supurbfood

Sustainable urban and periurban food provision

Work package 3 / Deliverable 3.3

Thematic paper 2: Innovative experiences with short food supply chains in (peri -) urban agriculture in the global South

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Contents

1. Introduction

The project SUPURBFOOD ("Towards sustainable modes of urban and peri-urban food provisioning", www.supurbfood.eu) is a research project financed by the 7th Framework Programme for Research and Technological Development of the European Commission. Its aim is to improve the sustainability of agriculture and food delivery in city-regions in Europe as well as in the global South by developing together with SMEs innovative approaches to: a). water, nutrient and waste management and recycling; b). short food supply chain delivery; and c). multifunctionality of agricultural activities in city-regions.

This is mainly done in 7 city-regions across Europe (Rotterdam, The Netherlands; Rome, Italy; Ghent, Belgium; Vigo, Spain; Bristol, United Kingdom; Zürich, Switzerland; Riga, Latvia), but the project also explicitly aims to learn from experiences with urban & peri-urban agriculture (UPA) and urban food provisioning in countries of the global South. In the global South, in spite of sometimes considerably different contextual settings and driving forces, often very similar types of experiences with urban agriculture, waste and water reuse, and food provisioning exist. These frequently have developed in a strong way and may hold important lessons for the development of sustainable city-region food systems in Europe.

Within SUPURBFOOD the RUAF Foundation (International network of Resource Centres on Urban Agriculture and Food Security, www.ruaf.org) is the responsible project partner for the identification and analysis of relevant experiences from the global South within the three thematic areas of the project, in order to enrich South-North exchange and collaboration and draw lessons from these for the development of sustainable (peri-) urban food systems in the 7 European city-regions mentioned above.

This thematic report specifically focuses on relevant experiences from the global South within the thematic area of short food chains, and aims to identify inspiring examples and define lessons for application elsewhere on the basis of these. The selected initiatives are drawn to a large extent from experiences of RUAF with urban agriculture and food provisioning projects in the South in which short chain development and value chain creation already for several years have become an integrated part (for example

see the RUAF programmes “Cities Farming for the Future” (2005-2008) and “From Seed to Table” (2011). A survey of literature and web sources was implemented to identify complementary initiatives and an electronic “Dare to Share” fair was organised in order to mobilise involved researchers, local authorities, urban planners, SME’s, producer groups, NGOs, etc. in the global South in providing other relevant examples.

The entire inventory of 21 cases (see Annex 1 of this report for those cases that were identified but not analysed in detail) demonstrates the variety of innovative approaches to short food supply chains as applied within urban and peri-urban agriculture (UPA) in cities in developing countries. The inventory looks at a range of different types of supply chain initiatives including farmers markets, delivery of boxes to consumers, distinctive quality labels and integrated schemes which combine different marketing channels in the urban locality. Also they highlight a variety of relevant drivers to such initiatives ranging from producer’s initiatives (either individually or in cooperation), to consumer- and civil society-based initiatives or again others principally driven by local public administrations.

Part I of the report provides of a more detailed analysis of 8 selected cases studies. This analysis addresses the following questions:

- What **characterizes** the short food chain initiative? What distinguishes it from other initiatives to establish and manage short food chains? Which actors are participating in this food chain? How are the logistic operations organized in the short chain? What kind of financing modalities, institutional arrangements, and business model(s) are applied? What roles are given to (peri-) urban producer groups, civil society groups and SME’s and what are the relationships among them and between these and other chain actors?
- What is the **economic, social and ecological performance** of the short chain based on available evidence: Its positive impacts on enhancing food security and access to food of the population in the city region, enhancing income level for the (peri)urban farmers, what are the social and organizational innovations that this initiative brings along and what are other specific social, economic and ecological benefits of this strategy/short chain modality. What are main possibilities to increase such benefits?
- What are the specific **social, economic and ecological problems** (negative impacts) caused by this strategy/modality?

- Which seem to have been the **main factors that facilitate or hamper** (socio-cultural, technical, economic and financial, political/legal and institutional) **expansion or uptake** of this type of short chain initiative? What are the main constraints encountered by the chain actors?
- Based on the above, (a). What is the **sustainability/viability** of this type of initiative and (b) What are important prerequisites for further expansion of this type of initiative? Changes in the approach needed, critical support required, etcetera?

Part III is a synthesis of lessons learnt from these cases. The main opportunities and challenges with respect to fostering short chain delivery of food are highlighted. These include aspects like: improving their coordination and the logistical strategies of the SME's involved in the chain, or increasing the sustainability (including economic viability) of the short supply chain initiatives. Special attention was given to opportunities and challenges with respect to roles of government, NGOs and private sector parties, the types of business models found, and the type of support needed to ensure their sustainability and impacts.

It should be noted that case description and analysis is based on secondary literature review and –where possible- on additional phone interviews. No ground verification has been done in the context of this project, nor have data been externally reviewed. The authors can therefore not ensure that data are fully correct, up-to date or complete.

2. Description and analysis of selected short food supply chain cases

This part describes eight short urban food supply chain in the global South and provides a description of the selected business initiative, its activities, challenges, lessons learned, impacts and sustainability and viability. The case descriptions follow all a similar outline that encompasses the following sections:

Section 1: Characterisation.

Short description of the initiative covering what, where, who is involved, how the initiative came about, dynamics and scale covering the following questions (to the extent that information was available):

- What are the key products and activities? What are the key resources needed/used?
- Value proposition: what is the added value, in what way it's different from other chains/products?
- What market segment is covered? What are the existing customer relations?
- Which actors are participating, what are their roles and relationships?
- How are logistic operations organized in the short chain?
- What kind of financing modalities are applied? Cost structure?
- What kind of institutional arrangements are put in place?
- What sort of business model was adopted, any changes/modifications made?

Section 2: Economic, Social and Ecological Performance

This section covers the following issues:

- Main positive benefits on food security and access to food; income; increased livelihood options, social and organisational innovation, any other social, economic and ecological benefits?
- What are possibilities to further enhance these positive benefits?
- Main negative outcomes/impacts (i.e. social, economic and ecological).
- Overview and assessment of costs/benefits.

- Main factors (socio-cultural, technical, economic, financial, political/legal and institutional) that facilitated/hampered further expansion/up-scaling of this short chain initiative and main constraints encountered by involved stakeholders.

The information documented in these sections is also graphically and schematically represented in the form of a 'Business Model Canvas' (see below). The Business Model Canvas was initially developed by Osterwalder (2004) as a strategic management tool to support entrepreneurs in developing new business models or facilitate discussions within/between companies on existing business models[1], and consists of a visual chart describing a firm's value proposition, infrastructure, customers, and financial cost and benefit structure. The tool is also increasingly used for comparative analysis and short characterisation of businesses and it is to this aim that it is used in this report.

Schematic overview of business model by means of Business Model Canvas

<table>
<tr><td rowspan="2">Key participants</td><td>Key activities</td><td rowspan="2">Value proposition</td><td>Customer relations</td><td rowspan="2">Market segments</td></tr>
<tr><td>Key resources</td><td>Marketing channels</td></tr>
<tr><td colspan="3">Cost structure</td><td colspan="2">Revenue sources</td></tr>
</table>

Section 3: Sustainability, Opportunities and Challenges

The last section of the case study description provides an analysis of the sustainability and viability of the initiative as well as of the lessons learned for possible application in other localities. The questions which are leading in this section include:

- What is the sustainability/viability (financial, ecological, social, institutional) of this short chain initiative?
- What are important prerequisites for further out-scaling/up-scaling of this type of initiative?
- What support/enabling environment is needed? Are any changes required in the approach applied?

[1] For more details see: A.Osterwalder (2004). The Business Model Ontology - A Proposition In A Design Science Approach. PhD thesis University of Lausanne and A.Osterwalder, Y.Pigneur, A.Smith et al, (2010) Business Model Generation. Wiley.

2.1 PROVE, Federal programme on processing and marketing of small-scale family production in Brasilia, Brazil

Characterisation

In Brasilia, Brazil, a policy programme on processing and marketing of family production called PROVE ("Programa de Verticalização da Pequena Produção Familiar", literally meaning "Programme for Verticalisation of Small-Scale Family Production") was implemented from 1995 to 1998 to support small-scale agro producers, increase their income sources and generate local economic development. This programme was initiated by the federal government, at that time headed by the workers party. Industrialisation trends meant that the general focus was on setting up and supporting larger scale processing facilities. This resulted in small scale producers not being able to compete with the large scale producers, leaving them without sufficient livelihood and income opportunities.

In response, the PROVE programme was set up to stimulate production, transformation and commercialisation of family-based agricultural enterprises. These are involved in various kinds of agricultural processes: horticulture, fruit production and animal husbandry, transforming vegetables and greens into pre-processed products, processing fruits into jam, pulp and juice, and animal raising and processing for the production of eggs, dairy products, sausages and smoked meat. The farming enterprises involved in the programme received support to improve production and processing and to access new markets.

Farming families grow their own crops, or raise their animals. They add value to primary products by agro-processing. The PROVE program also facilitated access to necessary supplies like machines and small equipment, packaging, uniforms, sanitary and cleaning tools from the Small Agro-industry Counter, that were otherwise difficult to obtain, especially in small quantities

Branding was done by labelling the products as "PROVE" (which also means "taste" in Portuguese) and made in Brasilia. Using the PROVE brand, a well-known project as a result of large media attention, established them as quality products. Products are also given bar-codes to allow for selling some in formal market chains like the Carrefour

supermarket. The products are of good quality, adhere to sanitary guidelines, and are sold as fresh products from the region itself. The programme not only enhanced family businesses and livelihoods, but also their inclusion to markets from which they were formerly excluded.

Product sales target middle to high end customers, as they are able to pay competitive prices. Products are sold in “producer stands” in supermarkets as well as directly to restaurants or other consumer groups. Advertisement for the products takes place through government subsidised billboards, TV and radio spots, and also through newspapers and brochures.

The Federal government, initiating the project, played a key role in the PROVE programme. They were involved in:

1. Lobbying public training, extension and support institutions to reach out and support the farmers.
2. Motivating the farmers to participate in the project.
3. Ensuring loans with banks. The programme convinced banks to adapt loan agreements to the target group who were normally not able to comply with all loan requirements (too high minimal loan volumes; high interest rates; short pay-back periods; guarantee requirements). The PROVE programme amongst others constructed a transportable mobile agro-processing unit that functioned as a guarantee for loans.
4. Reviewing sanitary legislation and regulations. The regulations in place dated from the 1950’s and were aimed at the big industry and therefore impossible for small scale producers to adhere to. The Federal District government agreed upon a law and series of norms and quality standards specifically adapted to small scale agro-industries (30 to 40 m^2).
5. Ensuring adequate processing facilities. Most farmers were used to process agro-products in their own houses and kitchens. In order to comply with the hygiene standards, they needed to have specific processing facilities. The PROVE programme developed a basic pre-fabricated processing costing between $2,100 and $4,200 (depending on its size). These units were bought by the producers themselves and financed with a loan from the bank.

6. Instruction and training. Farmers did receive training on: associative and cooperative marketing, enterprise management (costs and marketing), hygiene and food handling.
7. Enhancing availability of supplies. As mentioned before, the project set up the Small Agro-industry Counter, a place where farmers can buy supplies in small quantities for their businesses (buying such small quantities from standard suppliers was generally not possible). The Agro-Industry counters had the added advantage of saving on transportation costs, as they were located close to the farmers.
8. Publicity and marketing, involving the branding of the "PROVE" product; development of a logo and government sponsored publicity, including weekly television programmes featuring one of the agro-industries and increasing the visibility and credibility of the products as good quality products.
9. Commercialisation by organising sales channels through Producer's Stands (either government stands or independent producer stands) in supermarkets, such as the main Carrefour supermarket. As farmers could thus sell their products directly and exclude middle men, they received higher prices for their products (next to selling them to higher-end markets).

Other important actors in the programme were the Association of PROVE Producers and the NGO APROVE (An association formed in support of the verticalisation of small agricultural production). These institutional structures were set up in order to sustain and expand on the programme's activities.

The financing modalities and cost structures applied are quite straightforward. The farmers pay for all direct costs themselves. They can apply for a loan from the bank in order to build their processing facility, and they can buy supplies from the Small Agro-Industry Counter, either directly or on credit (they need to pay back in four months without interest). Training, advertising costs and Producer Stands were paid for by the government programme, as were a major part of marketing transport costs. Such "dependency" on financial project support indicates as the same time the "weak link" in the programme, as the main support ended with a change of government and the Producer Association and NGO could only partially take over these roles. However, institutionalisation was achieved by formulating and approving a law by the District House of Representatives which gave the PROVE programme a legal status and

established regulations for the simplification of fiscal treatment towards small scale agro-industries. This provided farmers new opportunities to broaden their activities and production and processing capacity. In a later stage the PROVE programme was also expanded to other regions in Brazil, including Matto Grosso du Sul and Minas Gerais.

The figure below schematically summarises the business model that has been used by PROVE, which generally can be characterised as that of a standard supply chain model, with a strong degree of government support in creating specific cost advantages (access to credit and training, input supply, legislation) and collectively developing market opportunities (producer stands, promotion and quality label of products)..It should be commented that there is a lot of information on the programme interventions by the government and much less on the producers association and NGO ASPROVE tand therefore not all details of the business model (e.g. logistical arrangements) could be clarified.

Schematic overview of business model PROVE

<table>
<tr>
<td rowspan="2">Key participants
• Federal govern-ment that initiated the project and provided training, financial support and legislation.
• PROVE producers association
• NGO ASPROVE
• Supermarkets</td>
<td>Key activities
-Family scale production and processing
-Individual and associative product sales</td>
<td rowspan="2">Value proposition
Value is added by “verticalisation”, e.g. integrating production, processing and marketing of quality products by family sized businesses (excluding middle men; and targeting high-end markets).</td>
<td>Customer relations
The products are sold at Producer Stands in supermarkets or directly at restaurants.</td>
<td rowspan="2">Market segments
The products are targeted at the middle and high end class customers in Brasilia</td>
</tr>
<tr>
<td>Key resources
• Locally grown fruits/vegetables/ animals (primary products)/ agricultural land
• Infrastructure, machines and equipment for processing
• Credit and loans
• Marketing infrastructure</td>
<td>Marketing channels
Major supermarket chains,
Restaurants,
TV, radio, newspapers and billboards have been used for advertising.</td>
</tr>
</table>

Cost structure	Revenue sources
• Fruits/vegetables/animals are produced and processed by the farmer themselves • Farmers apply for a loan to pay for processing facilities. • Supplies can be paid in 4 instalments without interest. • Marketing stands and transport are financed by the government.	Sales of the products through the Producer stands/restaurants

Economic, Social and Ecological Performance

The PROVE programme in Brasilia has had a positive impact on the livelihoods and self-esteem of the participating farmer households. About 178 families (around 900 people) have improved their social and economic position. The programme helped to improve on the activities they were already implementing, enhancing their income and social status. Income has increased fourfold from an average of $27/month before the programme, to $108/month at the end of the programme.

Possibly the most important impacts were the impacts on the local economy and job creation. The farming families benefitted from better job opportunities (with a larger number of family members involved in the agro production and processing), and in addition jobs were created through the supply shops, for people prefabricating the agro-industries and for those involved in input supply (hygienic clothing, machines, seeds, fertiliser, packaging, cleaning materials, etc). This has resulted in the creation of in total 712 jobs in the Federal district, creating jobs for on average 6 people per agro-industry. The products produced by the agro-industries were produced and also consumed locally, increasing local financial transactions and revenue (tax) generation.

The farmers improved their capacity and skills to run their own business, apply cost/benefit analysis on their activities, to keep accounts and are plan ahead for the future. With these skills they have better chances of keeping their business running, independent from any programme support.

Financial state support, according to the programme initiators, mounted up a cost of $745 on average per agro-processing unit. These costs were made on cars, technicians, fees, etc, with the farmers paying themselves for the processing facilities

and supplies. When taking into account that about 6 jobs per agroindustry were created, an investment of a bit over $125/job created can be considered to be a very low-cost investment.

Another interesting impact is that the families learned more about sanitation and hygiene, as well as improved production and processing, resulting in cleaner, safer and better quality food. The programme also contributed to reducing rural-urban migration, since farmers were able to produce and live with dignity in the rural and peri-urban areas, without the need to move to the city in search of jobs.

As the programme was seen by other Brazilian districts and neighbouring countries as very successful, and even received the Top 5 prize of the Public Administration and Citizenship Contest, in which 325 programmes competed, up-scaling resulted in a total of 500 small agro-industrial facilities having been built in Brazil and other countries in Latin-America up to 2010.

Sustainability, Opportunities and Challenges

Notwithstanding these successes, the programme proved to be - to a strong degree- dependent on government support, which contributed to the vulnerability of the initiative. The programme was initiated with government support, without a clear exit strategy, since the ruling Workers Party considered at that time that the government always had a role to play in supporting poor and socially excluded farmers. However and as soon as a new government was in place, priorities shifted and the PROVE programme was no longer supported. The Producers Association and ASPROVE NGO showed not to be strong enough as institutional structures to maintain all activities and take on a clear role in providing continued support to the PROVE programme.

As a result, quite a substantial number of small agro-industrial producers stopped operating or continued functioning on a much smaller scale. No clear analysis exist on the reasons for such drop-outs, though it may have to do with farmers being too used to function with government support (and never having being informed on a transition to functioning without support) or families still lacking sufficient entrepreneurial mind-sets to continue working on their own. It is also not known what type of farming families

stopped or continued, and therefore it is hard to draw conclusions on their motivations to act as they did.

It remains a question whether these the services that were previously provided by government to support the marginalised households should be maintained (as they resulted in important job creation), or whether this should be completely left to market mechanisms after a few years.

The creation of an Association of PROVE Producers sought to remedy this dependence on government support, but was either still too young or not strong enough to do so. In theory such association would be able to organise marketing and transportation for the products from the various producers and to continue lobbying with banks, supermarkets and input suppliers. Lessons in this regard can be learned from other cases described further below.

Sources of information

Documents:

Carvalho, J.L.H. de. 2006. The importance of legal and political support, the case of PROVE in Brazil. Urban Agriculture Magazine. nr 16. 2006. RUAF Foundation. www.ruaf.org

Carvalho, J.L.H. de. 2006. PROVE –TRANSFORMATION /PROCESSING OF SMALL-SCALE FAMILY PRODUCTION PROGRAM, BRASILIA. Programme description.

