

SUSTAINING URBAN AGRICULTURE UNDER INTENSE URBANISATION IN GHANA: EMERGING AND EXISTING ROLES OF FORMAL INSTITUTIONS

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Abstract

Many countries in the sub-Saharan Africa continue to experience intense urbanisation which affects urban agriculture in many ways. In Ghana, this has resulted in an extreme land scarcity for urban farmers; making them relocate to government institutions lands. As a result of this situation, the roles of these government institutions though not mandated to support urban agriculture have been made to do so. In this study, the seemingly evolving and existing roles of institutions supporting Ghana's urban agriculture within the context of intense urbanisation is assessed. Three main sources of data were used. They were key informant interviews from 'mandated' and 'unmandated' institutions, in-depth interviews from urban farmers and the several policy documents on agriculture. Three main themes emerged from the analysis of data. They were the evolving and existing roles of institutions in supporting urban farmers, policies of institutions providing lands to farmers and the challenges farmers encounter in receiving such support. The study recommends the drafting of a comprehensive urban agriculture policy, the establishment of an "Urban Agriculture Development Board" which will help develop and sustain Ghana's Urban Agriculture.

Keywords: Urban, Agriculture, Institutions, Emerging, Roles, Ghana.

1. INTRODUCTION

Urban Agriculture (UA) occurs within the urban space which goes through changes. As this urban space changes, it affects UA (Arku et al., 2012; Satterthwaite et al., 2010; Zezza & Tasciotti, 2010; Satterthwaite, 2007; Smit et al., 2001). This implies institutions whose actions which affect urban agriculture to a large extent have to adapt to the changes urbanisation brings to UA (Martellozzo et al., 2014; Arku et al., 2012). As urbanisation intensifies, it sometimes results in the scarcity of essential UA resources; key examples are land and water (Zhang & Xu, 2017; Early et al., 2015; UN-Habitat, 2014). This is because as cities become more urbanised, many economic and social activities compete with UA for these resources. Interestingly, Ghana's urbanisation is intensifying especially in the area of population growth and this has largely affected its urban land use and availability which directly affect UA (Allen et al., 2014; UN-Habitat, 2012; Ghana Statistical Service, 2012; 2005; Boateng and Mensah, 2021).

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Studies have suggested that as urbanisation intensifies, cities' administrative, political, economic and cultural settings depict more globalisation, westernisation and neoliberalism tendencies, especially in their socioeconomic activities (Apostolopoulou & Adams, 2017; Early et al., 2015; van Ginkel, 2008). This normally calls for dynamism in the role of institutions affecting its economic activities. An example is UA (Wadumestrige Dona, 2021). In some cities in the world, institutions and policies have proven to be a reliable channel through which UA develops and is able to achieve its goals of providing essential food sources, employment and support climate change resilience to cities. Examples of such cities are Rosario in Argentina, Gampaha in Sri Lanka Shanghai and Beijing in China, St. Petersburg in Russia and London in the United Kingdom (Moldakov, 2014; Amerasinghe et al., 2011; Dubbeling & De Zeeuw, 2011; Guénette, 2006; Yi-Zhong & Zhang, 2000; Garnett, 2000). For many cities in the world, the institutional roles and policies that support urban agriculture have not proven to be reliable even though some evidence of support for UA exists. Some studies have tried to ascertain these efforts in several countries (World Bank, 2013; Deelstra & Girardet, 2000), examples are Mzuzu in Malawi (Arku et al., 2012), Nairobi in Kenya (Foeken & Mwangi, 2000), Cairo in Egypt (Gertel & Samir, 2000) and Accra, Kumasi and Tamale in Ghana (Drechsel et al., 2014a; Arku et al., 2012; Nchanji, 2017). Notwithstanding the studies that have been conducted with respect to institutions and policies supporting UA, gaps still remain. In Ghana for instance, the literature on UA is enormous but few studies have given the needed attention to UA policies and institutional roles in general. These studies have touched on public officials' attitudes towards UA (Obosu-Mensah (2002), historical antecedents and policy implications of UA (Asomani-Boateng, 2002) as well as policy makers attitude towards UA in the midst of increasing food security concerns (Arku et al., 2012). The others are on how urban agricultural activities within Accra is regulated by government institutions and regulatory bodies (Drechsel et al., 2014a) and how low-income farm-based organisations are helping to promote UA (Egyir & Ackah-Nyamike, 2006).

Even though some studies have focused on policy and institutional frameworks within the context of Ghana and Africa, this study brings a new dimension to the subject. The uniqueness of this study is in three different forms; first, the objective, which is exploring the emerging and existing roles of institutions supporting UA; second, the methodology, which is the use of multiple sources of the data; and third, the context within which the study was conducted; which is within the space of changing institutional roles in the midst of unprecedented urbanisation. With respect to the multiple sources of data for the study, policy documents that influence UA and in-depth interviews of urban farmers and officials of institutions that support urban agriculture were used. These formal institutions include governmental, inter-governmental and non-governmental organisations.

2. MATERIALS AND METHODS

2.1. Research Design

A collective case study was the design for the study. With this design, data was collected from multiple sources (Stake, 1995; Creswell, 2013). They were one, policy documents on UA and agriculture in general in Ghana; two, policies and practices of institutions who are mandated or unmandated to support UA and; three, the farmers themselves who are engaged in UA. Within the context of data collection and analysis, the study employed a qualitative methodology and specifically pursued an exploratory approach (Yin, 2009; Creswell, 2013).

