

Monitoring & Evaluation of urbanGAPs – implementation by farmers in Cape Town

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Abalimi Bezekhaya, Cape Town, South Africa

Monitoring and Evaluation of urbanGAPs-implementation by farmers in Cape Town

Objectives:

- Supervision of practical implementation of agricultural techniques and principles recommended in urbanGAPs by farmers
- Support of farmer's self-assessment using the urbanGAPs-checklist
- Identification of benefits, challenges and lessons learnt in the use of urbanGAPs as basis for adaptation and finalisation of the document

Target group:

- 3 farmers fully and 2 farmers partly implementing urbanGAPs
- If possible, involvement of additional farmers from UFISAMO farmer research group

Tasks:

- Support farmers in filling in the urbanGAPs checklist along the different production stages
- Discuss feasibility, advantages and challenges of different practices/techniques with farmers (as part of the self-assessment)
- Collect additional information on urbanGAPs implementation, like impact/effects of use, changes in product quality and quantity, effects on marketing/prices, farmer's perception on urbanGAPs and formulation/understandability of urbanGAPs
- Carry out workshop with farmers on urbanGAPs at the end of the growing period (farmer to farmer exchange)
- If possible, identify ideas for further dissemination/marketing of urbanGAPs in Cape Town

Procedure

- Meet on farm and work with farmers on assessments between October and November 2018: Ria Schuurman and Sophumla Ntoyabo at Ubuhle Bendalo Garden, Sibongile Sityebi at Asande Food Garden, Manelisi Mapukatha at his home garden, Magda Campbell at Beacon Organic, Clifford Caeser of Greenlight Foods.
- Validation-WS with farmers during the UFISAMO Annual Meeting in Berlin
- Farmers requested a follow up session to understand how this research has affected them as a collective. It would also be ideal to speak with those who work with farmers to gain another perspective – local market spaces and support networks. Farmers left with many questions and so the workshop that must still take place will be a horizontal exchange, particularly around pest and diseases, fertility as well as seed knowledge.

1. Results of Farmer meetings / assessment

1. Farm vision and site selection

Every farmer farms with a great vision in mind and always fundamentally about the community in mind. Farmers have described that they may not necessarily have all the resources they require but do believe they are working with their means to implement their vision.

Logistics is constantly seen to and solutions found for specific needs or problems. Transport continues to be an issue, specifically when accessing market outside of local communities.

Everyone expressed that they were not able to do soil testing before UFISAMO supported this but they are not aware of what the results mean and do need more information.

Everyone described that farming on Cape Flats sandy soil is challenging and a constant learning. Unanimously farmers are not able to understand the results of the soil testing without support, they understand the dangers, for example, with high metal contamination, but not sure how to proceed. Soil and water contamination is a great concern that has remained hidden mostly, it is not an obvious issue as one often cannot see, smell or taste the contaminants. It is also not something that extension service seems to bring up as concerns or offer support on.

Record keeping has been paramount and has given farmers much insight and learnings from their practice. It initially was tedious and difficult for some but the friidiaries created a culture of recording for those who had not yet started. Farmers described that there was more control within the gardens and allowed farmers to take their farms to “the next level”.

Using mapping as a tool for farm planning has also greatly improved the production and knowledge of farmers. In some cases these plans have helped farmers make big changes and in others small changes. It connects with planting plans and some farmers continue with it while others use it for major changes.

2. Production and crop planning

Production planning has made a marked difference, particular providing a platform of sovereignty in some cases where production plans were created for farmers and not by farmers.

Crop selection and crop rotation are continually implemented and in the case of Clifford, learning from the other farmers and creating a different market. Clifford plants directly according to the needs of the market, his immediate community.

Most farmers have agreed that companion planting has benefitted but have decided to prioritise real estate for market gardening as the income is greater for the labour. This is not to say that farmers have abandoned it completely as companion plants are still found within the farms and sometimes within the beds, so in viewing the farms holistically, companion planting is still an important part of farming.

