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Food system flows and distribution for the Accra metropolis: Unfolding the policy dimensions

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Abstract

The continuous growth of cities in developing countries portends the challenge of food provisioning. This study therefore examined the policy dimensions of food flows and distribution for the Accra metropolis. The study methodology involved review of policy documents, interviews with government officials and city authorities, and discussions with a cross-section of food commodity traders at the city's markets. The study established that the city's food region is very extensive with the principal food staples originating from distant areas. The city's local markets (and numerous informal markets) are very important in the food distribution network. However, they are characterised by inadequate infrastructure, poor waste management and congestion in view

of poor planning. There is no composite national policy on city food supply and distribution apart from discrete programmes that seek to encourage partnership between city authorities and the private sector for the development of market infrastructure. The paper advocates for comprehensive national policy to ensure well-defined rural-urban linkages and city level agenda for sustainable food access in the city.

Keywords: urbanization; city growth; food system; food flows; sustainable cities, local markets

Introduction

Background

The United Nations (UN) estimated that in 2016 over half of humanity (54.5%) lived in urban settlements, with 1.7 billion people (23% of the world's population) living in cities with at least 1 million inhabitants. The UN also projected that by 2030, urban areas will house 60% of global population and one in every three people will live in cities with at least half a million inhabitants (UN, 2018). The UN further indicated that 95% of urban expansion in the next decades will take place in the developing world while the estimated 828 million people living in slums today keeps rising. This trend of population dynamics portends many challenges to governments, city authorities and city dwellers, particularly the poor. The UN Sustainable Development Goal (SDG) 11 explicitly talks about cities and communities, with the multi-faceted target to "*make cities and human settlements inclusive, safe, resilient and sustainable"*. Achieving this target means ensuring sustainable material flows, including efficient food system flows (FSFs) and food supply and distribution (FSD), as well as, efficient resource use and consumption patterns in cities which are essential for the city's metabolic processes.

Urban dwellers consume up to 70% of food production, even in countries with large rural populations (FAO, 2017). Thus, disruptions in the rural-urban food supply chain and inefficient urban food distribution networks could have serious implications

for food security. They can result in rising food prices and limit peoples' ability to access food, particularly the poor who reside in informal urban settlements with limited infrastructure and access to basic services. Thus, failure to ensure efficient FSFs and FSD could hamper efforts towards achieving SDG 2 – "*end hunger, achieve food security and improved nutrition and promote sustainable agriculture"* – for urban centres and cities.

Tacoli et al. (2013) have indicated that access to food in urban centres in developing countries is a critical issue as policies on food security tend to focus more on rural food production to the neglect of access to and affordability of food. Policies to deal with FSD problems of the rapidly growing cities lag behind mainly because most urban authorities accord it low priority attention; the emphasis is on education, housing, environment, sanitation and traffic control (Hubabard and Onumah, 2001). Indeed, urban dwellers and policymakers tend to think that there is nothing wrong with the FSF and FSD. Urban planners also tend to ignore them resulting in paucity of knowledge of the challenges facing urban food system and opportunities for improvement and advocacy (Cassidy and Patterson, 2008).

In spite of the emergence of shopping malls in major cities in many parts of the world, traditional or local markets continue to show strength and dynamism (Yazgi and Ozus, 2005; Aryeetey, and Nyanteng,2006). They constitute part of the city's economic landscape and they are the central nodes for the distribution of food items to the urban population through various formal and informal supply networks. Unlike the modern planned shopping plaza, traditional markets usually operate with overlay of periodicity, that is, special market days during which the volume and intensity of marketing activities are highest (Yazgi and Ozus, 2005; Aryeetey, and Nyanteng,2006). For the urban poor whose conditions may limit them in patronising shopping malls, traditional markets are the option. Therefore, there is the need to pay attention to the formal traditional markets

(and other informal food supply channels) and how they function to facilitate food distribution in the cities and urban areas.