2.2. Study Area

This study was conducted within the Greater Accra Metropolitan Area (GAMA), an area which comprises of Ghana's capital city, Accra, Tema and its highly urbanized areas. With over thirteen municipal and metropolitan assemblies, GAMA has a land size of about 1100 kilometres square. Within GAMA, the two most urbanised cities in terms of concentration of administrative offices and industries are Accra and Tema, even though Accra is the largest. These two cities put together have almost reached the status of a megalopolis (Ministry of Local Government and Rural Development (MLGRD), 2017; World Bank, 2015; Stoler et al., 2012; Ghana Statistical Service, 2005). GAMA is sometimes referred to the Accra Metropolitan Assembly (AMA) or Accra even though Accra is specifically Ghana's capital city (Agyemang, 2017; Afutu-Kotey et al., 2017; UN-Habitat, 2009). GAMA is characterised by a high population density and a cosmopolitan setting with an unmatched economic relevance in Ghana. Besides, it has highly been impacted by the policies of Structural Adjustment Programme (SAP); one of Ghana's major economic transformation agenda implemented in the 1980s and beyond (World Population Review, 2018; Agyemang, 2017 in World Bank, 2015). The SAP effect on GAMA continue to impact greatly on its UA activities. Besides, the ever changing lifestyle of its residents into a more westernized one coupled with an ever increasing concern for healthy lifestyle has increased the demand for vegetables (Food and Agriculture Organization (FAO), 2012). As farmers are beckoned with intense urbanisation, there is an opportunity to grow more vegetables. Interestingly, their response to meeting the growing demand is affected by the institutions whose activities and policies directly or indirectly affect UA (Obuobie et al., 2003; Food and Agriculture Organization (FAO), 2012; Danso et al., 2014).

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2.3. Data Collection

Two sources of data; primary and secondary, were used in this study. The primary was taken from urban farmers and institutions whose roles, policies and activities affect UA while the secondary was taken from policy documents that are related to UA in Ghana in general. With respect to data collected from urban farmers, 10 farm sites in GAMA were visited in all. The selection of the sites was based on the type of land ownership of these farm sites. As indicated in Table 1, the study classifies the types of land ownership into three; which are government institution lands (GIL), open lands owned by the Government of Ghana or a specific government institution (OGL) and native, family and/or private lands (NFPL). Figure 1 is the map of the types of land ownership together with the various municipal assemblies under which these farm sites are located. Those with GIL ownership were for Ghana Atomic Energy Commission (GAEC), Centre for Scientific and Industrial Research (CSIR), Ghana Broadcasting Corporation (GBC) and Korle Bu Teaching Hospital (KBTH) lands. Those with OGL ownership were for Ghana Grid Company (GRIDCo) and the Government of Ghana which is yet to be assigned to a specific government institution.

TABLE 1 - FARM SITES VISITED FOR DATA COLLECTION

No	Farm Site or Cluster	Type of Land Ownership	Organisation in Charge	Number of Farmers Chosen
1	Atomic	GIL	GAEC	10
2	Airport West	GIL	CSIR	2
3	Kanda	GIL	GBC	1
4	Tema/Kpone	GIL	GRIDCo	1
5	Korle- Bu	GIL	KBTH	1
6	Legon-Okponglo	OGL	GRIDCo	1
7	Dzorwulu Junction	OGL	GRIDCo	2
8	Dzorwulu Ebony	OGL	GRIDCo	2
9	Tema Motorway	OGL/NFPL/PT	GRIDCo, GoG & Private Firms	6
10	La-Tseaddo	NFPL & GIL	Natives/Family & Ghana Military	3
	Total			29

Source: Field Data

In selecting the farmers from the various sites, a heterogenous sampling method was used (Patton, 2002). The heterogeneity in the selection of the farmers was based on the differences in farmers ages, years of experience in farming, types of land ownership and the peculiar institutions and organisations these farmers farmed on their lands. Besides, the study was interested in the common experiences of these farmers with respect to how the actions of these institutions affected them. In all, 29 farmers were selected in the 10 farm sites. See Table 2.

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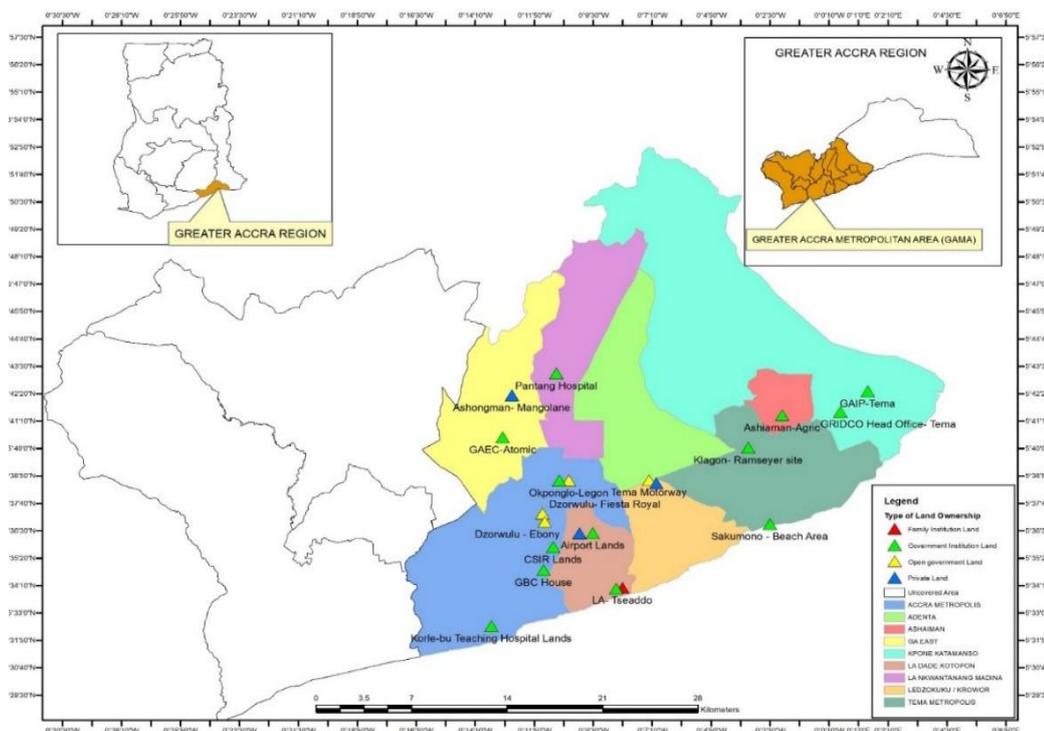


