Governance of agriculture in the cities of developing countries: Local leaders’ perspectives

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This paper used the perceptions of local leaders at a ward level to assess the governance of urban agriculture (UA) in Kinondoni Municipality-Dar Es Salaam City in Tanzania. Unstructured interviews were conducted with 24 local leaders involved in the day to day governance of UA in the Municipality. During the interviews, the local leaders were requested to narrate their perceptions on the governance of UA in the Municipality based on three criteria namely leadership quality, infrastructure provision and farmers' land right. In general, the leaders had the opinion that in the current settings there were limited efforts and plans to support UA in Kinondoni Municipality as assessed using the three criteria mentioned above.

Key words: Governance, urban agriculture, local leaders, ward agricultural officers, Tanzania.

INTRODUCTION

Urban agriculture (UA) has been known to be both a strategy for dealing with poverty and a means to ensure sustainability (Mlozi, 1997, Foeken, 2005). On the contrary, improperly practiced UA can be a source for environmental degradation, pollution and health hazards (Mlozi, 1997; Sawio, 1998; Mvena, 1999). In Tanzania, UA is construed to mean the carrying-out of plant and animal husbandry activities within statutory townships boundaries as provided in the schedule of the town and country planning (urban farming) regulations, 1992. The definition, however, does not identify delimit for the term ‘townships’. For example it is not clear if the term covers those intensively developed areas alone or it also annexes sparsely developed peri-urban areas (Schmidt, 2011 and Mwalukasa, 2000). The following sections of the introduction cover the history and reasons for existence of UA in the least developing countries, the conflict between policy and/or legal positions versus urban farmers positions as well as the major issue dealt with in this paper.

Setting the ground: UA in developing countries

In many developing countries UA is considered to be a nuisance and at times an illegal activity (Bryld, 2003; Mlozi, 1997; SCINAP, 2011a). On the contrary, pressures from urbanisation, economic constraints and lack of formal means of employment had forced the majority of the urban dwellers to participate in UA defying these legal provisions (SCINAP, 2011a; Foeken et.al, 2004; Rakodi, 1988, Yeung, 1988 and Diallo, 1993; Mlozi, 1997). Data for people engaged in UA in Tanzania varies significantly, for example Mvena (1999) estimated that 80% of the...
urban dwellers are involved in UA while the census briefs (2003) and (2012) had estimated it at 14%. While it is difficult to explain the enormous variations between the two data sets; it can inferred that the size of the sample used in the studies had an influence in the overall results. The census is based on the wider survey of the people in all urban areas in Tanzania while Mvena (1999) had studied urban residents in the City of Dar es Salaam alone.

It has been estimated that in the 1990s many households in the least developing countries (LDC) spent up to 80% of their average income on food (Ethelston, 1992). This spending pattern escalated their adoption of UA as alternative source of both income and food (Foeken et.al, 2004; Mvena, 1999). As such, urban dwellers use UA as a strategy for survival and thus they consider any legal provision against it to pose an eminent danger to their livelihoods (Mbiba, 1994; Mvena, 1999; Briggs and Mwambu, 1998 and Schmidt, 2011).

There are evidences to substantiate the claim that at the national level UA in Tanzania is a reasonably supported (SCINAP, 2011a; URT, 2000). Whether the practice is receiving full support from the central government or not is a cause for debate. For example some researchers such as Foeken et al, (2004) noted that the ministry of agriculture and food security (MAFS) uses its urban based agriculture/livestock extension agents (ALEAs) to promote UA (Foeken et al, 2004). This is contrary to Sawio (1998) and Schmidt (2011) who pointed out that there is no organisation at the ministerial level used to promote the existence and sustainability of UA. Also, at the city level, studies have shown that it is illegal to have land measuring more than 3 acres for growing food and that farming is not part of the functions within any urban area (Sawio, 1998; Mwalukasa, 2000; Mvena, 1999; SCINAP, 2011a). Due to non-integration of UA in the town planning process, there has been a number of infrastructural, social and environmental constraints despite its economic potentials.

In Kinondoni (one of the three municipalities forming the city of Dar Es Salaam); UA is partly recognised as a legal activity. The evidence to support the semi-legal status of UA activities in Kinondoni Municipality include; (1) The municipality has set aside land for UA in Kawe, Uzuri-Manzese (demonstration gardens) and along River Mpiji in Bunju Ward, (2) Almost each ward (both rural and urban) is allocated with an extension officer to oversee agricultural activities, (3) Farmers receive financial support and implements through district agriculture development programs (DADPs). Schmidt (2011) estimates that around 60% of land in Kinondoni are under cultivation and produce about 7% of the total food requirements. This shows that the level of UA productivity is lower compared to the amount of land in use in the municipality.