Cassidy and Patterson (2008) have indicated how the urban food system affects the socio-economic life of people and their environment in the US. Dubbeling, et al (2016) have also noted that in recent times operators in urban-based non-food sector are supporting the urban food system in the fields of urban and peri-urban agriculture production, developing short supply chains and promoting local processing and procurement, developing food hubs in the city region and optimising food waste reduction and re-use.

Under the New Urban Agenda (NUA), adopted in Quito in October 2016, food security and nutrition were considered as central to urban and territorial sustainability and fundamental for achieving the goals of the 2030 Agenda. With this recognition the FAO in 2016 launched the NADHALI pilot project to assist municipalities of three cities (Nairobi, Dhaka and Lima) to meet their countries' commitments to NUA. Prior to this, the Milan Urban Food Policy Pact (MUFPP) of October 2015 sought to commit local governments to work towards achieving more sustainable food systems. Thus, city authorities are being encouraged to integrate FSD in the planning and management of cities (Hubabard and Onumah, 2001; Cabannes and Marocchino, 2018; Dubbeling and Santin, 2018; FAO, 2018). The trend is towards developing local food systems strategies that focus on public health, landscape preservation, urban resilience and economic vitality (Blay-Palmer, 2015). This study therefore examines the policies of the central government of Ghana and authorities of the Accra Metropolis in ensuring sustainable FSFs and effective FSD for the city.

Conceptual considerations

Conceptually, the city's FSFs is a component of the city's material flows which are essential for its metabolic processes and functioning. It can be viewed as a complex set of activities

involving production, distribution, acquisition and consumption which affect the socio-economic life of city dwellers as well as their environment (Cassidy and Patterson, 2008). The Food and Agriculture Organisation (FAO) also considers the urban food system as "a complex system that relies on the support and coordination of many actors in public, private and civil society, with local authorities playing a key role in providing a vision and creating a framework of regulations and infrastructures" (FAO, 2011). This description of the food system suggests that city and local government authorities have a key role in ensuring effective and reliable food supplies and food security.

Food supplies begin at the unit production points at the farm level which are distant away (both domestic and external) though some limited amounts are produced within the city and the peri-urban areas. Food distribution is by various modes of transport and complex network of flow channels and delivery points, both formal and informal. It has very high private sector participation engaged in various service delivery including packaging, carriage and transportation, and catering (Argenti, and Marocchino, 2005; De Cunto et al, 2007; Dubbeling et al, 2016). These physical activities are facilitated and driven by a host of support services, energy inputs, varied consumption patterns and various mechanisms as part of the functioning of the city's economy.

Jennings et al. (2015) have described three basic types of (urban) food and market systems based on the structure of economy. The first is associated with countries with large rural population and greater degree of local and national production largely by small-scale holdings. The market is also dominated by informal actors and there is greater consumption of unprocessed foods. The second is more a feature of industrialised countries and cities. It is characterised by larger dependence on national and international trade with relatively smaller number of actors operating in the more centralised and well-structured supply chain integrated with the production system. There is reduced reliance

on local production and greater consumption of processed foods. The third model integrates the best characteristics of the first and second food systems to strengthen the links between urban areas and nearby food producers. This re-localisation takes advantage of the social, economic and environmental benefits of the city's region. It offers opportunities to the small-scale producers in urban and peri-urban agriculture and the rural areas in the city region (Jennings et al, 2015) and seeks to create a resilient balance of food supply from global and local sources (Dubbeling, et al, 2016). The model can be likened to the concept of City Region Food System (CRFS).