FIGURE 1 - MAP OF VEGETABLE FARM SITES WITHIN GAMA

Source: Department of Geography and Resources Development, University of Ghana, Legon

TABLE 2 - INSTITUTIONS INVOLVED IN THE STUDY

No	Name of Institution	No of Interviews	Primarily Mandated	Roles affecting UA
1	Land Use and Spatial Planning Authority (LUSPA), Accra	1	No	Land demarcation
2	Planning and Development Department, La Dade-Kotopon Municipal Assembly (LaDMA)	1	No	Land demarcation
3	Council for Scientific and Industrial Research (CSIR) Office, Airport	1	No	Land provision and support
4	Biotechnology and Nuclear Agriculture Research Institute (BNARI), GAEC, Atomic	1	Yes	Land provision and support
5	Environmental Health and Sanitation Unit, LaDMA	1	Yes	Regulate and support
6	International Water Management Institute (IWMI), Airport	1	Yes	Support
7	Ghana Grid Company (GRIDCo), Tema	1	No	Land provision
8	Ministry of Food and Agriculture (MoFA) Department, LaDMA	1	Yes	Regulate and support
9	MoFA Department, La Nkwantanang Madina-Municipal Assembly (LANMMA)	2	Yes	Regulate and support
10	MoFA, Ga East Municipal Assembly (GEMA)	1	Yes	Regulate and support
11	MoFA Department, Tema Metropolitan Assembly (TMA)	1	Yes	Regulate and support
12	School of Hygiene, Korle bu Teaching Hospital (KATH)	1	No	Land provision and support
	Total	13		

Source: Field Data

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There were differences in the number of farmers who were chosen per site and this was due to the exploratory nature of the study. This encouraged more interviews within specific sites as the narratives of the diverse experiences of these farmers unfolded. Based on this, sites where data collection started and had farmers who were willing to talk had a relatively higher number of farmers selected. At farmer number 29, the study had reached its saturation point; a stage where further farmer interviews did not add any relevant information to the data already obtained (Creswell, 2013). Similar to the selection of the farmers, the institutions were heterogeneously selected. The heterogeneity of these institutions was based on their core mandates, which were; those who are mandated to support UA and those who are not mandated to support UA. As indicated in Table 2, a total of 13 key informants were selected among nine institutions, departments and units.

All the institutional interviews were done in English. For the farmers, interviews which were not conducted in English were conducted in two local languages which were either 'Twi' or 'GA'. All interviews were recorded electronically. Field notes were taken alongside as well (Phillippi & Lauderdale, 2018). Each interview on the average lasted for 40 minutes. The secondary sources of data were policy documents which were the Food and Agriculture Sector Development Policy (FASDEP II) (MoFA, 2007); National Water Policy (Ministry of Works Housing and Water Resources (MWHWR), 2007); Medium Term Agriculture Sector Investment Plan (METASIP) (MoFA, 2010); the Ghana National Urban Policy Action Plan (Ministry of Food and Agriculture (MoFA), 2011) and the National Irrigation Policy, Strategies and Regulatory Measures (MoFA, 2011).

2.4. Data Analysis

The interviews in English were transcribed and those in the local dialect were translated and transcribed at the same time. All transcriptions were done in "pure verbatim" protocol (Mayring, 2014) after which a final review was done before proceeding to the creation of codes and themes (Gibbs, 2013). With the support of Atlas.ti, a Computer-Assisted Qualitative Data Analysis Software (CAQDAS) (Cope, 2009), I followed (Venkatesh et al., 2016)'s four stages of content analysis in arriving at the findings. These are having a coding plan, formulating the codes, creating the themes and consolidating the themes which are in line with the objectives of the study. In the creation of the codes, I used initial, value and in vivo as my primary and later used focused and pattern as my secondary to arrive at the themes which answered the objectives of the study (Saldana, 2009; Miles *et al.*, 2013). The content of the secondary data was also thoroughly analysed to augment the findings from the analysis of the primary data (King, 2004 in Saunders *et al.*, 2009; Mayring, 2014). Among other things, the study took into account the nuances in the data collected and managed to teased out the right themes for the study. This methodology ensured a high

level of robustness in the data analysis and ensured the results obtained were consistent and reliable (Najmaei, 2016).

2.5. Ethical Issues

The necessary and required standards of ethics in research were followed (Saunders et al., 2009). The choice of the topic was not influenced by the funding institution of this research. Before collecting data, I went through all the required processes of the Ethics Committee for the Humanities (ECH) of the University of Ghana, Legon, the host institution for the research to gain ethical clearance. In gaining access to the farmers and institutions, there was no gatekeeper coercion. Besides, I applied the necessary ethical processes of privacy, voluntariness, anonymity, informed consent, confidentiality and non-maleficence among others at every stage of the study where necessary.

3 .FINDINGS AND DISCUSSIONS

In analysing the roles of institutions that influenced urban farmers in the midst of intense urbanisation in GAMA, three main themes emerged. These were their roles in providing support to urban farmers, how the institutions acting as landlords related with the farmers and the challenges some of these farmers faced as users of some institutional lands.

3.1. Roles of Institutions Supporting Urban Farmers

The study looked at the changing and static roles of the governmental, non-governmental and inter-governmental institutions in supporting the activities of urban farmers in GAMA. Their roles included motivating and building capacity of farmers; collaborating, consulting and coordinating with stakeholders; promoting and influencing laws on good farm practices; and planning and regulating farmland use.

