Full Length Research Paper

Assessing the informal sector in Kumasi: case of elements of urban agriculture

Abubakari Ahmed Balormakpani and Romanus D. Dinye

Centre for Settlements Studies
Accepted 13 August, 2012

The recent trend of increasing urban agricultural activities in African towns and cities coupled with the contribution of the activity to development efforts of towns and cities has become a salient issue. Literature indicates that informal sector businesses including urban agriculture can be influenced by four main factors which include location, scale of activities (input-output), stakeholder and motivation. Using secondary data collected from government agencies and primary data collected from field observation and reconnaissance survey; the paper takes inventory of elements of urban agriculture (location, scale of activities, stakeholder support and motivation) and their potentials to reducing urban poverty. It was found out that there is no conscious planning for informal businesses such as urban agriculture in Kumasi as it has not been integrated into the land use plans of the city, lack of financial support, grazing of crops by animals and problems of access to land are the key challenges of urban farmers. Those involved in urban agriculture are mostly men in food crop farming and female in vegetable cultivation. The paper recommends urban agriculture land use policies that will avoid clash between the interests of farmers and long term government land use goals.

Keywords: Urban agriculture, urban poverty, land use policy and planning

INTRODUCTION

No country has been able to sustain a rapid transition out of poverty without raising productivity in its agricultural sector (Timmer, 2005). Despite this role of agriculture in economic development, both the academic and donor communities lost interest in the informal aspects of this sector, starting in the mid-1980s. This was mostly because of low prices in world markets for basic agricultural commodities caused largely by the success of the Green Revolution in Asia. After two decades of neglect, interest in agriculture is returning at local, national and international levels.

Agriculture constitutes the core of most low-income countries. In heavily indebted poor countries, the agricultural sector generated 33 % of the Gross Domestic Product (GDP) and 52 % of total merchandise exports, Ghana is not an exception, the sector employs 60 % of the working population particularly women (World Bank 2005). But due to increasing population in urban areas, there is the problem of scarce and limited land, lack of public policies and planning legislations for informal businesses such as urban agricultural activities which have raised concerns about the prospects of urban agriculture in poverty reduction. Urban areas are engines of economic growth and hubs of political and cultural fusion. They are increasingly becoming the test bed for the adequacy of political institutions, for the performance of government agencies and for the effectiveness of programmes to combat social exclusion and to promote economic development.

Urban agriculture is increasingly being seen as an important component of urban development, informal urban business and urban environmental management. It is a viable source of job, income and food for the urban poor. For the Sub-Saharan region, dented by poverty, rapid population growth, civil strife, refugee crises, environmental degradation and unstable economic and political conditions, urban agriculture is an alternative source of employment, household incomes, nutrition and
food security among many low-income urban dwellers (Smith and Haddad, 2002). Urban agriculture conducted in or around the city can provide a realistic and pragmatic solution. For example, reports indicate that urban agriculture is an important source of food throughout developing countries, food systems, and a critical food security strategy for poor urban households (Maxwell, 2001).

The population of Kumasi is growing faster than the country’s overall population. The movement of people from other places to Kumasi is to seek for jobs and greener pastures are at its ascendency. Migrants who move into the city of Kumasi usually face many challenges in the city and the struggle to do informal businesses. These challenges include high cost of living, job unavailability, inability to afford three square meals, living in indecent housing facilities, among others. Poverty is increasingly becoming an urban problem instead of reducing. This has added up to the number of poor people living in the city. Poverty is ceasing the life of many urban residents especially the vulnerable groups; children, women and the aged and depriving many of actualizing their potentials. No much wonder that increasing numbers of urban folks look for ways of supplementing their meager income through informal sector businesses.

According to the Statistics, Research and Information Division of Ministry of Food and Agriculture (MOFA, 2005), the location of farming activities in the urban areas is a major challenge to urban agriculture, about 80% of the arable lands in the Kumasi Metropolis have been displaced by the construction of estates and other infrastructure facilities and services and high demand for housing supply. Most of the farming lands are not accessible because most of them are not link to roads and this affect the marketing of farm products. Also due to lack of storage facilities, most of the farm produce get rotten since majority of them are perishable goods. These therefore compel them to sell the farm produce at low prices. Urban agriculture has been a neglected practice in Kumasi and Ghana until recently, urban planners and other professionals are beginning to appreciate it and are making efforts to bring it back on board through integrated planning for informal sector. Urban agriculture can be influenced by four main factors which include location, scale of activities, stakeholder and motivation. This paper seeks to address the geo-specific, scale of activities, stakeholder support and motivation for urban agricultural development that have potentials to reducing urban poverty. It highlights the role of urban agriculture to poverty reduction and the attendant issues and implications that emanate. Strategic proposals to protect the urban farming for sustained access and utilization have subsequently been made. It proposes principles and priorities to guide agriculture – led approaches to poverty reduction and helps decision-makers to weigh the potential growth and poverty impact of agriculture compared with other competing demands on resources.