Carvalho, J.L.H. de. 2012. PROVE: degrowing the use of natural resources for food production. IBGE; Instituto Brasileiro de Geografia e Estatística .“Indicadores de Desenvolvimento Sustentável.

Websites: http://www.agriculturaurbana.org.br/RAU/AU5/AU5prove.html.

Key resource person: Joao Luis Homem de Carvalho, Professor PhD, University of Brasília - Brazil, jluizhc@uol.com.br

2.2 Harvest of Hope, Cape Town, South Africa

Characterisation

The Harvest of Hope (HoH) initiative is a vegetable box scheme in Cape Town (South Africa) set up by a local NGO Abalimi Bezekhaya (meaning "Farmers of Home" in Xhosa) as a social business enterprise. Through the promotion of ecological urban farming activities, Abalimi aims to improve income and household food security and indirectly empower disadvantaged households by building their confidence and capacities in farming. Abalimi works in the townships of Khayelitsha, Nyanga and the surrounding Cape Flats areas. Abalimi has been working with urban small scale producers for 28 years to develop their own organic vegetable gardens. Abalimi provides support services such as the supply of low cost bulk compost, seeds, seedlings, marketing and sales support, training and on-site project extension as well as services that ensure monitoring and evaluation, development of local networks and partnerships and building of community organisations.

Initially, Abalimi started working with primarily poor women by engaging them in vegetable production in home and community gardens to supplement their diet and improve household food security. When these producers managed to realise surplus harvest, they started selling 'over the fence' to their neighbours. These producers wanted to enter markets beyond their local community since they did not see their local markets as reliable. However, they lacked the capacity to do so. Abalimi had already been experimenting for 7 years with local neighbourhood marketing and marketing outside the townships to various casual outlets. None of these efforts showed real promise, as risks were too high and returns too low. Abalimi and the vegetable producers started to look for better ways to sell their surplus vegetable production. With the support of external funds and an external business consultant, the idea behind Harvest of Hope was born.

Harvest of Hope (HoH) is essentially a marketing system selling boxes of organically grown, in-season vegetables on a weekly basis, and has the following objectives:

- Provide a sustainable and expandable market for small urban micro-farmers from the townships;

- Use this market as an engine for poverty alleviation, enabling township micro-farmers to have dignified, sustainable livelihoods;
- Give customers access to fresh competitive organic produce with less food miles; and
- Ensure that fresh organically produced food is available year round to the producers, their families, and local communities.

HoH was launched in partnership with South African Institute for Entrepreneurship (SAIE)[2] and the Business place Phillipi[3] funded by the Ackerman Pick n Pay Foundation. Obtained initial investment was used to renovate and upgrade a pack shed, for development of training materials and for Just Think, a business development consultancy firm advising on the design and launch of HoH and training staff. Since 2009, HoH has received further technical and financial support from several organisations and foundations which have been instrumental in building up HoH. From 2008 onwards, HoH has increased from working with 8 producer groups to 18 groups with around 120 producers in 2011. The weekly food box membership has increased from 79 in 2008, to 300 in 2011 to 350 in late 2012. By 2012, the vegetables are produced in approximately 20-25 community gardens.

HoH is a clear example of a social business initiative driven by an NGO combining a social development dimension (community empowerment) with an economic market development dimension. The main stakeholders involved are the vegetable producers (primarily aged women of 60 years and older), Abalimi (NGO), HoH (business and marketing unit of Abalimi), middle class customers, private companies and government officials. The individual producers, organised as producer groups of on average 8 members, sell their products to a social business (HoH). Clear arrangements exist between producers and HoH about type of vegetables, the quantities and the price. Buying prices are set by HoH. HoH transfers monthly payments to the groups' bank account after which the groups share the proceeds among their members and/or use part of the income to invest in the next production cycle.

[2] The *South African Institute for Entrepreneurship* (SAIE) develops materials for educators, trainers and community-based organisations to convey business skills, uncover entrepreneurship qualities and ensure sustainable economic development.

[3] The *Business Place Philippi* offers support and information services for small, medium and micro enterprises. It is designed to encourage entrepreneurship, stimulate local business, keep people in their communities and assist local communities to reduce dependency on the government.

HoH manages the initiative, supporting the producers with training and extension support, provision of (free/subsidised) seeds and fertiliser, takes care of repairs and maintenance of irrigation gear, collecting the products from the gardens, packaging, marketing and selling the products for the producers. Another example of the hands-on support provided by HoH is the development of clear production plans stipulating the type and quantity of crops that need to be produced by the various producer groups. The producer groups also receive training and on-site technical support (including farmer field schools and horizontal learning events).

HoH is staffed by approximately 6-10 people, including one full-time marketing manager and a team of part-time staff consisting of several field workers, a book keeper, packers and drivers. In addition, several Abalimi staff provide technical and managerial support to HoH. All logistics of HoH operations are handled by its staff such as the coordination of producers' production cycle and weekly pick lists, collection the vegetables for transport to the packing shed, packing the vegetables in boxes and delivery to the collection points.

Consumers who have subscribed to the HoH vegetable scheme can collect the vegetable boxes from selected schools, usually upmarket private schools and universities in Cape Town. HoH clearly targets middle class, well-educated and socially responsible consumers. HoH mainly attracts new customers through word of mouth and social media. It also organises weekly garden tours that existing and/or potential consumers can join. There are similar organic vegetable box schemes in Cape Town (such as Wild Organic Foods, Ethical Co-op and SlowFood) but these do not necessarily have the same social community development-oriented and not-for-profit philosophy.

Customers can sign up for 2 types of boxes, a large box (9-12 vegetables) or a small box (6-7 vegetables). Standard vegetables include potatoes, onions, carrots, a salad pack, and sprouts. Other regular vegetables are tomatoes, green peppers, butternut, baby marrows, sweet potatoes, beans, peas, pumpkins, spinach, Swiss chard, and beetroot. Boxes usually also contain more up-market vegetables such as mushroom, cherry tomatoes, red/yellow peppers or asparagus. Vegetables are harvested and picked the same day to ensure freshness and good quality.

Harvest of Hope does not have an official organic certification as the requirements are very strict and take at least 3 years. HoH uses its own organic standards whereby no artificial chemicals, pesticides, herbicides and fertilisers are used during production process. HoH is also involved in setting up a local/regional Participatory Guarantee System (PGS); a local quality assurance system that certifies producers based on active participation of stakeholders built on a foundation of trust, social networks and knowledge exchange. Partners in the PGS set their own standards (using organic certification standards as guidelines, where appropriate) and monitor each other. HoH monitors its producers' farming practices on a regular basis to ensure that they comply with HoH organic standards.

Other stakeholders who play an important role in HoH include:

- Department of Agriculture (DoA): HoH has supported its producers to request support from the DoA in terms of training and infrastructure. DoA has mainly provided 'hard ware' support by supplying fencing, boreholes, well points, containers, tools, irrigation, generally at no charge;
- City of Cape Town: supplied land, equipment and infrastructure to some producer groups/ community gardens;
- Agricultural college: testing of soil and water samples every 6 months; and
- Private companies including a well/borehole installation company (installation and maintenance of boreholes and irrigation), a gardening company (seed donations) and a fertiliser company (donations of organically certified poultry manure).

Over the years, HoH has made the following adjustments to the initial scheme:

- Initially, HoH only offered 1 box size but now also has a smaller box on offer to cater for smaller households. The smaller box has a smaller number of vegetables and is also cheaper;
- Following customers' demand for a more diverse vegetable box by including also fruits, HoH has started planting strawberries and Cape Gooseberries. It is also exploring options to link to other producer groups who may be involved in fruit production;

- Initially, it planned to increased producer group's contribution to the operational costs but in practice it has continued to subsidise a large number of functions, ranging from production support to processing and marketing.
- As the main collection points were primarily schools, there was a significant drop in box sales during the holidays. HoH recognized the needs to identify alternative market outlets/collection points that complement the current school-based collection points so that sales volumes could be sustained at a viable level. HoH has been exploring several options such as targeting more customers without school-going children, afternoon drop off points at corporate offices and pre-paid contracts with restaurants. In 2013, there is now a wider spread of drop off points, including corporate offices, retail shops and schools, which are less important, but still essential[4].

The figure below gives a schematic overview of the main elements of the business model of Harvest of Hope.

[4] See www.harvestofhope.co.za for the latest drop off list.

Schematic overview of business model Harvest of Hope

<table>
<tr>
<td rowspan="2">Key participants
Producer groups, mainly aged women living in town ships;
Harvest of Hope (marketing unit of Abalimi (NGO);
Consumers subscribing to vegetable box scheme;
DoA and private companies</td>
<td>Key activities
Vegetable production, training and advice on organic vegetable production. Processing an packaging
Linking producers directly to consumers through HoH as an intermediary</td>
<td rowspan="2">Value proposition
Organic vegetables produced locally
Packaging in food boxes
Social development
Not-for-profit</td>
<td>Customer relations
Customers collect vegetable boxes from schools.
Opportunities to engage as volunteer and/or join weekly garden tour</td>
<td rowspan="2">Market segments
Middle class, well- educated families mostly with children (collection points are mainly up-market private schools)</td>
</tr>
<tr>
<td>Key resources
Finance, inputs such as seeds and organic fertilisers, hard ware support such as farming equipment, irrigation facilities, technical advice</td>
<td>Marketing channels
Schools and universities
Occasional market outlets at organic shops and super-markets, other NGO social development initiatives</td>
</tr>
<tr>
<td colspan="3">Cost structure
After 5 years, not yet breaking even and partly dependent on external funds and subsidies to pay for coordination, production and marketing support.</td>
<td colspan="2">Revenue sources
Income from sales of vegetables
Donations by bilateral donors and private companies and in kind support by City Council and the Department of Agriculture.</td>
</tr>
</table>

Economic, Social and Ecological Performance

The HoH case seems to score well in terms of economic, social and ecological performance. The producers taking part in HoH benefit as follows:

- *Cheap/free and reliable access to inputs:* Producers who are interested in joining the HoH scheme have to pay a membership fee. The membership fee is based on the size of the market. In return, they get access to inputs such as

seeds/seedlings and fertilisers, access to training and advice and better marketing opportunities through guaranteed quantities sold for good market prices without having to take any direct risks. In principle, producers have to pay the purchasing price for seeds. As HoH is able to buy these in bulk and/or receives seed/seedlings donations, producer groups often benefit from prices below the going market price. The membership also entitles them to fully subsidised organic fertilisers as this input is essential for any commercially oriented vegetable production in the poor sandy soils of the Cape Flats.

- *Guaranteed buyer for their produce:* In advance, HoH agrees with producer groups the type and quantity of vegetables to be produced during certain periods of time. If the groups produce more, HoH will also buy this additional surplus for which it does not always have a ready market. HoH then looks for additional buyers and/or give this extra surplus to other social development and welfare initiatives.
- *Increased income:* The costs/benefits for an individual producer participating in HoH's vegetable scheme varies from group to group. Some garden groups make up to R 3,000 a month (ca. 225 Euro). By early 2013, HoH has generated 160 jobs since 2008 when it was launched; 100 permanent micro-farming jobs and 60 temporary micro-farming jobs, valued at between R500-R1000/m/farmer after deduction of production costs. Around 10 micro-farmers in 3 community garden projects are now earning consistently over R1000 (Euro 75) per month (after costs), which sometimes even goes up to R3000 per month profit. This is being done on plots the size of 300-500m² per micro-farmer.
- *Increased vegetable consumption at household level:* HoH calculates its production plan with a certain margin allowing for crop failure, fluctuation in number of customers and ensuring a surplus production for producers to take home. Therefore, producers will almost always have extra surplus of vegetables to meet their household food consumption needs.
- *Ability to invest in soil improvement:* Through access to free manure and other subsidised organic manure, combined with training and advice on soil fertility management (i.e. free soil samples), producers can invest in soil improvement measures without large capital investments while benefitting from guaranteed market outlets and steady income.
- *Increased social cohesion:* Through working closely together in community gardens, joining regular training sessions, having access to information, and

> increased income, individual members will become more confident in their own capacities and more aware of the importance and benefits of working together. Regular interactions in the community gardens and the community gardens turning into green spaces where other community members can meet and interact, HoH certainly strengthens community development and social interactions.

The consumers benefit through access to locally produced, fresh organic vegetables. It also offers them the opportunity to become involved and more aware of the complexity and the dynamics of vegetable production and marketing involving a social development dimension. There is no explicit information on the ecological benefits but it can be assumed that continuous investments in soil and water management will reduce land degradation and improve water management in general. Further, HoH promotes local production instead of procuring vegetables further away from Cape Town, and indirectly contributes to lowering the carbon footprint.

The available documentation did not highlight any negative benefits and/or outcomes from the HoH initiative. What might be a possible negative outcome is that the complexity of a production scheme required for a vegetable box scheme is likely to exclude the most vulnerable within the community as they are less likely to have the required social and human capital to enable them to join producer groups with better access to land and other inputs. It may evolve into a larger divide between those benefitting from the scheme and those who are left out and/or cannot join.

Another possible negative outcome could be the creation of a dependency attitude. HoH has assumed a pro-active role in this marketing chain with taking and carrying most of the risk and investments whereas the producer groups do not take any risk. It is clear that in initial stages most of the producer group members may have very little to no resources to be able to take any risk. However, by providing quite strong incentives such as access to inputs, advice, land and other infrastructure and providing a ready market, it may attract producers who may drop out when these incentives and external support structure is reduced and/or phased out. However, it is clear that Abalimi, the founding body of HoH, has put the importance of the social development dimension above the economic and financial sustainability perspective.

The main factors that hamper further expansion and/or out-scaling of this short chain initiative seem increased competition of similar vegetable/fruit box schemes, keeping customers and maintaining customers' satisfaction and problems with increasing productivity and overall production. Over the years, several vegetable and fruit box schemes have evolved which operate with commercial smallholders instead of local producer groups. These schemes seem to be better placed to offer a wider variety of vegetables and a mix of fruit with lower costs for logistic operation and technical support to the production management. These schemes tend to have a strong business objective and a more defined focus in terms of roles and functions whereas HoH is directly engaged in all steps of the production, processing and marketing chain.

In terms of customer relations and satisfaction, between 2008 and 2010, HoH lost about a third of its customers (28%) due to dissatisfaction with the quality of the vegetable box scheme including the size of the box (too much/too little), the variety (too much variety vs. too much of the same) and the location for collection. Other less common reasons for dropping out included better prices offered elsewhere, own vegetable garden and the desire to have their own choice on a daily basis as to what vegetables to eat instead of being 'told' what to eat.

Scaling-up the HoH initiatives through having more subscribed vegetable boxes (which is needed to reach breakeven) is primarily constrained by overall production and constraints in increasing productivity, given the difficult agro-ecological conditions such as poor sandy soils. Producers need specific skills to increase the productivity of their plots, i.e. through improved soil and water management and pest management. In addition, only a relatively small proportion of all vegetable producers in the Cape Flats have the ambition and/or the skills to produce vegetables for HoH[5]. The majority of the producers are part-time, aged home gardeners who consider gardening as a complementary activity for their livelihoods. So far, it has proved a real challenge to get younger age groups interested in joining vegetable producer groups.

For HoH to increase production and productivity, significant investments are required in terms of technical, financial and capacity building support to the producers and home gardeners. HoH could also consider following the example of other vegetable schemes

[5] Hoekstra (2010) estimates that only 25% of all producer groups grow vegetables for HoH. When including the large number of gardeners who mainly grow for household consumption, the proportion of producers involved in vegetable production for the markets is much smaller.

in Cape Town by increasing its linkages to other producer groups in peri-urban and urban Cape Town area (whom are trained by the government or other NGOs).

Sustainability, Opportunities and Challenges

The wide range of services provided by HoH to the producer groups are paid for through donations in kind and cash, and incomes from HoH's vegetables sales and two Garden Centres run by Abalimi[6]. Most of the activities of HoH are paid for by income from organic vegetables. Further, the producer groups are expected to increase their contribution towards these operational costs. Their contribution is deducted from their monthly payments, but in 2010 this was not widely applied. In 2013, the producer groups pay fully their seeds, seedlings, electricity (pumping), land rent, labour, and receive subsidised rates for bulk compost, repairs and maintenance.

In 2011, HoH was not yet breaking even, and external donor support was needed to fill the gaps. More customers were yet needed. HoH was breaking even for a few months in 2012, but costs increased, mainly because the producer groups cannot meet the demand fully. As a consequence, HoH has to buy in from outside to fill the boxes, which is more expensive. Early 2013, box sales were between 350-380 boxes per week. HoH intends to achieve a permanent base line of 380 per week from January 2014 onwards, with rapid increase to 600 and beyond thereafter. HoH estimates that once HoH goes beyond 415 boxes it will be making a profit. In addition to focussing on increasing the number of food box memberships, it might be worthwhile to explore opportunities for diversifying its market segments, both within the communities and outside, the more up-market segment. It needs to address also the importance of variety and convenience to consumers in terms of picking up and shopping habits. Other options include offering value added food products such as bottled jam or dried herbs, eggs, bread following a market need assessment (see also Thom and Conradie, 2013).

For Abalimi, the HoH initiative is not purely a commercial business, but a social business. Therefore, it is not all about profit, but also about supporting community development and making sure the producers do not only sell to HoH but also use their

[6] Breaking down these subsidised services to the number of producers was an average of R83–R167 per month per producer, or R3–R6 per producer per day (depending on the number of producers) in 2009 (Hoekstra, 2010).

land for growing vegetables for their household consumption. This combination of community development, not-for-profit, ecological sound and better for human health certainly contributes to creating a strong brand in a niche market. However, it is clear that such a 'two-fold' objective of bringing social with economic development together while focusing on disadvantaged groups will make it even more challenging to achieve financial sustainability. One could question if this is feasible in the first place given the strong competition with other more commercially oriented vegetable schemes within a relative small market segment. As long as the added value of combining such a social development and more equitable poverty reduction can be clearly demonstrated, one could argue that local government should continue to support these kinds of initiatives. Positive is that the City Council has provided land for vegetable farming to some of the producer groups and seem supportive of urban agriculture.

Given the several support functions that HoH provides to the producer groups and vegetable gardens, it remains to be seen how strong the social fabric of such producer groups is and how many of these would be strong/vibrant enough to continue if HoH would phase out and/or reduce levels of support. A similar observation applies to institutional sustainability, it would be better if the DoA would provide extension services instead of HoH taking over part of their role as it has been doing so far. HoH could invest more in convincing DoA to provide such services and/or ensure that linkages exist between producer group and extension services so that they know where to find each other in case they face problems.