3.1.1. Motivating and Building Capacity of Farmers

Under this role, both the mandated and unmandated institutions were found supporting farmers in this direction. The unmandated institution was the School of Hygiene under KBTH. I found out that the support farmers enjoyed from these institutions was because they used their lands for farming. Those mandated were BNARI, IWMI and the MoFA departments and units. These institutions motivated and built the capacity of the farmers mainly through training. They also introduced farmers to new technologies through field trials. The land scarcity which to a large extent is caused by intense urbanisation has resulted in farmers using smaller lands and these institutions trained urban farmers in intensification so they can maximise their output on the small land sizes available to them. This is how a MoFA office expressed it:

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“As a department, our main job is to impart knowledge in improved technologies to farmers. Our extension officers help them to use the right agronomy practices. If you are working on an acre of land...we try to put in measures that will help the farmer get most out of that”. (Mandated, MoFA Office of a Municipal Assembly, KII)

The FASDEP II for example spells out the role of government as a key player in the provision of extension services which ensure good agricultural practices to farmers, including urban farmers (MoFA, 2007, p.39). Notwithstanding this, it notes one of the key shortcomings of UA extension services to farmers is that it is mainly characterized by rural farming techniques (Drechsel et al., 2014b; Bancheva et al., 2013). In addition, there is also the fundamental problem of lack of proper training to urban farmers in specialised irrigation (Keraita and Cofie, 2014; Obuobie et al., 2014). Other studies have also proven that urban farmers have not been given the required support it needs in different cities in the world (Halloran & Magid, 2013; Mougeot, 2000; Armah-Klemesu & Maxwell, 1998). Notwithstanding that, some cities have evidence of the immense support government gives to farmers through training in innovative and modern ways of farming. Examples are in Mexico City, Copenhagen and London (Dieleman, 2017; Halloran & Magid, 2013; Garnett, 2000). Some of these supports come from non-governmental organisation as well (Halloran & Magid, 2013; Guénette, 2006; Campilan et al., 2001).

3.1.2. Providing Production and Marketing Logistics and Inputs

I realised that none of the unmandated institutions directly supported urban farmers in this capacity. Mandated institutions that uniquely supported farmers in this direction were BNARI, which is under GAEC, and IWMI. BNARI specifically provided compost they have produced to farmers at a very low cost. Those who benefitted the most were the farmers who were found on their lands. IWMI provided clean water sources to farmers on their farm sites. All the other institutions who were mandated to support urban farmers in this direction continued to perform this role. As part of their mandate, they provided logistics that boosted the production and marketing effort of farmers even though not all of such institutions provided such immense support to the farmers. This crucial support provided the opportunity to these farmers to use these logistics at a relatively lower or no cost. This is how an inter-governmental organisation expressed it:

“...what the farmers were doing was that they were using the polluted water to wash vegetables on the farm before taking them to the market so, what we did was that we provided clean water (pipe-borne water) to some sites. They were at Plant Pool, Dzorwulu and Roman Ridge”. (Mandated, Inter-governmental Organisation, Key Informant Interviews (KII))

Farmers within GAMA like any part in Ghana are also given awards on Farmers' Day¹ for their contribution to food security in Ghana by the various departments and units of MoFA of the municipal assemblies. The support these various institutions give to the farmers is based on the fact that the latter faces several resource challenge use; key is water. They are interested in making sure the products farmers bring to the market are safe and have satisfied the highest hygienic standards. For example, IWMI has gone further to provide sales points for the marketing of vegetables produced by these farmers. Institutional support to many urban farmers through production and marketing have improved their incomes and livelihoods (Mougeot, 2000).

3.1.3. Collaborating, Consulting and Coordinating with Stakeholders

All the institutions who were mandated to support urban agriculture collaborated and coordinated with other institutions or farmers to develop UA in GAMA. For the institutions who were not mandated, they found themselves doing that because the farmers were using their lands. Examples are CSIR and School of Hygiene. They do this by having stakeholder engagements and organising training seminars for the farmers. For the mandated ones, their meetings involved other stakeholders and not the unmandated, in most cases. The meetings normally focused on the use of efficient and environmentally friendly farming technologies as well as improved strategies of marketing their produce. This is how an organisation expressed it:

"We have organised series of meetings here and there...We do not start from just engaging the farmers; we also look at the stakeholders who should be involved." (Mandated, Inter-Governmental Organization, KII)

With respect to the existing policy documents on this role, MoFA in the FASDEP II and National Irrigation Policy documents appreciates the need to form collaborations with institutions and agencies who support farmers in the provision of services which concern the efficient use of technologies to farmers especially in the area of water use (MoFA, 2011 p.4; MoFA, 2007, p.39). In Ghana, it is in the literature that both government and non-government institutions work to promote UA activities through stakeholder consultations and collaborations (Drechsel et al., 2014a). In the city of Manila for instance, the coordination and consultations in the support of urban farmers are more effective since the city authorities are more committed to it (Campilan et al., 2000).

¹A special holiday during every first Friday of December in Ghana dedicated to the work done by farmers nationwide. Not all the farmers receive awards though but almost every farmer gets a farm input.

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For the mandated institutions, they all ensured farmers were embarking on good agricultural practices which centred on water use and soil tilling practices. Again, for the unmandated, I found the School of Hygiene was involved in this role even though it was ineffective and limited to the farmers on the KBTH land. These institutions made sure polluted water bodies were not used. They addressed these by making sure the right practices are followed. When I checked from the policy documents, the FASDEP II recognises the need for urban farmers to receive the right information concerning the use of the appropriate farming methods which encourages land and environmental sustainability (MoFA, 2007, p.31). The National Water Policy also demands the promotion and use of efficient technology and quality water for irrigation (Ministry of Works, 2007, p.18).

3.1.5. Monitoring Farm Practices and Setting Production Regulations

This was mainly done by the mandated institutions such as the Environmental Health and Sanitation Unit of the municipal assemblies but intermittently supported by the MoFA departments and some intergovernmental organisations such as IWMI. Unmandated institutions whose lands farmers were using such CSIR and School of Hygiene performed this role also even though the monitoring activities were not effective. The School of Hygiene at KBTH and CSIR at Airport for example focused on the activities of farmers on the KBTH and CSIR lands respectively. They did this by making sure farmers followed the Good Agriculture Practices (GAP) in vegetable farming. They helped farmers to comply with the set laws, rules and regulations that guided the activities of the farmers. They monitored the use of fertiliser and water to make sure farmers complied with the GAP standards. They do so by visiting their farms to monitor the quality of water, fertiliser or manure use. They sometimes take samples of water used to test the level of E. coli and other bacteria in them. This is how one of them expressed it:

“...we do a lot of work (studies) on the farms...we take various water samples from the various farms then we analyse them” (Mandated, Inter-governmental organisation, KII)

Even though these institutions are making efforts to ensure farmers adhere to GAP, it remains very difficult and largely ineffective. From the observations made on the field, the water farmers use is largely grey and untreated. Besides, studies on UA in GAMA have argued that the chemical use by farmers to a large extent is not effectively regulated (Keraita et al., 2014; Danso et al., 2014b). This situation is not only peculiar to GAMA but in other parts of the world (Mougeot, 2000). For example, Meenar et al. (2017) asserts that even though there are efforts to ensure the use of the right chemical standards in urban farming in the West, there are still loop holes in monitoring by formal institutions.