Concept of Informal Sector, Urban Agriculture and Poverty

The informal sector may be broadly characterized as consisting of units engaged in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned. In fact, the revised ILO /PREALC views the informal economy as the collection of marginal enterprises characterized by: low entry barriers in terms of skills, capital, and organization; family ownership enterprises; small scale of operation; labor intensive production with outdated technology; unregulated and competitive markets; low levels of productivity; and low levels of capacity for accumulation (Flórez 2002). The informal sector is a segment of society bound to disappear as a result of economic growth and structural transformation, the experience has been greater growth in informal employment than in the formal sector. As a consequence, interest in investigating its dynamics and salient features has grown steadily over the years. Common features of the informal sector are their small sizes in respect of labour, capital and business operations. One of such new features is the emergence of urban farming.

Urban Agriculture is defined as the production, processing and distribution of divestiture of food including vegetables and animal products within peri-urban or an urban area. Farming in this sense has its main motive to be food production for personal consumption or for sale and or for higher incomes. (Statistics, Research and Information Division of the Ministry of Food and Agriculture, 2005)

In other words Urban Agriculture involves farming activities that are carried out within the boundaries of towns or urban areas and these farming activities include the cultivation of crops, animal rearing and fish farming. In this case the location of the farm is important. It must therefore be emphasized that an urban dweller who only farm or maintain farms in a rural area is not an urban farmer.

Urban Agriculture is the practice of cultivating, processing and distributing food in, or around urban areas –town or city (Bakker et al., 2000). The only things that distinguish urban agriculture from rural agriculture are the characteristics and location of the agricultural activity. Urban agriculture is integrated into the urban ecological system and located in the urban area whiles rural agriculture is located in the rural area and incorporated into the rural ecological system. Urban agriculture is embedded in and links up with the urban ecosystem and economy. Such linkages include the use of urban residents as laborers, use of typical urban resources like organic waste as compost and urban
wastewater for irrigation, direct links with urban consumers, direct impacts on urban ecology, being part of the urban food system, competing for land with other urban land uses, being influenced by urban policies and plans, among others.

According to Smith et al (2001) Urban agriculture is an industry that produces, processes, and markets food, fuel, and other outputs, largely in response to the daily demand of consumers within a town, city, or metropolis, on many types of privately and publicly held land and water bodies found throughout intra-urban and peri-urban areas. Typically urban agriculture applies intensive production methods, frequently using and reusing natural resources and urban wastes, to yield a diverse array of land-, water-, and air-based fauna and flora, contributing to the food security, health, livelihood, and environment of the individual, household, and community. From this definition, the key elements of urban agriculture that can be deduced are location, scale of activities (input-output), support and motivation which are the key tenants of this study. For the purpose of this research, the practice of urban agriculture is considered as an activity of cultivating food crops and rearing animals within and around the cities and towns which does not exclude its distribution and consumption.

Urban Agriculture’s contribution to poverty reduction is sometimes considered to be small, because its relative economic importance usually falls when poverty affected countries successfully develop. This view is sometimes misleading. Strong agricultural growth, particularly increased productivity, has been a feature of countries that have successfully reduced poverty (Barrett et al, 2000). This was true for many parts of Asia, where what is now known as the green revolution (a period of improved agricultural activities both in the urban and rural areas) played a major role in reducing poverty. This contradicts Africa’s recent experience, where per capita food production and yields have largely stagnated, slowing overall growth and increasing hunger, malnutrition and poverty.

Empirical evidence consistently shows that general agricultural growth is highly effective in reducing poverty. Thistle et al (2001) concluded from a major cross-country analysis that, on average, every 1% increase in agricultural yields reduced the number of people living on less than a dollar a day by 0.83%. This increase in income did not only occur in rural agriculture but also urban agriculture. Increased urban agricultural productivity has benefited millions through higher incomes and cheaper food in developed countries. More importantly, it has provided the spur to economic development outside agriculture where growth and job creation are faster and wages higher. The contributions of agriculture in poverty reduction and local economic development in urban areas can be anchored in the areas of;

1. Making food cheaper for the affordability of the urban poor.
2. Rising incomes of both small and large scale farmers in cities and towns
3. Serving as an avenue for employment creation

Rapid increase in agricultural output in urban areas, brought about by increasing land and labor productivity, has made food cheaper. This has benefited the urban poor who spend much of their income on food. Bangladesh provides an excellent example of this. In addition, when the conditions are conducive, increasing agricultural productivity will increase the incomes of both small and large farmers and generate employment opportunities. These increases in income are particularly important in reducing poverty in the urban areas even though the proportion of urban farmers compared to rural farmers is low.

Cross-country studies revealed that for every 1% increase in agricultural output, it is estimated that farm employment increased by between 0.3 and 0.6 % (Mellor, 2001). It is not just the landless that rely upon this source of income. Many farmers supplement their incomes by working on the farms of others.

Urban Agriculture’s historical importance to reducing poverty goes far beyond its impact on agriculture-based livelihoods both in the rural and urban areas. Where agriculture has grown rapidly, higher incomes and cheaper food have increased the demand for goods and services produced outside agriculture. These strong linkages between growth in agriculture and that in the wider economy have allowed poor countries to diversify their economies to sectors where growth is generally faster and labour productivity and wages are higher. Where agricultural productivity has grown slowly, particularly in sub-Saharan Africa, non-farm activities have also tended to grow slowly and to offer low wages (Haggblade et al 2002).