This can be described as in Magda's garden, Magda has moved her tree garden to be incorporated into the production garden thus creating a food forest and planting around her trees. The production beds themselves do not have companion plants within them but a few meters away this is very much the case.

3. Seeds, seedlings, nursery and transplanting

Seeds are the most obvious issue in terms of urbanGAPs from an external perspective. This is because good quality, reliable seed are not easily available or affordable. Farmers are also farming towards produce harvest and not seed harvest which is its own specialization. To expect farmers to adopt this at once is also not realistic as it requires specific knowledge and practice and means produce is left in the ground for much longer. Farmers are starting seed practice on a small scale and some, such as Sibongile, have described how his own seeds are more successful than those imported onto the farm. All farmers are very interested to start working with seeds and have requested support to be able to do so.

Within the broader Research Farmer Network, Aunty Washiela has specialized into producing seedlings for the farmers and works on a pre-order system. It must also be noted that to be a seed producer requires space and resource allocation which currently is not where farmers are at and requires time for transition.

Everyone gets donations of plants and seeds too and often they do not know the origin of these seeds but accept donations regardless.

4. Land and soil preparation

It is interesting to note the creative solutions farmers have to deal with similar issues, for example, Sibongile in Nyanga has managed to control his mole issue with different plants and glass bottles sunk into the ground, whereas Magda has created mound beds to counteract the issue.

There is also a mixed land management system which is great to see, most farmers are farming raised beds, in situ, container planting and trench beds. Raised beds also provide solutions for moles to not target root crop as well as provide a solution for poor soils. Sandy soils compact in the heat and drought so this is able to mitigate that.

Urban soil contamination is the biggest issue, perhaps in general but the most foreboding as farmers, organizations and customers have not been aware of it. Learning to mitigate this will be the most important element. The farmers who had their soils tested were most concerned and anxious about the results as they have no idea what it means in terms of health. The mitigation and remediation of this soil is paramount as the local market may be the local community where health issues such as diabetes, hypertension, cancer, HIV AIDS are concerns or lived realities. How does contamination exacerbate these realities?

5. Soil management and soil fertility

This is a common need across the bed, combating sandy soil conditions is something that will take years but farmers strive for fertility and are constantly using different techniques to build fertility according to plants and needs. Farmers have noticed drastic changes since implementing methods such as green manure, trench beds or garden waste management into compost, albeit may be challenging initially, the farmers understand it's the discomfort of changing the farming system and this will create ease in other areas in the future.

Seaweed is a widely available resource and needs a permit (available from the post office for R98 per year) to harvest up to 10kg per day. It also requires transport which most farmers do not have but could access within the research farmer network. Seaweed is an untapped resource for fertility and water retention and experiments should be done on a broader scale.

It is interesting to see how communities extend because of manure. Most farmers are not farming with animals, except for Manelisi in the research group, so other farmers or close community members bring manure in to the farms and gardens.

Mulching is an interesting case, farmers all declare to be using mulch but this was not evident on all beds which may be because of rotation of beds. Mulching material is also a constant experimentation as some materials, like wood chips, may exacerbate acidity in soils or, in most cases, prevent water from reaching soil or roots. Use of grasses has proven to introduce mould and rot into the mulch layer. Mulch also provides safe space for ants or termites in summer which in turn attracts other insects and makes farming difficult. It's important to consider that farmers are seeking mulching without extra cost as mulch proves to be very expensive.

All farmers need support understanding soil pH, sodium and salt levels and general soil health. Contamination is a massive issue that needs support. Farmers also expressed success using cover crops, green manure, aerating of soil and incorporating this into farming practice, even though it has been labour and time intensive. There is the understanding that this is an investment but still is difficult for all to adopt fully initially.

6. Fertilization

Some farmers have a composting processing area, others rely on external compost sources that are brought into the farm. Some use animal manure, some from neighbours' animals such as horse manure, others have some animals in site like Clifford with his rabbits. Some farmers have bought compost like Bounce Back chicken manure while some are not using animal manure at all.