3.1.6. Planning and Regulating Farm Land Use

This is the main role of LUSPA and the Planning and Development Department of the metropolitan and municipal assemblies. In my interaction with these departments and institutions of government, they professed they regulated the use of lands for farming within GAMA. Among some of the actions they have taken are the prevention of private developers from taking farmlands and siting of illegal structures on farm lands. According to LUSPA, efforts have been made to rezone some areas in GAMA with the aim of making space to ensure urban farmlands are not used for residential and industrial purposes. In one municipality, this is what an officer in the department said:

“I can say that over the years we have been able to...redefine and rezone some of the lands, or perhaps stopped some of the (land encroaching) developments.” (Unmandated, Municipal Assembly, KII, July 2017)

These actions are supposed to be sustained according to the FASDEP II and METASIP documents; which promise government support to earmark lands for UA through the efforts of local authorities in the various urban areas of Ghana (METASIP, MoFA, 2010, p.42; FASDEP II, MoFA, 2007, p.30). Notwithstanding these provisions, the pressure on lands for residential and industrial purposes arising from urbanisation has resulted in the loss of lands earmarked for farming. This is due to land tenure complications and weak enforcement of policies and laws on farmland protection within GAMA (Owusu, 2013; Allen et al., 2014). This frustrates urban farmers who badly need lands to farm on and this forces them to find unused institutional lands though they are not intended for farming. Therefore, this role of land provision for urban farmers in GAMA has shifted to the government institutions who have lands to spare for mostly vegetable farming. Since they are the owners of majority of existing lands available for vegetable farming in GAMA, they indirectly protect the farmlands farmers use. Cities globally are having different experiences when it comes to land available for farming. Similar to GAMA in Ghana, cities in Pakistan in general are facing land availability challenges for UA (Peerzado et al., 2018). On the other hand, other cities such as Nairobi in Kenya, Gampaha in Nepal, Rosario in Argentina and Shanghai in China have lands allocated for UA and the city authorities to a large extent strictly adhere to them (Amerasinghe et al., 2011; Prain & Dubbeling, 2011; Guénette, 2006; Yi-Zhong & Zhang, 2000).

3.1.2. Policies of Institutions who serve as Defacto Landlords

The institutions and farmers made it clear there was no official agreement between them on the use of the lands and added the use of the land by these farmers is neither permanent nor guaranteed and can therefore be evicted at any time. The closest some of these institutions got with the farmers was a verbal

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agreement. While some the farmers sought the permission of these organisations before using their lands, some did not. Even with those who sought for permission, there was no official agreement with them and their landlords (institutions). This is how one of the institutions expressed it:

“As for these farmers, we do not have any ‘agreement’ with them...but we admire what they are doing on our land.” (Unmandated, Government Organisation, KII)

3.1.3. Challenges Faced by Farmers from De facto Landlords

Since most of these farmers who have settled on the lands of these institutions do not have any other secured place to farm within the city and are forced to use these institutional lands, they have very limited rights when it comes to the use of the land. Some of the farmers complained they sometimes face eviction threats and verbal abuse from some staff of these institutions. Though very rare, the farmers reported some of the institutions sometimes do not wait for them to harvest their vegetables but destroy them when the institutions need the farmlands for physical projects such as office spaces and other buildings to expand.

“Oh yes, as for them...some of the staff are very difficult ...some will mistreat you and warn you it is government institution land and if you stay there, you would build a (your own) house there. How can you build a house on a government land?” (Anonymous Farmer, Personal Interview)

4. CONCLUSION AND RECOMMENDATIONS

Land has become a key resource to the survival of urban farmers in GAMA and its scarcity has caused these farmers to move to lands of institutions who are not mandated to support these farmers in the crop production. Based on this drift, new roles in the form of support to UA by these unmandated institutions have emerged. Even though these roles are crucial and essential, they are largely informal, uncertain and unsustainable. On the other hand, mandated government institutions continue to sustain urban farming in other ways through government policy and institutional frameworks even though they are also largely ineffective.

Even though institutions involved in supporting urban agriculture have evolved, UA within GAMA still receives support from institutions which are mandated. Government still sees UA as important contributor to food security and continues to make efforts to support it even though they are ineffective. Ghana currently does not have a comprehensive UA policy and this calls for short-, medium- and long-term strategies to address the challenges of these farmers. For the short-term, MoFA through the various Metropolitan, Municipal and District Assemblies can be an umbrella that coordinates the activities of all

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institutions that are involved in supporting UA in Ghana. This will present a more united front to address the loopholes and deficiencies in institutional activities in supporting UA in Ghana. In the medium and long term, government should have a comprehensive UA policy. As part of this policy, an Urban Agriculture Development Authority, a semi-autonomous body under MoFA which will coordinate and regulate all UA activities in Ghana should be formed. This policy must coordinate the production, marketing and spatial planning issues in UA. This will inure to the total benefit of farmers, sustain UA and promote food security in Ghana.