It is to be noted that the pace of urban agricultural growth in today’s poor countries will probably be slower than in the green revolution and it will differ between countries, reflecting local conditions. The participation of small-scale farmers will also be more difficult. But urban agriculture’s potential can be realized and is critical to poverty reduction. Achieving this will require more effective investigation, investment and better policies adoption as discussed below.

Poverty can be defined in different ways. Some attempt to reduce it to numbers, while others argue that a more ambiguous definition must be used. In the end, a combination of both methods is used in defining poverty. Generally, economists and social workers use two approaches to define poverty. Some people describe poverty as a lack of essential items – such as food, clothing, water, and shelter – needed for proper living. The current widely accepted UN standard defines poverty...
as living on less than $2 per day and extreme poverty as living on less than $1 per day (World Bank, 2005).

Subsequently, poverty especially urban poverty has persisted and remains a major challenge in Ghana. In Ghana just like other urban areas, inadequate housing (in qualitative terms), health services and unemployment are still prevalent and manifest poverty. Whereas efforts to improve the socio-economic welfare of the population in urban areas in Ghana have been underway, the effectiveness of urban agriculture in alleviation of poverty for development needs to be evaluated.

Most slum and urban poor dwellers depend upon precarious employment in the informal sector, characterized by low pay and poor working conditions including urban agriculture. Marginalized from life and opportunity in the formal city, the urban poor are in many ways invisible to their governments. They are forced to pay considerably more to private vendors for services and infrastructure that are not provided by the government. Statistics often mask the severity of conditions for the urban poor. While demographic indicators for quality of life of urban dwellers can be higher than for their rural counterparts, disaggregated data reveals differences within levels of access to services and stark inequalities, for example in child malnutrition and mortality rates. Highly visible disparities, spatial segregation, and exclusion create the breeding grounds for social tensions, crime and violence.

Global poverty has become an urban phenomenon. In the year 2002, 746 million people in urban areas were living on less than $2.00 a day (Ravallion 2007). The absolute number of urban poor has increased in the last fifteen to twenty years at a rate faster than in rural areas. Rapid urban growth has made Asia home to the largest share of the world’s slum dwellers (Halfani 2007). But nowhere is the threat of urbanizing poverty graver than in Africa, which has the fastest rate of urban growth and the highest incidence of slums in the world. In her contribution to this volume, Vanessa Watson writes that rapid urbanization in Africa has been decoupled from economic development. In the last fifteen years the number of slum dwellers has almost doubled in sub-Saharan Africa, where 72% of the urban population lives in slums (UN-HABITAT 2006).

METHODOLOGY

Primary data was collected using questionnaires, visual observations, institutional surveys and key informant interviews in nine farming communities (Boadi, KNUST, Ayeduase, Kaase, Akwatia line, Kentinkrono, Dompoaase, Asokore-Mampong and Kwadaso). The institutional surveys covered the Town and Country Planning Department, Metropolitan Assembly, Ministry of Food and Agriculture, Environmental Protection Agency, and local Non-Governmental Organizations. Secondary data was collected through the review of literature, which includes documents from the Kumasi Metropolitan Assembly and the internet. The questionnaires seeks to address the types and nature of urban agricultural activities, their implications on urban policy and the way forward for protecting the urban poor.

A random sample was taken to ensure that the inference about population involved would be made valid and that the items in the population had the opportunity being chosen. According to the 2000 Population and Housing Census, the economic active population within the Metropolis is about 835, 573 (71.4 %) with the Agriculture sector employing 5 % of this economic active population hence making the total number of farmers within Kumasi to be about 41,779 (representing the sample frame). With this 60 % of them are engaged in crop farming whiles the remaining 40 % rear animals (Metro Agriculture Directorate). With 41779 as sample frame a calculated sample size of 100 activity units selected at 90 % confidence level and a margin of error 0.1. According to Rice (1995), in central limit theorem if a sample size of at least 30 is selected and properly distributed, research findings are close to reality when dealing with small sample size. From this proposition the emphasis was on distribution of the sample size in order to give a true representation of current situation to be assessed. Observation is one of the key techniques that was used it gathering qualitative data. This was done through monitoring by seeing the daily agricultural activities that take places at various locations. Major data findings gathered was discussed with a group of interviewees for them to make further contributions as to whether or not the research finding were of true representation of the situation on ground. In all two focus group discussions were held comprising a team of seven each for preliminary and final findings.

STUDY AREA

Kumasi is the second largest city in Ghana after Accra, the capital city with a total population of about 1,889,934 (Ghana Population Census, 2000). It is referred to as the commercial capital of Ghana and was once the Garden City of West Africa due to its greenery. Kumasi’ prosperity is partly associated with the timber forest of the neighboring towns and its local enterprise and artisan skills particularly in the areas of vehicle engineering and furniture-making which serves people from within and beyond the country’ boarders, that is; surrounding countries. Kumasi is located in the transitional forest zone and is about 270 kilometers north of the national capital, Accra. It is found in the wet sub-equatorial zone. The average minimum temperature is 21.5°C with a maximum average temperature of 30.7°C. It is located in the moist
Figure 1: Spatial Distribution of Urban Farming in the Kumasi Metropolitan Area

Source: Adopted from Town and Country Planning Department, Kumasi, 2006

Kumasi is located in a semi-deciduous forest. It lies within the plateau of the South-West physical region which ranges from 250-300 meters above sea level. The topography is undulating. The city is traversed by major rivers and streams like Subin, Wiwi, Sisai, Owabi, Aboabo, Nsuben, among others.

