

Topic: Income generation opportunities while integrating urban nature and biodiversity in the city

Author: Teuta Jaha-Hoxha, Kosovo

E-mail: tejaho@yahoo.com

1. Introduction

In November 2011 I visited Israel for the first time and the trip was organised by MASHAV international training program in the field of "Integrating Urban Nature and Biodiversity into Local Development".

First thing that I noticed, while traveling by taxi from airport towards the Weitz center in Rehovot, was how the green ribbon was planted across the road.

Sequences of trees, flowers, many parks, etc. were everywhere. Every little corner was green and was maintained with irrigation system (obviously a necessary thing).

But what fascinated me, after a few days staying in Israel, especially when I had the opportunity to visit Rehovot and some cities like Jerusalem, Netanya and Tel-Aviv, I saw that, in addition, there are fruit trees planted in public spaces such as tree strips and sequences of community gardens¹. It made me think, and I thought to myself: why is this like that? Apart from aesthetics could there be any financial benefit?²

This made me to understand that through greening, planting, cultivation and preservation of the existing greenery in our cities an income could be generated.

2. Income generation opportunities

The cities are expanding every day, they are urbanizing and are populated with lot of people who came from rural areas to live and work in them; so from this some questions can arise:

- what happens to the nature in these case?
- does it become degraded with massive construction and development of the cities?

¹ During Fild visite in Jerusalem on 13-14.Dec. 2011, I visite some cases of small gardens, developed from communities in urban areas.

² From information received from the representative of Municipality of Rehovot fruits from planted trees-oranges can be taken from anyone and from them municipality is not generate income.date11.Dec.2011.

- how much it is taken in consideration biodiversity in urban planning?
- is it possible to generate income from nature and urban biodiversity?

Here are some responses to these questions:

The increase of population, the need for food and energy, affects possibility of finding opportunities in urban and peri-urban zones, to create income generation dealing with agriculture or horticulture, etc., while using, protecting and cultivating biodiversity.

Based on the report named “ **URBAN AND PERI-URBAN AGRICULTURE (UPA)**” *A briefing guide for the successful implementation of Urban and Peri-urban Agriculture in Developing Countries and Countries of Transition Rome, July 2001*, compiled by *FAO and the Food and Agriculture Organization of the United Nations*, it has implemented a very good and successful project, analyzed and implemented in some countries as in: Nairobi, Der as Salaam, Lusaka, Jakarta, Eastern Europe, South Africa, Laos, Cuba, Zambia etc.³

Urban and peri-urban agriculture its practiced and its provided for small and medium areas within the city, while and for cultivation annual production of fruits and vegetables, raising small livestock and fish for consumption and domestic needs but also and for sale.

Urban agriculture can be developed on: *free plots, home gardens balconies, walls, fishponds, piles of buildings, flat roof tops, school gardens, street bands (road strips), open spaces, river banks, rivers, under electric power lines, along the railways, on Vergas, on containers etc.*

The reasons to support and to be engage with all forces for development of agriculture in urban and peri-urban areas are numerous. And these are: for the purpose of food production, income generation and recreational opportunities, the possibility of enriching the urban environment, improvement of access to consumer markets, contribute to the prevention of deficiencies, the potential to create new jobs and income, to contribute the improvement and maintenance of biological biodiversity by integrating it into the ecosystem, to have less need for storage, packing and transporting food, to have always available food close to them and fresh for daily consumption.

Urban zones have to be green and greening means planning, with managed forests and trees and related vegetation; they have to create or add values to the local community in an urban area.

Trees have multiple functions as an integrated part of the urban food system: they provide food (fruits, vegetables, roots and leaves), medicine and shade for

³ “**URBAN AND PERI-URBAN AGRICULTURE**” *A briefing guide for the successful implementation of Urban and Peri-urban Agriculture in Developing Countries and Countries of Transition Rome, July 2001*

crops and animals, fodder for the animals, and they deliver organic material for composting. In the past these benefits of trees have often been overlooked, as conventional forestry concentrated on the environmental benefits, aesthetics and recreational value of urban vegetation.

The categories of creating income generation by integrating nature and biodiversity to residents of the city seem few but there are plenty of options and they are already available.