All in all, the HoH case clearly shows HoH has been able to grow organically by getting producers slowly on board with Abalimi making significant investments and carrying most of the financial risks. It clearly shows that a long term, process-oriented approach is needed for such social business types of short chains to start, develop and mature before they become financially, socially and institutionally sustainable. It requires significant investments in terms of finance, time, and resources with a clear phased-wise approach where resources invested from external sources gradually become less important until the business is financially sustainable. It certainly needs the commitment from a wider group of actors including the local and national government and the agricultural extension services by building institutional linkages and support. Abalimi needs to think carefully about how to phase out some of its core support

functions to allow HoH and its producer groups to operate more independently and start learning to fly themselves.

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Contact persons:

Rob Small, Bridget Impey, Roland Welte and Damian Conway at info@abalimi.org.za and harvestofhope@abalimi.org.za

2.3 Schaduf Micro-farms on rooftops, Cairo, Egypt

Characterisation

Two brothers, Sherif and Tarek Hosny, established Schaduf as a for-profit company with a social mission in September 2011. They were inspired by the owner of a farm in Louisiana where they were volunteering. The owner did everything he could to support people who lost their homes in the Katrina hurricane and used soil-less agriculture techniques to grow crops. The brothers modified the model to be suitable for smaller scales to fit a farm into someone's back garden or garage. Upon return, the brothers modified the model further to fit on the rooftops of Egypt and formed Schaduf; named after the ancient Egyptian tool that Pharaohs used to lift water from the Nile to water the land. The brothers have no background in agriculture but made up by doing courses, reading and by collaborating with consultants and universities.

Schaduf now supports low income families and individuals to generate additional income by helping them to grow vegetables on their roofs and to market their produce. The target group of Schaduf is young low-skilled people living in underprivileged areas, who typically lack education, training and a strong support system that could help them step out of poverty. The soil-less methodology, Schaduf introduced, is called hydroponic irrigation: vegetables are grown in water (with all the required nutrients in the water) in raised beds off the ground on roof tops. It takes about a week to install the equipment and people can start farming immediately afterwards. Crops that are generally grown are leafy greens such as: arugula, lettuce, parsley, celery, spinach and "mulukhiya" , all without the use of pesticides.

NGOs that have already established relationships with residents in the informal settlements in Cairo and know about peoples' circumstances and economic needs, play a brokering role and screen and select families and/or individuals based on a number of criteria. People need a building with a roof and permission to use that roof. Other requirements are: commitment to work for 2 to 3 hours per day and willingness/ability to take a loan. The average size rooftop garden costs around 8,000 EGP (about USD 1,350) for all required investment and setup costs, including cleaning the roofs and training. The revenues are estimated at USD 130 per month. Some of the NGOs offer micro-loans but in the long-term Schaduf intends to partner with large Micro Finance Institutions that have the capacity to support the micro-rooftop farmers.

Another partner is the Egyptian Ministry of Agriculture because they could provide research, technical and political support. The Ministry has promoted rooftop agriculture for years and thus has a clear interest in helping Schaduf to succeed in its mission.

Schaduf collects the products from the individual farmers and sells it at wholesale markets and some farmers' markets. At present, 10 rooftop gardens are functional and operational and they have had two crop cycles. Lessons are learnt from these first 10 gardens and arising issues were addressed. These issues are unfortunately not mentioned, so it is unclear what these were. People taking part in these first gardens were happily surprised that they could grow lettuce on a rooftop.

With regard to the logistical arrangements, financing modalities and cost structure, there is only little information available, and therefore no further detail can be provided. The fact that Schaduf is a for profit company makes it understandable that they might be less interested in sharing this information, since they would not want this information to get to their (potential) competitors.

The figure below schematically summarizes the business model that has been used by Schaduf, which to some extent can be classified as a franchise-type business model.

Schematic overview of business model Schaduf

<table>
<tr>
<td rowspan="2">Key participants:
Schaduf
Other stakeholders:
-Micro roof-top farmers
-NGOs
-MFI
-Ministry of Agriculture</td>
<td>Key activities:
Provision of services: technical support, quality control, training, and marketing</td>
<td rowspan="2">Value proposition:
Organic production
Poverty reduction by focusing development initiatives on market opportunities and partnerships with private sector;
Target group: young low skilled people and people who cannot leave the neighbourhood (e.g. some women because of social norms, disabled, etc.) living in informal settlements in Cairo</td>
<td>Customer relations:
Schaduf provides continuous supervision and support to beneficiaries (rooftop micro-farmers) and ensures best prices for their produce</td>
<td rowspan="2">Market segments:
End consumers and whole sale markets</td>
</tr>
<tr>
<td>Key resources:
Costs of average rooftop farm is USD 1350 (incl. investment, set up costs, cleaning roofs and training)</td>
<td>Marketing channels:
Whole sale/ local farmers’markets</td>
</tr>
<tr>
<td colspan="3">Cost structure:
No information</td>
<td colspan="2">Revenue sources:
Set up of rooftop micro farm package @1350 USD
Margins from sale of produce?
Other?</td>
</tr>
</table>

Economic, Social and Ecological Performance

The economic, social and ecological performance of Schaduf looks promising, however Schaduf is only active since September 2011, which period is too short to be conclusive on its performance. Economically speaking it remains unclear how Schaduf is financing their support and what part of the average USD 1350 package of rooftop micro-farming flows back to Schaduf and/ or if Schaduf takes a profit margin of the products sold. However, Schaduf provides continuous supervision and customer support and ensures that products are sold for the best available prices according to fair trade standards.

The costs of setting up a micro-rooftop farm are 1350 USD, while the rooftop farmer's income is estimated at USD 130 per month for 2-3 hours work a day. The climate in Cairo is suitable to grow crops throughout the year and Schaduf claims that loans can be repaid from the sale of the crops within one year. The short working hours per day leave possibly room for other potential jobs. The income derived from rooftop micro-farming is therefore considered an additional income.

Socially, each micro-farm is a source of employment, skill-building and income generation for low-income families living in informal settlements in Cairo. The self-grown crops will give families access to fresh, healthy vegetables and thus increase their food and nutrition security. Furthermore, the micro-farms will create jobs for others and people will be trained in business skills, which might help their other endeavours. Ecologically, rooftop micro farming saves land and water, some studies show that a closed system soil-less agriculture consumes one twenty-fifth of the water required in traditional rain-fed agriculture.

Up-scaling is envisioned through the formation of clusters. Each cluster will consist of five closely located micro-roof-top farms, and eventually form mega-clusters of 25 systems. Negative outcomes and impacts are not directly described. A potential pitfall is the dependence of rooftop farmers on Schaduf for their inputs and marketing of products. There is no information available on the costs and benefits to Schaduf and if setting up micro rooftop farms/ selling farmers' produce is profitable to them.

According to Schaduf, the main challenge to further up-scaling and increasing the number of micro roof-top farms is changing mind-sets. People are not used to the idea of growing vegetables on rooftops in a city. It takes time to change minds that this is possible and even generates income.

Sustainability, Opportunities and Challenges

It is too early to make conclusions on the sustainability and viability of this short chain business. However, the chain seems financially viable and commercially interesting for both Shaduf and the rooftop farmers.

Required conditions for further up-scaling are:

- People interested in setting up micro rooftop farms and fulfilling criteria (e.g. available rooftop, permission to use it, willingness and ability to take up a loan, and committed to work 2-3 hours a day).
- Micro-financing Institutes or NGOs providing small loans to interested candidates living in informal settlements.
- NGOs with good relations with residents to broker relations between Schaduf and the people living in informal settlements.

An interesting observation is that available markets are not mentioned as a requirement, even though it seems a requisite that there is enough demand for the products from these roof-top farms. As Schaduf is already talking about increasing the number of participating farms, market demand seems to be sufficient.

It is difficult to recommend changes in approach due to a lack of data on relevant aspects and due to the relative early stage of development of the initiative. Schaduf only started less than 2 years ago, and there are only still working with 10 roof-top gardens. As any business normally takes 3-5 years to be set up, further evaluation is first necessary before any changes can be successfully recommended.

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2.4 Municipal Food security programme, Belo Horizonte, Brazil

Characterisation

Key to the Food Security programme in Belo Horizonte, Brazil, which started in 1993, was the acknowledgement of the government that citizens have a right to food and more importantly that it a public responsibility to guarantee this. A secretariat, consisting of different stakeholder groups representing the citizens, the farmers, the government and others, was formed to set up the programme. The main approach of the programme is to intervene in the market to reduce the prices of certain food items so that they are affordable for lower-income citizens. The local government committed itself to implement the 'right to food' initiative with 2% of its annual budget.

The new mayor, Patrus Ananias - now leader of the federal anti-hunger effort - began by creating a city agency, which included assembling a 20-member council of citizen, labour, business, and church representatives to develop an innovative new food system. This resulted in Belo's food-as-a-right policy. The city agency developed dozens of innovations to assure everyone the right to food, especially by weaving together the interests of farmers and consumers.

Different interventions were developed, all with the view to increase access to healthy food, but in a sustainable way, for the future.

- **School meals provisioning:** school meals were already provided in the majority of schools. However, the big change that took place is that they now prioritised local producers, particularly small farmers, to deliver their products for these school meals.
- **Popular Restaurants**: all social groups are welcome in the different popular restaurants, where nutritious meals are provided at affordable prices (around 50 cents). Again the meals are cooked using products from local farmers, supporting them in increasing their market.
- **The weekly publication of information on average costs of basic household goods:** informing consumers about the difference in price between the various shops and the prices set by the government for certain healthy food items.
- **School and community gardens**: a large part of the programme focused on teaching children how to plant and how to cook.

- **Direct sales from the farm produce stalls:** urban farmers were given prime locations on set days to sell their products. These locations could be used free of charge but the farmers had to commit to sell their products for agreed prices.
- **The Sacalão ABC produce grocers**: entrepreneurs were given good selling locations in covert markets. In return they had to sell 20 products (healthy foods) for a set price. All other products could be sold at any price.

The following actors were involved in the program: urban and rural farmers, citizens, local and national government, grocers / ABC sellers.

- *Urban and rural farmers:* Only small farmers can participate in the programme. The criteria are set by the government. They organise their own logistics to the market place and sell their products directly to the consumers. In 2007, there were 18 small farmers active in the program, compared to 36 in 1999. This drop was because the mayor's office decided to switch some of the sales locations of the farmers, which were less interesting for some of them. Involving more farers is also constrained by the fact that the government requires official receipts and accounts that not all farmers have/are able to produce.
- *Citizens:* The farmers generally characterise their customers as: housewives, hired helps, elderly, professionals, and people on a budget, students, and retired farmers. Those that frequented the stands included a good representation of society from rich to poor depending on the location of the stand. For example, at the stands close to a municipal building and close to major hospitals, the clientele includes government officials and doctors. Besides the buying consumers, school children also benefit from the programme through the school meals. Parents are generally very happy that the school provides this, as they are not able to put a meal on the table themselves. The same counts for the clients of the restaurants.
- *Local and national government:* The local government is involved as facilitator and funder of the programme. The programme falls under the responsibility of the government staff, even though a large number of stakeholders are continuously involved. The local governments also channels national food security and welfare funding to the programme.
- *Grocers / ABC sellers:* Besides the farmer stands entrepreneurs are given the opportunity to sell products in different markets at lower prices, but in prime

> locations. Today there are 34 of such markets where the city determines a set price, about two-thirds of the market price, of about twenty healthy items, mostly from in-state farmers and chosen by the store-owners themselves. Everything else they can sell at market prices. For those entrepreneurs selling on the best spots there is another obligation. They have to drive produce-laden trucks to the poor neighbourhoods outside of the city centre, so everyone can get good produce.

There is very little information concerning the logistical set up. It is clear that farmers have to arrange their own logistics to bring their products to the market. It is also clear that products for school meals and the popular restaurants are bought from the farmers. It is not clear who arranges the logistics for the transportation in this case.

Concerning the cost structure the available literature is not very clear. It is unclear for how much the products are sold and which margin the farmer applies. The price of produce sold in the markets is controlled by the programme. There is a set pricing chart that farmers must abide to, although at certain times when produce is less plentiful available (especially in the wet season), farmers are allowed to set their own prices for certain products.

The programme focuses on partnerships and civil society participation, and has partnered with NGOs, the University of Minas Gerais, philanthropic groups (that run day-cares, nursing homes and community centres), and the private sector.
The farmers involved in the programme must comply with certain criteria, those of being a small farmer. These standards are set by the Empresa de Assistência Técnica e Extensão Rural do Estado de Minas Gerais (EMATER), which is the state rural extension and technical assistance agency. The classification includes a provision on the percentages of sales (80 percent) that come from agricultural production, and a maximum land size of approximately 80 hectares.

The figure below gives a schematic overview of the main elements of the business model of the municipal food security programme in Belo Horizonte. One can speak of a distributor's model but government driven. The distributors are the farmers in this case and the government is partly in the driver's seat due to the fact that it sets the prices

and locations for products to be sold. Furthermore the government also provides the funds for training, the school meals etc. Important here to mention is that the governmental subsidies are not market distorting as they are not product subsidies or provide farmers with funding that otherwise would be taken up by the market.

Schematic overview of business model Belo Horizonte Food security programme

<table>
<tr>
<td rowspan="2">Key participants
Local government
Citizens
ABC grocers
Small farmers</td>
<td>Key activities
School meals with local produce.
Popular restaurants using local produce.
Sales at ABC locations with lower prices.
Sales at prime locations directly by producers.</td>
<td rowspan="2">Value proposition
Facilitating and assuring the right to food for all in Belo Horizonte.</td>
<td>Customer relations
Farmers and grocers are building their own relations with their clients at the different locations.</td>
<td rowspan="2">Market segments
A cross section of the population , though mainly benefiting the poorer segments</td>
</tr>
<tr>
<td>Key resources
Government subsidies
Farmers have to invest in their own business, but in certain cases are government supported</td>
<td>Marketing channels
Schools
Restaurants
Stores
Farmers markets</td>
</tr>
<tr>
<td colspan="2">Cost structure
Government subsidies for the interventions. Set price arrangements are made for the sales at prime locations and ABC locations.</td>
<td colspan="3">Revenue sources
Income from produce is directly for small farmers and grocers. The same counts for the sales they do to restaurants and for the schools meals.</td>
</tr>
</table>

Economic, Social and Ecological Performance

The positive effects of the programme have been documented as follows:

- According to several documents farmers' profits grew, since there was no longer an intermediary taking a part of the profit. As a result poor people also increased access to fresh, healthy food for a reduced price.
- Prospects of involved farmers have improved, which is remarkable considering that, as this programme was implemented, farmers in the country as a whole saw their incomes drop by almost half.
- The programme has also contributed to the agrarian reform movement, as some farmers have occupied land for which they now have been granted a 25 year mortgage. They might not have taken this risk, if the programme was not in place to give them more income security through set sales points, without intermediary salesmen.
- 2 million farmers now have access to credit, 700.000 of these for the first time in their lives. Credit was also an important intervention in the programme, but it is unclear how many Belo Horizonte farmers are part of these 2 million.

Statistics from 2006 demonstrate the great success of the programme in terms of food security and nutrition, since it started in 1993. These are as follows:

- 60 % fewer children are dying, compared to 10 years before
- 25 % fewer people live in poverty
- 75 % fewer children under 5 are hospitalised for malnutrition
- 40 % of the city's population benefit directly from the programme
- 40 % of people in Belo Horizonte report frequent intake of fruit and vegetables; the national average is just 32 %

These figures show that there are some clear positive impacts on the health of poor people in the area, especially children, and the fact that more people continue to eat fruits and vegetables means that these positive impacts will continue to take place.

There are also some minor negative impacts. As mentioned the criteria for small farmer selection were set by EMATER. They were decided upon at bureaucratic level with no possibility for an alternative definition from the farmers themselves. This definition was

not accepted by the participant farmers; yet the farmers did not have the power to ensure changes to the meaning of 'small' farmer, since the municipality had set the standard based on the EMATER definition. This resulted in tension between farmers who feel they truly have 'Roças' (the smallest farm in the programme was under 1 ha) towards those who they feel were unfairly advantaged because they had 'Fazendas' (the largest farm in the program was close to 27 ha).

Finally, for potential expansion certain factors should be taken into account. The success of a farmer depends on the land tenure situation (secure access to land) and not so much on the size of the plot of land. It is therefore very important that this is given a strong focus for new programmes. Secondly, within the current programme, prices within the farmer stands are set by the government, yet some people ask about pricing, and make decisions based on cost.

Sustainability, Opportunities and Challenges

There is insufficient quantitative data available to conclude whether this model is sustainable and economically viable. The government dependence is considerable, but only on those parts that can be expected to be provided for by a public service, such as school meals. The government has really taken up a role of facilitator and has not replaced any market players as such. The farmers and grocers sell their goods in a market context without any product subsidies. It can be concluded that the direct selling of products from stalls and markets will continue even if government funding stops. However, the involvement of the government will remain necessary as they decide on the availability and accessibility of the locations.

An opportunity that exists within this programme is the fact that the upper and middle class can be reached to a larger extent due to the fact that this programme was set up from a pro-poor perspective. It is therefore advisable to look into consumer behaviour of other sections of the population in Belo Horizonte as potential clients. Currently, there is a status attached to shopping at supermarkets rather than farm stands. However, in the global North, organic food is rather popular amongst higher educated and prosperous population sections in large cities. It would be good to also focus project interventions on convincing this clientele to buy from the stands. The image of urban farm food for this needs to be further developed.

A challenge in this programme is the monitoring of the quality of products. Farmers might be tempted to sell their less quality goods for the school meals and restaurants as the prices are lower and the quality is not monitored. In the stands they then sell their best products, as consumers look at what they buy. The government should assure that this monitoring is properly undertaken.

Finally, the dependence on the local government makes this programme rather vulnerable for possible policy changes and budget cuts. It would be advisable to diversify the funding and search for new funding opportunities at the level of the World Food Programme and other comparable donors.

A result that the programme is very proud of is the fact that hunger has been almost eliminated for the cost of less than 10 million USD per year, just 2% of the city's annual budget.