The issue and the gap

The Issue: The support extended to farmers as well as the existence of some by-laws governing UA (Sawio, 1998; Foeken, 2005; Schmidt, 2011) shows that UA is important and accepted. However, the reality on the ground is different, UA is haphazardly practiced by small-scale farmers without substantive plans to promote, coordinate, guide and safeguard farmers’ access to land and the ensuing rights, ensure sustainability and encourage productivity by providing the necessary infrastructure (Sawio, 1998; Mwalukasa, 2000; Mvena, 1999). Small-scale UA farmers in Kinondoni municipality argue that poor governance and even corrupt officials are the sources of their ever compounding woes.

The gap: Past studies in urban agriculture in Dar Es Salaam city or Kinondoni municipality in particular have concentrated and dealt with issues such as legal and policy (Foeken, 2005; Schmidt, 2011); Livelihoods (Sawio, 1998); benefits of UA to farmers (Jacobi et al, 2000; Sawio 1998; Schmidt, 2011; Mlozi, 1997) and Institutionalisation of UA in the environmental planning and management (EPM) process (Mwalukasa, 2000; Mlambo, 2002). Evidence from literature has shown that little has been documented on the governance of UA in Dar Es Salaam City and particularly in Kinondoni municipality (for example, Mwalukasa, 2000). Similarly, the revised studies concentrated on the farmers, plans and policies leaving aside the group of actors (local leaders) which is at the heart of promoting and coordinating the practice. These leaders are the connecting bridge between the farmers and the government. Their ideas may form a base for the formulation of farmers’ friendly policies, by-laws and plans for UA practices in Kinondoni and the whole of Dar es Salaam. This is augmented by Schmidt (2011); who argued that the role to initiate efforts to promote or protect UA lies with the local leaders. Do these leaders heed to that role?

This paper intends to fill that gap by assessing the local leaders’ perceptions on the governance of UA in Kinondoni municipality. The research on which this paper is based intended to assess local leaders knowledge on the governance of UA based on the three criteria of leadership quality, infrastructure provision and farmers’ land rights. Local leaders within ward offices are important actors in the governance of the functions of both local and central government. They represent the arm of the government which administers the day to day functions at the second lower level in the administration hierarchy in Tanzania.
In this paper, the title local leader is used to represent officials working in the ward offices and specifically the ward agricultural officers (WAOs) and in their absence the ward executive officers (WEOs) or ward livestock officers (WLOs). WAOs are government officials charged with the responsibilities to coordinate, promote and oversee UA activities within their jurisdiction that is, wards. In their intermediary role, WAOs are in constant interaction with both the farmers in the field and policy makers on the decision making end at ward, district and municipality levels. Thus, their understanding of issues surrounding governance of UA reflects both field experience and policy positions. In their absence, the WLOs and WEO assume their responsibilities.

**Governance: The state, the power and the influence**

The idea of good governance originates from the restoration of the government as a key actor in economic and political development (Grindle, 2010; Kjær, 2004). There are many definitions of the term governance depending on the use, need and perception of the person(s) or organisations involved; a common consensus is yet to be reached (Kjær, 2004, Pierre and Peters, 2000, Jreisat, 2002, Kaufmann et al., 2010). The world bank (1992) regards governance to be “the manner in which power is exercised in the management of a country's economic and social resources for development”. On the other hand, the African development bank (AfDB) has the view that governance is “a process to the rule of law”. While the International Monetary Fund (IMF) defines governance as “the broad concept which encompasses all aspects of the way a country is governed; including its economic policies and regulatory framework, as well as adherence to the rule of law”. While the African development bank (AfDB) has the view that governance is “a process referring to the ways in which power is exercised in the management of the affairs of a nation”, the United Nations development programme (UNDP) defines governance as “the exercise of economic, political and administrative authority to manage a country’s affairs at all levels”. The paper adopts the definition by UNDP, which links the relationship between economic, political and administrative authority in dealing with all affairs within a country at all levels. WAOs are administrative leaders at ward level entrusted with the authority to promote and oversee the day to day functions of the farmers within their jurisdiction. They act as a bridge between the grass root actors-farmers and actors at the policy marking tier-administrative officials and/or politicians. This position gives them an advantage of understanding farmers’ woes as well as policy issues and positions. In their position WAOs may influence both farmers and policy in ways of devising appropriate strategies and policies to deal with UA in the municipality. Thus, the use of WAOs in assessing the governance of UA in Kinondoni is founded on the need to have a group of individuals who are likely to provide a fair assessment without taking sides.