In urban areas citizens with the use of a simple technology and low cost can cultivate on above mentioned surfaces (balconies, roof, terraces, micro-gardens), various fruits and vegetables which can be used fresh or processed in domestic conditions, can be processed, as conserved pickles and jams, different teas, healing plants etc. Also there are opportunities for keeping and raising small animals such are rabbits, chicken, ducks, fish etc.

All these enable to create food for a family first, for their own needs and required reserves, and then also for sale.

Consumption of fresh food and healthy contributes to increasing of the quality of nutrition and health in general.

A good example of this issue is also a study called **The Impact of Urban Agriculture on the Household and Local Economies**, made for developing and transition towns except London and they are: Havana, Dakar, Harare, Dar es Salaam⁴ (*Dongus Stefan, Date: 1999-2000*), Jakarta, La Paz, Hubli-Dharwar, Ho Chi Minh City, Sofia, Accra, Shanghai.⁵ (*Nugent Rachel,n.a*).

Dar es Salaam case

It is worth mentioning Dar es Salaam, in Tanzania, as a successful case project. In Dar es Salaam urban agriculture includes rearing of livestock (mainly chicken and cattle), cultivation of fruit trees, but most obviously vegetable production.

Most vegetable production in the urban areas of Dar es Salaam take place in home gardens or on open spaces and it was practised throughout the whole city area. The major part of vegetables grown in home gardens is consumed by the gardeners themselves, their relatives and neighbours, whereas only few of these vegetables are sold.

Vegetable production is quite important and market oriented (Utility Open Spaces, Green Open Spaces, Corridor Open Spaces) in Dar es Salaam, very often the only source of income for the farmers involved.

⁴Stefan Dongus, Date: 1999-2000, Vegetable Production on Open Spaces in Dar es Salaam - Spatial Changes from 1992 to 1999

⁵ Thematic Paper 3The Impact of Urban Agriculture on the Household and Local Economies, Rachel Nugent

Almost 650 ha of the urban area of Dar es Salaam is currently used for vegetable production on open spaces offering employment for over 4000 farmers. From these 650 ha, 12% are privately owned land, 48% are institutionally owned and 40% publicly owned (*Stefan Dongus, Date: 1999-2000, Vegetable Production on Open Spaces in Dar es Salaam - Spatial Changes from 1992 to 1999*).

The scope of urban and peri-urban food production varies from continent to continent. This variation derives from many factors, e.g., the economic status of the country and the households (which determine their needs), the household itself (determined by its size, labour force, assets etc.), Cultural aspects (which partly determine the kind of crops are grown), the infrastructure and availability of fossil energy and inputs (which determine transportation capacities, availability of seeds and fertilisers), climate, soil and water.

Based on this, municipalities have to:

- promote urban nature biodiversity in this case agriculture in their cities. They have to develop tax incentives and other policies, and promote the Urban Agriculture activities in their territory.
- include Urban Agriculture in their plans and programs to alleviate poverty, food safety through promotion of local development and environmental and health improvement.
- recognize the significance of the contribution of Urban Agriculture to social development approaches, generation of jobs and income, self-esteem, environmental improvement and particularly food safety, and to add them to their key development goals in a transparent and concerted way.
- improve urban management through the promotion of Urban Agriculture experiences in cities,
- enhance food security, address urban poverty, improve urban environment and health management, and develop more participatory and less excluding governance processes, as well as to protect urban nature and biodiversity.

3. Conclusion

Governments and municipalities should make continuous effort to formulate and implement urban development policies based on models that will take into account expansion of greenery, new fields of plantations of trees, vegetables and other agricultural products, while giving the opportunity that most of the population of central urban area to be provided with local agricultural products and Eco products.

It is necessary to design Urban Development Plans (UDPs) which impose norms and specifications for land use, prevention of unauthorized construction and creation of large areas for the production of vegetables and fruits within sustainable systems in cities and their suburbs.

Municipalities should take into account vegetation not only for generating clean air, aesthetic appearance of the city but also to look at terms of financial gain, revenue generation, prevention of poverty and creation of new jobs.

But this endeavour it's not always easy. Developers want to have more benefits from the land. Depending on investors but it is likely that they will always try to construct structures, apartments, administrative or business centres, rather than preserving and promoting the increase of greenery areas, parks, gardens especially agriculture lands.

We, professional planners in this field, environmentalists, environmental activists have to fight at any cost to cultivate and retain greenery. First of all with the cultivation of agricultural products into gardens we provide food for our existence and most importantly income generation.

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