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2.5 Jinghe online membership farm, Beijing, China

Characterisation

In China in recent years a number of serious health scandals amongst urban consumers occurred due to many reported unsafe food incidences. This caused the start and growth of membership farms in the big cities. There are two kinds of models for these membership farms: the community supported farm, and the online farm. In the first model members (customers) usually grow the vegetables themselves according to their own preferences, and they are linked to 1 production base where they buy the supplies directly, without any middle-men. The online farm has a different model, members (customers) can order their package of vegetables online through a website, they use various production bases and distribute products according to order. This is more of a platform or distribution hub, than a farm.

The Jinghe online farm, is such a platform, and the case study is built around this model. There used to be one producer cooperative that was selling products to various customer groups, and the order process was done by phone. Then in 2013 with the support of the local government they developed an online virtual platform that functions as an online market place.

Jinghe online farm platform is run by the Sunlong group. They are in charge of the packaging, distribution and website maintenance, and have 15 employees. The platform is linked to many cooperatives and other producers responsible for delivering the requested products by the consumers. Sunlong is managing communications regarding the demand for the different products from the consumers to the cooperatives and other producers, and is responsible for the distribution of the products to the consumers. Jinghe started with selling only vegetables to their consumers, but is now exploring other products like fruits, meat, eggs, milk, poultry, grain and oil. People can also buy imported fruits and seasonal vegetable through the expanding system. The online tracking systems for each product means that people can track the products from the fields of origin, which ensures that people feel more confident that the quality and safety standards are met.

Jinghe also organises visits for consumers to the food enterprises and farmer cooperatives to give them more information on the process of farming and food production. Consumers, farmers and entrepreneurs can also sit together to discuss the type of products, the quality of the produce and the price that they are interested in and willing to pay.

Jinghe online farm functions like a virtual market place. Consumers can choose on the website which products they would like to buy, as long as they are 'in stock', and Jinghe sends these orders to the producers, who then harvest it, or get it out of their storage and ensure it is sent to Jinghe, who does the packaging in a box and sends it to the customers. People have to order at least 2 days before the products should be delivered, and they can have a delivery 1 or 2 times a week.

The key resources for Jinghe include facilities for storing the products, packaging and transportation means to bring the products to the consumers. Transportation of the boxes to the customers is done by an external logistics company, who is specialised in this service.

Jinghe, and other similar companies, provide good quality products, and ensure transparency for the consumers, so that they feel more secure about the products they consume. Also the fact that customers buy directly from the producers reduces the prices for the consumers. Jinghe now has 4 large client cooperatives that receive additional benefits by buying bulk. The cooperatives are workers unions or institutions, with mostly officials and other middle class people. To date, there are 4 cooperatives involved including Beijing Federation of Trade Unions, Beijing Agricultural Research Center, the IGSNRR, CAS and the Research Office at Beijing CCP commission. These cooperatives are then organised into a Consumer Union who discusses with the producers on what to produce in order to fulfil wishes of the consumers. Jignhe would like to attract more individual customers as well in the near future.

The producers that are working with Jinghe are not only cooperatives, but also include some food companies that provide the wide range of products that consumers are interested in. These include some big food enterprises, such as Beilangzhong, Beijing Grains Group and Yanjing Beer. The cooperatives that Jinghe works with are

Beicaiyuan Mengwu Jingbaili and Mengwu Economic Cooperative. Beicaiyuan is a group comprised of 12 farm cooperatives engaged in vegetable, grains, animal breeding and Chinese herbs. Mengwu Jingbaili is a farmer cooperative with 161 farmer households, and Mengwu Economic Cooperative is a cooperative with 101 employees.

As soon as an order is placed in the online system, the producers decide amongst each other who will deliver which products. Each customer group has a corner where each employee has a mailbox, this is where the boxes with products are delivered by the logistics company. The customer then receives a text message that the box has been delivered to their mailbox, and they can pick it up from there.

The local government has supported the start-up costs of building the website and platform. It is not known how high these costs were. It seems that the costs of the packaging, distribution and maintaining the customer database are covered by the producers collectively. They share the costs and the profit of the various products that are being sold. Details of how this is operated or what kind of internal structure is put into place to manage the online platform are not known. It is clear that there are no guarantees for the producers, Jinghe is only an online market place, and therefore the risk if products do or don't get sold lies with the producers. Still the discussions between producers and consumer unions make sure that products are well adapted to the needs of the consumers and ensures a certain market demand. During these discussions the prices of the products are also determined. As products are organically produced, the prices are higher than in the supermarkets, even though members get a discount price.

Schematic overview of business model Jinghe online farm

<table>
<tr>
<td rowspan="2">Key participants
The various producers that provide all the vegetables.
The logistics company that delivers the boxes to the customers.
The customers cooperatives.</td>
<td>Key activities
Online marketing platform</td>
<td rowspan="2">Value proposition
Fresh, healthy vegetables locally produced and easy to order through the online order system. This means customers can choose the vegetables they want, and decide on once or twice a week delivery.</td>
<td>Customer relations
Customers are talking directly with producers in order to make sure the products that are on offer meet their demands.</td>
<td rowspan="2">Market segments
Large businesses/government organisations whose employees are interested in fresh vegetables. Mostly middle class people.</td>
</tr>
<tr>
<td>Key resources
Online database and website</td>
<td>Marketing channels
Through the website
By the customer cooperatives whose employees buy the products</td>
</tr>
<tr>
<td colspan="3">Cost structure
Start-up costs covered by the government
The producers together cover the costs of the online platform, collection, packaging and distribution costs.</td>
<td colspan="2">Revenue sources
Revenue comes from the sales of the vegetables and other related products through the online system. It is not known whether the income covers the costs, so if the enterprise is making a profit or a loss.</td>
</tr>
</table>

Economic, Social and Ecological Performance

One of the main positive benefits of the Jinghe online farm is that consumers are able to buy and eat organic vegetables with guaranteed quality. They are able to follow the products from the fields up to delivery.

Another benefit is that consumers choose their own vegetables through the internet website, and they can be delivered 1 or 2 times a week to their office. This is not only very convenient (there is no need to go shopping elsewhere), but also unique in the sense that customers choose which vegetables they want to eat that week (in difference to the vegetable boxes supplied by HoH for example).. This shows that the programme is very customer oriented, and makes sure that their customer needs are

met, and therefore will continue to buy products from Jinghe. Reduced customer shopping may have an added positive impact on reduction of consumer food miles (and related emissions).

For the supplying producer cooperatives this system is beneficial since they are directly selling to the customers, without middle-men. This reduces the price of the otherwise expensive organic vegetables. Even though prices are still higher than in the supermarket, they are now more affordable for consumers, and therefore it provides a market for organic products that would otherwise have been more difficult to establish. It is not clear exactly how much farmers earn from the Jinghe online farm, however they have a quite stable customer group because of the cooperatives. And through the interaction with consumers they can ensure the products they grow are attractive to their customers, thereby increasing their sales.

An option to further enhance these positive benefits is to extend the online farm to also include meat, dairy and other organic products in order to offer a wider reach of more healthy products. Jinghe farm is planning to include these products in the course of 2013. Another option is to make the online platform also available for individual customers.

Sustainability, Opportunities and Challenges

Since the Jinghe online farm has only started at the beginning of 2013, it is not possible o draw conclusions on its sustainability. This is further complicated because there is little financial information available.

As mentioned before it is probably important to widen the customer base, as it seems unlikely that Jinghe can be profitable on the longer term with only 4 customer cooperatives.

There is, at the moment, enough support from the government and other public institutions to keep Jinghe going. As they are covering all operational costs themselves, only the set-up of the website was supported by the government, Jinghe seems to be able to function without further government support.

Sources of information

Documents:

Information from Jianming based on a field visit and interview with people at Jinghe online farm.

Website:

Jinghe website at http://www.jhnp365.com

Contact person: Jianming Cai RUAF China, caijm@igsnrr.ac.cn

2.6 Marketing of spring onions by Iraq el Amir Women's Association, Amman, Jordan

Characterisation

In Amman, Jordan, the women's cooperative Iraq el Amir, traditionally working with handicraft activities, a communal kitchen and bed and breakfast, started in 2008 an Urban Producers Organization (UPO) growing fresh green onions in order to diversify and increase their income opportunities. They introduced a new variety of spring onions suited to the local conditions, that do not flower early, have a longer shelf life, have a larger size and are uniformly produced. They are also growing onion seedlings that are being sold to the market at competitive prices, this is to shorten crop cycles and reduce seed losses. They also started to plant and harvest three seasons per year, instead of one or two for local onion variety, which increases the commercial value of the onions in addition to production characteristics mentioned above.

In total 42 farmers and 72 families are involved. Individual farmers undertake the growing and harvesting of the products as well as preparation of the soil and sorting of the onions. The UPO manages the joint packaging and marketing of the onions. There are 7 people employed by the UPO; a director, a treasurer, a secretary, 2 packaging and 2 marketing people, all of them women. They give the farmers guidelines on how to grow the onions, ensure that these guidelines are followed and do the branding and packaging, marketing and selling of the spring onions.

Training has been provided by external support organisations and government extension, resulting in increased capacities on management and marketing as well as on food production techniques. Part of the training was focused on new harvesting and post-harvesting techniques (dry the soil before harvesting, first cleaning in the field, sorting at household level, branding and packaging at the Cooperative level). Other resources needed include a greenhouse for the seedlings, packaging material, marketing materials, a building for the cooperative, account books, onion seedlings and equipment for growing spring onions.

By direct marketing to local markets in the city, middle-men are excluded, thereby increasing the price producers get for their products, and offering at the same time a

competitive price for the consumers. The new variety of spring onions used has a higher commercial value than the variety traditionally grown.

The UPO sells the onions to retail shops (supermarkets) and occasionally on farmers' markets. There is not a lot of information about the logistical organisation of the marketing process.

Relations with customers are maintained through direct contact of the women of the cooperative with their customers. A specifically designed label (highlighting local, safe and solidary production) triggered consumer loyalty and by the end of 2010 practically all supermarkets in Amman were selling the green onions from the UPO.

There are many groups involved in the spring onions business: (1) the farmers producing the onions, (2) the UPO who is responsible for managing, packaging and marketing, (3) training and extension agencies, (4) (inter)national organisations supporting funding, technical support and training, (6) marketing institutions, (7) the Ministry of Trade and Commerce, who provided a free stand at the Friday market, (8) Credit institutions and (9) The Urban Agriculture Bureau of the Municipality of Amman that provided continuous backstopping to the Cooperative for 24 months in capacity building and implementation of the project.

The business model that has been applied by the Iraq el Amir Women's association is a cooperative model. Every farmer who is part of the UPO paid a fee to join the UPO (JD 5 to 10, depending on their capacity), and a monthly fee of JD 1 (Jordanian Dinar where 1 JD= 1 Euro). Besides this the farmers are contributing 30% of their gross revenue from sales as a marketing fee to the UPO. This is split into 2 parts: a variable part goes to a revolving fund, and the rest is used to cover marketing costs. Each farmer also deposits 1% of their sales in a reserve account to encourage saving. The revolving fund is used to cover costs such as: accident insurance, pay bad debts, finance improvement of skills, education and investment opportunities, and to build the fund. Marketing costs include costs for packaging, transportation and commission. Further information on cost-recovery or profitability is however lacking.

The farmer's receive a constant rate of the total profit (70%) and profit the most from a higher price of the produce. There are two types of labour involved in the profit calculation: the labour of the 2 packaging/marketing people, and the UPO administrators (3 people). The packaging/marketing people receive a fixed salary, so the percentage decreases as the price of onions goes up. The UPO administrators receive a fixed percentage of the price, therefore their income increases as the price is higher. When the price is under 1JD per kg, it is unclear whether the UPO is then making a loss, or if the administrators simply receive less salary.

The farmer receives 70% of the total selling price; at a selling price of JD 0.8/kg, the farmer receives JD 0.56/kg whereas at JD1/kg, he/she receives JD0.70/kg and it can reach up to JD 0.84 when the selling price is 1.2JD/kg.

Schematic overview of business model Iraq el Amir Women's association

<table>
<tr>
<td rowspan="2">Key participants
The farming families
Agricultural extension services and support organisations
The local government</td>
<td>Key activities
Packaging, marketing and selling of the onions. Producers are growing the onions.</td>
<td rowspan="2">Value proposition
The UPO is selling a new variety of spring onions, that is of higher quality and can be harvested early in the season. Onions are packaged and labelled and directly sold to consumers</td>
<td>Customer relations
Customer relationships are maintained through regular interaction with the UPO.</td>
<td rowspan="2">Market segments
Customers at supermarkets and the farmers market on Friday.
No information on what type of customer segment.</td>
</tr>
<tr>
<td>Key resources
Packaging facilities, and marketing materials.</td>
<td>Marketing channels
Supermarkets
Friday market</td>
</tr>
<tr>
<td colspan="3">Cost structure
Salaries of the UPO staff.
Packaging material costs, as well as transport, petrol, mobile credit and the rent of the room for packaging.</td>
<td colspan="2">Revenue sources
Sales of the onions.
Contribution of farmers when they join the UPO (5 to 10 JD)
Monthly contribution of the farmers (1 JD)</td>
</tr>
</table>

Economic, Social and Ecological Performance

The main positive benefit of the spring onion cooperative is that it increases the income of the farmers who are growing the onions. Participating households interviewed during an impact monitoring study showed that only 1 households had less income then before the project started, 63 households (80% women) have improved their income with 20% (equivalent of €350/crop cycle, 3 cycles a year).

The improved techniques taught to prepare the land and grow the onions have been applied by 100% of the participating farmers. The UPO stimulates the use of organic fertiliser, and some farmers have adopted this, though many are still using chemical fertiliser.

Member farmers also mentioned that their home supply of food and other requirements has improved. It is unclear whether this is because of the increase in income, or because they are using more onions for their own consumption. Even so, also by the

level of households' expenditures that has risen sharply, it can be concluded that families have more to eat and can more easily meet their other expenditures.

The fact that the UPO consists of women only, in a context where men are usually in charge of agriculture, is also a positive social benefit. The capabilities of women are now strengthened and they are taken seriously by other traders who are mostly men.

Organisational skills of UPO staff have been increased. Additionally the project mobilised trainings from different institutions such as the extension department at the Ministry of Agriculture, therefore the UPO can be seen as a hub that brings in knowledge and expertise for not only the UPO itself, but also for its producers.

There are possibilities to further enhance these positive benefits once the revolving fund of the UPO has grown enough to sustain and expand the business. For example if a harvest would now fail, the current revolving fund may not be sufficient to re-compensate all the farmers. The UPO has however already initiated a second project producing, labelling and marketing goat milk.

It is unclear whether the UPO is currently making a loss, a profit or breaking even. What is known is that with the given fixed costs and the current production level of the farmers, they would be making a loss when they sell the onions at 0,8 JD per kg. As soon as the price increases to 1 JD per kg the UPO seems to be making a profit. The prices at the wholesale market vary according to the season between 1 JD and 2 JD; the lowest price at which the onions will be sold at can be estimated to be 1.35 JD for the onions grown in the open field and 1.5 JD for the onions under tunnel, according to the prices during 2009. If these trends are maintained, the UPO should still be making a profit.

One of the challenges however is increasing competition, with other producers also having shifted to this new variety of onions and applying similar packaging methods. The UPO needs to retain its market niche by further improving, diversifying or consolidating a fixed customer base.

Sustainability, Opportunities and Challenges

Based on the results and impact evaluation, there are some important lessons to be learned:

- It is important to raise the capacity of the women to deal with the "outside" world: experts, marketing, managing contracts and funds, etcetera;
- It is crucial to constantly stress and build business-orientation: everything has a cost and a return; the UPO should stay updated on market price, competition and production costs;
- It is very important to have the participating farmers respect the conditions of timely planting and harvesting in required quantity;
- Building trust between the producer group and the buyers of the produce was crucial: creation of a positive and social image (buy green, local, healthy product), branding, maintain good quality of the product, timely delivery
- Adequate management and control of the revolving fund and the savings scheme are crucial for financial management.

Some considerations for the sustainability of the initiative are the following:

- Improve soil fertility and pest and disease management;
- Ensure proper crop rotation;
- Further expansion of the number of participating farmers;
- Increase the number of buyers and further diversify marketing channels;
- Ensure periodic external management assistance;
- Develop market chains for other products (e.g. goats, fruits and herbs).

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Documents:

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Presentation by S. Tawk. Production and direct marketing of green onions; The experience of the Women Association of Iraq al Amir, Amman

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2.7 Canastas Comunitarias, Riobamba, Ecuador

Characterisation

Canastas Comunitarias is a grass-root movement which strives to make healthy food affordable for low-income city dwellers through community-based groups and direct relationships between consumers and agro-ecological producers. The canastas comunitarias are urban consumer groups formed by neighbourhood ties or linked through churches, clubs or universities. “Canasta” means “basket,” and represents the basic food share that all citizens should have the right to access. This movement was born as a response to urban food insecurity as the national and local government failed consistently to deliver food security measures and forms a social safety net for marginalised populations. All members of a canasta comunitaria (“community basket”) pool funds together to make bulk purchases in the public marketplace, which are then divided among the families in the group, resulting in substantial savings.

The first group was formed in 1987, a church group of 25 families in Riobamba, Ecuador. However, in 1999, the group disbanded for unspecified reasons. In 2000, seven families in Riobamba formed the Canasta Comunitaria Utopía, and their example was followed by many new groups being formed, sometimes spontaneous, sometimes promoted and supported by CSOs and local government representatives. It is not known how many canastas exist in Ecuador. Initially, the canastas comunitarias consisted mainly of urban poor who had an economic incentive to join such a group. Increasingly, also the better off join and/or form canastas motivated by a desire to know more about the origin of their food, the interest in organic products, health concerns and having direct linkages with producers.

A group of people may decide to form a canasta, and everybody has to pay to get a canasta share. The price of a canasta share varies among the canasta comunitaria and depends on the number of participants, number of products, purchasing power of the participants, local market prices and logistical and administrative costs (transport, packing areas, coordination etc). In addition they pay for each canasta a fixed amount (approx.. 8-10 U$), of which a small % is for covering administrative and coordination costs In principle, canastas comunitarias can differ in size, ranging from 15 up to 80 families, although the larger ones are rare as logistics become a serious bottleneck and affect the continuity of these groups. When the canasta become too big, they may

break into smaller sub-canastas and evolve into independent canasta's. After the initial group formation has taken place, the group members agree on key rules for the group. Key functions for food purchases and distribution of canastas are ideally shared by all members on a rotational basis, with a coordination committee appointed for a fixed number of months. In principle, all members are expected to take turns in assuming coordination and/or support roles but the level of commitment and active involvement may vary across members.

