



# Urban agriculture as a contribution to food security

## Cape Town and Maputo – The UFISAMO project

ERIK ENGEL



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**Cities in Sub-Saharan Africa are growing faster than cities anywhere else in the world. The population growth leads to serious challenges for urban infrastructure. The number of socially and economically disadvantaged people is growing disproportionately. This raises the question of how these population groups are able to adequately feed themselves.**

Urban food systems primarily depend on agricultural products from the hinterland and on food imports. In many cities around the globe, urban agriculture also plays a role: While in cities of the Global North, it is mostly pursued for social, ecological and ideologi-

cal reasons, it can contribute to the diversity and quality of the nutrition of households in the Global South. Urban agriculture is also practiced to produce for markets: Ideally, the nearby markets and consumers benefit through direct sales or through intermediaries. In

this case, urban production becomes part of the market cycles and can generate income for producers (and traders). Thus, urban agriculture is a possible strategy towards a contribution to more sustainable cities and sustainable urban food systems in the sense of Goal 11 of the United Nations Sustainable Development Goals.

### Definition: Sustainable, urban food system

A sustainable urban food system interconnects rural, peri-urban and urban production and aims at providing the population with healthy and adequate food. It is (ideally) based on

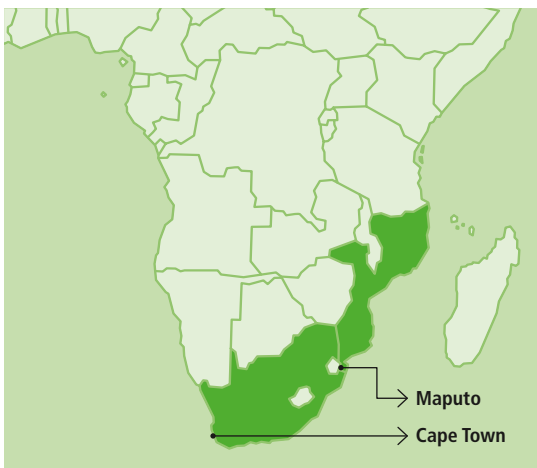
- organic urban and peri-urban agricultural production,
- affordable, short delivery routes,
- strategic urban planning to ensure sufficient land for production,
- actors' ability and willingness to innovate.

Source: Paganini, Schelchen (2018), [own translation]

### The UFISAMO research project

Within the framework of UFISAMO (Urban Agriculture for Food Security and Income Generation in South Africa and Mozambique), an international interdisciplinary team examines various aspects of urban agriculture in Maputo and Cape Town, and focuses on

- the organisational forms of the actors,
- the production patterns,
- the value chains,
- consumer behaviour,
- the exchange of knowledge between stakeholders and
- the consideration of urban agriculture in urban planning.



Township in Cape Town

Photo: © Henning Knipschild, BfL

The project is funded by the Federal Ministry of Food and Agriculture (BMEL). The Federal Office for Agriculture and Food (BLE) is the project executing agency. The cooperation with governmental and non-governmental actors aims to ensure that the acquired knowledge is transferred to the various target groups – from the backyard gardener to the city council's decision-makers.

## Two cities, two realities

Cape Town and Maputo, being two completely different cities and facing specific challenges each, have come up with completely different urban agricultural systems.

### Maputo

In Maputo, Mozambique's capital, over half of the population suffers from food insecurity (Raimundo in Paganini, Schelchen 2018). The "zonas verdes", a peri-urban green belt which is intensively cultivated by around 14,000 farmers are located within some of the poorest districts. These farmers are primarily organised in associations through which they receive land titles. In addition, there are an estimated 7,000 backyard gardeners. According to FAO estimates, over 40,000 people benefit directly from urban agriculture; according to other estimates, ten percent of Maputo's population generate their income by selling urban agricultural products (Raimundo in Paganini, Schelchen 2018). Mostly fast-growing leafy vegetables (cabbage and lettuce) are cultivated and sold through intermediaries to supply the local market. Profit margins are low. However, rapid and year-round production paired with consistent demand contribute to regular, albeit low income for farmers. Thus, this income or the lack of alternative and more attractive sources of income mainly motivate farmers to produce in the green belts (Paganini, Shell 2018). The remarkably high use of fertilizers and, above all, also of pesticides, casts doubt on the added ecological and health-related value of the products. The fact that 22 percent of all households in Maputo purchase products from urban agriculture (White, Hamm in Halder et al. 2018) illustrates its important role in the city's food system.

According to the farmers in Maputo, pest pressure is the main problem which they try to overcome by widely applying pesticides without even following the most basic principles of health and safety regulations. Problems are also posed by the salinization of soils and recurring climate disasters, mostly floods (Paganini, Schelchen 2018). Moreover, market access is not equally favourable for all farmers. Storage facilities or jointly organised marketing are lacking (Dolch et al. 2017). Despite political statements regarding the promotion of urban agriculture, the city of Maputo has not developed any legal framework or strategy to provide security for this economic sector or to improve knowledge and practices – the network of advisors is too weak to generate any lasting effect.