The CRFS is defined as the "complex network of actors, processes and relationships to do with food production, processing, marketing, and consumption that exist in a given geographical region that includes a more or less concentrated urban centre and its surrounding peri-urban and rural hinterland; a regional landscape across which flows of people, goods and ecosystem services are managed" (Dubbeling, et al. 2016. pp. 16). Since its emergence in 2013 at the FAO multi-stakeholder expert consultation meeting, the concept has received a lot of commentaries in the urban food literature. It is largely viewed as an integrated approach for looking at all the processes involved in food production, distribution, consumption patterns and dynamics in urban areas (Forster and Getz Escudero, 2014; Blay-Palmer et al, 2015; Dubbeling et al., 2017, Dubbeling and Santini, 2018; Dubbeling and Carey 2018). It provides a territorial approach to the understanding of the urban food system and developing urban food strategies not only in terms of spatial linkages but also other land use, resource management and climate change. This is because urban growth also has implications for land and water which provide food and essential ecosystem services in the dynamic urban landscape (De Cunto, et al, 2007; Dubbeling et al., 2017).

In terms of policy and planning for urban food security and promoting local economic development, the concept of

CRFS emphasizes building strong rural-urban interlinkages and agricultural value chains based on traditions and epistemologies, ecosystem considerations, regional food policy and governance structures (Blay-Palmer et al, 2015; Dubbeling et al., 2017). In this regard, a number of key questions can be posed relating to various aspects of the FSFs and CRFS as indicated in Table 1 below. As already indicated above, this study focuses on policies relating to the supply and distribution aspects of city FSFs.

Table 1: Questions relating to various aspects of the urban food system.

Subject	Question(s)
Structure	– *What are the essential characteristics of the food supply and distribution network?*
Network infrastructure	– *What are the city's food distribution network infrastructure and how do they complement each other?* – *How can the city's local markets and other informal food distribution centres be made more competitive and improve upon their service delivery?*
Actors	– *Who are the key actors and what are their complementary and/or conflicting roles in the FSF?* – *What is the nature of gender participation in the FSF?* – *How can the actors be engaged to build a better urban food system?*
Market and food waste	– *How can we take advantage of the huge volume of the city's organic waste for compost production to boost urban agriculture?*

Food Production	– *What other measures can be undertaken to promote food production in the city and the peri-urban interface?*
Management	– *What management principles/models can be employed to enhance efficiency in the city's FSF?*
Policy and governance	– *What is the policy for the city's food system?* – *How effective are the regulatory mechanisms and governance structures of the existing food system and what new models can be introduced?*
Dynamics	– *What are the potential drivers of change and how do they impact on the city's FSF?*
Innovative models	– *What best practices can be adopted or adapted for shortened supply chain, improved service delivery and more efficient urban food system in general?*

Study Methodology

The Greater Accra Metropolitan Area (GAMA)

Accra is the capital of Ghana located along the western coast of Africa. The population of Accra which was 624,091 in 1970 increased over the years to 1,665086 in 2010 (Ghana Statistical Service, 2000; Ghana Statistical Service, 2010). The city has merged with the industrial and port town of Tema and the dormitory town of Ashiaman (all in the east) and other municipalities to the west and north. The entire built-up area, referred to as the Greater Accra Metropolitan Area (GAMA), covers an area of about 3,000 sq km and has estimated population of 4.3 million, out of the 26.6 million people in Ghana (Cities Alliance, 2018). Further in the west, GAMA has merged with Kasoa (Iron City), a fast-growing dormitory town in the Central Region with a population of over 44,227 (World

Population, 2018). As GAMA continues to expand outward, prime agricultural lands are consumed which reinforces the shipment of food from distant regions. Just like other cities in the country there are three food systems: local production within the city and its peri-urban areas, supply of mainly fresh foods from distant farming regions and imported fresh and processed foods from other countries.