**Criteria for the evaluation of UA governance in Kinondoni municipality**

In evaluation studies it is important to first set the benchmarks or points of reference which may be used to test and verify the studied issues. Therefore the study had to establish these criteria based on the existing literature. Thus, literature in UA in Tanzania and Kinondoni in particular were revised and repeating issues were noted. These issues were then captured into thematic areas. After collation and pattern matching three criteria were identified. Under each of the criteria, there were a string of factors which tends to define the success of the criteria as shown in Table 1. Table 1 has identified the common criteria which appeared in some of the UA literature accessed by the researcher. These criteria are discussed in the following sub-sections:

**The Leadership Quality:** The leadership quality is concerned with the availability of visionary administrative machinery intended to create an enabling environment for the proper operationalisation of the UA activities (Rakodi, 1988; Sawio, 1998). The general premise is that; strong and visionary leadership at local and central government is very important for the promotion, regulation and sustainability of UA activities (Mwalukasa, 2000; Schmidt, 2011; SCINAP, 2011b). The unconditional support of the planners, decision makers, local leaders at different levels in securing resources for UA is vital for the formalisation of UA (Sawio, 1998). A good leader ensures that all factors relevant for sustainability of UA activities are well-functioning (SCINAP, 2011b; Sawio, 1998). Leadership is expected to plan, organise and co-ordinate the UA practice to ensure efficiency and productivity by ensuring availability of infrastructure and access to land (Schmidt, 2011, Foeken et al, 2004; Mlambo, 2002; Mwalukasa, 2000). Thus, it is only fair to assess the leadership quality based on the availability of plans for UA practice, regulation of the activities and efforts to avail the needed agricultural infrastructure such as roads, markets, irrigation, storage and micro-financing (SCINAP, 2011b). In absence of good leadership, UA will be misguided or un-directed. This will be a good platform for unscrupulous officials to intentionally deter or delay any efforts to provide the necessary plans and infrastructure.

**Provision of infrastructure:** Availability, functionality, accessibility and affordability of infrastructure are vital in the operation of UA activities (Schmidt, 2011; Sawio,
Table 1. Identification of criteria and critical success factors

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<tr>
<th>Criteria</th>
<th>Critical success factors</th>
<th>Sources of information</th>
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<tbody>
<tr>
<td>The Leadership Quality</td>
<td>Availability and implementation of plans for sustainable UA</td>
<td>Sawio, 1998; Mwalukasa, 2000; Foeken et al., 2004; Rakodi, 1988; SCINAP, 2011a; Schmidt, 2011; Mvena, 1999.</td>
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<td></td>
<td>Regulation of UA</td>
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<td>Efforts to avail the needed infrastructure</td>
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<td>Functionability</td>
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<td>Access to land</td>
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<td>Security of tenure</td>
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In order to ensure productivity and sustainability of UA, the availability and functioning of basic infrastructure such as water, market, storage facilities and extension services cannot be over-emphasised (Sawio, 1998; Foeken et al., 2004). For example, Sawio (1998) noted that while the tap water distributed by the Dar Es Salaam water supply company (DAWASCO) is easily accessible by urban farmers and has tended to be expensive and unaffordable. Farmers have thus resorted to using polluted and not fit for human consumption water from rivers such as Msimbazi River (Sawio, 1998; Kiango, 2010). At times, Foeken et al. (2004) argued that due to scarcity of tap water, DAWASCO has disconnected the supply used by farmers to irrigate their produce (un-functionability). The disconnection of tap water has led to the killing of the farmers’ produce. In the case of accessibility, Dongus et al. (2009) had found that only 30% of the urban farmers in their sample were using tap water; while slightly more than a half were not irrigated or relied on rainfall or open wells water.

The availability, affordability, functionability and accessibility of these services are the criteria for the evaluation of the achievement of the governance of UA in Kinondoni municipality. In order to provide a fair analysis, the study also looked into the availability of plans intended to provide each of the mentioned infrastructure.

**The farmers’ land right:** The farmers’ land right is concerned with availability of and accessibility to the formal land by the urban farmers (SCINAP, 2011; Schmidt, 2011; Mwalukasa, 1999). It also involves protection of the existing parcels of land used by the farmers against other land uses and future plans to designate land for urban agriculture (Mvena, 1999; Mwalukasa, 1999). Schmidt, 2011 argued that municipal officials often fail to see value in Agriculture and believe that residential or industrial land uses are superior and would generate more revenue. Thus, they tend to have little interest in protecting agricultural land. There is an agreement that municipal official and urban planners have continually failed to incorporate agriculture into planning process. This was also observed by the land policy, 2000; which stated in its item 4.3 that the relevant authority has failed to designate and allocate land for UA and that as the urban areas expand, agricultural land is lost to other land uses. In evaluation of the farmers’ land right, the study used criteria such as availability of land, access to land, security of land tenure and existence of UA land use plans in Kinondoni municipality.