REFERENCES

- Afutu-Kotey, R. L., Gough, K. V., & Yankson, P. W. K. (2017). 'Transitions to adulthood among young entrepreneurs in the informal mobile telephony sector in Accra, Ghana'. *Geoforum*, 85, 290-298. doi:10.1016/j.geoforum.2017.08.008
- Agyemang, E. (2017). Mode choice for long distance trips: Evidence from the Greater Accra Metropolitan Area of Ghana. *Journal of Transport Geography*; 64, 150-157. doi:10.1016/j.jtrangeo.2017.09.003
- Allen, A., Apsan Frediani, A. and Wood-Hill, M. (2014). Land and Planning for Urban Agriculture in Accra: Sustained Urban Agriculture or Sustainable Urbanization. In P. D. a. B. Keraita (Ed.), *Irrigated Urban Vegetable Production in Ghana Characteristics, Benefits and Risk Mitigation*. pp 146 - 161. Accra: International Water Management Institute (IWMI).
- Amerasinghe, P., Gammanpila, U., Kodikara, S. and Mahindapala, R. (2011). Developing Institutional Synergies for Effective UA Development in Sri Lanka. *Urbanisation Agriculture Magazine*.
- Apostolopoulou, E. and Adams, W.M. (2019). Cutting nature to fit: Urbanization, neoliberalism and biodiversity offsetting in England. *Geoforum*; 98, pp.214-225.
- Arku, G., Mkandawire, P., Aguda, N. and Kuuire, V. (2012). *Africa's Quest for food security: what is the role of Urbanisation Agriculture?* Retrieved from Harare.
- Armah-Klemesu, M. and Maxwell, D. (1988) *Urbanisation Agriculture in the Greater Accra Metropolitan Area*. Accra.
- Asomani-Boateng, R. (2002). Urban cultivation in Accra: an examination of the nature, practices, problems, potentials and urban planning implications. *Habitat International*; 26, pp 591-607.
- Bancheva, S., Brandt, F., Jones, C.C., Doria, N., Ferro P., Ordonez A. and Segura C. (2013). *Securing Livelihoods and Green Open Spaces: The potential of Urbanisation Agriculture towards an environmentally just urbanisation*. In Environmentally Just Urbanization through Urbanisation Agriculture; Accra, Ghana Reports 2012 (First ed., pp. 163 - 224). London: University College London-UCL.
- Boateng, E. N. K. & Mensah, C. A. (2021). Land Use/Land Cover Dynamics and Urban Agriculture in Tarkwa-Nsuaem Municipality, Ghana. *Theoretical and Empirical Researches in Urban Management*, 16(2), 5-20.
- Campilan, D., Boncodin, R., and De Guzman, C. (2001). *Multi-sectoral initiatives for UA in Metro Manila, Philippines. Scientist and Farmer: Partners in Research for the 21st Century*; Program Report 1999-2000, 433-443.

Tuffour M.

SUSTAINING URBAN AGRICULTURE UNDER INTENSE URBANISATION IN GHANA: EMERGING AND EXISTING ROLES OF FORMAL INSTITUTIONS

- Cope, M. (2009). Transcripts (coding and analysis). *International encyclopedia of human geography*; 3, 350-354.
- Creswell, J.W. (2013). *Qualitative inquiry and research design: choosing among five approaches*. Los Angeles: SAGE Publication.
- Danso, G., Drechsel, P., Obuobie E., Forkuor, G. and Kranjac-Berisavljevic, G. (2014a). *Urban Vegetable Farming Sites, Crops and Cropping Practices*. In P. D. a. B. Keraita (Ed.), *Irrigated Urban Vegetable Production in Ghana Characteristics, Benefits and Risk Mitigation* (pp. 7 - 27). Accra: International Water Management Institute (IWMI).
- Danso, G., Hope, L. and Drechsel, P. (2014b). *Financial and Economic Aspects of Urban Vegetable Farming*. In P. D. a. B. Keraita (Ed.), *Irrigated Urban Vegetable Production in Ghana Characteristics, Benefits and Risk Mitigation* (pp. 39 - 51). Accra: International Water Management Institute (IWMI).
- Deelstra, T. And Girardet, H. (2000). *Urbanisation Agriculture and sustainable cities*. Bakker N Dubbeling M Gündel S., Sabel-Koshella U de Zeeuw H Growing cities growing food. Urbanisation Agriculture on the policy agenda. Feldafing, Germany: Zentralstelle für Ernährung und Landwirtschaft (ZEL), 43-66.
- Dieleman H. (2017). Urbanisation Agriculture in Mexico City; balancing between ecological, economic, social and symbolic value. *Journal of Cleaner Production*; 163, S156-S163. doi:10.1016/j.jclepro.2016.01.082.
- Drechsel, P., Keraitat, B., Amoah, P. and Karg, H. (2014b). *Health Risk Management for Safe Vegetable Irrigation*. In D. a. B. Keraita (Ed.), *Irrigated Urban Vegetable Production in Ghana Characteristics, Benefits and Risk Mitigation* (pp. 181 - 198). Accra: International Water Management Institute (IWMI)
- Drechsel, P., Obuobie, E., Adam-Bradford, A. & Cofie, O.O. (2014a). *Governmental and Regulatory Aspects of Irrigated Urban Vegetable Farming in Ghana and Options for its Institutionalization*. In P D a B Keraita (Ed) *Irrigated Urban Vegetable Production in Ghana Characteristics, Benefits and Risk Mitigation* (pp. 199 -). Accra: International Water Management Institute (IWMI).
- Dubbeling, M. and Zeeuw, H.D. (2011). Urban agriculture and climate change adaptation: ensuring food security through adaptation. In *Resilient cities* ; (pp. 441-449). Springer, Dordrecht.
- Early, L., Howden-Chapman, P. and Russell, M. (2015). *Drivers of Urban Change*. Wellington; Steele Roberts Aotearoa.
- Egyir, I.S and Ackah-Nyamike, E.E. (2006). *Urban and Peri-Urbanisation Agriculture: Towards a Better Understanding of Low-Income Producers' Organizations* (Vol. GCP/INT/955/CAN). Accra: College of Agriculture and Consumer Sciences, University of Ghana.
- Food and Agriculture Organization (FAO). (2012). *Growing Greener Cities in Africa*. Rome; FAO. Italy.
- Foeken, D. and Mwangi, A. M. (2000). *Increasing Food Security through Urban Farming in Nairobi*. In N. Bakker, M. Dubbeling, Gündel, S. U. Sabel-Koschella, & H. de Zeeuw (Eds.), *Growing Cities, Growing Food UA on the Policy Agenda: A Reader on UA* (pp. 303-328). Feldafing, Germany. Zentralstelle für Ernährung und Landwirtschaft (ZEL). Food and Agriculture Development Centre.
- Garnett, T. (2000). *UA in London: Rethinking our Food Economy*. In N. Bakker, M. Dubbeling, SSabine Gündel U Sabel-Koschellad and H de Zeeuw (Eds.), *Growing Cities, Growing Food UA on the Policy Agenda: A Reader on Urbanisation Agriculture* (pp. 477 - 500). Feldafing, Germany: Zentralstelle für Ernährung und Landwirtschaft (ZEL), Food and Agriculture Development Centre.
- Gertel, J. and Samir, S. (2000). *Cairo: UA and Visions for a "Modern" City*. In N. Bakker, M. Dubbeling, S. Sabine Gündel, U. Sabel-Koschella, & H. de Zeeuw (Eds.), *Growing Cities, Growing Food UA on*