Method

Data for the study were obtained through interviews with officials of the 11 municipal and metropolitan assemblies (MMAs) of GAMA. They included officers in-charge of development planning, budgeting, community development, business advisory and agriculture. The officers have been in service for periods ranging from 5 to 21 years. They were engaged in one-on-one interview sessions using a structured interview schedule. The interviews centred mainly on policies and projects relating to food supplies to the city, food distribution and management of the markets by the MMAs. Interview sessions were also held with the National Development Planning Commission and the Ministry of Food and Agriculture (MOFA) on national food policy and urban FSD. The responses were ordered into various themes and based on this a comprehensive write-up was made on the food supply systems policy and planning. Discussions were also held with a cross-section of food commodity traders during field visits to 20 formal traditional markets to establish the principal sources of food supplies. The information was used to compose the map of commodity supply sources in relation to the agroecological zones of the country. The on-site visits also provided the opportunity to observe market participation by sellers and buyers and the conduct of trading activities, as well as, the physical conditions at the markets. Additionally, the study relied on extensive review of policy documents, technical reports and other relevant literature.

Findings and discussions

The city markets

GAMA depends largely on domestically produced basic food staples including maize, yams, plantains, cassava, cocoyam, fruits and vegetables. These commodities together with the imported foods flow to formal traditional or local markets and informal markets in the city and other neighbourhood and household sales points. The food supply outlets are vibrant in the food distribution network which is dominated by private small-scale operators and medium-scale enterprises. The neighbourhood markets are found in small open and common spaces in the communities. They sell from mostly makeshift structures of wood and metal. Sales from shops at the frontage of housing compounds to immediate neighbours are also very common.

The informal markets are places with unique advantage of heavy pedestrian traffic such as bus-stops on major road arteries, adjacent lands of road intersections and lorry/bus stations. Usually, trading activities emerge spontaneously at these places and may continue to intensify when uncontrolled by municipal and metropolitan authorities. Trading activities begin by mid-morning, reach the peak in the evening and continue till the early hours of the night. The trading activities do obstruct vehicular flow creating a lot of nuisance (WIEGO, 2015). In some cases, the informal markets are need-driven and they emerge because of absence of planned and well-established markets especially in the peri-urban areas (People's Dialogue on Human Settlements, 2014). Over time they grow to provide essential service for the public and the authorities may be compelled to formalise them.

In all, there are 55 formal local markets in GAMA (WEIGO, 2015). The distribution map of the markets indicate that they are concentrated in the Accra inner city and the industrial town of Tema (Fig. 1). The market density however thins out in the outlying communities and peri-urban areas. This distributional pattern indicates the fast pace of estate

development and poor planning. Thus, the geographical location of the markets reflects their historical establishment and development. The markets are of varying sizes in terms of space, intensity of market participation and transactions, and volume of trade. The high order and wholesale food markets have their special market days when they receive food supplies from the hinterland for traders to pick for redistribution at the medium and smaller markets and other sales points. Majority of the markets are characterised by poor layout and inadequate infrastructure which result in congestion in view of huge number of traders. There is also poor waste management and insanitary conditions. Others are also located in low-lying areas and, coupled with low capacity and poorly constructed drains, they are highly vulnerable to flooding.

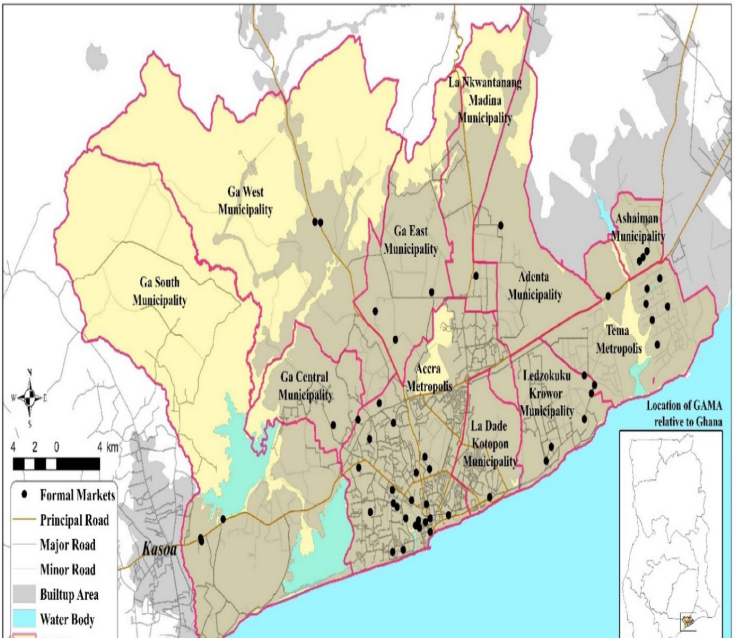

Figure 1. Spatial distribution of formal local markets in the Greater Accra Metropolitan Area