### RESEARCH APPROACHES AND METHODOLOGY

#### The study area

Kinondoni municipality Kinondoni is the second largest Municipality in Dar Es Salaam City-Tanzania with a total land mass of 531,000 hectares and inhabited by 1,088,867 people making it the highly populated municipality in the whole country. It has 39,980 ha of...
land favourable for UA, which is about 7% of its total area. According to the information from Dar es Salaam city council, there are about 197,500 farmers tilling around 13,600 ha which means around 66% of the arable land is idle. Agriculture is estimated to contribute 7% of the total required food in Kinondoni Municipality (Schmidt, 2011). Kinondoni is divided into 4 administrative divisions and 27 wards: 20 of those are urban wards and the remaining 7 are rural. Nevertheless, the rural wards in Dar es Salaam mainly exhibit the characteristics of the urban fringes.

The choice of the study area

The choice of Kinondoni as a case study is based on a number of factors; First, Kinondoni has been in the fore of legitimising the UA in the city of Dar Es Salaam. Its efforts coupled with the assistance of sustainable cities international network-Africa program (SCINAP) have partially borne fruits and plans for the inclusion of UA in its master plan are now on the verge of being approved (SCINAP, 2011). Equally important, Kinondoni has been chosen due to its population challenges; the municipality is the most populated in the whole country. Kinondoni therefore is a good case study for evaluation of the governance of UA practices in Dar Es Salaam and Tanzania as a whole.

UA governance in Kinondoni: Localised practice versus centralised policies

In Kinondoni Municipality as it is the case for other parts of Tanzania, UA is practically governed at the municipal and ward levels (Schmidt, 2011). At the Municipal level, there is Municipal agricultural and livestock development officer (MAOLD) who oversees the promotion, coordination and management of the agricultural activities. At the Ward level, there are WAOs with the same responsibility. In case there are no agricultural officers, the WEOs take charge of the governance of UA in a particular ward. On top of the three responsibilities mentioned above, the WAOs are responsible for provision of extension services to farmers in the ward, and to respond to any emergency issues such as floods, animal/insect attack and others. The WAOs are also required to submit a monthly agricultural development report to the MAOLDs. In the report, they are required to provide details on the amount of rainfall, amount of produce, number of farmers they have visited, available farm implements, the level of demand for farming implements, repair of equipment and weather challenges. Interestingly, it could be noticed that the report is more on the farm implements and weather issues; some of the farmers’ challenges, such as land rights, irrigation, marketing and plans for sustainable UA are conspicuously missing out. Further, the reports produced by WAOs are local in nature and reflects a condition on the ground within a specific ward.

However, policies and laws affecting UA are formulated at the higher level (that is, the ministry of lands, housing and human settlements development and the ministry of agriculture and food security). These policy makers seem to lose touch with the reality on the ground (Foeken et al, 2004; Mvena, 1999; Mwalukasa, 1999; Sawio, 1998). The outcome has been the formulation of the policies, which work against the farmers and the farming as a whole as discussed earlier on (Rakodi, 1988). This has complicated the day to day functions of the WAOs and MALDO sat ward and municipal levels. For example, in recent times, the ministry of lands housing and human settlement development (MLHHSD) has declared that there are no farms in Dar es Salaam. This government order prohibits the granting of the right of occupancy to people who own farms within the city boundaries. This order coupled with the policies, which were discussed in the previous sections made it easy for the acquisition of the farming land for the urban uses.

Approaches in data collection and analysis

The study intended to respond to questions with the nature of why, how and what with the view of extracting meaning from the opinion of the local leaders who are involved in the day to day promotion, coordination and management of UA in Kinondoni Municipality. These questions according to Yin (2009) are within the post-positivists paradigm and are best answered using the qualitative approaches. One of the major data techniques used in data collection in qualitative studies is narrative approach, which was the main data collection tool in this study. The leaders narrated their experience and knowledge based on the criteria identified in Table 1 above.

Sampling and Data Collection

There are 27 wards in Kinondoni Municipality with 27 local leaders (one at each ward) who are responsible for coordination, promotion and management of agricultural activities. Out of 27 leaders, the study managed to hold interviews with 24 leaders; this is 89% of the study population. The study interviewed 6 respondents from the rural wards and 18 from the urban wards. The sample is a good representation of the population as only 3 leaders were not reached. The results from the study strongly reflect the perceptions of the majority of local leaders in Kinondoni Municipality. A total of 21 WAOs and 3 WEOs were interviewed.

The interviews were requested a week or two in advance. Mobile telephone played a great role in setting appointments with the leaders. The leaders’ telephones numbers were obtained from Kinondoni Municipality website. Notwithstanding, the fact that the meetings were pre-arranged, holding the interviews was not easy. Some meetings were rescheduled at the last minute while for others it took up to three visits and reminders. Most of the time, the local leaders were busy attending other matters in relation to the ward development or their own personal chores. The narratives from the interviews were qualitative in nature. The instruments used had 12 thematic questions and local leaders were requested to narrate their understanding and knowledge over the UA governance issues based on the criteria leadership quality, provision of infrastructure and farmer’s land rights (Table 2). During the interview local language (Kiswahili) was used for clarity and ease of communication.