Some canastas buy goods bi-weekly and other canastas once a month. Generally, the distribution of these food baskets take place every other weekend, with a smaller group of members/volunteers doing all preparation, planning, collecting the upfront payments, negotiations with producers and/or traders. Depending on the season, prices and availability, the canasta contains up to 15 items every two weeks, including potatoes, onions, tomatoes, carrots, chard, and some fruits. After the volunteers have purchased all items and prepared all canastas, the members come to select their canastas.

In some cases, the canastas develop direct linkages with individual producers and/or groups of producers for delivery of certain crops. These direct linkages are inspired by a wish to understand better the farming realities, ways of production (i.e. reducing the use of pesticides) and by economic reasons. In this way, there is often a win-win situation, the producers receive a better price whereas the canastas benefit from cheaper prices, as there are no margins going to the traders. Urban consumers also start to learn that quality and taste of vegetables and other food crops are not only about appearance but also linked to the various crop varieties production methods used. However, these linkages may not always work well, as the farmers and/or canastas need to take over the roles of the traders, i.e. providing transport and taking responsibilities for risks of fluctuations in quality and quantity of products delivered by the farmers and/or bought by the groups. Examples exist where canastas purposively choose to work with several producers as a way of supporting a broader group of farmers and helping them to improve the quality of their produce by providing them with feedback. Other examples exist where producer groups have been able to enter organic food niche markets thanks to their interactions with a canasta comunitaria.

Over time, the government and several NGOs have become interested in supporting and/or building on the canasta movement. For example, Heifer International provides

core funding to the canasta to pay for staff to take on coordination roles. EkoRural (formerly known as World Neighbours) supports with agricultural development projects to improve production and core funding for supporting canasta and farmer support groups coordination to strengthen the linkages between consumers and producers. SwissAid focuses on seed savings systems, particularly to preserve local seed varieties and seed fairs.

Schematic overview of business model Canastas Comunitarias

<table>
<tr>
<td rowspan="2">Key participants
Local consumers groups
Producers

At times:
NGOs providing support services to producer groups
National umbrella organisations representing canastas</td>
<td>Key activities
Bulk buying and repackaging
Recipes
Awareness raising
Members rotate in taking responsibilities</td>
<td rowspan="2">Value proposition
Bulk buying results in cheaper prices
Consumer awareness on origin of food</td>
<td>Customer relations
Sometimes direct producer – consumer linkages
Generally producer – trader - consumers</td>
<td rowspan="2">Market segments
Mainly the urban poor but increasingly also better off/well educated due to concern about origin and quality of food.</td>
</tr>
<tr>
<td>Key resources
Cash, bags, shed for repackaging, transport</td>
<td>Marketing channels

Generally whole sale markets</td>
</tr>
<tr>
<td colspan="3">Cost structure
Members of canastas buy a share to become a member of a canasta. Pay for each canasta a fixed amount (approx.. 8-10 U$), of which a small % is for covering administrative and coordination costs</td>
<td colspan="2">Revenue sources
N/a</td>
</tr>
</table>

Economic, Social and Ecological Performance

It seems that this form of self-mobilising grass-roots movement with groups forming spontaneously and changing in size, membership and functions as per need and interest of their members has primarily positive benefits for all concerned. It seems also very cost-effective, as the principle idea behind the canasta comunitaria is based on voluntary contribution in kind and cash by its own members. The benefits for members of the canastas comunitarias include:

- *Reduced expenditure on food:* Through bulk-buying, canasta members can save up to 30% on food expenditures. The urban poor can spend less money on a larger diversity of food items. The savings can also be used to cover other household expenses.
- *A more diverse diet and improved nutrition security.* Canastas members get a wider variety of fresh food produces for less money, and rely less on processed food with a lower nutritional value. As canastas members get a food basket once every 2 weeks, they may also eat other vegetable items which were not common to their household diet. Canastas members give each other advice on how to prepare certain food items by sharing recipes. A study by Bekkering (2011) shows that the proportion of the canasta to the household food consumption can vary from 10%-80% depending on the size of the household, its composition and purchasing power.
- *Integrating economic priorities with social-political and agro-ecological concerns:* The majority of the groups prioritises economy over quality of food but it is expected that the experiences of the groups that are moving towards responsible food systems will serve as a learning process for forming direct markets between canastas and producers. Where direct relationships exist, the canastas comunitarias seek to ensure that producers receive fair prices and enjoy a rare degree of market stability. In addition, canastas work with producers to improve product quality and manage competition.
- *Aces to food on credit:* this is not very common, but some groups reserve a percentage of the communal funds for this purpose. Whenever a family cannot pay for its canasta, the family will get a canasta on credit and needs to repay another time. Especially when such canasta comunitaria get bigger, and social connections get less strong among its members, there have been problems with members not paying for the canastas on time with negative consequences for the overall functioning of the canasta comunitaria. Sometimes these communities fall apart and/or form new sub-groups by splitting off and becoming an independent canasta comunitaria.
- *Stronger social bonds among urban consumers:* as the canasta comunitaria are based on the principles of reciprocity, whereby its members assume responsibilities on a rotational basis and work together on a voluntary basis. Through these regular interactions, people get to know each other and have the opportunities to expand their social networks.

In terms of social and institutional performances, the canastas comunitarias are an exciting example where a grass-roots movement has gained momentum by broadening and diversifying its membership basis and developing strong policy influencing activities. Initially, the canastas comunitarias consisted mainly of urban poor who had an economic incentive to join such a group. Increasingly, also the better off join and/or form canastas motivated by a desire to know more about the origin of their food, the interest in agro-ecological produces, health concerns and closer linkages with producers, in particular the indigenous marginalised farmers by offering them opportunities to get a fairer price for their produces.

From localised grass-root based groups, the movement has also expanded and organised itself in a national umbrella organisation called *Red Mar, Tierras y Canastas* (Network of Sea, Land, and Food Baskets). This umbrella organisation has developed strong linkages to the national movement on food sovereignty, whereby the canastas are gaining visibility and providing legitimacy to the national movements for policy influencing as part of the *Colectivo Agroecológico* (Agroecological Collective). For example, the Canastas is taking a prominent role in the *Collectivo's* call for protecting consumer health, smallholder farmer markets and conserving the environment by banning of transgenic crops and seeds. An important spin-off has been the Movimiento de Economia Social y Solidaria del Ecuador (MESSE) which was formed to bring the rural based economies closer to the urban consumer economies by introducing alternative means for exchanges such as barter systems and local currencies.

These movements have had an influence on the 2008 Constitution as priority was given to further development of innovative food sovereignty and economic solidarity policies and a nine-member Intercultural Food Security and Sovereignty board (COPISA) was charged with this responsibility. A representative of the Canasta Comunitaria is part of the COPISA. The Collectivo continues to find new ways to bring issues around food sovereignty to the public and policy makers' attention, such as improving laws around responsible consumption as part of the national campaign on *Come Sano, Seguro y Soberano* (Eat Healthy, Secure and Sovereign). The political environment of Ecuador with a government supportive of its indigenous culture and smallholder farming certainly has contributed to the emergence and gained influence of

several national movements promoting food sovereignty and more sustainable modes of farming.

Sustainability, Opportunities and Challenges

The gained momentum and sustained growth of the canastas comunitarias as a grassroots based urban consumer movement speaks for itself. It clearly offers considerable benefits for its members to join and keep it going. The linkages build to the national level movements will certainly increase its visibility and possibly inspire more people to join. It may also help the government and other key stakeholders to think of opportunities to strengthen these initiatives for example by providing means for producers and consumers to interact. It is encouraging to see that national and international NGOs have found ways to build on and strengthen these movements, e.g. through either organisational capacity building of the canastas comunitarias and the producer groups or through supporting mechanism to improve the agricultural production, including agro-ecological ways of farming.

It is only hoped that these external interventions will build on what is happening already and will not hijack these organic self-supporting processes by providing support and thus possibly creating unsustainable incentives for people to join and become active in the canasta comunitaria movement. These support activities should really remain add-ons but not take over the facilitative dynamics of these movements.

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2.8 Municipal Programme for Urban Agriculture PAU, Rosario, Argentina

Characterisation

In Rosario, the third largest metropolis in Argentina, urban agriculture has been supported since the early nineties through government policies that were introduced under the PAU (Programa de Agricultura Urbana/ Urban Agriculture Programme). This municipal Programme for Urban Agriculture was set up with the support of the local NGO CEPAR (Centro de Estudios de Producciones Agroecológicas (Centre for the Study of Agroecological Production). More recently, urban agriculture activities largely increased as a result of the economic crisis in 2000 and government support to combat poverty and at the same time create more jobs.

This first phase (2002 – 2005) of the programme had the characteristics of emergency response, whereby the objectives were to create social networks amongst those similarly affected by the crisis, to increase income on short term and to provide healthy foods. Unemployed people could sign up with the municipality, work in the gardens for at least 4 hours per day and earn 150 pesos (US$50) per month. The programme started with around 10.000 farmers / gardeners.

The second phase (2005 – 2008) was one of consolidation. A large number of people left the programme, as they found a job in the sectors that were again growing after the crisis (such as the construction business). Others that stayed consolidated their activities, which, in certain cases, they had first seen as a side activity when they had nothing better to do, but now became full time jobs providing for their families. The programme was left with around 200 active gardeners. Up to 2008 it was funded by the government and several donors.

From 2008 onwards, the focus was one of strengthening the activities. Commercialisation and sales channels were the key words. The programme grew from a focus on food cultivation for self-sufficiency to a focus on creating viable commercial channels for gardeners to make an adequate living. Nowadays there are 120 to 150 active gardeners, selling their produce directly to consumers in weekly market fairs; through a food box system and to processing industries.

The gardeners active in the Rosario urban agriculture programme ensure a supply of fresh and ecologically grown fruits and vegetables for the urban market. A reasonably stable production offer (though different products are available at different periods throughout year) has now been established. Quality of produce is checked by laboratories in the city and "accredited" by the local government. A special logo has been developed and consumer confidence in safety and quality of produce has been ensured.

The urban agriculture programme has also supported the development of two agro-processing businesses, one business to package the vegetables and to process fruits and the other to produce organic cosmetics. The gardeners provide the necessary raw products for the agro processing units at lower prices than for the market. Products are sold either directly from the agro-industry or also at the farmers markets (see below).

Next to capacity building activities (on farming techniques, processing, management), the programme focused on supporting and developing different commercial channels for the products:

- **Farmers markets (or fairs)**: in 2003, PAU created seven weekly markets in different parts of Rosario. The programme provides all the market infrastructure and coordinates its transportation from one location to the other if necessary. Gardeners are able to sell their products directly to the consumers. Most of the time, a younger member of the family is sent to the market while the adults work in the garden.
- **Delivery bags of vegetables (bolsones)**: These are brought directly to the consumers on a weekly or monthly basis depending on what the consumer has requested. The 'bolsones' programme is operated largely by the gardeners themselves. Profits from the 'bolsones' programme are shared entirely among the participating gardeners. Approximately 50 bags are delivered weekly, though this number fluctuates based on the weather and the season.
- **Agro industries**: as mentioned above two industries were developed, one for pre-packaged vegetables and the other for cosmetics. At first the gardeners were responsible for both the cultivation and the processing of vegetables but due to lack of time and skills, now the PAU has employs a group of women to work in the agro industry and pays them a salary. Pre-packaged vegetables are

sold at the community markets, the agro industry itself, two small shops, and directly to offices. An average of 40 to 50 food packages are sold each week, earning a profit of about 500 pesos. It is estimated that around 100 packages per person should be sold daily for the employees to receive a decent wage. The gardeners do not share in any of the profit from the pre-packaging unit.

- **Direct sales from the garden or in neighbouring communities**: this is not a commercial channel supported by the programme but has been developed by the gardeners themselves. Literature mentions that a substantial amount of their income comes from the channel, however hard data is not available. Such sales may also benefit the lower-income population that lives close to the gardens.
- **Commercial channels with supermarkets are being established from 2012 onwards** with local supermarkets selling organic garden vegetables and cosmetics.

The programme principally focuses on middle and high income households interested in eating healthy organic food.

Furthermore the programme provided the gardeners with direct infrastructural investments at the level of the farms such as irrigation facilities, materials for harvesting and planting (often mechanical) and logistical support for transporting the products.

Finally, the PAU negotiated the usage of land in urban parks for gardening. These are larger areas of public land, where groups of gardeners are able to work.

In terms of financial resources the municipality contributed 591,827 USD for general costs and 810,008 USD for staff costs as a subsidy to the programme in 2011. The programme itself also raised funds from donors of an amount comparable to that of the municipality. Benefits of such investment are twofold:

- Gardeners can join the programme based on specific criteria, amongst other when they receive a social welfare (unemployment) subsidy. Gardeners that now make an income form the garden are able to get out of this welfare scheme. They have gained self-esteem by now contributing to their own income. In many cases, children of the gardeners have followed the practice and are learning management skills; communication and sales skills that may

benefit them also in search of other jobs. They are possibly also less vulnerable to participating in the rapidly rising drug-trade and youth gangs in Rosario.

- Promoters (government paid extension staff) earn a decent salary (job creation- see also below). Promoters can also earn an accreditation as "gardener" and some have found a job as gardener for richer-off households and have been able to increase their income levels.

The main actors involved in the programme are:

- *Gardeners;* Overall these gardeners are relatively old, with a clear lack of young adults active in the sector and the majority are women. On 30th of August 2011 there were 160 gardeners active in the programme.
- *Municipality (local government);* The municipality is involved through the PAU programme which falls under one of its Secretariats. It provides funding for the programme and has a large role to play in the promotion of the activity nationally. Luckily Rosario maintained a social party in power for the duration of the programme, that strongly promotes these types of activities and gives it stability.
- *Promoters;* The municipality has employed 30 to 40 promoters. Most of them were gardeners in the past, and have been trained to support and build the capacity of the current gardeners.
- *Donors / NGOs;* PAU is a joint effort by the local government – bringing in money, logistic support, and infrastructure and NGOs such as CEPAR and Ñanderoga (two local NGOs). Technical support has been provided by the Schools of Engineering and Architecture at the University of Rosario. Financial support has been granted by international organizations such as UN Habitat, the Spanish NGO ASPA and the Italian NGO ICEI.

The gardeners are currently depending on the municipality as they finance marketing infrastructure; gardening equipment and transport. Several vehicles were bought through the project, with cooling facilities. These are used for transportation of the products from the production units (gardens and agro processing units) to sales points (community markets etc.). Transportation of the market stalls and costs for these materials are currently organised by the municipality as well.

Handing over transportation and logistical organisation to the gardeners is mentioned in the literature, but there is no clear strategy. It remains unclear whether gardeners have to pay anything at all for transportation or whether this is included in the selling price to the consumers.

PAU provides extensive material and technical support to participants. Land is provided rent-free, while training programmes, seeds, equipment, and other inputs are also available at no cost. Gardeners sell their products directly to consumers (via the mentioned commercial channels) and can keep the profits.

Promoters are an important aspect of the institutional arrangements. These promoters train the gardeners, are the link with the programme and the municipality. They identify the needs of the gardeners. Furthermore, the promoters take the lead in sales arrangements, particularly in the case of the agro businesses, where they arrange the procurement of products and the sale of the final products.

Another important aspect for the successful development of the programme and the institutional arrangement was the setting up of a network of gardeners in Rosario, in order to better link the urban producers (learning and exchange), play a “political role” in urban agriculture development in the city and better negotiate rights and other needs of the producers to other stakeholders. Currently, gardeners are organised at two levels: that of the overall producers’ network and at the level of “garden associations”, organized groups for each of the different gardens. At this second level, arrangements are made such as one person selling - on a commission basis - products for the others, or one person representing “their garden” in overall network meetings.

It is hard to talk about a business model, when the initiative is still government-led in terms of operating and financing the action. The gardeners are currently not yet in a position to sustain themselves without any financial support. The land they garden is provided to them rent free, the infrastructural investments are made by the municipality through the programme and the transportation of the products is also organised and provided for through the programme. In this regard, the programme rather has a social outlook than a purely economical one. Nevertheless, at the level of individual producers or the agro-industries business models could be further analysed.

Schematic overview of business model PAU Rosario

<table>
<tr>
<td rowspan="2">Key Participants
Local government
NGOs / donors
Gardeners
Citizens</td>
<td>Key activities
Capacity building of gardeners, technically and in management skills.
Infrastructural improvements at the level of the gardens.
Organisation of farmers markets and delivery bag network to promote sales of products.
Development of agribusinesses.</td>
<td rowspan="2">Value proposition
Development of commercial channels to directly market the products of the urban gardeners.
Ecological production (fresh; good quality; no chemical fertilisers and pesticides)
Produce accredited by government and special logo.</td>
<td>Customer relations
The gardeners and promoters directly develop new customer relations.
Products are sold without middle men directly to consumers at the farmers markets</td>
<td rowspan="2">Market segments
The richer customer segment, as the products are popular with the middle-high wanting to live more ‘green’/ eat ecologically grown produce.
Farmers markets are also specifically located at high end parts of the city.

Produce on the gardens is however also sold to lower –income households living close to the gardens that are located in the poorer neighbourhoods of the city.</td>
</tr>
<tr>
<td>Key resources
Financial inputs come from the donors and the municipality.
Gardeners have hardly done any investments themselves</td>
<td>Marketing channels
Promoters paid by the municipality do a lot of the promotion for the gardeners.
For direct sales, gardeners undertake their own marketing activities.</td>
</tr>
<tr>
<td colspan="3">Cost structure
Municipality and donors have financed all investments so far. Gardeners sell their products to the consumers or to the agribusinesses and get to keep the profits.</td>
<td colspan="2">Revenue sources
Gardeners: Profits from sale.</td>
</tr>
</table>

Economic, Social and Ecological Performance

The main beneficiaries of the PAU are the gardeners and they benefit economically and socially:

- Improved social position: the majority of urban farmers come from the lower social classes in Rosario. Many live in the slum areas and lived on social welfare subsidies. Now they are able to provide for themselves, receive an education and interact with policy makers and high-class customers their self-esteem and social position has improved.
- Improved land ownership: the majority of farmers farmed on land that was not officially assigned to them. In certain cases large landowners rented out the land and as soon as investments were made by the gardens (land improvements), the landowner would take back the land. Through a land survey the PAU was able to identify large amounts of land suitable for long term cultivation. With support from the municipality it was able to negotiate user-right contracts of about ten years. This gives farmers much more stability and encourages greater investment.
- Income and job creation: there is increase in the demand for products over time during the programme's implementation period. Growth of sales on both the farmers markets, in the garden itself (generating 33% of income on sales) as well as in number of delivery bags: fifty registered clients in 2008 compared to 650 in 2011. This resulted in some gardeners making high profits (up to 500-600 Euro/month) and now having a full time job in gardening. Gardeners have also started other than gardening enterprises such as nurseries; sale of ornamental plants and compost that diversity their income sources. A group of youth has started recently started a business in selling ready-made planting boxes to middle and high-class income families for placing on their roofs or balconies.