However, rapid urbanization over the last two decades has caused agriculture in the metropolis to experience some drastic changes. The residential, industrial and commercial land uses have invaded and taken over agricultural land. It is estimated that about 80% of the arable lands have been displaced by the construction of houses, industries and other physical infrastructure (MOFA, 2005). As a result of this invasion, there are very few pockets of agricultural activities currently in the metropolis. These pockets of farming are found mostly at the backyards of houses and in communities found at the fringes like Ayedause, Kotei, Boadi, Emena, Kwadaso, Deduako, among others as shown in figure 1. Crops and animals such as maize, plantain, yam, cassava,
women are considered good through the year. Some few vegetable's work compared to 24 production labour of controversy for a considerable time. -

ANALYSIS OF FINDINGS

Gender

Evidence from certain parts of Africa (Tanzania, Kenya, Uganda, and Zambia) proves that, it is mostly women who are involved in urban farming. Contrarily, in the Kumasi Metropolis, men are in majority (94%) in farming activities. About 90% of these men are found within the active age group. Most women are considered good when it comes to marketing of the farm produce and therefore prefer selling the farm produce to engaging in the urban farming itself. Quite interesting, 4.7% of the male farmers were found below fourteen years of age. According to these children, it is interesting to farm to supplement the meager amount of money provided by their parents. They use some of the amount earned to pay their fees, buy books, for miscellaneous expenses and to supplement household income. Food crop farming and animal rearing was mostly done by men while women are into vegetable cultivation. Muslims are mostly found to be rearing animals including poultry and livestock.

In the past and even in some quarters now, women and children are placed second after men on the social class strata and therefore only qualify to be passive participants in the economic arena. The debate on the direct role of women and indirect role of children in societies and their participation in economic activities has sparked a lot of controversy for a considerable time. The foregoing analysis accentuates the role of sociodemographic conditions on urban poverty reduction in agricultural sector. Those who are against the increased participation of women in all spheres of economic and political activities have argued that the biology of sex determines that women are limited to the home and children and must play a subordinate role in the economy, public affairs and even in the home. This is a fallible argument because, the biology of sex has been constant throughout, and it cannot therefore be used to explain changes in societies nor explain the status of women in societies. To enhance efficiency and aid survival, every known society divides and specializes labour tasks to some extent and these divisions of labour has knowingly or unknowingly been done along sex lines where men carry out tasks that take them outside the home; while women are largely restricted to homecare, childbearing and child caring. However, a study by the UNDP revealed that unpaid reproduction labour constitute 66% of women’s work compared to 24-34% men’s work (Amrita, 2007). This is not recorded in national statistics or in the UN systems of national account, but it is often what prevents most households from slipping into extreme urban poverty.

Location

Farmers in Kumasi are either engaged in food crop farming, animal rearing or both. With this 50% of them are engaged in crop farming, 40% are into the rearing of animals and 10% do both. It was revealed by the survey that, particular crops were cultivated at certain location for various reasons. Pieces of land at backyards (46%) are usually used for the cultivation of cereals and tubers. It is only vegetable farms that are cultivated along the water bodies. This enables vegetable farmers to cultivate their crops throughout the year. Some few vegetable farms (20%) are found at the backyards usually for cultivation of tomatoes, pepper, garden eggs, among others. Land for animal farmers as well as the location of the farm established that, 52%, 48% and 10% were family, individual and hired lands respectively. The cultivation of variety of crops at the backyards is for easy access for family consumption and this saves portion of the family’s income which would have been spent on food for other purposes. Table 1 shows the number of food crop farmers using various locations. The locations, fringe, backyard, roadside, along water bodies and even abandoned city lands can either by purchased or hired with prearranged agreements with land lords.

The location of activities in the urban environment tends to be dictated by certain factors. These are pull and push factors that underpin their location at particular places. Land under market conditions should go for the highest and best use otherwise the economic potential would be underutilized. According to (Rockson 2009) the

### Table 1: Location of food crop farmers

<table>
<thead>
<tr>
<th>Item</th>
<th>Fringe</th>
<th>Backyard</th>
<th>Roadside</th>
<th>Abandoned City Land</th>
<th>Along Water Body</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Cereals</td>
<td>6</td>
<td>6</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>Root/tuber</td>
<td>6</td>
<td>15</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>23</td>
<td>2</td>
<td>3</td>
<td>10</td>
<td>50</td>
</tr>
</tbody>
</table>