SUSTAINING URBAN AGRICULTURE UNDER INTENSE URBANISATION IN GHANA: EMERGING AND EXISTING ROLES OF FORMAL INSTITUTIONS

- the Policy Agenda: A Reader on UA (pp. 209 - 234): Zentralstelle für Ernährung und Landwirtschaft (ZEL) Food and Agriculture Development Centre.
- Ghana Statistical Service. (2012). *2010 Population and housing Census, Ghana, Final Results*. Accra: Ghana Statistical Service.
- Gibbs, G. R. (2013). *Using software in qualitative analysis. The SAGE handbook of qualitative data analysis*, pp277-296.
- Guénette L. A.(2006). *City Hooked on Urban Farming*. Retrieved from Ottawa.
- Halloran, A. and Magid, J. (2013). The role of local government in promoting sustainable UA in Dar es Salaam and Copenhagen. *GeografiskTidsskrift-Danish Journal of Geography*, 113(2), pp121-132. doi:10.1080/00167223.2013.848612.
- Keraita, B. and Cofie, O.O. (2014). *Irrigation and Soil Fertility Management Practices*. In P. D. a. B. Keraita (Ed.), *Irrigated Urban Vegetable Production in Ghana Characteristics, Benefits and Risk Mitigation* (pp63 - 74). Accra: International Water Management Institute (IWMI).
- Keraita, B., Silverman, A., Amoah, P. and Asem-Hiablie, B. (2014). *Quality of Irrigation Water Used for Urban Vegetable Production*. In P. D. a. B. Keraita (Ed.), *Irrigated Urban Vegetable Production in Ghana Characteristics, Benefits and Risk Mitigation*. Accra: International Water Management Institute (IWMI).
- King, N. (2004). *Using templates in the thematic analysis of text. Essential guide to qualitative methods in organizational research* in Saunders et al, 2009; 2, 256-270.
- Martellozzo, F., Landry, J. S., Plouffe, D., Seufert V., Rowhani, P. and Ramankutty, N. (2014). UA: a global analysis of the space constraint to meet urban vegetable demand. *Environmental Research Letters*; 9(6), 064025. doi:10.1088/1748-9326/9/6/064025
- Mayring, P. (2014). *Qualitative content analysis: theoretical foundation, basic procedures and software solution*. Klagenfurt, Austria
- Meenar, M., Morales, A., and Bonarek, L. (2017). 'Regulatory Practices of Urban Agriculture: A Connection to Planning and Policy'. *Journal of the American Planning Association*; 83(4), pp389-403. doi:10.1080/01944363.2017.1369359
- Miles, M. B., Huberman A.M., and Saldana, J (2013). *Qualitative data analysis*. London: Sage.
- Ministry of Food and Agriculture (MoFA).(2007). *Food and Agriculture Sector Development Policy (FASDEP II)*. Accra: Ministry of Food and Agriculture, Republic of Ghana.
- Ministry of Food and Agriculture (MoFA).(2010). *Medium Term Agriculture Sector Investment Plan (METASIP),2011–2015*. Accra: MoFA, Government of Ghana.
- Ministry of Food and Agriculture (MoFA) (2011). *National Irrigation Policy, Strategies and Regulatory Measures*. Accra: Government of Ghana.
- Ministry of Local Government and Rural Development (2012). *National Urban Policy Framework*. Accra: Government of Ghana.
- Ministry of Local Government and Rural Development (MLGRD).(2017). *Greater Accra Metropolitan Area (Gama) Sanitation and Water Project: Final Environmental and Social Management Plan (ESMP)*. Accra: MLGRD.
- Ministry of Works Housing and Water Resources (MWHWR).(2007). *National Water Policy*. Accra: MWHWR.

Tuffour M.