The traders at the markets form associations usually based on the major commodities traded. For example, yam sellers' association, tomatoes sellers' association, and so on. The associations have their leadership, and the head is referred to as the 'item leader'. Since women usually dominate the sector, the leader is referred to as the 'queen', for example, "tomatoes queen". The traders' associations constitute very important organisational structures at the markets and in the management of these markets. There are those registered with the metropolitan and municipal assemblies and the informal ones. The associations address the concerns of members, seek their interests, settle disputes and resolve conflicts, and are able to mobilise funds for them (WIEGO, 2015). They are the channels by which the market management and local authorities relate to the traders, for example the Greater Accra Market Association (WIEGO, 2015). However, the posturing of city authorities and the official responses to the association remains one of the most critical factors for the informal traders (WIEGO, 2015).

Food Supply Sources

The survey of sources of food supply to GAMA indicates an extensive supply landscape reflecting production specialisation based on the agroecological zones of the country and beyond (Figure 2). The most important food staples including yam tubers and maize are mainly from the forest-savanna transition zone of the middle belt, which is noted to be the food basket of the nation. The southern part of this zone is roughly 250km by road to Accra. Plantain, another popular staple crop (and bananas), as well as cocoyam, are mostly from the forest belt which is closer to Accra. Cassava is widely produced in the forest and forest-savanna transition zone. As a result, the fresh tubers are mostly from the forest region and the peri-urban frontier zone of the city. *Gari,* granules of processed cassava, originates mainly from the middle belt. Beans and groundnuts are also from the forest-savanna transition zone and

the guinea savannah. However, fruits (mainly pineapple, papaw and oranges) originate mainly from within the 50km radius of the city.

With respect to vegetables, the bulk of tomatoes and onions consumed in the country as a whole is imported from neighbouring countries, mainly Burkina Faso. It is estimated that average annual tomato and onion imports into Ghana for 2013 to 2015 were 101,640mt and 862,190 respectively (van Asselt et al, 2018). According to van Asselt et al. (2018), these figures are higher than the estimates by the Ministry of Trade and Industry (tomatoes–6337mt and onion–52,467mt) since significant trade volumes go unreported because of porous borders with the neighbouring countries, poor border enforcement, and illicit trading practices. Also, the country imports substantial amount of rice which is now a major food staple (Amanor-Boadu, 2012; Boansi and Favour, 2015). The Ghana Export Promotion Authority has indicated that the nation's value of rice imports increased by eight-fold in 7 years, from US$152million in 2007 to a peak of US$1.2billion in 2014/2015 (Ghana Export Promotion Authority, 2018). Though MOFA has indicated the importance of peri-urban agriculture in the country, involving mainly vegetable production, it has emphasized the difficulty in measuring productivity (MOFA, 2016).