In terms of ecological benefits, the following benefits can be identified:

- The programme provided solutions for illegal land occupation and urban farmers working the land were able to clear the abandoned pieces of land and the urban parks allocated of weed and debris. Waste areas, where drug-

trafficking and crimes were often sighted, were turned into clean well-managed and aesthetically pleasing landscapes. In addition this motivated the community to clean up other neighbourhood spaces and thus had a positive effect on overall health and hygiene conditions.

- The programme has had a positive effect on the spreading and development of ecological production methods. It collects green waste from markets and green spaces (grass cuttings, tree clipping, leaves) for composting, thus contributing to reducing waste.
- The garden parks are located in poorer neighbourhoods of Rosario where people generally lack access to green spaces. As the gardens are publically accessible, they enhanced access to such green spaces for the general population that often does not have the economic possibilities to visit Rosario's green and recreation zones located in the better -off neighbourhoods and city centre. Such green zones also have a positive impact on the micro-climate and reducing urban temperatures in these areas.
- Several of the garden-parks are located in flood zones. By enhancing rainfall infiltration and reducing the risk of illegal housing/construction (that suffered from regular flood damages), flood risks are reduced.

Next to the main target group and neighbourhoods where the gardens are located, the urban consumers also benefitted from this programme:

- The number of sales points for ecological food products for consumers increased enormously, making this type of healthy food more accessible.
- Also supply of products is a more constant, more variety is available and products are of better quality, due to new production techniques and improved production skills, so that even in the hottest month of January products are still available.

There is not enough information available to make a detailed cost benefit analysis of individual gardens or the agro-industries. However, it might also be argued that government subsidies have had a market distorting effect. As gardeners do not have to pay for land, inputs and transport/marketing costs; price settings and incomes generated do not reflect actual production costs. It is the question how many gardeners will continue growing if they are no longer supported by the government.

Especially in the beginning, when the programme was a clear response to the economic crisis, government support was well justifiable. Still and up-to now, the programme only supports the poor population living on social welfare schemes. Next to social benefits the programme has clear environmental benefits. Nonetheless, exit strategies should be put in place, with for example the producers' network taking over part of the government support roles.

Limiting factors for further up-scaling that can be identified in the literature are:

- Urban agriculture is still seen as a sector that works as a 'cushion' during economic hardship. This makes the sector vulnerable, as seen in diminish number of gardeners, when economic development is more prosperous (many now having found –temporary- employment in the construction industry). It can be argued however that the sector always provides a back fall for poor people and should be supported as such.
- The fact that the majority of gardeners are old also demonstrates the vulnerability and the low interest from the working population. The programme developed a strategy to train and involve younger people with support of the Ministry of Works. Impacts will have to be evaluated in future.
- Urban agriculture, as any agriculture sector, is vulnerable to climate impacts. Framers have in the past several times lost their produce due to hail, heavy rainfall or periods of drought. The setting up of insurance systems (or revolving funds as in the case of Amman) needs to be considered.
- In order to reach scale, production needs to increase. As several of the gardens are still not sufficiently developed in terms of infrastructure and mechanisation, it remains difficult to produce sufficiently to comply with the demand. Further investment could be channelled through a government loan system, or a viable partnership with a micro credit bank.
- There is interest from new gardeners to start gardening in their won neighbourhood. Investments in cleaning and preparing the land are however quite high, restricting the development of new garden parks. Institutional relationships are being explored for example with the new hospital of Rosario to provide such investments and also guarantee a sales channel for part of the produce (hospital kitchens).

Sustainability, Opportunities and Challenges

Looking at longer term sustainability of the initiative, it can be concluded that with the current set up, whereby the gardeners themselves are dependent on subsidies from the project and not being responsible for securing a financial basis for the project, this short chain initiative is not sufficiently resilient for future external shocks. As soon as the government pulls out, or a political change in government composition occurs, the initiative could very well collapse. However, the model does have potential to be financially sustainable. There is high demand for produce, consumer willingness to pay a decent price, and sufficient production potential. The PAU has concluded that gardeners should be able to earn a monthly income of about 200-500 Euros. Whether this covers all production and marketing costs, if farmers have to bear these themselves, is not mentioned.

Institutionally, the municipality and the promoters have to take on a more facilitating role, whereby they support the gardeners to become increasingly financially autonomous. This means that a clear exit strategy needs to be developed, and that also the social organisation of the gardeners ought to be further strengthened. In the long run, administrators of PAU envision this network taking over many of the operations that PAU currently controls. While arguing that there will always be a need for the municipal investment in infrastructure, they wish to significantly transform the role PAU plays in urban agriculture in Rosario in favour of direct decision-making by the gardeners themselves.

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3. Synthesis of lessons learned from the cases

The development of Urban and Peri-urban Agriculture (UPA) and short food chains is increasingly seen as an important part of sustainable and resilient urban development by local governments in the Global South. Examples of this include cities like Rosario (Argentina), Belo Horizonte and Brasilia (Brazil). Their food policies often integrate a range of different policy domains and objectives and cover both the production, distribution and consumption aspects of city region's food systems. The fore-mentioned trend is also expressed by the 2013 Mayors Declaration recently adopted at the ICLEI Resilient Cities Congress in Bonn (2 June 2013):

> "*We call on local governments to develop and implement a holistic approach for developing city-region food systems that ensure food security, contribute to poverty eradication, protect and enhance local biodiversity and that are integrated in development plans that strengthen urban resilience and adaptation.*"

The cited examples are primarily driven by social support and development motives and are still clearly government-led initiatives.

These and other cases treated in this report, which on their turn are more clearly driven by market parties (Shaduf in Egypt, Jinghe farm in China) or civil society organisations (Harvest of Hope in Cape Town), make clear that there is a considerable body of experiences with short chain provisioning of food in the context of urban and peri-urban agriculture in the global South from which important lessons can be drawn for similar initiatives in the global North. In this chapter a number of such lessons will be described: (3.1) institutional arrangements and governance models; (3.2) business models, and (3.3) food security and logistical infrastructures.

3.1 Institutional arrangements and governance models

Striking the right balance between government, civil society and private sector

- The development of short food chains and socio-economic networks surrounding these are to a different degree driven by initiatives of market parties (including producers), government agencies and civil society. An

analysis of the role and relative weight of different food governance mechanisms based on market governance, public governance and civil society organisation therefore appears to be an important tool to analyse success factors. Generally initiatives which build on a well-balanced and complementary mix of governance (public, market and civic) mechanisms by means of public-private partnerships, multi-stakeholder platforms and an increased role for Small & Medium Enterprises (SMEs) appear to be relatively successful and more resilient on longer term.

- Within such institutional arrangements and governance models, different parties from public administration, civil society and market all have their specific role to play. For example in the case of PROVE (Brazil) the government supported the initiative by adapting legal frameworks that made it easier for the entrepreneurs to run their business. At the same time market parties played their part by providing loans to get these entrepreneurs started with the processing facilities they needed. The civil society played an important role in starting this initiative and mobilising different stakeholders to play a role in training and supporting the entrepreneurs.
- Government support seems key in the start–up phases (even in the case of Jinghe farm where initial website development was financed by the government) and in cases where social support to poorer/vulnerable groups is a main objective. In the latter case, investments in job creation have to be compared to investments made in other sectors (costs of creating one job) to be able to evaluate costs and impacts of a short food chain versus another government programme. The case of PROVE seems that indicate that costs/job created were considered to be lower than generating jobs in other sectors.
- Nevertheless, there is not always a clear-cut line where government support ends and what it should entail. In the case of Rosario and PROVE the government for example played/plays role in the logistics of getting products to the market. In Belo Horizonte on the other hand, transport seems to be organised and paid for by the producers, even though the programme has similar social aims as the former two programmes mentioned. In the Belo Horizonte case the government rather takes on a role in indirectly facilitating market initiatives by providing good market locations, publicity, guaranteeing product qualities, and setting price levels for certain products, but it does not take on actual transaction and business activities themselves. The question

remains to what extent such functions could be best taken on by private actors (including the farmers themselves; or as in the case of Shaduf by the intermediary enterprise or as in China by a logistic company) and to what extent this influences the sustainability of the system.

- The situation can also be reversed where an NGO or a market party takes on responsibilities that otherwise could be organised by public authorities. For example in the case of Harvest of Hope (South Africa) the NGO initiative provides agricultural extension services to the producers that are working with them, while it might be argued that the government (Ministry of Agriculture) could take on this role more permanently (requiring that urban producers are recognised as "farmers" and that extension systems/technologies are adapted to their circumstances. In cases where a temporary project takes over certain market functions, initiatives may well collapse when the project(funding) is withdrawn. When government services would take up this activity, this could at the same time bring down the costs for HoH and make it easier for the initiative to financially break even. For this purpose, multi-stakeholder networks can be mobilised and created to ensure that tasks are distributed through institutional arrangements with both government and market parties, thus improving the sustainability and viability of the project.

Strengthening networks at city-region level

- The development of UPA and short food chains involves the (re-)creation and strengthening of networks and linkages at city-regional level, many of which have been broken in earlier processes of globalisation and concentration processes in mainstream food provisioning systems. Relevant networks and linkages include amongst others those between food producers and consumers, (re-)localized processing and distribution systems, market and non-market functions and actors of UPA, etc.
- In different cases previously existing social networks are mentioned as an important factor for the success of initiatives (for example Canastas Comunitarias, Ecuador). In other cases, producer networks (like in Amman, China, Rosario) and consumer networks (green consumers in Rosario; consumer cooperatives in China) play an important role in success and impacts by creating economies of scale; generating a more stable product demand and playing a role in decision-making processes.

Defining a clear exit strategy for government intervention

- Especially in the case of government support there is a danger of a too strong, one-sided, dependence on external funding and policy support, which can make urban agriculture and food provisioning initiatives excessively vulnerable for e.g. government change or imposed budget cuts. It is therefore important that policy support is well-defined and focused, policy implementation activities to the extent possible are taken over by market-based organisation forms (in a gradual phasing-out strategy), and that a clear exit-strategy for externally funded policy support is formulated. This all keeping in mind that certain government support functions (e.g. food security of vulnerable social categories) correspond to the core activities of public administrations and never can be fully transferred to markets. Social aims are than a priority and cannot be replaced by market goals.
- Specific support activities for which often a role for governments appears to be required as incubator and facilitator in the setting-up of urban agriculture and food provisioning initiatives with a focus on social needs include the following:
  - Support to disadvantaged groups to get them involved and started on a business or other livelihood enhancing activities.
  - Legislation on hygiene and quality of products.
  - Access to land or infrastructure.
  - Creating awareness about healthy food (mobilising consumer demand).
  - Facilitating credit mechanisms and financial support.
  - Using public demand by means of procurement mechanisms to develop markets for local or organic produce.
  - With respect to active government involvement in the actual operation of supply chain activities, rather an approach to increasing (institutional) capacity of market parties to take up these activities would be more sustainable on the long run than taking over market functions themselves. .

Bussiness mind-set

- When working with vulnerable groups of people, social goals may conflict with creating a business mind-set among the target group. Farmers used to receiving support (as in the case of Harvest of Hope, Brasilia and Rosario) may

not be able or willing to continue working –even if the activity seems quite profitable as in the case of Rosario- if such external support mechanisms are halted. Selecting beneficiaries with a right business mind-set and increasing their business and managerial capacities and skills is crucial when making the transfer to self-sustaining businesses.

- However , so-called intermediary enterprises, like Harvest of Hope or Shaduf may play such “business role”, functioning themselves as a business and breaking even/making profit , while supporting specific social groups of beneficiaries that deliver products to the business. It would be interesting to evaluate the functioning of Shaduf and HoH in a couple of years’ time to see if the social (at the level of the beneficiaries) and economic rationale (at the level of the intermediate enterprise) are well working together. To a certain extent, Jinghe also play such intermediary role; although with less of a social aim than the other two.

3.2 Business models for short food supply chains

- Among the illustrated cases, different types of enterprises and corresponding business models can be distinguished. These range from SMEs or producer groups that themselves take up short-chain marketing initiatives (for example Spring onions, Amman), to intermediary SMEs which assist farmers in marketing and training activities (for example Harvest of Hope, Cape Town) or roll-out franchise type of production and marketing concepts (for example Schaduf, Cairo) to mainly government-driven food delivery chains (e.g. Rosario, Argentina and Belo Horizonte, Brazil). Also objectives of such different business models are different ranging from revenue generation or profit maximisation, to social enterprises with wider objectives aiming at recovery of organization costs and job and income creation for involved beneficiaries.
- There is evidence from the cases that the suitability and success of these different models partly depends on the type and characteristics of involved farmers: lower education/entrepreneurial skills may require an intermediary, while ensuring food and income for the poorest social group may require a government support programme.
- Short food supply chains (SFSCs) appear to be an important and promising approach to generate socio-economic tissue and income streams supporting

urban and peri-urban agriculture. As such SFSCs are an important institutional mechanism for the building of regionalised urban food systems, especially when they often are crucial in developing markets for local / organic food where these did not yet exist or to generate better price margins by excluding intermediaries or valorising distinctive product qualities (for example case Spring Onions, Amman and Canastas Comunitarias, Riobamba).

Supporting activities for business models

- Supporting business models for SFSCs involves various types of policy, financial and technical support:
  - Improving (market) infrastructure, capacity strengthening (technical, management, business and financial skills) and extension (for example case Rosario, Belo Horizonte, Schaduf).
  - Strengthening producer organisations and networking among producer organisations (for example case Amman, Rosario, PROVE).
  - Promoting value-chain development in urban agriculture and direct producer-consumer marketing, localising food hubs (for example PROVE, Belo Horizonte).
  - Increasing producers' access to financing, including taking the lead in or guaranteeing investments in processing/marketing facilities that are too risky for individual or collective initiatives of entrepreneurs (for example cases PROVE, Brasilia, Harvest of Hope, Shaduf).
  - Provide access to public land (for example Rosario) or generate funds and/or credits to obtaining more secure access to land.
  - Transportation of products to markets.
  - Setting up producer associations to take over some coordination and lobbying role after the producers are no longer supported by NGOs or governments.

(Re-) defining profitability and economic viability

- When analysing traditional business activities, often profitability is considered as the main objective – implying that a surplus of revenues after deduction of costs and investments is generated to be paid out to the owner or shareholders of the involved business enterprise. However, in the practice of short-chain

related initiatives it turns out that there are other forms of business that not necessary make a profit, but still can be economically viable. An example are social enterprises which have a social goal, and therefore do not necessarily need to make a profit, but rather aim to cover their own costs and break even. Potential surplus is reserved for future investments, and not retained as profit. Another example are government support programmes where investment is made in order to create jobs for socially excluded or vulnerable groups of the population.

- Most of the cases analysed in this study are not (yet) profitable in the traditional business sense, with maybe the exception of Jinghe farm. This is certainly the case for younger initiatives, but also for initiatives which are already in a more mature stage. In some of these cases, rather than profitability in a traditional business sense, cost recovery can be considered as the financial business objective (current example of Harvest of Hope). However at the level of individual enterprises (for example individual agro-industries in PROVE), or even at group level (creating financial reserves for the future; expanding to new business opportunities like goats such as on Amman), activities are profitable and carried on –also when external support ended.
- Further identification and analysis of short food chain enterprises in the Global South would be necessary to be able to make statements on the real potential of short food chains to be profitable (in the traditional sense of the word) –over time-. It may well be that short food chains are still a recent development in the Global South and so-far have mainly been geared by more social, societal and developmental aims, which may include functions such as providing employment for producers/farmers or selling clean/healthy vegetables to urban consumers, thereby combating food insecurity or increasing social cohesion.
- Many cases and business analysis do not take all costs into consideration. Often repair costs, maintenance, transport and funding for growth; insurance or risks are not included in the financial planning. Another issue in relation to economic viability and profitability is that often there is very little information available or accessible on the costs, benefits and economic margins realized by initiatives. This can be both for reason of real lack of data available, while in other cases the information is available but restricted because it is seen as market-sensitive information. In either case, is it an important research gap and

a bottle-neck for the further analysis and development of business models for urban agriculture-based short chain enterprises.

Scale, quality and marketing requirements

- Access of local food initiatives to mainstream food trading and distribution systems in many cases are restricted due to scale and quality requirements. Consumers pose quality requirements as do supermarkets (demanding a certain quality, quantity, timely delivery) and public administrations (hygiene regulations, etc.). It can be argued that there is a double scale problem: on the one hand the scale of input supply and supermarket logistics is restrictive in terms of volume of produce needed and integration in globalised commercial logistic structures which are not accessible to local individual and groups of producers. On the other hand, the scale of production/supply of short chain initiatives is often still too small, in such a way that they do not reach economies of scale and/or do not have sufficient resources to do large investments. Innovative solutions have been developed by the PROVE programme (agro industries supply counter; setting up of producers kiosks for joint sale at supermarkets; creation of a joint logo) that can serve as inspiration to other new initiatives. Another innovative example is the Jinghe farm that pools producers and consumers together (cooperatives) and so links demand and supply at larger scales.
- Reaching scale through market-diversification also seems an important success factor. Marketing channels may vary from farmer markets; institutional arrangements; consumer food boxes and supermarket sales. Stable linkages to consumer groups (the green consumers association in Rosario; the consumer cooperatives in China) also play an important role in sustaining the business.
- The different cases indicate that in general there is a considerable demand for the food products produced in urban and peri-urban settings and rather that often demand is exceeding production Urban consumers appear to be increasingly interested in urban, locally produced food and this generates demand. The case experiences indicate that there are different types of market demand for short chain urban food producing initiatives. Several of the initiatives specifically aim to reach middle and higher-class consumers in view of their economic buying power (Rosario, Cape Town). On the other hand, there

are initiatives which mainly focus on marketing to poorer groups often in combination with social aims in terms of improving food security (e.g Belo Horizonte, Canastas Comunitarias). The question remains to which extent this influences business profitability for individual farmers or enterprises.