Source: Field work 2012

vegetables, cattle, sheep, goat, rabbit, grasscutter, snail, among others are cultivated and reared.
use to which urban land is engaged in is always undergoing changes because of the dynamism of human settlements, emanating from the improvement in urban economies, stable political climate and the increase in urban population. These changes provide different frameworks within which competition between the existing and potential land users decide the pattern of land use in urban areas. Urban agriculture land use is grounded on the concept of bid rents whereby the land user seeks closer locations for various reasons, but is willing to accept a location further from city centre if rents are lower in compensation. There are wide differences in the land use patterns of urban areas. Varying topographical features have an effect on land use locations; so do climatic conditions, past and present social and religious agglomerations, legislation and legal decisions, demand for goods and services including varying consumer preferences and the policy of local and central government in the supply of public utilities and social services. From his understanding, these variations provide different frameworks within which competition between the existing and potential land users decide the pattern of land use location, and within these frameworks and subject to the imperfections of the market, the forces of demand and supply provide the means by which land is developed up to its highest and best use. This phenomenon puts spatial limits of urban agriculture. However, according to Smith et al (2001) urban farming employs land that is unused or unsuitable for other purposes, or it makes usufruct use of land allocated for other uses, thus returning extra land rents. Most cities have a large amount of such land that can be farmed. The nature of certain urban lands such as buffer zones, marshy areas, slopes among others constituting abandoned city lands can only be used for agriculture if these lands are to gain rent values.

**Scale of Activities and permission**

In general urban farmers have a small parcel of land at their disposal to farm on at any particular period and frequently using and reusing natural resources and urban wastes. This is because majority of the farmers (about 90%) cultivate on less than 1 acre of land with an average farm size being half of an acre of land whiles only 10% have access to 1-3 acres of land. The unavailability of land in the metropolis has compelled farmers to cultivate small farmland (1/2 of an acre) making their activities less profitable hence employing few people (on average two people) to assist them. A relationship exists between the location of the farms and the means of permit acquisition. Owners of farms located at the fringes (91.7%) of the metropolis sought only the permission of land owners while 8.3% acquired farming permission from the traditional authorities. All the Backyard farming operators do not seek permission from any authority. They rather farm in their own capacity or talk to their family heads to give them the go ahead. They believe the land is theirs and their family’s so they can use it for whatever they desire. Again, 80% of the farmers along streams and water bodies sought permission from the traditional rulers only whiles the remaining 20% sought the permission of their land owners but they do not involve the Town and Country Planning Department. Out of the fifty farmers interviewed, only 8% sought the permission of the Town and Country Planning Department before embarking on their activities. The rest of the farmers (92%) only ask for permission to till the land from the individual landowners or the traditional authorities. Farmers attributed their actions to the bureaucratic and time wasting processes involved in the acquisition of permits from the Town and Country Planning Department of the Metropolis. Some also added that they are unaware of the existence of such a department. As a result of the fact that 92% of farmers not having permit from the Department, haphazard location of farms in farming areas of the city has emerged. This haphazard location of farms has been one of the main reasons why some urban authorities refuse to accept the practice of farming in the city environment in the quest for development control. Development control covers everything for which planning permission is needed and it extends from creating an international airport to getting permission to cut down and replant a tree which is subject to a tree preservation order (Keeble, 1972). Numerous factors account for this situation namely, rapid urbanization, exorbitant real estate rents and prices, lack of executive capacity to implement relevant urban and regional planning laws and the ubiquitous Ghanaian factor (Essein et al 2009). Due to the idea of urban farmers invading city planning authorities, they farm in small parcels of lands do reduce risk of losing their big investments. It is of this reason that farmers along river bodies such as Aboabo and Subin Rivers develop small gardens. Some of the farmers (20%) expressed concerns of the shifting land use nature of farming in urban cities to give way for development infrastructure to keep pace with urbanization, hence urban agriculture according to them is a temporary activity.

**Land Ownership**

Farmers cultivate crops at their backyards, fringes, on abandoned city lands, along carriageway/roadside and water bodies. These places they use as farm lands are either theirs, family, hired or free land. The land could also be acquired through share tenancy agreement. However, it was identified that there is a correlation between the location of the land and the interest a farmer may hold. For farmers who own their lands, 83% are located in their backyards whiles 16% are found at the fringes of the Metropolis. A high percentage of self-
owned lands are located at backyards because the farmers (83%) are using part of the land they acquired for housing construction as farm lands. As revealed by the data, family lands which farmers till, 66.7% and 33.3% are located in the backyards and at the fringe areas of the metropolis respectively. Of the lands farmers hire 56% are located along the water bodies, 25% at the fringes and 18% are found on abandoned city lands. Farm lands that farmers acquire freely without any charge, 66.7% are located on carriage ways/roadside whiles the remaining 33.3% are found along water bodies. Lastly, it was realized that all free lands were found at the fringes of the Metropolis. For farmers using their backyards as farm grounds, there will not be any space for expansion when the need arises. There is therefore the need for government to allocate space for farming through the schemes been drawn by the Town and Country Planning Department. This will enable farmers to have access to space for expansion for increase production. Increased land access for the poor can also bring direct benefits of poverty alleviation, not least by contributing directly to increased household food security (Cotula et al, 2006).

Even where agriculture and land are becoming less important with the growth of alternative sources of income, secure land rights provide a valuable source of income for investment, retirement or security in case of unemployment. Moreover, secure access to land creates incentives for the user to invest labour and other resources in it, so as to maintain or enhance its value and sustain its productivity, and to access social and economic development opportunities (Cotula et al, 2006).