Data analysis

The data analysis was intended to establish the patterns which can be used to discriminate and discern the status of governance of UA in Kinondoni Municipality. The analysis was based on pattern matching (Yin, 1984; Maxwell, 1998; Stewart, 2000, Powel and Renner, 2003 and Oliver, 2004). Pattern matching involves the comparison of the empirically observed pattern(s) against a predetermined or predicted pattern or situations. The purpose was to determine the level of agreements or disagreement between the WAOs on the issue under evaluation based on majority decision criterion. In the urge to ensure uniformity of the assessment percentages were adopted to indicate the degree or level of agreement.
Table 2. Criteria, critical success factors and thematic questions

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<tr>
<th>Criteria</th>
<th>Critical success factors</th>
<th>Questions</th>
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<tbody>
<tr>
<td>The Leadership Quality</td>
<td>Availability of plans for sustainable UA</td>
<td>1. Some people are arguing that there are no plans for sustainable UA in the Municipality. What is your opinion on this matter?</td>
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<td></td>
<td>Regulation of UA</td>
<td>2. Some people are saying that at the moment urban agriculture is not properly regulated. What is your opinion on this matter?</td>
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<td></td>
<td>Efforts to avail the needed infrastructure</td>
<td>3. Some people argue that the government is not doing enough to ensure availability of infrastructure for UA. What is your opinion on this issue?</td>
</tr>
<tr>
<td>Provision of Infrastructure</td>
<td>Availability</td>
<td>4. Some people are of the opinion that necessary UA infrastructure are not in place. What is your opinion this issue?</td>
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<td>Affordability</td>
<td>5. Some people are arguing that the necessary UA infrastructures are not affordable by the urban farmers. What is your opinion on this matter?</td>
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<td>Accessibility</td>
<td>6. Some people are of the opinion that the existing UA infrastructures are not accessible by the urban farmers. What is your opinion on this issue?</td>
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<td></td>
<td>Functionability</td>
<td>7. Some people are of the opinion that the existing UA infrastructure are not properly functioning. What is your opinion on this?</td>
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<tr>
<td>The Farmers’ Land Rights</td>
<td>Availability of land and/or land use plans for UA</td>
<td>8. Some people are of the opinion that land for are not available/designated. What is your opinion in this matter?</td>
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<tr>
<td></td>
<td>Access to land</td>
<td>9. Some people argue that there are no land use plans for UA in the Municipality. What is your opinion on this matter?</td>
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<td>Security of Tenure</td>
<td>10. Some people are of the opinion that farmers’ access to land is limited. What is your opinion on this issue?</td>
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<td></td>
<td></td>
<td>11. Some people are of the opinion that in the current environment farmers have no secure tenure. What is your opinion on this matter?</td>
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</table>

or disagreement among the local leaders. In this, study the patterns established from WAOs’ responses were compared to critical success factors (CSF) summarised column 2 in Table 2. This is a tedious but a reliable way of establishing the facts related to phenomenon under evaluation in a qualitative bases. It mainly depends on the logical and sensible interpretation of the transcription by the researcher (Yin, 1984). Data analysis involved three simplified stages; (i) transcription of the interviews (ii) observation of the patterns (ii) making sense and matching of the patterns to CSF. The use of qualitative approaches in analysing data was important since the number of respondents was below 30 units which is a reasonable sample for quantitative analysis.

RESULTS AND DISCUSSION

This section reports and discusses the results of the evaluation of the governance in Kinondoni Municipality based on the identified criteria.

Assessing the leadership quality

Availability of plans for sustainable UA: The local leaders in Kinondoni are aware of the efforts to formalise UA in the Municipality, which are mainly pioneered by foreign non-governmental organisations (NGOs) such sustainable cities international network-Africa programme (SCINAP). Majority of the leaders, however, are of the opinion that these plans are not meant to sustain UA and may not be achieved within the next few years. Around 46% of the interviewed local leaders believe that the plans for sustainable UA in Kinondoni may not be realized while around 37% thought the plans can be achieved. The remaining 17% was equally divided between those leaders who were undecided and not sure if the plans are sustainable or could be realised within the next few years. The first category of leaders have the opinion that these plans have been in place for years since the inception of the Dar Es Salaam sustainable cities project (SDP) in the early 1990’s without much success on the ground. The SDP was launched in 1992 had the aim to plan and manage growth of the city in partnership with interested groups of stakeholders, including urban farmers (Mwalukasa, 1999). But the leaders observed that the SDP closed shop in the late 2000’s without solving issues of land access and tenure to urban farmers. This was also echoed by Foeken et al (2004) and Mvena (1999). On its part, SCINAP has been involved in the provision of awareness and public sensitization on the
need of incorporating UA in the master plans. However, their efforts are being frustrated by irresponsible local leaders (SCINAP, 2011).

