

How can the Direct and indirect contributions of urban Agriculture be maximised to create more food secure and sustainable cities

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Abstract: This paper looks at the ways in which urban agriculture can be promoted in order to maximise the direct and indirect benefits we get from it. Urban Agriculture used interchangeably with urban farming is the practice of growing crops and rearing animals in the cities and towns. The direct benefits include the increased access to food and income generation among other benefits while the indirect benefits include improved nutrition, employment creation, and economic development. All these benefits whether direct or indirect can be maximised through increased access to finance for urban poor farmers and vulnerable women, access to water supply to sustain farming, creation of markets for the produce, infrastructure development, organising the farmers into groups, education and training, and the municipalities adopting the regulations that are relevant to poor farmers. With these ways urban agriculture can be sustainable bearing in mind that there are effects such as pollution of the environment and environmental degradation which need to be minimised by applying good land use mechanisms for sustainability.

Keywords: Urban agriculture, sustainable farming, food secure, sustainability, promotion

Acronyms

UA- Urban Agriculture

NGO- Non Governmental Organisation

RGDP- Real Gross Domestic Product

Introduction

With the increased urbanisation in developing countries more and more people now live in urban areas. The people who migrate from the rural areas are usually used to farming in the form of crops or small livestock. In most of the African countries people live on subsistence agriculture and as they move into towns they continue with their farming and earn a living. This has been done in most cases against municipalities' by-laws and not up to standards. I therefore want to demonstrate that the benefits that the urban farmers are getting and what the countries are getting can be increased by a number of things that can be done to promote urban farming. The RGDP of a nation can be increased if urban agriculture is promoted and as a result the living standards of the people will also improve and poverty will be alleviated if we successfully maximise the benefits of urban agriculture.

Urban agriculture defined

Urban agriculture or urban farming is the practice of growing crops or animal rearing in the cities and towns. The practice may also include forestry, bee keeping and horticulture. (Bailkey, and Nasr. 2000 p.6). Urban agriculture is affected by a lot of problems especially the town by laws and the environmental policy issues despite it contributing greatly to economic development of cities and towns, poverty alleviation and it recognises the people's right to food. Its vulnerability makes it unsustainable because it is an informal business which is always at loggerheads with the city authorities. It relies on urban residence as labourers, natural resources such as water. People are motivated into doing urban agriculture because it increases food security, nutrition and improves the living standards of the people by generating income. Urban Agriculture may be different in characteristics with peri-urban especially on the size of the land. (Hampwaye, Nel,&Ingombe, 2013). It also involves processes such as processing, marketing, distribution and consumption. At each process there are some challenges which need to be

addressed in order to maximise the benefits of urban agriculture to cities and towns.

Benefits of urban agriculture

It is important to look briefly at the benefits of urban agriculture that makes us wanting to expand it before looking at the ways we can expand. Urban agriculture brings a lot of benefits that includes; food security, nutrition and improved livelihoods. UA allows for the families in towns to sustain themselves through provision of food for their families thereby increasing their standards of living and nutrition. As they grow crops and keep small livestock they are likely to eat a balanced diet that includes all the body nutritional requirements. The expenditures for food are minimised and the families' savings are increased and they will be able to invest on other capital projects for sustainable development. The market is always supplied with fresh produce unlike when the food is coming into town from rural areas. Employment creation is also one of the benefits of Urban Agriculture that we can enjoy if it fully implemented. Many people living in the urban areas are not employed especially in the developing countries of Africa, so if they are engaged in urban farming their standards of living are increased and can earn income that will be in turn used to develop cities in the form of taxes and licenses costs. All in all, urban agriculture contributes to the local economic development, poverty alleviation and recognises human right to food, there is social inclusion of the poor people in the cities into the economy and women as well who are marginalised. It is because of its benefits that we have to look at some ways in which it can be promoted in order to maximise the benefits listed above. While this paper is looking at the ways of maximising urban agriculture it does not mean that urban agriculture is hundred percent good. There are issues like, pollution of the environment with some agricultural chemicals such pesticides especially with the aquatic life, waste management for the waste generated on the farming such as plastics and liquid waste, generally the essence of the towns being urban could be lost if the farming is not controlled by the cities by laws which we also say can hinder the urban farming. However, I will concentrate on the promotion of urban agriculture since the benefits outweighs the disadvantages.

Maximising urban agriculture for food security and sustainable cities

Due to the benefits urban agriculture brings to the cities and to the people, it has to be promoted through various means in order to increase its benefits. The things that need to be looked are those that address the challenges that urban farmers face in trying to do their farming businesses. Urban farmers are not spared from financial constraints just like any other small business operators. We can maximise the gains from urban farming through increased access to finance for the farmers. Usually the people who are engaged in urban farming are the poor people in society and women so access to credit and finance need to be directed mainly to the poor people and women. The towns and cities may need to set aside guarantee fund that will assist the urban farmers or link them to the money lending institutions mainly the micro financing institutions that assist with money to buy inputs for the farming. Farmers can also be encouraged to access loans from the banks in order to boost their production and quality of the harvest. (Bailkey, M, and Nasr J, 2000). If the funds are available the agriculture become sustainable and year after year farmers will be able to fund their own agriculture. Another way of financing urban agriculture is for the municipalities to include the urban farming in their budgets. The small farmers usually found in the city pavements selling agricultural products are the ones who pays council bills that water and sewage costs so there is every reason for the towns and cities to support urban agriculture by including them in their budget.