Duncan (2004) cited in her report “access to and control over land from a gender perspective” assumed that security of land tenure will enable the poor to improve their livelihoods as well as increase their food supplies, raise employment and foster more sustainable agricultural practices. She further cited that, secure land rights are said to have a significant positive impact on the alleviation of poverty, as it gives the owners greater control over their labour, a rationale to invest in the land and crops, greater access to extension services and more bargaining power. In the quest for food security, the poor often have little choice but to use their limited resources extensively. They are often forced to adopt survival strategies with short-time horizons due to factors such as their insecure land tenure rights, their limited access to financial services, their lack of access to information and lack of access to agricultural inputs. Although secure resource rights cannot guarantee sustainable land management, it can be a powerful incentive. Farmers with long-term access to land have a greater incentive to sustain the land and develop ways of preserving and regenerating it (Duncan 2004). Security of land tenure used to be guaranteed by the utilisation of land. However, land use rights have been eroded due to external factors, such as population growth and agricultural commercialization (Duncan 2004). Statistical data for Ghana show that women account for about half of the agricultural labour force and produce around 70% of Ghana’s food crops (Duncan 2004). Despite this percentage contribution of women, they are the most vulnerable group with regard to access to productive land. Osman (2004) also indicated that there were several problems associated with accessing customary land in Ghana. In his report “Accessing Customary Land for Development Consideration for Improvement”, certain problems such as evolving and unclear customary tenancy systems, indeterminate boundaries of customary-held lands, general indifference in the land markets, lengthy and expensive litigations over land and weak administration system.

**Farming and Income**

Of all the crop farmers, 84.6% of the vegetable farmers earned up to GH ¢500 which is the highest amount farmers earned in the metropolis for every three months season farming. On the contrary, it is tuber and roots farmers (72%) who earned mostly below GH ¢1000 annually. This is because most of the plantain farmers' farm on small pieces of land at their backyards to feed their families rather than to sell whiles vegetable farmers purposely cultivates vegetables for sale. Again, according to farmers, the prices of vegetables are higher than most of the crops grown and it is highly patronized in the Metropolis. Interested farmers who want to invest more into vegetables and other crops if the necessary conditions are created they will be able to feed their families and get some income from it thereby helping reduce poverty in the long run. One important income poverty measurement is the Gross Domestic Product (GDP) per capita. In Ghana the GDP per capita is GH¢2400 (IMF, 2009), this is a reflection of a middle income status, thus annual incomes below GH¢2400 signify low income earnings. With this all the urban farmer in food crop sub-sector are poor. However, absolute income measures of poverty may be misleading. Measures of relative poverty have therefore been proposed to assess poverty in relation to specific socio-demographic and economic conditions. Bradshaw (2004) explains that the equivalence scale is based on the assumptions that, the resource needs of households increase with each additional member, and that children and adults in households have differentiated resource needs. Urban and peri-urban vegetable farmers generate at least twice the income of their rural colleagues, which is an important contribution to poverty alleviation and better livelihoods (Danso et al., 2002). Therefore the contribution of this type of urban agriculture to employment, income generation and better livelihood is unquestionable. Studies conducted by IWMI in 2003 in the three cities
revealed that between 40% and 80% of urban farmers in Accra, Kumasi and Tamale, consider urban farming as their main income generating activity. Informal economic sectors of the cities in Ghana do not generate adequate income for the poor urban population. At the same time, urban agriculture supplements both diets and incomes of the urban poor, even in confined spaces.

The average income from farming may be low but have an enormous impact on household food security. However, it should be realized that, for those whose primary livelihood is farming, income from farming can be appreciable. Most farmers (75.8%) producing for sale and consumption adopt the mixed cropping type of farming system. They prefer mixed cropping to mono cropping on the premise of the underlying reasons.

1. To get farm-supplied variety of food crops for home consumption.
2. The instability of the prices of crops at uncertain seasons.
3. To harvest crops for sale all year around as different crops have different harvesting

Some farmers spend above what they earn but do have other sources of income such as security works and do not concentrate their resources to farming. On the other hand, farmers who earn more than they spend are full time farmers and commit their time and resources to it. Therefore, if farming is integrated into land use planning and made attractive in a way that the urban poor becomes interested, it can help reduce poverty in Kumasi. From the field survey, it was ascertained that crop farmers who cultivate on less than 1 acre of land (about 90 percent) are able to earn on the average GH¢ 450 as income every three months which is the gestation period for most of the vegetables whiles those who are able to cultivate between 1 - 3 acres of land earn on the average GH¢ 800 as their income for the same period.

Motivation and support

Nonetheless, the practice of farming in the urban area has not gained much consideration especially in the developing world especially among policy makers, city managers and the urban residents in Kumasi. The survey indicated that lack of public policies and financial assistance are the hindering factors that impede their quest to produce. As much as 50% were concern about the inconsistencies of land tenure in Kumasi and as such the willingness to acquire land to produce is quite low. Land is not available legally for farming and socioeconomic and political conditions are not favour farming. Urban agriculture like other informal sector activities in Kumasi therefore, does not always conform to official land use zoning and licensing laws. Unlike land for commercial and residential purposes which follow specific standards, urban agriculture has no standards guiding it. Urban farmers therefore, till wherever they deem appropriate such as backyards, abandoned city lands, peri-urban lands, along buffer zones and along roads where there are spaces. This attitude has enabled certain critics to point at the haphazard form of farming in certain parts of Kumasi as a reason to discourage the practice. The neglect of the practice by urban managers is the major reason why the practice has not seen much improvement in Kumasi. There is a rise in the competition for land for activities in space. Traditional land uses in urban areas such as residential, commercial and industrial compete with new urban land uses like urban agriculture. Acquiring land for agricultural purposes in Kumasi where there are other high land use competitors as such becomes a major problem to contend with. In most developing countries, the private sector holds a higher percentage of land which it entrusts into the hands of the government to be a caretaker. It however, tends to be difficult for these landlords to release their lands for the implementation of prepared plans by authorities. Especially, in such instances in which other land uses pay better than seekers who need it for urban farming. Land acquisition in Kumasi for urban farming therefore follows the bid rent concept. The cost of land in urban areas is too high that mostly the urban poor who needs a just a piece of land to farm on may tend to lose it to other users and this impedes their scale of activities.