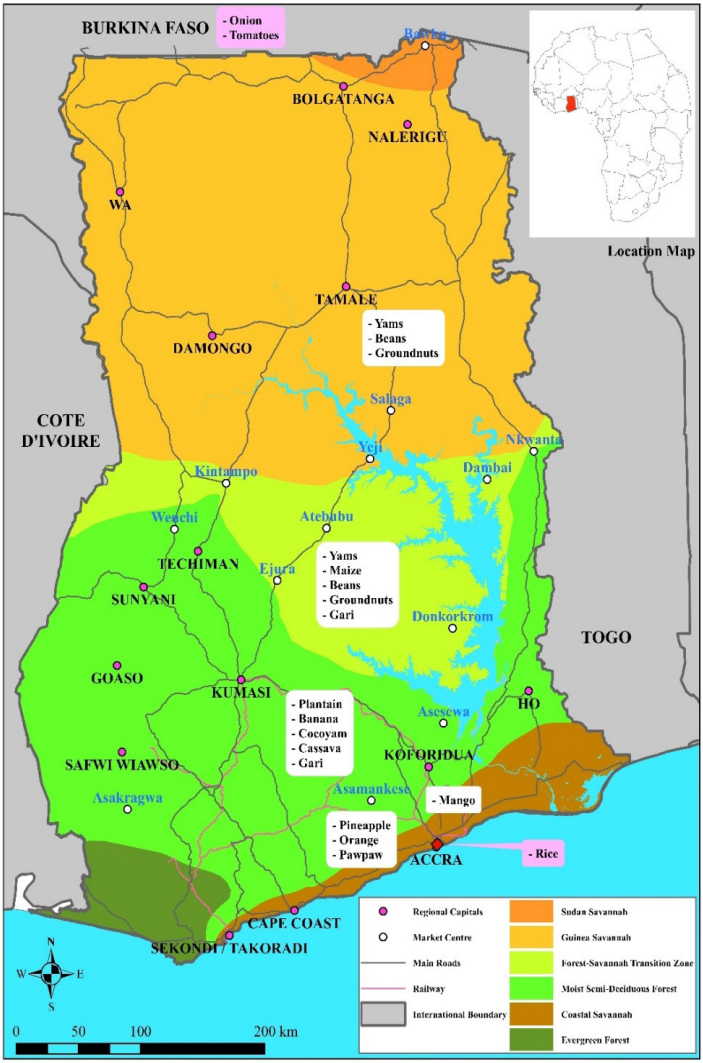

Figure 2: Sources of food commodity flows to Accra with respect to Ghana's agroecological zones and neighbouring countries.

Thus, with the exception of cassava, plantain, banana, cocoyam and fruits which are supplied to GAMA from near production zones, the principal food staples (yam and maize), onion and tomatoes are supplied to GAMA from distant and remote areas. These food items are transported by road to the city. Rail transport network in the country as a whole is limited, and the existing eastern line that connects the city to the south-western part of the country has remained non-operational since the early 1990s. In this regard effective supply linkage (by road) is important in guaranteeing food availability in the city. Disruptions in the supply chain and inefficiencies in the supply network will have implications for sustainable food supply and availability and, consequently, price levels.

Policy and planning

This section situates the city's food supply system within the context of the overall national development plan and framework of the country and government's policy on agricultural development and food security. Additionally, the section reckons with the policies and programmes of the municipal and metropolitan assemblies which are the decentralised units of the country's governance structure. This sets the stage for examining the city's food supply system in terms of central and local government policy and city authority agenda and development efforts.

Aministrative and Planning agencies

Under the Government's machinery of administration, the Metropolitan, Municipal and District Assemblies (MMDAs) are the units of governance at the local level. The new Local Governance Act, 2016, (Act 936), mandates the MMDAs to formulate and execute plans, programmes and strategies for the effective mobilization of the resources necessary for the development of their respective jurisdictions. They are also required to coordinate national development planning at the

local level (Government of Ghana, 2016; Institute for Local Government Studies and Friedrich Ebert Stiftung – Ghana, 2016). They operate under the Ministry of Local Government and Rural Development and they have the decentralised departments and agencies of the Central Management Agencies of Government Machinery to ensure good governance and balanced development of the country.

With respect to food production, the Ministry of Food and Agriculture (MOFA) is mandated to develop the agriculture sector of the Ghanaian economy by developing policies and implementing programmes for the transformation of the sector.

The National Development Planning Commission (NDPC), under the NDPC Act of 1994, (Act 479), is mandated to coordinate Government's Economic and Social Development Policies and Programmes. All government departments, agencies, and other public authorities are required to cooperate fully with the Commission in the exercise of its functions.