### Cape Town

Cape Town forms the economic hub on the southern tip of South Africa: The city has been promoting urban agriculture since 2007. A variety of actors practice very different types of agriculture, either for their own consumption or for the market. For example, in the "Philippi Horticultural Area", mainly large commercial farmers grow around 100,000 tonnes of fresh vegetables on about 3,600 hectares (Halder et al. 2018). The produce is directly supplied into Cape Town's food system via the private Epping wholesale market and supermarkets and covers almost half of urban consumption (Dolch et al. 2017). There are also around 4,000 backyard gardeners with small production areas of six to twelve square metres and around 100 community gardens covering an average area of 600 square metres. Both garden types are mainly found in the Cape Flats. The townships are located west of the city centre. Sandy soils, small areas of land, limited access to water and, sometimes, theft or vandalism make more profitable management difficult.

In Khayelitsha, the largest township within the Cape Town Metropolitan Area, 89 percent of households are considered food insecure (Battersby in Paganini, Schelchen 2018). In backyard and community gardens food is produced for home consumption. Rarely, the produce reaches the market with the sup-



In Maputo, insecticides are applied generously – without any protective clothing

port of NGOs acting as intermediaries between producers and, usually, better-off (white) middle class consumers who buy the products of urban agriculture via vegetable boxes, in trendy markets or in some

## Fact sheet

**UFISAMO:** Urban Agriculture for Food Security and Income Generation in South Africa and Mozambique

**Funding agency:** Federal Ministry of Food and Agriculture (BMEL); project executing agency: Federal Office for Agriculture and Food (BLE)

**Project budget:** 1.19 million euros over three years

### Project partners:

- Humboldt University of Berlin
- Free University of Berlin
- University of the Western Cape (Cape Town)
- Eduardo Mondlane University (Maputo)
- Frankenförder Forschungsgesellschaft mbH (Luckenwalde)
- SETSAN (Maputo: Secretary for Food Security: a governmental consulting institute for various ministries)
- Abalimi Bezekhaya (Cape Town: NGO, has been promoting urban agriculture in the townships of Cape Town for 30 years)

### Team:

- almost 20 employees, including four PhD students and several Bachelor and Master students

### Goals:

- Urban producers improve their knowledge of the risks and benefits of urban agriculture and apply good practices in production, processing and marketing.
- The partner universities integrate modules on urban agriculture into their curricula, promote research into this thematic area and disseminate good examples in the region.
- Decision-makers are aware of the importance of urban agriculture and take the developed recommendations into account in their programmes and strategies.



Babalwa, Liziwe and Noncedo (left to right)

### Interview with Babalwa, Liziwe und Noncedo

They are employees of Abalimi Bezekhaya, a partnering NGO within the UFISAMO project. Abalimi has been supporting small-scale gardeners in the townships of Cape Town for 30 years.

#### How did you get into urban agriculture and how long have you been working for Abalimi?

**Liziwe:** I grew up with a backyard garden in Eastern Cape. I have been with Abalimi for over 20 years and facilitate the beginner trainings for new farmers.

**Noncedo:** My father was a farmer in Eastern Cape. As a child, I worked in the field before school and on weekends. In the mid-1990s, when I moved to Cape Town, I saw a community garden nearby where I lived. This brought back beautiful memories. I also met Liziwe and I did a training on urban gardening with her.

**Babalwa:** I only started gardening three years ago. I had a small kiosk in Khayelitsha and I used to sell food there. One day, the potatoes were spoiled. Since I could not sell them, I put them into the ground next to the kiosk - three months later, I was able to harvest potatoes. Before, I thought, food comes from the supermarket! Later I met Abalimi and Liziwe and I was trained in her youth development program "Urban Gardening".

#### How do the restrictions in the availability of water affect you?

**Noncedo:** Usually, we have an abundance of vegetables at this time of the year. Now, we have to buy it. My garden does not have a well, so I cannot grow anything right now. It upsets me, not to be able to grow anything.

**Liziwe:** Many gardeners at Abalimi have wells, so we can still water our gardens. Nevertheless, we also have to save water, as the wells can dry up.

**Babalwa:** There were restrictions put in place last year, but nobody cared. Now, we have to reduce our activities. We harvest less, but the quality is still good.

**Liziwe:** Employees of the community control the careful use of water, even when using wells. By now, all wells have to be registered.

**Babalwa, Liziwe, Noncedo:** We teach water-saving cultivation methods, mulching, soil improvement with compost and manure, direct watering and drip irrigation, and also watering only at certain times of the day with the optimal amount of water. In the future, we have to promote indigenous plants, dune spinach and local asparagus. And continue to teach "organic" because the use of chemistry also needs more and more water.