- Especially for reaching more well-off consumers it is important that the product quality is guaranteed and standardised and that attention is paid to the presentation of products (branding, packaging, barcode, etc.). In several cases product logos (Amman, Rosario, PROVE) played an important role in creating customer confidence. Government accreditation (Rosario, Brasilia), participatory guarantee schemes (Cape Town) or rather proximity and the building of strong community networks and direct contacts between producers and consumers are instrumental for the articulation of market demand and consumer control over production (for example Canastas Comunitarias, Riobamba). Also the possibility of making farm visits, or to buy directly from the farm, may strengthen the bond between producers and consumers and effectively increase sales volumes and prices (for example Rosario; Jinghe online farm, China).
- Customer convenience plays another important role in generating demand. Jinghe serves as an example of new and innovative forms of online marketing, often targeting more well-off consumers with internet access and sometimes in combination with home delivery.

3.3 Food security and logistical infrastructures

- One of the most positive outcomes of the short food supply chains is that the quality of (and control over) the products has increased, making more healthy food available for urban consumers.
- Many short food supply chains are still primarily concerned with fresh foods (vegetables, fruits, eggs, exceptionally dairy) and often also focus on a limited number of products. A important question remains how short food chains can expand their niche in an urban food retail system that includes also more diversified product offers, including transformed, prepared, and conserved products, a market that is increasingly dominated by large transnational processing companies and retail chains.

- For this, the development of logistical infrastructures (‘food hubs’) appears to be of key importance. Generally the aggregation of products from different producers in a diversified ‘basket’ of products and the creation of synergies between different types of short marketing channels and outlets turn out to be important success factors for short food chain, as is shown by the cases of Jinghe (China) and Belo Horizonte (Brazil). There is a clear role for innovative SMEs here, which not necessarily only include private initiatives but may also cover social enterprises (for example case Harvest of Hope, South Africa) or government-initiated agro-industries or farmers markets (Rosario).

Annex 1 List of short food supply chain cases

a. Organic vegetables, Bangalore, India

Name Marketing organic vegetables: a balancing act
Location *Country:* India *Region:* Karnataka *City:* Bangalore
Main thematic area: Short supply chain, namely: Sales to a member organization (CoCo)
Short summary: AME (Foundation working on sustainable agriculture in dry lands) started an initiative with organic methods of vegetable cultivation. This was triggered by discussions on recycling organic waste in the city of Bangalore, in southern India. They started a partnership with two other NGOs to help farmers grow and sell their organic vegetables. A lot of difficulties with producing stable quantities of vegetables and getting enough customers to make it profitable were encountered and resulted in the end of the initiative.
Dynamics and scale: *Stage of development*: no longer functioning *Timeline:* 1996 – 1998 *Scale level of initiative*: City *Link to wider city development*: links to city waste management
Relevant networks and organization: *Stakeholders involved*: AME (main implementer), ACTS Ministries, NGOs marketing organic products : CoCo and ICRA, individual customers. *Principally driven by state, civil society, market parties*: Civil society *Type of organization / business model*: Bussiness cooperative
Type of products / services: *Agricultural / food products*: Organic vegetables
Sources and availability of information: *Documents/reports (titles, refs.)*: Leisa Magazine, volume 14, issue 4 – Growing green and trading fair, Marketing organic vegetables: a balancing act (1998) *Websites*: http://amefound.org/ *Contact persons (name, email)*: Mans Lanting, Chitra Suresh and Dilip Chinnakonda, amebang@giasbg01.vsnl.net.in, amefbang@amefound.org. *Overall assessment of quality of available data: (poor, sufficient, excellent)*: Poor **Availability of data on achievements and impacts (Y/N):** production / no. of people involved, economic (regional and internal), social, environmental: No for all aspects.
Evaluation: *First assessment if case is interesting*: Even though not a success, it contains lessons on potential failures relevant for other projects.

b. Scaling up chickens, Ouagadougou, Burkina Faso

Name: Scaling up chickens and goats to increase income levels
Location *Country*: Burkina Faso *Region:* *City:* Ouagadougou
Main thematic area: Short supply chain, namely: sale of chickens and goats on farmers market Synergies with other thematic area, namely: N.A.
Short summary: Households are supported with chickens, goats and vegetables in order to raise income for their families. Once they have received a few chickens, goats and/or vegetables, and have been able to increase their stock, they give some of the young chickens and goats and vegetable seeds to another household who wants to join the project. Once a larger group of farmers became involved in the project, they build a market place to sell their products together. This market is located about 25 kilometre from Ouagadougou and takes place every three days, like a traditional market. They have also organised a chicken festival during the holidays and a farmer award for applying the best practices learned by ASUDEC.
Dynamics and scale: *Stage of development*: Established *Timeline*: 2002 – ? *In case of programme / project*: Unknown (likely on-going)
Relevant networks and organization: *Stakeholders involved*: Heifer NL, Africa's Sustainable Development Council (ASUDEC), Peri-urban farmers. *Principally driven by state, civil society, market parties*: Civil society *Type of organization / business model*: Individual production, associative marketing
Type of products / services: *Agricultural / food products*: Chickens, goats and vegetables
Sources and availability of information: *Documents/reports (titles, refs.):* Project description available *Websites*: website of ASUDEC: www.asudec.org, *Blogs*: http://blogs.worldwatch.org/nourishingtheplanet/transitioning-from-subsistence-to-entrepreneurship/ http://blogs.worldwatch.org/nourishingtheplanet/asudec-helping-farmers-to-improve-their-incomes-and-become-leaders/. *Contact persons (name, email)*: Salibo Some, Director of ASUDEC, info@asudec.org. *Overall assessment of quality of available data:* Poor *Why is the case relevant / innovative?* It illustrates how a simple project design can reach a large scale with only small investment.

c. Street food vendors, West Africa

Name: Street food vendors in West-Africa
Location *Country:* Mali, Ghana, Ivory Coast and Sierra Leone *City:* Bamako, Abidjan, Freetown, Accra
Main thematic area: Short supply chain, namely: Sale of urban fresh vegetables and other food, home-cooked, sold directly to consumers without a middlemen.
Short summary: Street food vendors are mostly women. They buy vegetables and other products from the local markets, then transform, prepare and sell the products themselves. They are usually supported by female family members. Most of the women use the profits from selling the street food for financing household expenses like clothing, health and child education. The initial investment for street food vendors ranges between almost $240 to $263, but this does vary according to the kind of street food they would like to sell. With $50 they can already start selling bread condiments, whereas for fruit juice sellers they need refrigerators and freezers which can add up to $2500. Vendors –as working informally- can be easily displaced, this negatively affects their business, as they cannot stay in the same location for long and therefore it is difficult to keep regular customers.
Dynamics and scale: *Stage of development:* Established *Timeline:* Ongoing *In case of programme / project*: N/A
Relevant networks and organization: *Stakeholders involved:* Street food vendors, local markets *Principally driven by state, civil society, market parties:* Market parties *Type of organization / business model:* Family business, mostly women (transforms, prepares and sells products)
Type of products / services: *Agricultural / food products:* Fresh food (meat, small meals, fresh juice, etc)
Sources and availability of information: *Documents/reports (titles, refs.):* STREET FOOD VENDING IN WEST AFRICAN CITIES; Potential and challenges, 2012, FAO Regional Office for Africa *Websites:* www.fao.org/africa http://www.streetfoodglobalnetwork.net/ *Contact persons (name, email):* Giorgia F. Nicolo', giorgia.nicolo@fao.org, Mohamed Ag Bendech, mohamed.agbendech@fao.org. *Overall assessment of quality of available data for this study :* Poor, since it mostly focuses on general aspects of street food vendors, not 1 specific case.

d. Organic mushrooms, Huairou, China

Name: Diversifying into Organic Mushrooms
Location *Country:* China *City:* Huairou (peri-urban village of Beijing)
Main thematic area: Short supply chain, namely: (peri)-urban organic mushroom growing, cooperative structure, marketing support through marketing cooperative
Short summary: When an existing vegetable cooperative decided to start growing organic mushrooms, they received support from the Agricultural university of Beijing. The university provided training and the first seeds to get the production started. It has now scaled up in such a way that there are three clusters where the mushrooms are grown. The cooperative trained the producers, and sells the input (bars/mushroom seeds) and buys the produce (through a type of contract farming/outgrowing system). They also linked up with a marketing cooperative to sell the mushrooms to supermarkets, and the products of lesser quality are sold locally. There are still some challenges that need to be addressed, these are quality management and quality control.
Dynamics and scale: *Stage of development:* Incipient *Timeline:* 2009 - 2010 *In case of programme / project*: Unclear whether it is still on-going or not
Relevant networks and organization: *Stakeholders involved:* Beijing Agricultural Bureau, Huairou Vegetables Cooperative, Agricultural University of Beijing, Marketing Cooperative *Principally driven by state, civil society, market parties:* Cooperative *Type of organization / business model:* Cooperative (buys and sells)
Type of products / services: *Agricultural / food products:* Organic mushrooms
Sources and availability of information: *Documents/reports (titles, refs.):* Strengthening Urban farmer organizations and their marketing capacities: The RUAF 'From Seed to Table' programme. H. De Zeeuw. 2010. UA Magazine, issue 24. *Websites:* only a website of a Chinese partner, but this is in Chinese. *Contact persons (name, email):* Jianming Cai RUAF China *Overall assessment of quality of available data:* (poor, sufficient, excellent): Poor; Interesting cooperation between 2 cooperatives: vegetable cooperative and marketing cooperative.

e. Innovative vegetables production, Accra, Ghana

Name: Innovative vegetable production in Accra, Ghana
Location *Country:* Ghana *City:* Accra
Main thematic area: Short supply chain, namely: Individual production of lettuce and amaranth,joint sales; producer organisation managing the business.
Short summary: Various producer organisations were involved in the project. They are now organized in such a way that each farmer sells their own products to market women who usually come to their plots of land to buy some vegetables or the harvest of a complete field. Training on technical issues and business plan development as well as strengthening the internal organization of the producer organisations was done.
Dynamics and scale: *Stage of development:* Established *Timeline:* 2009 - ongoing
Relevant networks and organization: *Stakeholders involved:* Urban producer organizations (3 in Accra, and 1 in Ibadan), UPFS, Department of Cooperatives in Accra and Ministry of Commerce and Cooperatives in Ibadan, MFCS Limited, a development NGO, International Water Management Institute-RUAF. *Principally driven by state, civil society, market parties:* Civil society *Type of organization / business model:* Farmers produce and sell themselves, but are organized through a UPO.
Type of products / services: *Agricultural / food products:* Lettuce and Amaranth
Sources and availability of information: *Documents/reports (titles, refs.):* Strengthening Urban Producers Organisations for Innovative Vegetable Production and Marketing in Accra and Ibadan, Paper for RUAF From Seed to Table Publication. Business plan for the three UPOs in Accra, 2009. Impact monitoring report, 2011. *Contact persons (name, email):* Larbi, T. O. Cofie, O.; Amoah, P. *Overall assessment of quality of available data:* Sufficient.

f. Sales of assorted vegetables, Freetown, Sierra Leone

Name: Sales of fresh, clean packaged assorted vegetables
Location *Country:* Sierra Leone *City:* Freetown
Main thematic area: Short supply chain, namely: Production, processing, packaging and marketing of assorted vegetables in nice bags. Sales through offices.
Short summary: About 80 producers in the mountains around Freetown are organised through an association in order to jointly paclage and sell their products. By improving their production techniques, and by using better quality seeds, they are able to produce higher quality vegetables. Farmers bring their products to the processing centre (managed by the Association) where they are sorted, packaged and delivered to the customers. These customers are mostly UN offices. The association would like to diversify into other offices and businesses like hotels, restaurants, supermarkets and other offices. Marketing people from the association go to customers to take their order, and customers can also using mobile texting to place orders. Farmers pay a registration fee and a monthly fee and the Association keeps 10% of their sales as a saving mechanism, that is paid to the farmers after 6 months to stimulate saving.
Dynamics and scale: *Stage of development:* Established *Timeline:* 2009 – 2011 (ongoing?)
Relevant networks and organization: *Stakeholders involved:* COOPI, Mountain Farmers Association (MoFA), Milla group (makes the bags), Print point (Print company), Seed tech international (dealer in seeds). *Principally driven by state, civil society, market parties:* Civil society *Type of organization / business model:* Farmers produce and the association organizes the rest: Packaging, transport, marketing) selling to staff at UN offices mostly
Type of products / services: *Agricultural / food products:* Assorted vegetable such as lettuce, carrot, cabbage, parsley, spring onions, Mint, cucumber, runner beans, egg plant, tomato, coriander, and radish.
Sources and availability of information: *Documents/reports (titles, refs.):* Business plan by MoFA. Date unknown. Impact monitoring report on MoFA and PATCOBAMA. M. Serena. 2011. *Websites:* http://awoko.org/2011/11/04/coopi-intends-to-kick-poverty-from-mountain-farmers/. *Contact persons (name, email):* Umaru Saffa, Chairman of the association. *Overall assessment of quality of available data:* Sufficient, the business plan is very elaborate, impact monitoring however does not provide good data on profitability (bussiness is still young)

g. Safe vegetables, Hanoi, Vietnam

Name: Short supply chains for safe vegetable, Vietnam
Location *Country:* Vietnam *City:* Hanoi
Main thematic area: Short supply chain, namely: Sales of safe vegetables by cooperative through retailers to consumers
Short summary: Safe vegetables have been labelled by the government in order to reduce the use of pesticides. Farmers, sometimes organised through cooperatives, are producing safe vegetables for which they can ask a price that is 50 to 100% higher than for normal vegetables. The cooperatives are supported by the government and the safe vegetables are certified. Farmers are technically supported, for example with nets to keep insects away. In some cases, there are retailers, these can be supermarkets or open market retailers, that buy the products from the cooperative and sell them, but it also happens that cooperatives sell their products directly. This increases the trust that consumers have in the safety of the vegetables, since this is an important concern amongst Vietnamese consumers.
Dynamics and scale: *Stage of development:* Established *Timeline:* 1999 - now
Relevant networks and organization: *Stakeholders involved:* Hanoi department of Plant protection, farmers, cooperatives, retailers *Principally driven by state, civil society, market parties:* Market parties *Type of organization / business model:* Cooperatives and retail sales.
Type of products / services: *Agricultural / food products:* All kinds of vegetables that are common in Hanoi
Sources and availability of information: *Documents/reports (titles, refs.):* -Agro-food system transitions, short food supply chains, and sustainability: implications for regional development Vietnam. S. Scott, University of Waterloo, Ontario, 2006 -Pham Van Hoi, A.P.J. Mol and P. Oosterveer (2009), Market governance for safe food in developing countries: the case of low-pesticide vegetables in Vietnam, *Journal of Environmental Management* 91(2): 380-388. -A. Tapia, H. Li, G. Prekatsakis, N. Schweighöfer, C. Setalaphruk, N. Sharma and R. Zafeiriou, 2007, Improvement of Market Chain Development of Urban Agricultural Production, Wageningen University. *Contact persons (name, email):* Steffanie Scott, sdscott@fes.uwaterloo.ca *Overall assessment of quality of available data:* Sufficient *Why is the case relevant / innovative?* Interesting linkages between short chains and food safety, which might be an issue in various other countries.

h. Local market supported by municipality, Piracicaba, Brazil

Name: Local markets supported by municipality
Location *Country:* Brazil *City:* Piracicaba
Main thematic area: Short supply chain, namely: sales of vegetables through *varejoes* (retail markets managed by local municipality)
Short summary: The municipality of Piracicaba decided to provide various incentives: tax breaks, training courses for farmers and the establishment of the *varejoes* in order to increase food production around the city and reduce food imports. There are 24 *varejoes* in the city, the municipality determines the maximum price, based on other wholesale market prices, adding 20%. Farmers can sell their products themselves, or let another farmer sell it. Because of direct sales, the farmers retain a higher added value and the consumers pay a lower price than in the supermarket. Since customers like the *varejoes,* the markets have started to offer other products as well. The municipality pays for the market stands and regulates prices and quality of the products, also assisting the producers to improve their production and product quality.
Dynamics and scale: *Stage of development:* Mature *Timeline:* 1982 - now
Relevant networks and organization: *Stakeholders involved:* Municipal Secretariat of Agriculture (SEMA), small scale producers. *Principally driven by state, civil society, market parties:* State *Type of organization / business model:* Individual farmers selling directly to consumers at markets.
Type of products / services: *Agricultural / food products:* All kinds of fruits and vegetables *Other products:* Meat, poultry, fish, bread, appetizers, homemade sweets, kitchen utilities and flowers are also sold at the markets.
Sources and availability of information: *Documents/reports (titles, refs.):* C.G. Vitorino, G.M.C. de Freitas, C. Hamamura, M.F. Tavares, A.C. Silva, M.C.N. Bernardes, E.M. Moda, F.B. Gandara, Influence of public policies on the Urban production in Piracicaba, Brazil. 2010. UA Magazine, issue 24. *Websites:* No website *Contact persons (name, email):* Christiano Vitorino, cristiano.vitorino@usp.br *Overall assessment of quality of available data:* Sufficient (but most is in Portuguese)

i. Agrupar, Quito, Ecuador

Name: AGRUPAR, Agricultura Urbana Participativa, Ecuador
Location *Country:* Ecuador *City:* Quito
Main thematic area: Short supply chain, namely: urban horticulture, linking producers to canastas , organic farming, producer-consumer linkages
Short summary: "Quito's Farms Produce Food, Enterprise, and Hope" is a project in Quito implemented by AGRUPAR (Agricultura Urbana Participativa) as part of a municipal program which sees urban agriculture as an effective approach to improve urban livelihoods, food security, and supplying safe and healthy vegetable, fruit and other products to gardeners and urban consumers. The municipality, through the support of AGRUPAR, aims to improve and strengthen agricultural (organic) practices (organic farming using compost and organic pesticides), processing and marketing of the products (business planning, marketing and accounting skills). It also facilitates urban farming by making vacant urban (waste) land available to those urban farming groups interested. Increasingly other stakeholders have become interested such as universities, chambers of commerce and business associations. They started with encouraging families to grow fresh, healthy vegetables for their own consumption. This is done in groups, where a group can come to AGRUPAR with the request for support if they are interested in the program. After some time there were a few families who produced more than they needed and started selling to the neighbourhood at the gate. When the farmers are interested in larger sales, they are encouraged to form micro-enterprises who then receive training from AGRUPAR in business planning, accounting and marketing. There is also a self managed micro-credit scheme where farmers contribute $10 to 20 depending on their financial situation. This can be accessed by farmers to give an additional push to their business activities. Market linkages have been established such as a community-based tree nursery with the municipality as client, linking the urban gardening groups with the Canastas communitarias (*'food basket'* consumer groups), and ensuring access to open city markets and the Bioferia, an organic market fair. The social aspect is as important as the economic and food security aspects. About 33 gardens do not have an economic purpose as such but more a social function. These gardens are food suppliers for schools, hospitals and other social welfare organisations.
Dynamics and scale: *Stage of development:* Established *Timeline:* 2002 – now *In case of programme / project*: N/A *Scale level of initiative (region, city, neighbourhood):* City (and neighbourhoods) *Link to wider city development:* Supportive municipality policies (i.e. making urban vacant land available to landless farmers)

Relevant networks and organization:
Stakeholders involved: AGRUPAR (NGO), Quito Municipality, consumers (Canasta groups), urban gardeners, agriculture extension services, UN-HABITAT, IDRC (Canadian research centre), CONQUITO (Economic promotion corporation)
Principally driven by state, civil society, market parties: State and NGOs (AGRUPAR)
Type of organization / business model: Individual farmers, farmers groups, cooperatives
Formal / informal networks: Informal and formal

Type of products / services:
Agricultural / food products: Horticulture, fruit, guinea pigs
Other products: Compost

Sources and availability of information:
Documents/reports (titles, refs.):
Improvement of Market Chain Development of Urban Agricultural Production, ETC Urban Agriculture, Netherlands By A.Tapia, H.Li, G.Prekatsakis, N.Schweighöfer,C. Setalaphruk, N.Sharma and R.Zafeiriou, 2007
La Ciudad viva come URBS, AGRUPAR, Agricultura Urbana Participativa (June 2010)

Quito's Farms Produce Food, Enterprise, and Hope, Case study Growing Better Cities, 2006
http://www.idrc.ca/EN/Documents/farms-produce-food-enterprise-hope.pdf

Promoting Value Chains in Urban Agriculture for Local Development in Quito, Alexandra Rodríguez Dueñas, UA Magazine 24, Sept 2010, http://www.ruaf.org/sites/default/files/UA%20Magazine%2024%20sept2010web%2061-62.pdf

http://www.idrc.ca/EN/Resources/Publications/Pages/ArticleDetails.aspx?PublicationID=536

C.J. Avila, Trust Funds as Financing Mechanisms for Participatory Urban Agriculture. UA Magazine 7, Aug 2002.