Also 45% looks at the paralysis of public institutional collaboration, decentralized planning and lack of public policies on urban farming as their bane. Urban farming in Kumasi is expensive due to cost of land acquisition and as such 5% of the farmers expressed dissatisfaction on the part of micro finance institutions, private sector and local government initiatives to risk in giving financial assistance to the urban poor. A study carried out by the International Water Management Institute (IWMI) in Ghana between 2000 and 2003 revealed that almost two-thirds of households in the main urban centers practice backyard farming. Besides, intensive all-year-round vegetable irrigated farming is done on virtually every empty space close to water sources engaging up to about 2,000 farmers in and around Ghana’s three main cities of Accra, Kumasi and Tamale. The importance of this kind of farming especially to urban food security and livelihood of the urban poor is remarkable. For instance, as much as 90% of lettuce and spring onions eaten in Kumasi and Accra are grown in and around the urban areas (IWMI, 2003). Despite this, urban managers in Kumasi are reluctant to support urban farming due to public health reasons. Even though urban agriculture is said to be a healthy practice in poverty reduction in the urban areas, questions concerning the health implications of the practice has been raised. In food production, there is the use of chemicals for the control of diseases and pests to help reduce pre-harvest loses and thus increase
the production levels. The use of such chemicals in production could affect the health status of the urban populace especially those long river bodies. For instance, the use of biocides for pests and disease control in urban agriculture has been linked to the bioaccumulation of synthetic organic compounds in aquatic life. The use of chemicals in food production is also thought to contaminate soils and crops. Urban wastewater may also contaminate farm produce. These assertions raised against the practice have served as a source of discouragement to governments and the private sector. Policies formulated by government officials do not give consideration to urban agriculture since it considered a transitory part of life in the city dwellers.

RECOMMENDATIONS

There is a possibility of urban agriculture in reducing urban poverty of informal sector workers. For this to work, strategies must be adopted to ensure a smooth operation of urban agriculture. These potent strategies are outlined below.

Integration of Urban Agriculture and Informal Sector into Urban Land Use Planning

In fact urban agricultural practices have always been part of the city, but its integration into the urban economy is what is lacking in today’s urban planning and policies. Planners and other policy makers are seen as the opposers to urban agriculture as they have not given it attention in their plans as a land use nor designed estates to allow the activity to be carried out on plots. The central question here is how planners, urban managers and policy makers can facilitate or support urban agriculture. There is a need to understand what planning is all about and the constraints that planners face in trying to integrate urban agriculture into development plans. City planners must be given an uninterfered atmosphere to design plans incorporating urban agriculture land use and other informal business land uses. Plans must also be periodically reviewed to ensure the consideration of changing trends in the practice. Once lands are zone for urban farming and informal sector, acquisition will be less difficult for the poor urban farmers and city dwellers.

Creation of a Supportive and an Operational System

To enable a successful farming activity in the urban area, there should be a congenial and a sound urban economy that is stable. Policies that encourage citizens especially the poor to engage in it must be considered. There is the need for the creation of an atmosphere that will give farmers the urge to make profitable choices about the allocation of resources. It is realized that, Kumasi agriculture is hit by high taxation rates on its equipment and systems which keep prices low. Production cost at the long run mismatch the total amount earned. A growing agricultural sector as in Kumasi needs support from the government which could include a free taxation zone for the urban poor, available land to use and a legal and regulative system to support it. It must also, be supported by an effective research and information and extension services that corresponds with the demand of farmers and prospective investors. In Kumasi such services may be missing or operating at a shallow and a limited level of coverage. There is therefore, the need to establish such an environment to allow for the fruition of urban agriculture to help reduce poverty.

Tackling Market Failures

Poorly functioning markets for inputs and products have been a major challenge to agricultural development both in the urban areas. The poor are often priced out in most competitions especially access to land and technology. Attempts including giving of loans to farmers, purchasing of farm products directly by government and acquisition of land should be major roles of the Kumasi Metropolitan Assembly. This will relieve poor farmers from the associated problems of the invincible hand through state intervention. As a result of the inefficiencies in government, state owned agencies cannot provide the needs of the farmers despite the huge sum of money invested.

