Sustainable Urban Food Systems in Cape Town and Maputo
urbanGAPs as innovation towards a healthier, more agroecological and environmentally friendly production in cities

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What to talk about

- context of the study and research approach
- methods applied
- Why urbanGAPs
- Early research results from Cape Town / transfer to Maputo
- Conclusion
Why Urban Agriculture?

• „Zero Hunger“ (SDG”) and “Sustainable Cities” (SDG11) are global commitment towards achieving the Sustainable Development Goals

• Achieving food and nutrition security is not only a rural challenge, the access to adequate - in terms of quantity and quality - healthy and affordable food is also a growing issue for cities

• The increasing and ongoing urbanization strongly stresses the food system, mostly in informal and food insecure neighborhoods

• Urban agriculture receives increased attention in discussions about the future of cities because of its possible potential in supply, income increase, its contribution for “green cities” or in human-nature relationship

-> discussion on the contribution of urban agriculture to food and nutrition security is controversial
What role plays Urban Agriculture in a Sustainable Urban Food System

A (Southern African) Sustainable Urban Food System is the complementary city system to feed the population sufficiently and healthily.

It considers a more organic and environmentally-friendly urban and periurban production, affordable and short local supply chains, a strategic urban (food) planning to use appropriate space for food production as well as access to knowledge and willingness by stakeholders to adopt innovations.

A Sustainable Urban Food System is stable and strongly interlinked to peri-urban and nearby rural agriculture.

Paganini, Schelchen 2018
Research Design “Sustainable Urban Food System”

UFISAMO project 2016-2019

- Good Practice in horticulture production
- Innovation, Knowledge Transfer and Dissemination

Two PhD studies:

- Understanding a city through food: Urban agriculture’s potential contribution towards a more sustainable urban food system in food-insecure neighborhoods in Cape Town and Maputo
case study area: urban food insecure areas of CT and MP

Cape Town

- 50-80 small-scale market gardens in the Cape Flats
- 5,000 backyard gardeners trained in the Cape Flats
- Philippi Horticulture Area with 3000 ha urban farmland (up to 50% of CT fresh produce)
- Highly supported UA by NGOs and City of Cape Town, who claim Urban Agriculture as way against Food Insecurity
- Previous research: UA on backyard level has almost no impact on food security within the townships (Battersby)

Maputo

- 14,000 farmer cultivate on more than 1,300 ha
- 7,000 farmer cultivate in their backyards
- 20% of households involved in Urban Agriculture
- 40,000 persons benefiting economically from UA
- Quick turnover due to mainly fast growing leafy vegetables
Two cities, two realities – Summary of findings

That is different
- In Maputo farmer produce what they eat
- In Cape Town, farmer mainly do not eat, what they produce
- In Maputo farmer sell from their field
- In Cape Town, there is hardly no market “over the fence”
- In Maputo high use of chemical input
- In Cape Town home prepare organic inputs
- Almost every farmer in Cape Town has been trained, in Maputo less than every 2nd farmer received a training
- Cape Towns farmer are more connected and in networks
- Maputos farmer are organized in associations

That is similar
- production challenges due to climate change
- Inputs like seeds, compost and low tech is expensive
- Farmer contribute with agriculture to their income but are still depended on other income sources
- Prices increase for daily food basket
- UA products have to compete with supermarkets with regard to quality, price, stigma of food
<table>
<thead>
<tr>
<th>production</th>
<th>Food pathways</th>
<th>value chains</th>
<th>Processing &amp; consumption</th>
</tr>
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</table>
| • Contamination  
• Pollution  
• Theft and vandalism  
• weak soil fertility  
• Land access / UA competes with housing  
• Climate change  
• Expensive inputs | • Lack of transport  
• Cheaper imports  
• Supermarketization  
• Food price increase  
• Continuous quantity | • Lack of knowledge in administration  
• Lack of knowledge in marketing  
• Little or no access to fundings | • Lack of knowledge in agro process  
• Little or no storage facilities  
• Lack of knowledge, how value addition could increase income |
Assumption

A more environmental-friendly Urban Agriculture in line with Good Agricultural Practice adapted to the urban context (urbanGAPs) has the potential to reduce the health and ecological risks associated with conventional urban agricultural practices, and provide more agrobiodiversity within the city and facilitate market access. Quantity and quality increases.

The assumption is that, if GAPs are adopted adequately this might be a way towards promoting a Sustainable Urban Food System.
Why urbanGAPs in Cape Town

- Farmers have little access to their own markets due to a lack of continuous produce and quality, lack of knowledge in marketing and administration, as well as the spatial layout and historical separation of the city what makes it different to transport produce.

- Farmers are challenged by poor soil quality and difficult production conditions like heavy winds, strong sun and water shortages.

- Farmers invest more in inputs (compost, seeds, mulching material) than they gain with their production.

- Farmers have little knowledge about pest management and plant protection. Crop rotation is hardly applied in the fields.

- Demand for organic and locally produce, retailers cite continuous produce as main challenges when working with smallholder farmers.
Why urbanGAPs in Maputo

- Farmers inadequately apply chemical pesticides and mineral fertilizers, only very few farmers use biopesticides.

- Good Agricultural Practices are not in place and farmers have very little knowledge about soil fertility, irrigation and crop management.

- Farmers have little knowledge about pest management and plant protection. Crop rotation is hardly applied in the fields.

- Farmers are challenged by poor soil quality and difficult production conditions like heavy rains, strong sun and water shortages.