SUSTAINING URBAN AGRICULTURE UNDER INTENSE URBANISATION IN GHANA: EMERGING AND EXISTING ROLES OF FORMAL INSTITUTIONS

- Moldakov, O. (2014). *The Urban Farmers of St. Petersburg*. Urban Agriculture, 1.
- Mougeot, L. J. (2000). *Urbanisation Agriculture: definition, presence, potentials and risks*. In N BakkerM Dubbeling SGuendelU SabelKoschella H de Zeeuw (Ed.), *Growing Cities, Growing Food, Urbanisation Agriculture on the Policy Agenda*; (pp. 1- 42). Feldafing, Germany DSE.
- Najmaei, A. (2016). *Using Mixed-Methods Designs to Capture the Essence of Complexity in the Entrepreneurship Research: An Introductory Essay and a Research Agenda*. In *Complexity in Entrepreneurship, Innovation and Technology Research* (pp. 13-36): Springer.
- Nchanji, E. B. (2017). Sustainable urban agriculture in Ghana: what governance system works?. *Sustainability*, 9(11), 2090. <https://doi.org/10.3390/su9112090>
- Obosu-Mensah, K. (2002). Changes in Official Attitudes Towards Urbanisation Agriculture in Accra. *African Studies Quarterly*,; 6(3), pp19 - 32.
- Obuobie, E., Danso, G. and Drechsel, P. (2003). Access to land and water for urban vegetable farming in Accra. *Urbanisation Agriculture Magazine*,; 11, pp15-17.
- Obuobie, E., Keraita, B., Hope, L and Agodzov, S. K. (2014). *Health Risk Perceptions of Stakeholders*. In P. D. a. B. Keraita (Ed.), *Irrigated Urban Vegetable Production in Ghana Characteristics, Benefits and Risk Mitigation* (pp. 105 - 116). Accra: International Water Management Institute (IWMI).
- Owusu, G. (2013). Coping with Urban Sprawl: A Critical Discussion of the Urban Containment Strategy in a Developing Country City, Accra. *Planum Journal of Urbanism*; 1(26), pp1 - 17.
- Patton, M.Q. (2002). *Qualitative Research Evaluation Methods (Third ed.)*. Thousand Oaks: Sage Publications.
- Peerzado, M. B., Magsi, H. and Sheikh, M J (2019). Land use conflicts and urban sprawl: Conversion of agriculture lands into urbanization in Hyderabad, Pakistan. *Journal of the Saudi Society of Agricultural Sciences*; 18(4), pp423-428.
- Phillippi, J. and Lauderdale, J. (2018). 'A guide to field notes for qualitative research: context and conversation'. *Qualitative health research*; 28(3), 381-388.
- Prain, G. and Dubbeling, M. (2011). *Urbanisation Agriculture: A Sustainable Solution to Alleviating Urban Poverty, Addressing the Food Crisis, and Adapting to Climate Change: Case studies of the cities of Accra, Nairobi, Lima, and Bangalore* (World Bank (project: CN# 43)). Retrieved from Leusden.
- Saldana, J. (2009). *The Coding Manual for Qualitative Researchers*. London; Sage.
- Satterthwaite, D. (2007). *The transition to a predominantly urban world and its underpinnings*. Human Settlements Discussion Paper Series, Theme: Urban Change; -4(4), pp1 - 90.
- Satterthwaite, D. McGranahan, G. and Tacoli, C. (2010). Urbanization and its implications for food and farming. *Philosophical Transitions of the Royal Society*; 365, pp2809–2820. doi:10.1098/rstb.2010.0136
- Saunders, M, Lewis, P. and Thornhill, A. (2009). *Research Methods for Business Students* (5th ed.). Essex: Pearson Education Limited.
- Smit, B. and Pilifosova, O. (2003). Adaptation to climate change in the context of sustainable development and equity. *Sustainable Development*; 8(9), 9.
- Smit, J., Nasr, J. and Ratta, A. (2001). *Urbanisation Agriculture yesterday and today*. In *Urban Agriculture: food, jobs and sustainable cities* (pp. 1-31): The Urbanisation Agriculture Network, Inc. New York: The Urban Agriculture Network, Inc.

SUSTAINING URBAN AGRICULTURE UNDER INTENSE URBANISATION IN GHANA: EMERGING AND EXISTING ROLES OF FORMAL INSTITUTIONS

- Stake, R. (1995). *The Art of Case Study Research*. Thousand Oaks, CA: Sage Publications.
- Stoler, J. Weeks, J. R. and Fink, G. (2012). Sachet drinking water in Ghana's Accra-Tema metropolitan area: past, present, and future. *Journal of Water Sanitation and Hygiene for Development*; 2(4), 223-240.
- UN-Habitat (2012). *State of World's Cities 2012/2013: Prosperity of Cities* (World Urban Forum ed.). Nairobi, Kenya: UN-Habitat.
- UN-Habitat. (2014). *The State of African Cities 2014: Re-imagining sustainable urban transitions*. Nairobi, Kenya: UN-Habitat.
- UN-Habitat. (2009). *Ghana: Accra Urban Profile*. Nairobi: UN-Habitat.
- Van Ginkel., H. (2008). *Urban Future*. In *Pressure Point* (pp. 32 - 33). London: MacMillan.
- Venkatesh, B.T, Andrews, T., Parsekar, S.S., Singh, M.M and Menon, N. (2016). 'Stigma and mental health- caregivers' perspective: A qualitative analysis'. *Clinical Epidemiology and Global Health*; 4, pp 23 – 27. doi:10.1016/j.cegh.2015.06.003
- Wadumestrige Dona, C. G. Mohan, G. and Fukushi, K. (2021). Promoting UA and Its Opportunities and Challenges—A Global Review. *Sustainability*; 13(17), 9609.
- World Bank. (2013). *Urbanisation Agriculture: findings from four city case studies* (English); Urban development series knowledge papers, no. 18 Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/434431468331834592/Urban-agriculture-findings-from-four-city-case-studies>
- World Bank.(2015). *Rising through Cities in Ghana*. Retrieved from Washington.
- World Bank. (2015). *Urbanization in Ghana: Challenges and Strengths* Retrieved from Washington.
- World Population Review. (2018). *Ghana Population*; Retrieved from <http://worldpopulationreview.com/countries/ghana-population>
- Yi-Zhong., C. and Zhang, Z. (2000). Shanghai: Trends towards Specialized and Capital-Intensive UA. In M D N Bakker S Guendel S Sabel Koschella and H de Zeeuw (Ed.), *Growing Cities, Growing Food, Urbanisation Agriculture on the Policy Agenda* (pp. 467 - 475). Feldafing, Germany: Zentralstelle für Ernährung und Landwirtschaft (ZEL) Food and Agriculture Development Centre.
- Yin, R. (2009). *Case Study Research: Design and Methods* (Fourth ed.). Thousand Oaks, CA: Sage Publications.
- Zeza, A. and Tasciotti, L. (2010). Urbanisation Agriculture, poverty, and food security: empirical Evidence from a sample of developing countries; *Food Policy*, 35(4), 265 – 273.
- Zhang, W. and Xu, H. (2017). Effects of land urbanization and land finance on carbon emissions: A panel data analysis for Chinese provinces; *Land Use Policy*, 63, pp493-500. doi:10.1016/j.landusepol.2017.02.006