Bridging the Financial Gap

Finance remains a real obstacle for many urban poor farmers. The ability to secure funds for investment in general has been a battling case. Urban farmers invest in inputs for production such as labour, land, seeds, fertilizers and other needed resources continuously but only earn after the harvest period. They mostly do not have access to credit facilities, savings or remittances to provide for their inputs. The state-operated activities, such as targeted agricultural finance schemes and input schemes operated by parastatal marketing organizations, has not worked effectively. The use of microfinance schemes and other models to enable the accessibility of the urban poor to financial assistance are gaining grounds through Non-Governmental Organizations. In spite of this, these opportunities have not gotten to the level where the most poor in the urban area could access it. Government subsidies and guarantees could also assist in this situation by taking the initiative to provide accessible funds for the urban farmers through government based micro finance schemes for urban poor.

Taking Advantage of Technology

Technology is central to accelerating urban agricultural
growth and informal businesses. The use of innovative and technological systems of operations in urban agriculture will help improve productivity and production and manage resource. Realizing the benefits of technology and innovation will require; working with poor urban farmers to identify and tackle their key problems; concerted efforts to develop a range of new technologies and practices and systems that enable farmers to hear about, choose from and obtain appropriate new and existing technologies. With the adoption of technology, the unreliable rainfall patterns that most urban farmers are hooked to will be discarded and crops can be provided throughout the year. The difficulty of feeding livestock in the dry seasons can also be discarded for a better way of storing hay for feeding. The technology adopted must be a one that suits the local context. Attention must be placed on labor intensive technologies that will provide employment to the extremely poor. Technologies that will make use of urban wastewater for irrigational purposes and solid waste for fertilization can be deployed. There is therefore, the need for an efficient system of publicly funded agricultural research at both the national and international levels.

**Securing Property Rights for Prospective Investors**

Urban agricultural growth has benefited poor people mostly where land ownership has been relatively equitable. Land ownership, however, often remains inequitable; reducing urban agriculture’s potential to reduce poverty. Well-defined and secure property rights are important in encouraging urban farmers to invest. Without secured property rights few urban farmers will take the initiative of risking their investments on a land that could be taken from them at any time. Clear and transferable property rights that are recognized by banks also allow land to be used as a collateral security by urban farmers wanting to borrow money. This is particularly important for poor urban farmers who otherwise have limited access to credit. Urban Farmers can use their registered land as collateral for accessing credit facilities. Apart from outright ownership, urban farmers can also adopt other means such as leasehold, tenancy agreements and sharecropping (which is called abunu and abusa in Ghana) to increase their access to land. Special attention needs to be given to land access for the most marginalized communities and people in the urban areas. This is already starting to be addressed. For example, national legislation and international conventions are increasingly recognizing indigenous land rights. But formal recognition of these rights needs to be complemented by far-reaching action that empowers communities to exercise them.

**Creation of a research center**

To actualize the capable role of urban farming in reducing urban poverty government should create a research and information center for urban agriculture. Government should fund research activities into safe urban agriculture practices and make the information available to all farmers. Consumer preference information can also be communicated to farmers to enable them meet the market demands. The dissemination of such information can be channeled through the media: radio stations, television station, extension and veterinary service officers. Educational institutions like the Kwadaso Agricultural Institute and the Kwame Nkrumah University of Science and Technology can be resourced to undertake such research activities. Non-Governmental Organization interested in urban agriculture issues can also be taken advantage of for such a research.

**CONCLUSION**

Farming in the world’s cities and towns is increasingly turning to be a vital part of the economy, especially in developed countries. As cities expand in size and population, competition is been created between the traditional land uses and new emerging land uses and land uses that bid higher prices and those that offer less price such as urban agriculture. Urban agriculture pays a key role in poor reduction. Despite this, state interventions, public policies and planning have failed to incorporate it. In spite of this, urban agriculture has the capacity to thrive well in towns if given the needed support. Urban agriculture normally has numerous functions in terms of time and space, as well as social (e.g. women and low income groups) and economic (e.g. financial crisis, food shortage) conditions. It has been observed that urban agriculture exists within heterogeneous resource utilization situations, e.g. under conditions of scarce as well as abundant land and/or water resources. In terms of its contributions to development as noted above, urban agriculture enhances food security, provides additional income and employment for poor and middle-income urban dwellers, and contributes to an ecologically sound urban environment. As a result of the numerous importance government should initiate programmes in support of urban agriculture. The principal challenges for urban farmers and gardeners at that time were access to land and a lack of experience. Urban agriculture does not exist in most planning schemes, because of the idea that “real” agriculture takes place in rural areas. The time has come to start integrating urban agriculture into urban planning. Especially for the peri urban areas, the proposed law to establish greenbelt zones to halt urban development activities should be enacted and enforced. Technical advice and training for farmers by agriculture extension officers should be offered and should be sustained. Aspects of the training include soil erosion control techniques and bio-intensive farming practices to
enhance soil fertility and check soil degradation.

REFERENCES


Duncan, BA (2004); Access to and Control over Land from a Gender Perspective. A case study conducted in the Volta Region of Ghana. FOA, United Nations.


Rockson, N-BY (2009). The Relationship between the Changing Land Use Patterns and Land Values along Major Roads in Kumasi, Unpublished Special study submitted to the Department of Planning, Kwame Nkrumah University of Science and Technology Kumasi


Timmer, CP (2005): Agriculture and Pro-Poor Growth: An Asian Perspective, Asian J. Agric. Develop. 5(1)

Town and Country Planning Department (2006): Annual year report of Kumasi