**Regulation of UA Activity:** UA as an economic activity is not formally regulated. The leaders are of the opinion that the campaigns used by the municipal administration are ad-hoc and mainly against the farmers’ interest. Over 76% of the leaders agree that UA is haphazardly practiced and farmers tend to initiate their own plans for land acquisition, marketing, farm implements and irrigation. Non-regulation of the market has led to insecurity of tenure, unreliable markets, poor marketing strategies and dependency on rain and/or polluted water. The results reflect the earlier observations by Sawio (1998); Foeken et al (2004); Schmidt (2011) who have shown that UA is not regulated in Dar es Salaam. For example Sawio (1998:12) noted that “Urban planning regulations do not clearly permit urban agriculture activities and by-laws that are formed to guide UA activities are not clearly understood by all practitioners”. Lack of appropriate ways of controlling UA has led to the use of unsafe irrigation water (Mwalukasa, 1999; Sawio, 1998), invasion of hazardous land (Sawio, 1998; Foeken et al, 2004). On the other hand, 20% of the local leaders were of the opinion that the practice is partially regulated taking examples of policies which limited the size of land to be owned by urban residents (Mwalukasa, 1999 and Mvena, 1999 and Mlozi, 1997). This group further argues that the Municipality administration is now working closely with the foreign NGOs and local farmers groups. The remaining 4% were not sure if UA is regulated or not.

**Efforts to avail the needed agricultural infrastructure:** It has been revealed that local leaders are of the opinion that UA can be effective if the necessary infrastructure such as markets, irrigation systems, transport networks and storage are in place or the government works hand in hand with the farmers to ensure their availability, access and reliability. Around 87% of the local leaders agreed that these infrastructure systems are vital for the sustainability of UA. While 6% had the opinion that the government had supported the farmers in terms of infrastructure provision through its programs such as DADPs. Majority of the local leaders (84%) have the opinion that the government has done nothing in terms of infrastructure provision.

**Allocation of and/or safeguard of the farmers’ land:** Local leaders are also assessed based on their abilities to ensure availability of and/or safeguarding land used by farmers. The evidence has shown that 90% of the local leaders in Kinondoni agree that the government has not played its role in the provision and/or safeguarding farmers’ land. One of the local leaders noted that the land that was formerly allocated to farmers along river Mpiji has been converted into a dumping site and sand mining areas without government interventions. This has reduced the amount of land intended for agricultural purposes. The remaining 10% was divided equally between those who believe that the government had assisted farmers and those who were not sure.

**Assessing the provision of infrastructure**

**Availability, Affordability, Accessibility and Functionality of the Infrastructure:** Infrastructure has been identified to be vital for the sustainability of UA. The important infrastructure includes markets, irrigation systems, transport networks and storage. Local leaders were requested to identify the availability, reliability, functionality and accessibility of each of the mentioned infrastructure.

Generally, local leaders agreed that majority of the above infrastructures are not available in areas where farming is conducted. 94% of the local leaders are of the opinion that there are market facilities, reliable road networks, irrigation systems or storage to ensure that perishable goods are kept fresh. The remaining 6% noted the fact that the government has in some areas provided these infrastructures either for general use or specifically for UA. However, they agree that the infrastructures are now in a bad shape and in want of repairs. Lack of infrastructure has been discussed in length by Sawio (1998).

There were a number of issues related to the availability, accessibility and functionality of water infrastructure resources. According to Sawio (1998) and Schmidt (2011) farmers have been using water from Msimbazi valley, which is highly contaminated with heavy metals such as cadmium, lead and copper well above the allowable national and international levels. Sawio (1998) proposed for technology for harvesting water, digging of small reservoirs, shallow wells and even the use of pumps. However, a simple analysis of each of the proposed alternatives reveals that farmers require a seed capital. The question of capital is not easy to urban farmers who have no access to any micro-financing. Thus, the propositions are both unaffordable and hence inaccessible to the urban farmers.

Marketing of the farmers’ produce is essential in ensuring the need for the UA to serve as a source of income/employment. Due to the perishable nature of the crops produced in Kinondoni the farmers should be ensured with a market place. The interviews with the local leaders have shown that around 92% of the respondents admit that in their wards there are no markets for UA.
produce. Only 4% of the respondents said they have markets and the same percent had no answer regarding this question. The leaders further identified poor packaging; low prices of the produce and transportation issues (normally dependence on hired vehicles at higher tariffs) to be among the issues negatively affecting the marketing of their produce. Lack of market (which was also discussed by Mvena, 1999) within the wards, limits the income from UA produce; farmers rely on street peddling, or on-site selling or formal markets in other areas as their selling points. This is costly in terms of resources and time used to attend to customers or move the products to the nearby market. Plate 1 and 2 shows marketing strategies by farmers in Kinondoni municipality.