To access credit from the banks urban farmers also need to be organised into groups because many of them are not organised so it is very difficult for banks to offer loans and credit facilities to them. NGOs in developing countries have been very successful in some countries in Africa and this has to be done in other parts of Africa. With groups it is easy for some government workers to provide advice and training but with farmers unorganised with individuals doing their own things, growing their own crops and at different times it is difficult for any helper to assist. In Zimbabwe the groups in Chitungwiza have accessed training more as groups than individuals from the NGO called the Environment Africa and from the Government agricultural extension workers and from the University of Zimbabwe. (GCP/INT/955/CAN Project, City case studies, Harare, Zimbabwe) With such groups in action access to donor funding is enhanced and concept notes and proposals can be written to seek donor funding.

The governments have provided little or no support to urban agriculture especially in developing countries through trainings and provision of technical skills in farming. In Zimbabwe for example we have the agriculture extension workers who are rarely found in the urban areas but are found in the rural areas. This is because the

urban farmers lack legitimacy especially when it comes to ownership of land. A shift into the way the government views urban farming is needed because its benefits cannot be ignored. Urban agriculture have not benefited from agricultural research which comes with new ideas of farming because most of the research benefit the large scale farmers. There is need for the municipalities and governments to provide training and the extension services to the urban farmers. Ministry of Agriculture in Zimbabwe have to deploy agriculture extension workers in towns to provide technical skills to farmers because if they do without the skills the production will be very low. Education that is required includes, ecological farming methods, management of health risks and marketing. In South Africa for example, in Cape Town the policy on urban farming calls on the support organisations found in the city and those outside to urban farmers with education and training on business management, technical skills and marketing strategies. The Botswana government policy on urban agriculture promotes farmer education by provide posters, brochures and integrating the urban agriculture into the university and colleges curriculum.

The training that is rendered to urban farmers should include the technical aspects of urban farming. The farmers should acknowledge that the rural farming and urban farming are different. Urban agriculture is done under some conditions that require technologies that fits into the context of limited space, cost of urban land especially renting, shortage of water supply and high population of people. Given these conditions at stake, it means for maximisation of the gains from urban agriculture there is need to adopt new technologies that suit the context. Due to shortage of water, there may be needed to make use of the waste water from the sewage treatment. So there will be need to educate people on the safe use of this kind of water. Another way of harnessing water for use in urban farming is the rain water harvesting that can be stored in tanks for later use. In most rural areas they use manure from domesticated animals to increase yield but in urban areas there is no such. This result on the need to, think about the use of organic waste to provide manure for the farmers. It is the duty of the government and municipalities to provide training to the farmers on the technologies appropriate for urban agriculture to increased yield and quality. Municipalities and cities can include new technology development in their budgets that will support the urban farmers through trainings. Research institutes, Non-Governmental Organisations, and the agricultural extension organisations need to have a coordinated effort in helping the urban farmers.(Hampwaye, G; Nel E. & Ingombe L. (2013). The education that lacks in urban farming is the proper soil management, disease and pest control, water and soil conservation, and the ecological farming systems so the education and training should emphasise that and the result will be the increased production.

Improving access to the market, to inputs and to the good infrastructure can maximise the gains from UA. The 'location of Urban farmers is strategic in the sense that they are very close to the consumers. Instead of agricultural produce to come from the rural areas into town, the cities promote the market for their products. UA also involve a chain of events like processing, packaging and storage so the Municipality should create processing enterprises so that the urban famers can market finished products that will increase their capital base for expansion.(Cohen B. (2006). 64)There is need for the creation of direct local market for the urban farmers because the people in town had been relying on food items from the rural areas which will reach town when they are no longer fresh. It is imperative that the urban council create infrastructure that will allow urban farmers to market and sell their products. In low income countries the infrastructure is usually very poor so there is need to improve the existing infrastructure for easy of the market. Zimbabwean Government have done a lot by creating the trading tables in the urban areas but most of them are used by people coming from the rural areas or people going out to buy for resell. The municipalities can also link the farmers to the local schools, hospitals and community kitchens and other organisations. This will increase the market base for the urban farmers which will result in the business being expanded because the demand will be high.

The other factor that affects the urban farmers is the issue of the inputs for farming. The government and the municipalities should assist the farmers to access the inputs such as fertilisers, quality and tested seeds, organic manure, and mechanical tools for farming. The municipalities and cities should link the urban farmers to Non-Governmental organisations who are agricultural based and are willing to support farmers in the urban areas. NGOs like the Department for International Development, Catholic Agency for International Development, Plan International, Food and Agricultural Organisation should be engaged for the supply of inputs through writing the proposals and concept papers for funding. If the government cannot give full support they can subsidise the input cost so that they become affordable to the urban farmers. The tax reduction can also help to cushion the farmers and the charges of the licenses be reduced also to make the environment conducive for expansion.