Websites: www.conquito.org.ec, http://www.cepesiu.org/ (more details on Popular Investment Societies)
Contact persons (name, email): Alexandra Rodríguez Dueñas, CONQUITO, AGRUPAR Project Coordinator, email: conquito@guito.gov.ec, alexitro@hotmail.com

Overall assessment of quality of available data: OK, not clear if quantitative/impact level information is available.

j. Milk suppliers, Tianjin, China

Name: Milk supplier in Han Gu District, Tian Jin, China.
Location *Country:* China *City:* Tianjin
Main thematic area: Short supply chain, namely: urban dairy market chain, formal market chain, cooperatives
Short summary: Tianjin is the third largest city in China after Beijing and Shanghai. Dairy production is an important source of income. This case describes a dairy farmer who bought some cows using his savings and a loan provided by a credit union. After starting as an individual dairy farmer, he had the opportunity to move his dairy farm to a dairy village close to a milk collection centre/cooperative. The members own their cows and are responsible for looking after their animals, feeding and milking. The Cooperative/ collection centre provides stables, feed storage, water, electricity and special construction for disinfection, prevention of epidemics, hybridisation (crossing different kinds of cows to create stronger cows), and a common milking hall. Furthermore veterinary services are provided to the farmers. Each farmer has to pay a fixed amount for the use of the land. The collection centre/cooperative takes a fixed share of the milk selling price as compensation for the use of services provided. The milk is taken by a cooperative member to a nearby dairy processing company which sells it to retailers and supermarkets. Due to access and adoption of improved dairy farming technologies, mutual learning among dairy farmers, improved cow management practices, milk quality control and improved cow breeds, the productivity has increased.
Dynamics and scale: *Stage of development:* Mature *Timeline:* Ongoing
Relevant networks and organization: *Stakeholders involved:* Dairy farmers, Cooperative, Dairy Processing company, agricultural extension services *Principally driven by state, civil society, market parties:* State and market parties *Type of organization / business model:* Cooperatives (services)
Type of products / services: *Agricultural / food products:* Dairy
Sources and availability of information: *Documents/reports (titles, refs.):* Improvement of Market Chain Development of Urban Agricultural Production, ETC Urban Agriculture, Netherlands By A.Tapia, H.Li, G.Prekatsakis, N.Schweighöfer,C. Setalaphruk, N.Sharma and R.Zafeiriou, 2007 *Websites:* *http://china.nlambassade.org/binaries/content/assets/postenweb/c/china/zaken-doen-in-china/import/kansen_en_sectoren/agrofood/rapporten_over_agro_food/milking-chinas-cash-cow*

k. Small scale milk production, Hanoi, Vietnam

Name: Small scale milk production in Hanoi, Vietnam
Location *Country:* Vietnam *City:* Hanoi
Main thematic area: Short supply chain, namely: urban dairy market chain, informal and formal market chain, milk collection centres
Short summary: Hanoi is a densely populated city which has seen increasing demand for dairy products over the past 15 years. From 1996 to 2002 Vietnam's milk production has tripled, driven by an increase in milk demand and the government's dairy promotion efforts consisting of stabilising milk price, supporting the creation of collection centres and marketing channels, and the import of highly productive dairy animals for breeding purposes. Further, the government has adopted supportive policies for the development of dairy production on family farms. Dairy farmers have labour and fodder resources for dairy farming and have a strong need for a regular cash income. The combination of these factors accelerated dairy sector output growth to an average of 25% per year, between 2000 and 2002. Despite impressive growth, milk production still remains small, as domestic dairy products meet only about 22% of demand. In Hanoi, around 90-95% of the milk is marketed through the formal sector, especially by the two largest processors, Vinamilk and Hanoi Milk. Vinamilk is the biggest company; in 2000, it collected and bought 320 thousand tonnes of fresh milk and exported powder milk, dried fresh milk and a dried nutritional supplement to the value of US$ 83 million. These milk processing companies have also supported the investments of farmers for buying dairy cows to improve the dairy production. In addition to the large processors, about 5-10% of Hanoi region's milk is handled by small milk shops. These milk shops sell directly to the end-consumer and/or to other retailers within the city of Hanoi. Milk producers receive similar prices from the large processors and small milk shops, around 0.197 US$/ kg. The marketing mechanism for milk in Vietnam was established and supported by extension institutions and processing companies. The major dairy processors have established numerous milk collection centres, reaching most small producers in the region. Milk processing companies partner with local cooperatives and/or individuals, which operate as milk collection centres. Dairy farmers have contracts with the milk processing companies and sell their milk regularly to the local milk collection centre. All collected milk is transported by refrigerated truck to the processing factories. The company uses the raw milk to produce various types of liquid milks, which are pasteurized and packed in plastic or tetra pack containers. They also produce condensed milks, yoghurts, UHT and powder milk. For small-scale dairy producers, it is attractive to sell their milk to the local co-operative collection centre, due their proximity, direct cash payments, good (cold) storage facilities. Dairy production contributes significantly to farmers' livelihoods due to good margins, mainly because of low feed costs, high prices of milk products and regular

milk collection systems.
Dynamics and scale: *Stage of development:* Mature *Timeline:* Ongoing
Relevant networks and organization: *Stakeholders involved:* Dairy farmers, informal milk collection points, formal milk collection points, dairy processing companies (Hanoi Milk and Vinamilk), national government, agricultural extension services. *Principally driven by state, civil society, market parties:* State and market parties *Type of organization / business model:* Collection centres
Type of products / services: *Agricultural / food products:* Dairy *Other products:* Cow dung for bio-gas and as fertiliser
Sources and availability of information: *Documents/reports (titles, refs.):* Improvement of Market Chain Development of Urban Agricultural Production, ETC Urban Agriculture, Netherlands By A.Tapia, H.Li, G.Prekatsakis, N.Schweighöfer,C. Setalaphruk, N.Sharma and R.Zafeiriou, 2007 Garcia, Hemme, Luong Tat Nho and Hoang Thi Huong Tra (2006). Working Papers 33 Pro-Poor Livestock Policy Initiative (PPLPI), FAO. http://www.fao.org/ag/againfo/programmes/en/pplpi/docarc/wp33.pdf Dairy development: Environmental consequences and pollution control options in Hanoi Province, North Vietnam, Nguyen Quoc Chinh, Ph.D, 2005, http://idl-bnc.idrc.ca/dspace/bitstream/10625/46079/1/132568.pdf Environmental impact dairy livestock farming http://www.fao.org/ag/againfo/programmes/en/lead/toolbox/Indust/LargeSM.htm *Websites:* No websites found *Contact persons (name, email):* Not available *Overall assessment of quality of available data:* Good

I. Sales of fresh produce, Lusaka, Zambia

Name: Strengthening marketing channels of fresh produce in Zambia
Location *Country:* Zambia *Region:* Central Province *City:* Lusaka
Main thematic area: Short supply chain, namely: vegetable value chain to urban markets, rural-urban (less peri-urban-urban)
Short summary: The background information describes the current fresh produce marketing chain for Lusaka. The main vegetables marketed include tomatoes, okra, rape, onion, cabbage and eggplant. Rural-urban linkages are central to the availability and costs of these staple vegetables. At least 98% of the value of consumed tomatoes, rape and onion was bought from markets, and not produced on urban plots. Only rape, as a highly perishable produce is primarily grown in close proximity to Lusaka (within 20-30 km radius). The other vegetables are purchased from near Lusaka but mainly from other rural parts of the country. Most vegetables are produced by small-scale farmers and to a lesser extent to large scale commercial farmers. In 2005, 50% of the agricultural cash income is derived from sales of fresh produce, which constitutes 9% of the total income. In total 70-80% of the fresh produces are sold at open air markets, 7-10% at supermarkets, 9% by street vendors and 2% through other outlets. The traditional marketing system plays a dominant role in vegetable marketing, with Soweto wholesale market at the centre. Marketing channels are short, less than 40% of tomatoes passes through traders before reaching the wholesale market, none of the rape does so. Despite this, gross marketing margins are high. Brokers play a central role on Soweto markets, but are associated with lack of transparency and many farmers feel obliged to sell through brokers. Compared to other countries, a lower % of households is involved in selling horticulture products, only 16% of the households compared to 70% of the households in Kenya, and 25% in Mozambique. An EC funded programme 'Urban Markets Development Programme (start in 2002) tried to improved the marketing mechanism but failed to address the more structural problems underlying the failure to meet expanding consumer demand, such as lack of public investment, strengthening linkages between peri-urban/rural farmers and urban markets, improved collaboration among market stakeholders and enabling governance and policy environment.
Dynamics and scale: *Stage of development:* Established but not well functioning *Timeline:* N/A
Relevant networks and organization: *Stakeholders involved:* Small-scale farmers, brokers, assembler traders, wholesale market (informal/corporate), Freshpikt processing company, retailers, supermarkets, street vendors, consumers *Principally driven by state, civil society, market parties:* Market parties and weak public

sector
Type of organization / business model: Individual traders and farmers, sometimes organised in traders associations and farmers union, but no cooperatives
Formal / informal networks: Informal

Type of products / services:
Agricultural / food products: Horticulture (tomatoes, onions, cabbage, rape, egg plant, okra)
Other products: Processed tomatoes (canned)

Sources and availability of information:
Documents/reports (titles, refs.):
Zambia Horticultural Rapid Appraisal: Understanding the domestic value chains of fresh fruits and vegetables by M. Hichaambwa and D.Tschirley, Working paper 17, Food Security Research Project, 2006.
http://www.aec.msu.edu/agecon/fs2/zambia/index.htm
Do Brokers help or hinder the marketing of Fresh Produce in Lusaka? Preliminary insights from research. D. Tschirley and M. Hichaambwa, 2010. Food Security Research Project, Working paper number 39
http://wwwaec.msu.edu/agecon/fs2/zambia/index.htm
The Structure and behaviour of vegetable markets serving Lusaka. D. Tschirley and M. Hichaambwa, 2010. Food Security Research Project, Working paper number 45.
http://www.aec.msu.edu/agecon/fs2/zambia/index.htm

Websites:
http://aec.msu.edu/fs2/hort/index.htm
http://www.aec.msu.edu/agecon/fs2/zambia/index.htm

Contact persons (name, email): David Tshirley
Overall assessment of quality of available data: Good

m. The green zones, Maputo, Mozambique

Name: The Green Zones of Maputo, Mozambique
Location *Country:* Mozambique *City:* Maputo
Main thematic area: Short supply chain, namely: (peri)-urban agriculture, poultry marketing, 2-tier cooperative structure, marketing support
Short summary: The term “green zones” refers to the suburban farm land that surrounds large cities such as Mozambique’s capital Maputo. Maputo’s green zones cover an area of 2.100ha on which 6.200 members of the GUC (General Union of Cooperatives) work. The products cultivate in green zones range from livestock (poultry, eggs), which are the most commercial, to crop production (maize, cassava, beans, fruit and horticultural crops) from which only a small portion is sold (the staple crops do not have any comparative advantage and are produced for own consumption). However, Maputo’s green zones are an important supplier of lettuce and different types of cabbages for the local market. The government, the People’s Development Bank and NGOs have played an important role in promoting (peri)-urban production through the development of cooperatives under the umbrella of the central instrumental organisation GUC, finance, infrastructure development and capacity building on farming techniques. The GUC was established to better serve the needs of cooperatives operating within the green zones. All individual co-op members automatically belong to the GUC and membership is free (6200 members in 182 co-ops located on 700ha on the outskirts of Maputo, all cooperatives are headed by women, 50 members each). The most critical role the GUC plays is ensuring marketing channels for the products grown by the cooperatives. By providing slaughterhouses, cold storage facilities and contracts with merchants and retailers the GUC has been able to provide a stable market for female producers (no need to deal with middlemen). The GUC is capable of raising more than 3.000.000 chickens per year and has four retail stores in the urban areas (60% of the chicken destined for Maputo’s markets were raised in the cooperatives). As co-ops are located 20km outside the city and most members have no access to private transport, the GUC buys livestock and other products from the cooperatives for sale in the city. The GUC supplies basic farm implements and other goods and services (buys farm instrument at bulk and sells at cost). Future opportunities lie in the implementation of a certification system, which would give higher market prices and access to large purchasers such as supermarkets. Apart from certification, agro-processing would reduce the imports in favour of locally produced goods.
Dynamics and scale: *Stage of development: M*ature *Timeline:* Ongoing

Relevant networks and organization:
Stakeholders involved: Cooperatives, national government, People's Development Bank, Maputo Municipality, NGOs
Principally driven by state, civil society, market parties: State and CSO
Type of organization / business model: 2 tier Cooperative (buys, storage, processing and sale)
Formal / informal networks: Formal

Type of products / services:
Agricultural / food products: Chicken, eggs, horticulture

Sources and availability of information:
Documents/reports (titles, refs.):
Improvement of Market Chain Development of Urban Agricultural Production, ETC Urban Agriculture, Netherlands By A.Tapia, H.Li, G.Prekatsakis, N.Schweighöfer,C. Setalaphruk, N.Sharma and R.Zafeiriou, 2007
Websites:
Supporting Women Farmers in the Green Zones of Mozambique
http://pdf.usaid.gov/pdf_docs/PNACG555.pdf
THE GREEN ZONES WOMEN DEVELOPMENT PROJECT IN MAPUTO:
http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/ADF-BD-IF-2005-02-EN-MOZAMBIQUE-GREEN-ZONES-WOMEN-DEVELOPMENT-PROJECT-IN-MAPUTO-PCR.PDF
Contact persons (name, email): No information available
Overall assessment of quality of available data: Sufficient but not recent (1995 and 2004)
Why is the case relevant / innovative? Good example of Cooperative model which covers full chain from production, storage, marketing etc, focus on chicken/egg and strong component of empowerment and capacity building.

n. Haat Bazaar, Dhankuta, Nepal

Name: Haat Bazaar Dhankuta, Nepal
Location *Country:* Nepal *City:* Dhankuta Bazaar, Dhankuta District
Main thematic area: Short supply chain, namely: Farmers' market, direct sales farmers-consumers
Short summary: There are several cases of *Haat Bazaar* (Farmers Market) operating in the Eastern and Terai regions of Nepal. This is a case of Dhankuta bazaar of eastern Nepal, located at the Headquarter of Dhankuta district, which is held twice a week at 2 fixed locations. Producers from within the city and from the surroundings of the city bring fresh vegetables such as cauliflower, beans, gourds, pulses, cabbage, onions, garlic, lettuce, asparagus, chayot, potato, pumpkins, zucchini, leaf vegetables and several local vegetables and fruits. Farmers can sell directly to consumers and to middlemen from India, and are free to fix their prices. The municipality authorities have made basic stalls and there is a haat bazaar operating committee nominated by the municipality. They collect levies from stall occupiers and arrange garbage collection, cleaning and maintenance of toilets and stalls. Stalls are occupied on first-come first-serve basis. The main success factors of this market include direct dealing, regularity and the social aspect of close interactions between farmers and consumers. It also offers the opportunities for farmers to buy agricultural inputs such as vegetable seeds. The limitation for farmers with larger surpluses is the relatively fixed number of customers and lack of (cold) storage facilities. Thus they need to find other marketing channels such as middlemen and larger farmers' markets outside the district if they want to sell these larger numbers of products.
Dynamics and scale: *Stage of development:* Established *Timeline:* Ongoing
Relevant networks and organization: *Stakeholders involved:* Municipality, Haat bazaar operating committee, Farmers, Middlemen, Consumers *Principally driven by state, civil society, market parties:* Market parties *Type of organization / business model:* Individual farmers; joint slaes location
Type of products / services: *Agricultural / food products:* Horticulture *Other products:* Vegetable seeds
Sources and availability of information: *Documents/reports (titles, refs.):* Case 5b in Improvement of Market Chain Development of Urban Agricultural Production, ETC Urban Agriculture, Netherlands By A.Tapia, H.Li, G.Prekatsakis, N.Schweighöfer,C. Setalaphruk, N.Sharma and R.Zafeiriou, 2007 *Overall assessment of quality of available data:* Poor