Policies and programmes

Two national policy documents of the NDPC are of relevance to the development and food security of the country's cities: the *"Medium-Term National Development Policy Framework: Ghana Shared Growth and Development Agenda (GSGDA) II, 2014-2017"* (Government of Ghana, 2014) and the *"National Spatial Development Framework 2015-2035: Space, Efficiency and Growth"* (Government of Ghana, 2015).

The policy documents of MOFA are the *"Food and Agriculture Sector Development Policy (FASDEP II)* 2007*"* (Government of Ghana, 2007) and its investment plan, the *"Medium Term Agricultural Sector Investment Programme (METASIP) II-2014 to 2017*" (Government of Ghana, 2010). These two policy documents are in harmony with the objectives of the GSGDA II of NDPC and the *"Comprehensive Africa Agriculture Development Programme (CAADPP)"* of the New Partnership for Africa's Development (NEPAD) [2002].

The overall programme for achieving food security in Ghana is increased production and reduction in extreme poverty. The country is reported to be the first in sub-Saharan Africa to have met the UN's Millennium Development Goal 1 (MDG-1) target of halving extreme poverty by 2015, having reduced the level of its poor population from 7 million in the early 1990s to less than 1 million in 2015 (Government of Ghana, 2007). Among the interventions are the Ghana School Feeding Programme (GSFP) and Capitation Grant which cover schools in urban centres and cities as well, and improved infrastructure development, particularly road networks in areas that are not well accessible. In 2010 the National Food and Buffer Stock Company (NAFCO) was established to hold strategic stock and in 2011 it signed a memorandum of understanding (MOU) with the GSFP to provide food supplies for schools.

Among the six pillars of FASDEP and METASIP of MOFA are the food security and emergency preparedness and increased competitiveness and integration into domestic and international markets (Government of Ghana, 2007; Government of Ghana, 2010). Discussions with the Policy Planning and Budget Division of MOFA also revealed that there are sub-sector and commodity specific policies such as livestock improvement policy and fertilizer improvement policy. However, these policies focus more on production and do not embrace the entire food supply system to address the flow of commodities and marketing of food produce. Thus, there is no policy on food supply and distribution. This is so because of the view that the food trade sector is under the mandate of the Trade Ministry. Unfortunately, there has not been that serious inter-ministerial cooperation and coordination to address the food supply policy gap.

With respect to market improvement, FASDEP and METASIP, encourage partnership between the private sector and the MMDAs to develop trade in local and regional markets with improved market infrastructure and sanitary

conditions, and enforce standards of good agricultural practice (Government of Ghana, 2007; Government of Ghana, 2010). Significantly therefore, the strategy highlights local and municipal authority initiative and efforts and collaboration with the private sector to promote the marketing of locally produced agricultural commodities. Against this backdrop, it is expected that the MMAs of GAMA would develop their own policies and strategies that would feed into governments' overall agenda of achieving food security and improving infrastructure for effective food system flows and distribution. Unfortunately, this is not the case. Responses of officials of the MMAs interviewed indicate that none of them has a comprehensive policy in place that addresses the subject. At best, they target improvement in market infrastructure, revenue collection, waste management and improved sanitary conditions. They recognise the need for these tasks, as stated in the Local Governance Acts, 20 16 (Act 936).

Generally, there are no grand schemes to monitor food commodity inflows and volume of trade. Major commodity supply lines have not been defined and mapped to permit determination of traffic volume and potential risks assessment. Also, there are no well-planned efforts at working towards effective and efficient supply-chain linkages. The city's food supply system has been left almost entirely in the hands of private individuals and informal traders who coordinate fairly well among themselves along commodity lines but rarely with city authorities and other government agencies. In cases where attempts have been made to address the food system flows, the MMAs have depended mostly on donor support, for example, the European Union Local Economic Development Mushroom Project implemented in Adentan Municipal Assembly. Under the project, farmers were provided with requisite capacity and support to find suitable market, both local and international, for their produce. In other instances, particularly in the peri-urban zones, market development has been 'community-demand-

driven'. An example is the case where the Ga South Municipal Assembly is contesting to take over the control and management of a market initiated by the traditional authority.