The urban farmers should be promoted by increased access to land. Most of the urban farmers do their farming on rented land or land that is idle in the city but they do so without security and guarantee of doing the same thing for a long period of time. This affects planning and forecasting also hinders the expansion of the sector. We cannot have a meaningful urban agriculture without land as land is the most important resource for urban agriculture since there is always competition with other land uses. Municipalities and town councils can facilitate the access to land by mapping of the vacant land in the city. (<http://www.org/node/238>). High numbers of unutilised lands are found in many cities in the world that could be used for farming either permanently or temporarily. Evidence shows that even in the highly urbanised cities there are lands which are vacant for example researchers identified 70000 vacant lots and in Tanzania they have done the same using the Geographical information systems and found that there is a lot of land underutilised. In my own home town Mutare, there is a lot of land that lies idle with owners unable to develop due to economic problems. Many people in Mutare Zimbabwe who stay in the low density areas own more than 1000 square meters of land with their houses only occupying less than 20% of the land which means that the remaining land can be used for other agricultural activities like crop growing, and small livestock farming. The people who own such large pieces of land need to be enlightened about the importance of urban farming and also be encouraged to lease the land to people who can farm. Usually the vacant land in the cities is earmarked for future uses such as building of schools, hospitals, clinics and recreation facilities. This land can also be found on those areas that are not fit for construction especially the areas that are flood zones, buffer zones and the areas under power lines. Such kind of land can be given to the people as short and medium lease to the urban poor for gardening purposes thereby expanding urban farming. Apart from that, the municipalities and local Non-Governmental Organisations need to negotiate with land owners to probably increase the number of years for the lease agreements to at least 5 years so that the farmers invest meaningfully on the land.

Water is one of the most critical things that affect urban agriculture. Whether it is agronomy, horticulture, animal husbandry, and forestry, there is need for adequate supply of clean water. However, the most affected by the shortage of is the crop production as it requires huge supplies of water. (Showers K B, (2002 p 636). From our agricultural knowledge, we know that there are three conditions necessary for plant growth, which include water, oxygen and heat/sunlight. Water helps the plants to manufacture food in a process called photosynthesis and as well as produce oxygen in a process called respiration. Water supply is a real problem in urban areas especially in the low income countries so its use is limited and usually water for urban agriculture becomes a nightmare. There is need for the municipalities to make use of the waste water for irrigation purposes but there might be need for proper handling of the water to avoid spread of water borne diseases like dysentery, typhoid and cholera. Technologies such as rain water harvesting, borehole drilling, elephant pumps, and reservoir tanks can be used in order for the urban farmers to access water for their crops. Urban agriculture should not actually wait for the rain season to do farming otherwise it will not produce the desired results of nourishing the urban population with fresh produce. (Showers K B, (2002, p 640) Examples where urban farmers are assisted with water by the municipalities are in the city of Bulawayo in Zimbabwe the urban farmers are provided with treated waste water for their community gardens while in the City of Gaza in Palestine they promote the reuse of grey household water in the home and in the gardens. (<http://www.ruaf.org/urban-agriculture-what-and-why>) In Cape Town South Africa the municipality assist community gardens with the basic infrastructure which include fence, tool shed, a water storage tank and hoses for irrigation. Given what other parts of the world are doing urban agriculture can expand to high levels if promoted by the government, municipalities and towns.

All the other things can be done to promote urban agriculture but without the proper legal framework all will be in vain. In many cities especially in the low income countries urban farming have not been legally accepted so it is not included into the urban planning process so that it is given a budget and land as eluded earlier on. In cities and towns where legal frameworks provides for urban farming, land is set aside for farming and budget set aside for that as well. The Governmental and non-Governmental organisations have helped a lot by their declarations in support of UA. Example is in Dakar Senegal; declaration adopted in March 2002 on waste water use in agriculture. Of late cities and towns described urban agriculture as a nuisance, a source of health and environmental degradation without looking at the benefits it brings to the people. As a result the cities by laws were not favourable as in most towns and cities urban farming is prohibited. The municipalities in the modern world are encouraged to include urban farming in their planning because prohibiting urban farming might not be the best way of reducing the risks associated with it, (Baharoglu&Kessides 2000). In terms of regulations the municipalities and towns need to review their by- laws and adopt more flexible regulations, draft regulations that are relevant to all groups of people, information on land tenure and use need to be readily available to every

person and finally infrastructure development which also stand as a strategy on its own.

Conclusion

In developing countries like Zimbabwe, Zambia, Rwanda and many other food prices are usually high and standards of living for the people are low. Many people are living below the poverty datum line and unemployment is very high. This background prompt for finding ways of improving the lives of people living in urban areas by promoting urban agriculture through, improving access to water in urban areas, providing adequate land, educating the farmers on the proper farming technologies for sustainable farming, and regrouping farmers for easy access of finance. This is what this paper have been looking at and it have also enlightened me that urban agriculture cannot be sustained by applying only one single method but a combination of methods that will result in maximising benefits.

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