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Sustainable Social Entrepreneurship Models for Urban Agribusiness Initiatives in Johannesburg

Michael Rudolph*, Madimetja Antony Mello, Evans Muchesa

Faculty of Engineering and the Built Environment (FEBE), University of Johannesburg, Johannesburg, South Africa
*Corresponding author: michaelr@uj.ac.za

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Abstract The objectives of the study were to explore and develop a sustainable social entrepreneurship model which can be effectively and efficiently applied in the establishment, operations, and evaluation of urban farming initiatives in Johannesburg. The methodology used for the study was a review of relevant literature and key expert qualitative interviews which investigated strategic and operational intervention regarding the successful implementation of these initiatives. The findings highlighted several important challenges which limited and hampered the ability of urban smallholder farmers to ensure financial viability and sustainability of their farming initiatives. The results confirmed findings from other studies including limited accessibility to farming land, markets, funding and most importantly knowledge and information regarding setting up and effectively and efficiently managing small agri-businesses. One of the outcomes of this study is a proposed social entrepreneurship model that describes an alternative way of thinking about social initiatives, viz. a focus on both social impact and the profitability of the business. Further work needs to be done to develop an enabling environment for these initiatives to flourish. This study should stimulate and trigger a much-needed shift in thinking and approach to urban agriculture to effectively benefit and transform the urban farming community and related stakeholders.

Keywords: *social entrepreneurship, urban farming, agribusiness sustainable, food security*

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1. Introduction

Developing a model for collaborative urban farming initiative to drive social and economic transformation, specifically through increased food security, social cohesion and income generation is a key objective for urban/small holder agriculture. This entrepreneurship study aims to present a viable and sustainable business case for the establishment of small-scale fresh produce farms in urban Johannesburg communities. The methodology reviewed literature on social entrepreneurship and relevant management theories. This is followed by expert interviews and discussions with detailed recommendations for the development of a sustainable urban farming business models [1,2,3].

Johannesburg has seen sharp increases in people migrating from rural South Africa, the southern African region, and the rest of the African continent to the metropolitan area. The region's population is estimated to be in the top 15 in the world [1,4]. Many of the current interventions implemented by the South African government to try curb urban food insecurity have been ineffective because they have focused on urban agriculture in isolation and without due consideration of the role of urban agriculture as a part of the wider complex food system [5]. The eradication of food insecurity in urban areas is a multifaceted topic involving more than making food available [6]. Some of the critical factors necessary to achieve the goal of a sustainable urban farming business model will be investigated and supported by a review of current literature with reference to the key points below [7,8]:

- adoption of new strategies such as climate-smart agriculture and the incorporation of technology to ensure resilience and consistent crop quality and yields,
- development of adequate funding models to allow for the successful implementation of the project and future project extensions,
- scalability of the project; ensuring fresh produce is made easily accessible to those households that need it the most while maintaining profitability of the project,
- creation of meaningful and decent employment to ensure long-term retention of skilled labour,
- coherent coordination of efforts between multiple stakeholder groups including national, provincial, and local government, communities, the formal and informal business sectors, and other non-government institutions,

- systematic drivers of food insecurity, specifically interrogating issues such as urban geography (socio-spatial issues), land tenure insecurity, perceptions of poverty, supply chain regulation and "food miles".

The *objectives* of the study were to better understand the strategic and operational challenges of urban farming and to appreciate and recognise the current roles and functions of all the relevant stakeholders in establishing sustainable urban farming social enterprises in Johannesburg.

2. Conceptual Framework

2.1. Entrepreneurship as a Tool to Build Sustainable Social Enterprises

A conceptual framework for social entrepreneurship projects and other key entrepreneurial concepts provides the primary base upon which successful enterprises can be built. The resource-based view and stakeholder theories are also considered as key management theories that are applicable to the development of social enterprises. Overall, the literature provides some positive evidence that the widespread implementation of collaborative urban farming initiatives presents an ideal opportunity to have a direct impact on the marginalised urban populations. However, there are some strategic and operational challenges identified through the review of literature that hinder the successful implementation of current urban farming initiatives [9,10]. These factors and the lack of well-documented case studies of successful urban farming enterprises clearly validates the need to investigate these issues further and to attempt to develop a comprehensive urban farming business model [11].

Figure 1 considers social entrepreneurship as an overall abstraction of key antecedents (i.e., entrepreneurial orientation, social innovation, network embeddedness and sustainability orientation) within a mediating environment (context) to achieve social and economic value [12]. Social needs include environmental, social and economic, value capture and scaling are important for urban agribusiness enterprises as illustrated in Figure 2.

The business model canvas conceptualises how an organisation's business model creates, delivers, and captures value. It consists of nine interconnected components: (customer segments, customer relationships, value proposition, channels, key resources, key activities, partners, costs and revenues and extracts how these components are integrated to deliver value for customers and the organisation, and the relationships between the supply chain and stakeholder networks [13,14]. The economic business model is composed of a triple layered approach made up of a social layer, social stakeholders and networks, and an environmental layer [15] which considers the lifecycle of the enterprise. This multi-layered business model approach explicitly addresses the triple-bottom-line perspective of organisational sustainability through the integration of economic, environmental, and social value creation [14].