#### Is it an option for you to give up gardening?

**Liziwe:** No, it is not. We will grow less, but we will not stop completely.

**Noncedo:** Even if I have less than eight square meters of space, I have to cultivate.

**Babalwa:** It is also about health. Where within the townships should we find organic vegetables? You would have to go downtown, but nobody can afford that. We have to use water as little as possible, but with the right methods, we should be able to continue producing and even produce better. Ultimately, it is also a question of the distribution of water - in the richer suburbs, people will also not let their ornamental gardens become dry.

restaurants. Demand in the townships seems low, which is partly due to the eating habits of a large part of the population: They either do not eat fresh vegetables or buy them from supermarkets – that are supposedly cheaper and socially more desirable. The fact that NGOs promote the cultivation of little-known vegetables, such as aubergines or tomatoes, which are rarely consumed fresh in the townships turns out to be part of the problem. Although these products grow excellently under local conditions, an independent, easily accessible market is lacking in case the more complex box systems or the sophisticated restaurants that depend on regular and consistent quality are not available as a sales market.

The city's Urban Agriculture Strategy of 2007, international organisations as well as local NGOs aim at reducing social disadvantages in the townships. The support by public institutions and NGOs towards improving food security and income have so far been of limited success (*Paganini, Schelchen 2018*): The efforts of NGOs to create market access cannot compensate the lack of a local market; wind erosion threatens the fertility of sandy and increasingly salinized soils; compost, which has been made available via subsidies, cannot locally be produced in sufficient quantities. Also, in 2018, the most severe drought ever recorded since the beginning of weather records challenged both the city as well as agriculture within and around the metropolis. The current weather situation in Cape Town and the entire Western Cape Province forces actors to rethink: Without adaptation, the future of urban and rural agriculture is at risk. The Western Cape region, for instance, is world famous for wine, table grapes and rooibos tea. In this situation, the trainings already offered by various NGOs which are tailored to the constrained conditions and aim at agro-ecological production can have an important impact. According to our own surveys, the adoption rates of various ecological techniques are over 80 percent (*Paganini, Schelchen 2018*).

### The project

Innovations to improve production under the given circumstances, organisation and peer certification are the project's central starting points in order to increase the chances of higher yields and to produce better quality in the market gardens and urban agriculture in the medium term.

### Good agricultural practice

German, South African and Mozambican students and research staff use different qualitative and participatory methods for their research on various aspects of urban agriculture. One focus for South Africa, for example, is on the adaptation of good agricultural practices (GAP) to the urban space (urban-



Gardens in Maputo's Zonas Verdes

GAP). For this purpose, a demonstration garden with endemic, drought-resistant plants has been established in Mitchells Plain, a district of the city that has so far only hardly been used for urban agriculture. The aim was, on the one hand to show which vegetables can be produced for home consumption and on the other hand, which are suitable for an adapted vegetable production (urban-GAP). Ten "researching farmers" document their experiences, even and especially in times of absolute water scarcity. Together with academic and agricultural policy experts, they develop guidelines for good vegetable cultivation in the city under limited access to water.

### Peer certification

Local "designers" convert the developed guidelines into a more easily comprehensible format for dissemination, which then also will be the basis for a participatory certification system (Participatory Guarantee System, PGS). This could improve market access, given that the existing bottlenecks of "consistent quality" and "predictable volume" can be overcome.

### Outlook

After the initial experiences in Cape Town, the model will be transferred to Maputo and adapted to the local challenges there. The selected approaches of the project have the potential to expand the cultivation patterns and simul-

taneously, in the medium term, to increase soil fertility and reduce pest infestation. Finally, urban farmers also have to make economic decisions: Is it worth the effort to change established but well-proven techniques? Does this make it easier to sell the products? Can the family's diet be more healthy and diverse?

### Transfer: Anchoring at Universities

Cooperation between the universities intends to ensure that aspects of urban agriculture are scientifically investigated beyond the end of the project and that respective findings are communicated to the actors involved. Close cooperation between teachers, supporting NGOs and municipal or state advisory services helps adapting the education syllabus to the actual needs in the field. The exchange between students and gardeners is deliberate, access to university knowledge is democratised and scientific work becomes more application-oriented. Finally, accompanying measures of education to advocate a healthy and balanced diet are also necessary to change eating habits and facilitate decisions for healthy, inexpensive, locally grown and tasty products.

### Conclusion

After just over 1.5 years, the project is well on its way to making its first contributions to existing urban agricultural

practices and to dealing with ever new challenges – such as drought. Maintaining, deepening and adapting the results will remain a major challenge. After the existent problems have been analysed and initial proposals for solutions have been elaborated, a phase is now required in which suggestions for improvement are tested and adapted. To some extent, this should be ensured by the cooperation with motivated farmers, supporters in administrations and NGOs, scientists and project staff. ■

*The author would like to thank the entire UFISAMO team for their inputs and is especially grateful to Dr. Karin Fiege and Nicole Paganini for the photos, comments and inspirations.*

### Literature

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>> German version of the article available in the magazine "Ernährung im Fokus" 05-06 2018 <<



#### THE AUTHOR

With a background in ethnology, geography and environmental management, Erik Engel first worked with NGOs in Central Asia and East Africa, then for HU Berlin in sub-Saharan Africa. Since the end of 2016, he has been coordinating the UFISAMO project for the Frankenfoerder Forschungsgesellschaft.

Erik Engel  
 Koordinator UFISAMO  
 Albrecht Daniel Thaeer-Institut  
 Invalidenstrasse 42, 10099 Berlin  
 engel@frankenfoerder-fg.de