- Local produced vegetables are sold on the informal market, quality assurance is not sufficient for formal markets and cheap imports from South Africa compete with urban produce.
why does Urban Agriculture need UrbanGAPs

UrbanGAPs seeks to
• improve quality and quantity of urban produce
• provide a credible quality assurance guideline for Urban Agriculture to retailers
• to decrease production costs for farmers
• have culture specific production practices
• be ideal for assurance with a Participatory Guarantee System
• to have continuous produce and an easier market access, through PGS certification, short value chain or group-selling

UrbanGAP avoids “Urban” risks in production
• risk of contamination with pathogenic organisms
• irrigation with polluted water or inappropriate greywater use
• heavy metal contamination
• risk of ecoli through human latrines
• inappropriate buffer zones to industry
• Livestock
What makes an innovation to a good practice

- Analysis hindering & pushing factors
- Analysis autonomously or projected

- Example Innovation to Good Practice
  - Soil Building through mulching
  - Farmer networks
  - Corporate marketing

- Example Innovation to Bad Practice
  - Market depends on one external retailer
  - Sprinkler irrigation during a drought
Innovation: Application more organic / more agroecological practice: What is the farmers perception on organic urban agriculture

In Cape Town

Every 2nd farmer (53%) says
“Agriculture free of chemicals and fertilizer”

“Use of natural products (manure/compost/waste)”
“I do not know/ I forgot” (13%)
“Green/sustainable agriculture & fresh/healthy products”
“Own preparation/production”

In Maputo

Every 2nd farmer (50%) says
“Agriculture without chemicals/fertilizer/pesticides”

“Use of natural/organic products”
“Sustainable agriculture”
“Healthy production/good for health”
“Good form of production/without damage”
“I don’t know/only heard of it”
“Use of manure”
“Family subsistence”
“Without the use of manure”
“Production in rural areas”
“Not possible for us at the moment”
Evaluate Innovations

Extract of research results, only based on results on production and value chains

- Farmer Exchange in CT
- Fruit Trees in Maputo
- Biopesticides in Maputo
- PGS CT
- Container Garden in CT
- UrbanGAPs
- Marketing via NGO in CT
- PGS Maputo
- Fruit Trees in Cape Town
- Local compost production in CT
- Aquaponic in Maputo
- Grapes in Backyards – Cape Town

Bottom up GOOD PRACTICE

- Autonomously initiated

Top down GOOD PRACTICE

- Projected

Single case success, but difficult to get multiplicable Good Practice

Adoption (not yet) successful
Evaluate Innovations

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- Farmer Exchange in CT
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- Fruit Trees in Cape Town
- Bio pesticides in Maputo
- urbanGAPs
- PGS CT
- PGS Maputo
- Marketing via NGO in CT

Bottom up GOOD PRACTICE

Autonomously initiated

Highly diffused

Projected

Hardly diffused

Single case success, but difficult to get multiplicable Good Practice

Adoption (not yet) successful
urbanGAP Workshop – projected & facilitated - but a farmers result

- multiactor workshop with farmers, Department of Agriculture, retailer, researcher, NGO Trainer, certifier, consultant
- Participatory workshops with urban research farmers in before and after to prepare and monitor the urbanGAPs
- hazard analysis of urban production
- Outcome: urbanGAP guidelines, urbanGAP farmer manual, urbanGAP policy recommendation, urbanGAP checklist for PGS monitoring
- Strong participation of farmers during whole research phase

Cape Town 6-9.3.2018 / adopted and transferred to Maputo in 2019
Chapter 1: Farm Planning and Site Selection
Chapter 2: Production and Crop Planning
Chapter 3: Seeds and Seedlings – Nursery and Transplanting
Chapter 4: Land and Soil Preparation
Chapter 5: Soil Management and Soil Fertility
Chapter 6: Fertilization
Chapter 7: Water Management and Irrigation
Chapter 8: Pest and Disease Management / Field Hygiene / Weed Management
Chapter 9: Harvesting and Post-Harvest Handling
Next: Verification of urbanGAP with Participatory Guarantee System
How PGS works

Shared Vision – the members of the PGS share a common goal and collectively embrace the principles of organic agriculture.

Participatory – the members participate in the development and management of the process and procedures of the PGS which is “owned” and controlled by the collective.

Transparency – the system is open to public and peer scrutiny at all levels.

Trust - “integrity based approach” – trust and integrity form the basis of the system.

Learning Process – the assessments and the process focuses on skills and knowledge exchange.

Horizontality – the group has a flat organisational structure, it is developed and managed by peers and not by a top-heavy management.

(Source: Brynstone Organic Market PGS)
Conclusion

• UA is an alternative or additional source of food and a complementary strategy to the rural Food System and could create niche markets, fill in gaps in urban food deserts and contribute to a more diverse diet

• The increasing and ongoing urbanization strongly stresses the food system in the two case areas – rethinking of UA through multi actor food planning and urbanGAPs

• urbanGAPs, as a successfully adapted innovation can become a good practice for urban agriculture production and mitigating urban hazards
Thanks
Obrigada
Khalimambo
Enkosi
Dankiee

Thanks to all farmers, our research and interview partners and colleagues in Cape Town, Maputo, Berlin and Coventry for this learning journey, your contribution, ideas and inspiration as well as overall support to our work and PhD research.

This research is funded by the German Federal Office for Agriculture and Food through the Ministry of Food and Agriculture & Thank you to Frankenförderforschungsgesellschaft for supporting this conference contribution.