The national 'umbrella' planning agency, NDPC's policy document, "National Spatial Development Framework 2015-2035: Space, Efficiency and Growth" specifies the creation of "urban food sheds" in view of the progressive loss of farmlands with growing and expanding urban populations. The food shed is defined as "…the farms, processing facilities and distribution networks within a certain distance to a city that sustain the flow of fresh food to nearby populations" (Government of Ghana, 2015: pp 4-134). The NDPC cites the city of Accra (and Kumasi) as top priority for food shed planning. According to NDPC, the food shed has the benefit of reducing transportation costs and potential disruptions to food supply as food is grown nearby. It also has the potential of making fruits, vegetables and other foods readily available to consumers, thereby maintaining their nutritious value. However, none of the municipalities and metropolitan assemblies made mention of this idea of food shed let alone planning its implementation, which indicates the apparent low level of coordination between the local authorities and the NDPC. This situation also underscores the absence of a comprehensive policy on the city's food supply system that should help build strong rural–urban interlinkages and more efficient agricultural value chain to promote sustainable and resilient consumption patterns.

Conclusion and Policy implications

This study has assessed the policies of government and the programmes of the municipal and metropolitan authorities of the Accra metropolis (GAMA) in Ghana in respect of sustainable food supply for the city. This is against the backdrop of the NUA, which considers food security and nutrition as central to urban and territorial sustainability, and the MUFPP, which seeks

to encourage local governments and city authorities to integrate FSD in the planning and management of cities. The study noted that the principal food staples for the metropolis originate from distant areas and that the traditional markets and numerous informal markets are very important in the food distribution network. However, the markets are characterised by inadequate infrastructure, poor waste management and congestion in view of poor planning. The study revealed that there are no grand schemes to monitor the volume of food commodity inflows. Major commodity supply lines have not been defined and mapped to permit determination of traffic volume and potential risks assessment. Above all, there is no comprehensive national policy on city food supply and distribution system apart from discrete programmes that seek to encourage partnership between city authorities and the private sector for the development of market infrastructure.

The key lesson of the study is that, as Ghana works towards achieving the SDGs, particularly 2 and 11, city authorities must build sustainable and resilient food systems for their respective city regions. The concept of urban food shed proposed by the NDPC for the Accra Metropolis (and Kumasi, the second largest city) fits into the CRFS framework that provides a territorial approach to the understanding of the urban food system in terms of spatial (rural-urban) linkages. The food shed concept can be integrated into the planning agenda of the spatial development of the city. However, there is the need for comprehensive national policy on FSFs and FSD that would guide the development of well-defined rural-urban linkages and city level agenda for sustainable food access by the residents in GAMA and other major cities in the country. Given that the cities of Africa and Asia are leading the trends in global urbanisation with major social, economic and environmental transformations, it is pertinent for the city authorities to integrate food into their planning programmes to address the growing urban poverty and food insecurity. In this regard, the NADHALI pilot project of

the FAO involving the cities of Nairobi, Dhaka and Lima should offer some useful lessons.

Since substantial quantities of the major food staples for GAMA are, for ecological reasons, not produced within reasonable distance range of the city. Therefore, there is the need to map out well-defined rural-urban linkages and more efficient supply chain that will feed into the proposed food shed for the city. Fundamentally, there is the need for comprehensive surveys on city food inflows to capture relevant data that would permit rigorous city-food-needs assessment for projections to be made in accordance with the growth of the city. It is also essential that the markets of GAMA are given the necessary attention by the MMAs in terms of management strategies and infrastructure development. This should enable them to continue performing their essential role in the informal sector and make them competitive in providing food for the city's growing population, particularly by the poor in informal settlements.

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