**Transportation of produce to the market:** Lack of market facilities within farmers’ vicinity has prompted them to transport their produce to the nearby local market or customers. There are various ways used to access the customers or market as identified by the local leaders. 65% of the local leaders asserted that, transportation of the produce is normally done on foot. Farmers use locally made baskets to carry their produce. They will stroll the street peddling and touting the customers or just walk silently to the market. Others identified the use of bicycle (8%); bus (4%); combination of bus and bicycle (4%); combination of on foot and bicycle (10%); and the combination of bicycle, tricycle (Bodaboda), bus and on foot (9%). The overall lesson from this observation is that UA is practiced mainly by people who seldom can afford ownership or the use of car (plate 3 and 4). This is supported by the evidence that around 50% of the respondents asserted that low income earners are the major participant in UA. The means of transport used also indicate that farmers are only able to sell limited quantities of crops.

**Assessing the farmers’ land rights**

The effectiveness of UA activities depends on the availability and accessibility of land. The farmers’ right to land ensures continuity in the practice and possibility of receiving supports from financial institutions and international organisations. Local leaders were requested to give their opinion regarding the availability of land for UA or land use plan(s), access to land and security of tenure. The following sections account for the results from local leaders regarding the land question.

**Availability of land and of UA land use plan(s):** UA activities in Kinondoni are now allowed in four main locations mentioned earlier. Kinondoni Municipality has designated an area of 5 hectares of land for UA activities along River Mpiji. There are also other areas allocated for UA such as Kawe, Malolo and Uzuri-Manzesegardens. The amount of land allocated to UA in the four areas is small compared to the number of people involved in UA in the Municipality. The available data have shown that a total of 50,400 people are currently actively involved in UA as their main source of income. 78% of the local leaders pointed out that UA is a localised activity, which requires space/land to be availed at ward level. Only 2 wards out of the 27 have been allocated with a limited amount of land for UA activities. At the moment, leaders agree in Majority (93%) that, the government has not done enough to ensure availability of land to urban farmers. The Leaders in Kawe and Mpiji wards pointed out that the available land was not intentionally intended for UA but it...
was a spill-over. In Kawe, the land was intended to be a teaching farm for people involved in horticulture. While in Mpiji, it was a leftover of a 20,000 plots delivery project (PDP).

In terms of plans, 92% of the local leaders had the opinion that the government has no specific land use plans for UA while around 6% had used Kawe and Mpiji areas as examples of available plans. The remaining 2% were not sure about the availability of plans. The local leaders along river Mpiji had accounted that; there were many plans for agricultural development along river Mpiji prior to 20,000 PDP. They narrated further that the 20,000 PDP has taken land set aside for agriculture and leave behind a small amount of land which it deemed to be hazardous. This reflects the earlier observation by Sawio (1998:8) that “as the urbanisation proceeds, space demanding forms of UA migrates to more peripheral or less valued locations”. The situation in Dar Es Salaam is becoming worse as almost the whole city has expanded to the limits on its northern boundary. The leaders lamented that the 20,000 PDP had allocated plots for residential use along the river banks. The on-going construction has impacted on the quality and amount of water used for agricultural activities. This sentiment was equally shared by the ward leaders at Mbweni, Goba, Bunju and Mbezi.

According to the local leaders, land that has been alienated by the 20,000 PDP was prime for the UA activities.

Apart from the two agricultural projects implemented at river Mpiji and Kawe garden the study has identified that UA is taking place in areas which are set for other activities. UA is taking place mainly along the rivers, undeveloped plots, open spaces, housing yards and road reserve. Around 46% of the respondents informed the study that UA takes place along the river while 21% pointed housing yards to be popular. Open spaces and undeveloped land were in the third position with a score of 12.5% each. It was noted that 8% of the respondents identified road reserve as another area in which UA is conducted. Unlike in some other areas, farmers along road reserve are mainly involved in the flowers and plants nurseries. The evidence has shown that 84% of the leaders are of the opinion that farmers in rural wards own up to 5 acres of land while those in urban ward own between half an acre to 2 acres. The leaders noted that the size of the land depends on availability of the land and farmers purchasing power.

Management of the land used for UA is thus mainly effected by the farmers themselves; except in those areas which are legally designated. In these areas, the local leaders are involved in the distribution and overseeing the UA practices in collaboration with the farmers’ group leaders.

