S. C., K. Gyimah-Brempong, M. Nwafor, and H. Edeh, 2014. *Capacity Assessment for Achieving Agricultural Transformation Agenda in Nigeria.* Nigeria Strategy Support Program Working Paper PP59. Abuja, Nigeria: International Food Policy Research Institute.

Babu, S. C. and S. Kolavalli. 2013. *Methods of Capacity Needs Assessment: A Discussion Note*. GSSP Discussion Note No. 026. Accra, Ghana: International Food Policy Research Institute.

Babu, S., R. Mensah, S. Kolavalli. 2007. *Does Training Strengthen Capacity? Lessons from Capacity Development in Ghana, Ministry of Food and Agriculture.* Ghana Strategy Support Program Background Paper No. 0009. Washington, DC: International Food Policy Research Institute.

Baser, H., and P. Morgan. 2008. *Capacity Change and Performance.* Discussion Paper 59B. Maastricht, the Netherlands: European Center for Development Policy Management.

Birner, R., and D. Resnick. 2010. "The Political Economy of Policies for Smallholder Agriculture." *World Development* 38 (10): 1442–1452.

Blee, K. M., and V. Taylor. 2002. "Semi-structured Interviewing in Social Movement Research." In *Methods of Social Movement Research,* edited by B. Klandermans and S. Staggenborg. Minneapolis, MN, US: University of Minnesota Press.

Breisinger, C., X. Diao, S. Kolavalli, R. A. Hassan, and J. Thurlow. 2011. *A New Era of Transformation in Ghana: Lessons from the Past and Scenarios for the Future.* Washington, DC: International Food Policy Research Institute.

Chhokar, J. S., S. C. Babu, and S. Kolavalli. 2014. *Improving the Food Policy Process: Lessons from Capacity Strengthening of Parliamentarians in Ghana.* IFPRI Discussion Paper 01401. Washington, DC: International Food Policy Research Institute.

Dittoh, S. 2013. *Capacity Strengthening Strategy through Capacity Needs Assessment for Country Level Strategic Analysis and Knowledge Support System (SAKSS): Ghana.* ReSAKSS CNA Report 5. Washington, D.C.: International Food Policy Research Institute.

Freeman, T. 2005. "Effective States and Engaged Societies: Capacity Development for Growth, Service Delivery, Empowerment and Security in Africa: The Case of Ghana." Ottawa, Canada, Goss Gilroy, Inc.

Grindle, M. 2004. *Despite the Odds: The Contentious Politics of Education Reform*. Princeton, NJ, US: Princeton University Press.

Grow Africa. 2013. *Sowing the Seeds of Growth: Accelerating Investments for Sustainable Growth in African Agriculture.* Accessed November 22, 2013. http://growafrica.com/wp/wp-content/uploads/2013/01/Grow_Africa_Booklet_Jan2013.pdf.

Hajer, M. A. 2006. "Doing Discourse Analysis: Coalitions, Practices, Meaning." In *Words Matter in Policy and Planning: Discourse Theory and Methods in the Social Sciences,* edited by V. den Brink and T. Metze, 65–74. Utrecht, the Netherlands: Graduate School of Urban and Regional Research.

Inter-Parliamentarian Union. 2008. *Informing Democracy: Building Capacity to Meet Parliamentarians' Information and Knowledge Needs.* Geneva: Inter-Parliamentarian Union.

Kolavalli, S., M. Keefe, and R. Birner. 2013. *Reflections on Influencing Country Policies and Strategies: The Toy Story*. Ghana Strategy Support Program Discussion Note No. 023. Accra, Ghana: International Food Policy Research Institute.

MoFEP (Ministry of Finance and Economic Planning). 2010. *Ghana Aid Policy & Strategy 2011-2015.* Accra, Ghana.

MoFA (Ministry of Food and Agriculture). 2010. *Medium Term Agricultural Investment Plan (METASIP) 2011-2015.* Accra, Ghana.

———. 2013. *West Africa Agricultural Productivity Programme Annual Report 2012.* Project Coordination Unit Accra, Ghana. Accessed November 22, 2013. http://www.waapp.org.gh/web/reports.

NDPC (National Development Planning Commission), GoG (Government of Ghana), and UNDP (United Nations Development Programme). 2010. *2008 Ghana Millennium Development Goals Report.* Accessed September 13, 2013. http://www.undp.org/content/dam/undp/library/MDG/english/MDG%20Country%20Reports/Ghana/ghana_april2010.pdf.

ONE. 2014. *Ripe for Change: The Promise of Africa's Agricultural Transformation*. Washington, DC: ONE Campaign.

Pinstrup-Andersen, P. 2014. *Food Price Policy in an Era of Market Instability: A Political Economy Analysis.* Oxford, UK: Oxford University Press.

Poulton, C. 2014. *The Political Economy of African Agricultural Policy*. Prepared for the SNRD Agricultural Policy Learning Event. Accra, Ghana.

Ragasa, C., Babu, S. C., and J. Ulimwengu. 2014. "Institutional Reforms and Agricultural Policy Process: Lessons from Democratic Republic of Congo." *Agricultural and Food Economics* 3 (4): 1–21.

Resnick, D., S. C. Babu, S. Haggblade, S. Hendriks, and D. Mather. 2015. *Conceptualizing Drivers of Policy Change in Agriculture, Nutrition, and Food Security: The Kaleidoscope Model*. IFPRI Discussion Paper 01414. Washington, DC: International Food Policy Research Institute.

Salifu, A., G. Francesconi, and S. Kolavalli. 2010. *A Review of Collective Action in Rural Ghana*. IFPRI Discussion Paper 00998. Washington, DC: International Food Policy Research Institute.

Senadza, B., and A. D. Amarquaye Laryea. 2012. *Managing Aid for Trade and Development Results: Ghana Case Study.* Paris: Organisation for Economic Co-operation and Development.

Stapenhurst, F. 2004. *Parliamentary Strengthening: The Case of Ghana, Capacity Enhancement*. Capacity Enhancement Brief No. 8. Washington, DC: The World Bank.

Strauss, A. L. 1987. *Qualitative Analysis for Social Scientists*. New York: Cambridge University Press.

USAID (United States Agency for International Development). 2011. *FY 2011-2015 Multi-Year Strategy.* (Feed the Future strategy document. Accessed December 1, 2013. http://www.feedthefuture.gov/sites/default/files/country/strategies/files/GhanaFeedtheFutureMulti-YearStrategy_2011-08-03.pdf.

———. 2013. *Institutional Architecture for Food Security Policy Reform: Guidelines for the Assessor. Draft March 25, 2013.* Accessed September 13, 2013. http://africaleadftf.org.s79942.gridserver.com/wp-content/uploads/2013/05/Instititional-Architecture-Assessment-Guidelines-3-25-13.pdf.

———. 2016. Ghana: Nutrition Profile. Assessed September 7, 2016. http://www.USAID.gov.what-we-do/global-health/nutrition/countries/ghana-nutrition-profile.

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