7. Water management and irrigation

Farmers use mostly borehole water. The addition of compost and other soils is good but not ideal for water retention. Mulch is a valuable addition but prevents superficial precipitation from reaching soils and may be difficult to acquire, expensive too.

Grey water is not priority use on farm but is not usually wasted either. Grey water is also better for farmers to use on bigger plants such as trees. Some farmers did not have an understanding of what grey water is but upon further explanation realized they do in fact implement it from time to time.

A concern is the canalised water used on Clifford's farm, Clifford was informed by the extension service that as long as this water flows it is safe to use. This needs investigation.

7. Pest and disease Management

Farmers are aware of the differences between pest infestation or damage and may need support for differences between disease and nutritional defect. Having said that there does not seem to be too much issue and farmers have been able to isolate the damage experienced. Farmers are also not afraid to seek knowledge and research for themselves what this is. Options such as the library, social media and other farmers and support networks have helped farmers understand what issues they have.

Common pests are easily handled, such as snails or aphids and solutions change from farmer to farmer and farm to farm. Diseases such as virus are more difficult to understand. A common disease is Mosaic Virus and plagues such plants as tomatoes and spinach leaves. Farmers have also noted

new diseases they did not notice before, it is unclear whether this is because of new mechanical and cultural practices that these diseases are noticed or whether they are in fact new.

8. Harvest and post-harvest

Farmers generally harvest what is needed for when it is needed and are greatly encouraged by connection to market, such as Umthunzi. Umthunzi have shared that often they receive more than what is ordered or hold surplus harvest when the farmers have.

It is clear that farmers gift crop, as a way to sustain their fields and to use as tokens.

Most farmers have described they struggle with post-harvest storage and would appreciate some kind of cold storage as well as more knowledge on post-harvest techniques.

It is clear that farmers see Umthunzi as an opportunity to take beyond their capacity, a potential space for farmers to deposit their harvest but have few other market access apart from Clifford.

Farmers still plant an extraordinary amount of plants according to surplus, specifically of plants in great surplus.

Conclusion

It is clear that to farm on the Cape Flats is greatly challenging, simply from a production perspective the soils are sandy with high acid and low nutrients and minimal water retention. While one assumes that this sandy soil drains water quickly, it actually has what we call an "oiliness" that prevents water from draining and sits on the surface, giving more opportunity for water to be evaporated in the hot summers.

In spite of these conditions farmers are optimistic and agreed that urbanGAPs have drastically improved the marketability of the produce and increased yield too. The report writing has given a great documentation to note this and continues to do so.

Just because farmers have used urbanGAPs it does not mean that the garden is at its ultimate production, the GAPs monitoring does not relay the level at which farmers are implementing the GAPs. Of course, there is always room for improvement.

Unforeseen positives are around network building and horizontal learning which allows exchanges and sharing seeds, successes, failures. Building friendships and solidarity through farming has also fortified the important work these farmers do.

Feedback on checklist for self-assessment

Across the board the farmers all asked for assistance with filling in the form, for this I imagine it was a difficult assessment process to do alone because of the language barrier. Farmers asked for a lot of repetition and examples to understand the questions better. While the assessment forms were long, this was necessary to include as much of the GAP's as possible and farmers understood this and were patient with it.

Some of the questions were leading or ambiguous and farmers tended to answer in what they imagined they were supposed to answer but we were able to discover what the farmers meant through some creative questioning.

If farmers were to do this as self-assessment as it was intended, I do believe the forms would need to be in a different style or that farmers would have more time to do it in.

Fridiaries made the most impact it seems with the interviewed farmers in terms of assessment.

2. Results of the validation workshop with farmers

UFISAMO – Annual Meeting

Berlin, 10.-14. December 2018

Participants:

Research farmer group from Cape Town: Liziwe Mkaza, Babalwa Mpayipeli, Sibongile Sityebi, Clifford Ceasar;

Zayaan Khan; Matias Siueia Junior; Nicole Paganini; Anja Kühn

What went well? / What has changed through urbanGAPs?