Each of the components and functions of the multi-dimensional business model will be further explored, unpacked, and examined in order to gain critical insights and act as a bridge between high level strategic interventions and local actions that need to be taken to achieve an effective business prototype.

Founded in 2002, Little Green Number is an example of a successful social enterprise set-up in Johannesburg. The company uses a community based micro manufacturing franchise ownership model to convert used advertising billboard posters, that otherwise would pose an environment risk to create quality handbag products. Little Green Number have leveraged their business skills to positively impact the environment and achieve sustainable job creation [16].

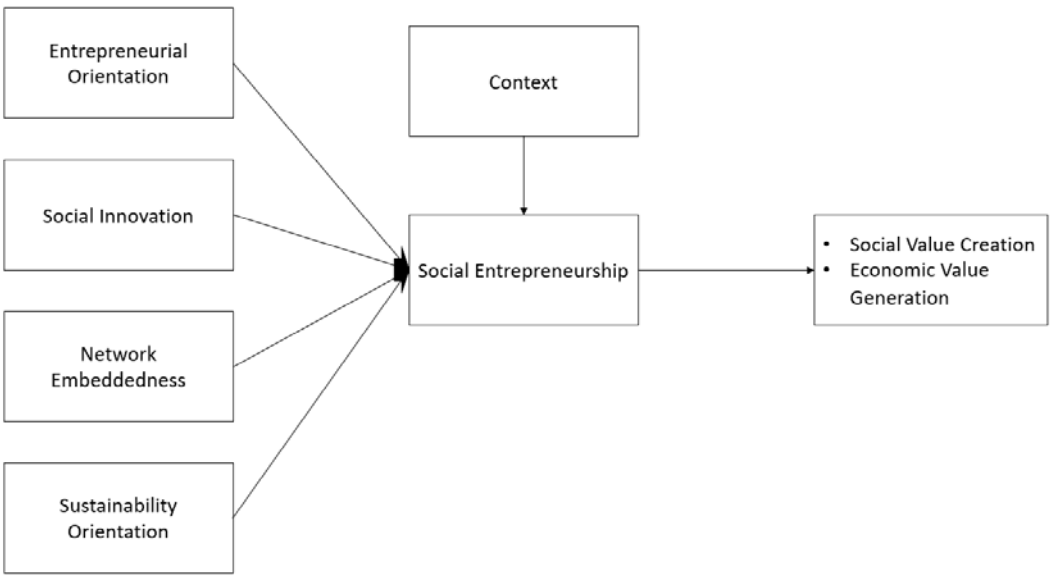

Figure 1. Conceptual framework for social entrepreneurship [17]

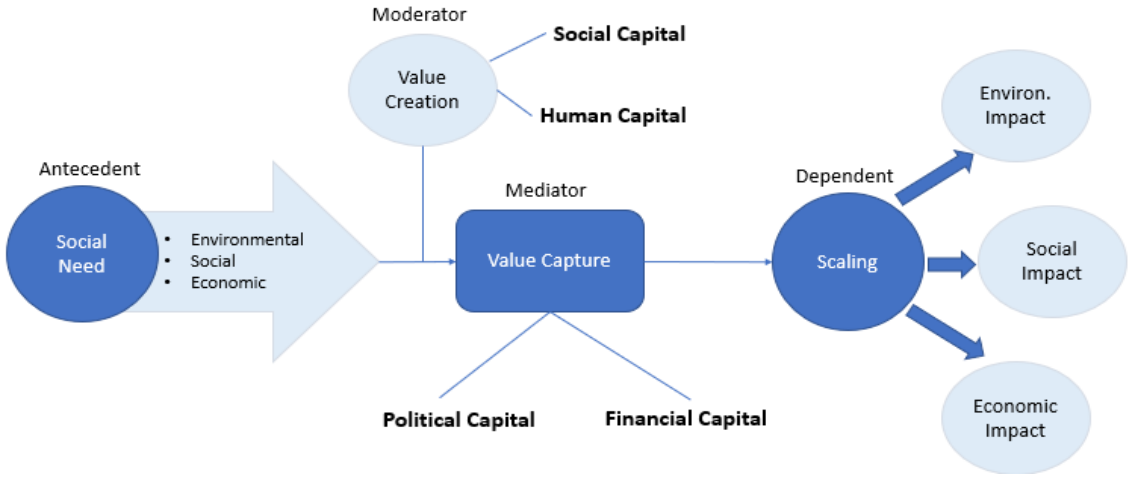

Figure 2. Relationship between Social Issues and Scaling of Social Entrepreneurship Initiatives [11]

2.2. Resource-Based View Theory

The Resource-Based View (RBV) takes the position that an organisation derives its sustainable competitive advantage from the unique resources and capabilities within the group's control [18]. This theory has been very influential in many of the existing strategic management sources, and it posits that an enterprise's growth is a function of the RBV theory [11]. Assessing social entrepreneurship initiatives from this perspective acknowledges that resources and capabilities are crucial to scaling social innovation [19]. This approach is appropriate for the evaluation of social entrepreneurship initiatives in that it focuses on the entrepreneurial processes and resources within such initiatives, as opposed to quantifying the output from these processes [20]. Day and Jean-Denis [11] present a theoretical framework that argues for a more integrated conception of social entrepreneurship that combines financial, social, human, and political capital.