**How do Farmers Access Land?** The local leaders agreed that, most of farmers access land in an informal way except in a few designated areas along Mpiji River and Kawe gardens. The leaders pointed out that in planned areas UA is practiced on the land originally designated for residential use, commercial use, industrial use which are not developed yet or open spaces. The main way of accessing land in these areas is through grabbing. Farmers; individuals or groups will invade or encroach into land which has been idle or planned for other land use.

In rural wards, farmers mainly buy land from the traditional/customary land owners. 21% of the local
leaders in rural areas reported that, mainly farmers own land in customary way and farming is not restricted in their wards. Also, another 21% of the local leaders noted that farmers would utilize idle land as a means of protection against invaders/encroachers. In this arrangement farmers enter into an agreement with the farm/plot owners (who are not residing in the rural wards) to temporarily till the land. In this case, farmers are formally recognised by the owner in exchange for protecting the land from land invaders. This is a win-win situation, because the farmer will be allowed to use the land while the owner will be sure that his/her land is protected.

Generally, looking from outside one would assume that there is no specific arrangement for the land used by urban farmers. On the contrary, agricultural activities are regulated in an informal manner. For example, open space farming in the rural wards is more tolerated than in the urban wards. In the urban wards, most of farmers have agreements with some authorities that own undeveloped land such as army, universities, The Tanzania electrical company and schools. This type of agreement does not protect the farmer when the authorities decide to utilize their land for other purposes. Mainly the agreement is temporary and it can be terminated at any time. This is the case for example when there is a new leadership or change of institutional plans over the land. In the urban wards, 55% of the leaders admitted that farming is not allowed in their wards and farmers only utilize open spaces and their household plots to create small gardens.

Security of Land Tenure: Security of land tenure has been a major concern of the local leaders. Over 90% of the leaders asserted that farmers have no legal ownership over the land in areas where UA is practiced. Around 6% of the leaders argued that farmers have legal rights over their land. The two areas where farmers have been deemed to have legal rights are Mbweni and Kibamba, along Mpiji River. These areas have been designated by the Kinondoni Municipality for present and future UA activities. However, according to the officials in the Municipal agriculture office, while UA in this area is allowed farmers have no documentation to substantiate their tenure or legal rights. This indicates that even in the wards were UA is allowed in Kinondoni Municipality still, the security of tenure is low. Lack of security of tenure has been evident in Mbweni Mpiji were areas which were said to be set aside for UA are now used as dumping site. The leaders, however, noted that this is a temporary matter and will be resolved within the near future.

In Bunju ward along Mpiji river, the government surveyed the whole area for the purpose of converting the land into residential uses. According to the WAO at Mabwepande in Bunju ward, “there are large plots of land that are not developed within the ward, UA should continue in these undeveloped plots, UA activities that are conducted along Mpiji river are safe since farmers use fresh water from the river and are guided to protect the environment”. A recent discussion with a MALDO confirms that, the ministry of lands and human settlement developments has allocated plots for residential purposes within the land set aside for UA along Mpiji river.

CONCLUSIONS

Generally, local leaders are in support of UA in Kinondoni Municipality. However, discussion on the three criteria of governance has revealed a number of issues and challenges associated with UA in Kinondoni Municipality. Farmers have been left to fend for themselves. Lack of proper plans has pushed farmers to some inappropriate solutions. This is not healthy for the development of UA. In order to ensure the sustainability of UA and solve the identified issues, there are various issues which are to be dealt with. First, the Kinondoni Municipal government should designate a sizable land for UA in various areas. This will create both income generating activities for low income earners and a source of food for all urban residents. This land should be secured and incorporated in the Municipal development plans. On the other side, the voiceless farmers ought to organise themselves in groups/associations which are powerful and push their agenda to Municipal official through their local leaders. One of the agenda is the identification of UA activities as a source of income that requires a formal recognition. While we have noted the scarcity of water/irrigation facilities, we are of the opinion that the credibility of UA depends on the farmers themselves. We thus urge the urban farmers should adhere to farming practices which ensure the protection of customers’ safety by restraining from using intoxicated irrigation water. Farmers should also strive to protect the environment. Lastly, the government and other stakeholder should create enabling environment for marketing and storage of the produce to avoid waste and promote self-employment.

For example the local government can consider sensitizing farmers on the establishment of the farmers market on top of the normal local market. The study is of the opinion that the implementation of these ideas gathered from the local leaders can be beneficial to the urban farmers and the Kinondoni residents in general. It will also deal with dangers of unsafe vegetables that are currently flooding the market.

ABBREVIATIONS

UA- Urban Agriculture; WAO- Ward Agricultural Officer;
DCP- Dar Es Salaam City Profile; WEO- Ward Executive Officer; WLO- Ward Livestock Officer; DADPs- District Agricultural Development Programs, MALDO- Municipal Agricultural and Livestock Development Officer; SCINAP- Sustainable Cities International Network-Africa Programme.

Conflict of Interests

The author have not declared any conflict of interests.

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