- **Production/better productivity** => Better quantity and quality of produce

Improved production due to implementation of certain practices, e.g wind breaks, better way of irrigation (water saving techniques)

Better overall management of the farms (weeding, field hygiene), better garden waste management

Better pest and disease management

Change in soil / land preparation (“If you do soil preparation right, you have a good soil fertility”)

Improved soil fertility/soil management due to regular / own composting and manuring, intercropping, trench beds

“Compost is the kitchen of the farm” – regular composting is also garden waste management.

“Being a soil farmer more than a plant farmer”

“In order to be a successful farmer, you have to start with the soil. Focusing on soil is the main key.”

“You know what to add to the soil with the GAPs and how to do it (the right practices).”

“Better soil fertility leads to better productivity.”

Manure is useful for water retention. Better soil structure, thus, less water is necessary, less time for watering needed.

In a few cases own manure production (e.g. rabbit production for that), mostly buying or receiving gifted manure from local animal farms.

- **Record keeping**
had a big influence on production, not only overview on in/outputs, also a tool for decision making, helps production planning and reflection, considers experiences
- Doing proper **production planning**
- **Marketing**
for securing new/better access to local marketing like schools and churches or Umthunzi market, understanding markets and their problems better, being aware of markets and neighbours demands
“knowing who the market is and what the market needs”
“not only planting: knowing, what you are planting for whom”
Problem is: dependency on middleman – no direct link between producers and consumers.
“The middlemen don’t want to listen to farmers.” They decide on the agenda of meetings, there is no exchange. Farmers inputs are not wished.
- **Better communication and networking** amongst farmers / farmer engagement
- Immediate **community involvement** (neighbours, local markets, youth)
“People started seeing how good the garden looks and show interest” – children and youth as well

What was challenging?

- Many practices are time and labour intensive, like field hygiene, weeding, trench beds, own compost/manure production
- Upkeep field hygiene, processing of diseased planting material
- Processing/Management of kraal manure; is cheap but storage only after fermentation and processing. Space, time, understanding need to be considered
- Logistic and place for own compost production (rabbit production for having and independent system)
- Mulching: right material (disease and weed seed free, free bugs to acid, saw dust is not good excepted on pathways), strong winds need heavy mulch (material is blown away)
- Lack of shade, lots of sun – high evaporation and sun burning (trees are helpful)
- Water and soil testing and implementation of the knowledge - interpretation of test results is difficult. What does contamination mean?
Water quality is a problem. Department of water states “water is ok, as long as it flows”.

- Pest and disease identification and management – access to information
- Access to seeds, seed saving and knowledge (little seeds available, many don't work in the Flats, organic seeds not available or too expensive – often own seed production or buying seedlings from specialised nurseries)
- Own seed production is challenging: seed saving is something new, must be aim from the beginning, not much knowledge so far collection: select healthiest plants, drying, storage at cool place (e.g. in container in the soil if very hot), WS on seeds necessary, seed production is a specialisation, at least at a certain portion of the farm
- Language and communication of urbanGAPs, not in first language.

Additional practices (not mentioned in the GAPs) or missing practices

- Soil amendments, addition of clay to the sandy soil (10-20%)
- Tunnel production
- Animal production for manure /soil fertility (rabbits, agroecological production)
- Use of seaweed for fertility and mulch
- Nutrient and pH-needs of crops (carrots need higher pH e.g., no citrus in Cape Flats)
- More on pest and disease identification and control, and differentiation to nutrition deficiencies
- More information on logistics and whom to contact (e.g. boreholes etc.)
- Agro processing/value addition
Also a dependency on middleman and their prices and linkages. First experiences existing with community (tasting trials), but many poor people, so cheaper prices are necessary. Youtube competition for processing exists.
- Green manure needs more implementation, is not done because the space is used for production. More knowledge is needed, when to plant and together with what (considering heavy and light feeders).
- Is there a correlation between compost and new pests?