Stakeholder Theory: The underpinning ideology in stakeholder theory is that people voluntarily collaborate to create economic value to benefit all stakeholders [21] Stakeholders are defined as "any group or individual who can affect or are affected by the achievement of the organisation's objectives" [22]. The ultimate objective of the enterprise according to the stakeholder view, is to simultaneously create economic and social value [21]. The concept of social entrepreneurship continues to gain prominence, worldwide and thus a greater appreciation of current management theories including RBV and stakeholder theory. Both these theories provide good theoretical frameworks that are applicable to a new way of doing business [23].

2.3. Research Methods and Design

The methodology used for the study was a qualitative technique using grounded theory focusing on social entrepreneurship frameworks and RBV stakeholder theory. The other qualitative technique is a case study focusing on agribusiness initiatives and key stakeholders around Joburg City Metropole. The data collection contributed to a greater appreciation of the current challenges of the business models used for agricultural social enterprises.

The data for this project was primarily collected via unstructured individual face-to-face interviews with identified key expert interviews. The discussions were steered towards a few pre-determined topics identified during the review of literature. Purposive sampling was used to identify the most suitable key expert candidates based on their knowledge relevant to the project. To fully explore the critical issues identified for this study, a diverse group of interview candidates were selected from industry, academia, business, and the public sector [24]. This also presented an opportunity to explore the gaps in perceptions and opinions that exist between the different stakeholders. The interviews were conducted once consent had been received from the interviewee and a mutually suitable date, time and venue were agreed to, preferably in their natural work setting. The interview results were reported anonymously. The data was analysed using ATLAS.ti 9 and the responses were coded and included in the discussion of the study.

Ethical clearance was received from the University of Witwatersrand Ethics Committee

Table 1 below shows the list of the key experts, profile and assigned number.

Table 1. List of Interview Respondents

Key Expert Profile	Assigned number
Entrepreneurial development Specialist	1
Urban farm Manager	2
Farming training academy Chief Operating Officer	3
Strategic solutions consultancy Director	4
University Professor – Anthropology and Development Studies	5
Gauteng Department of Agriculture and Rural Development (GDARD)	6
Commercial bank agribusiness Business Development Manager	7
Agriculture expert with economic background	8
Agricultural Social Entrepreneur	9
Process energy and environmental technology Researcher	10

3. Results

According to most of the respondents, the greatest challenges hindering the ability of smallholder farmers to ensure the sustainability of their farming initiatives were limited accessibility to farming land, markets, funding and most importantly knowledge and information of urban farming. Some of the good work being done by individual farmers and government was highlighted. However, it was also noted that these efforts are currently fragmented and that there needs to be a greater integration of all these initiatives.

3.1. Challenges with the Current Business Models

According to the key expert 1, an entrepreneurial development specialist, and key expert 4, a strategic solutions consultancy director, the conventional way of designing and structuring business models needs to change. The current African business models requires the incorporation of aspects of socio-economic development which include the creation of sustainable jobs, improvement of productions systems, enhancement of quality of produce and making profits. Both these experts expressed that, it is essential for business models to address social aspects Expert 5, a highly experienced academic in Anthropology and Development Studies, asserted that urban farming specifically has multiple benefits including nutrition, local economic development, social cohesion, water management and ecological services. However, there was a consensus amongst the key experts that to achieve a successful urban agriculture enterprise, some key elements of a traditional business model are required when setting up urban farming social enterprises. Other factors such as farming skills, the right location, funding, water and energy resources such as and other infrastructural inputs make up critical elements and contribute to the success to an urban agriculture enterprise

Expert 8, an agriculture expert with economic background provided practical insights into rethinking of urban agriculture business models which was to divide activities into agronomic and economic activities which entail the following.

- Farmers need to start step by step considering their overhead costs and calculating their inputs versus outputs per square meter as a standard.
- The process of accurate record keeping of finances, methodology of planting and labour. In this way everything can be quantified per square meter.
- A constant updating of the enterprise business plan used for projecting income and expenditure.
- A gradual improvement of the production system that can sustain the business. This is particularly important considering the farm has a high human resources base, so most of the sales go towards paying salaries.

Expert 5 also explained that creation of a sustainable market system for smallholder urban entrepreneurs is essential for their survival and sustainability. Expert 1 suggested that one of the challenges in the South African context is that enterprises operate under a similar compliance framework and thus there is a need create an enabling environment for small enterprises to establish themselves as viable businesses. The difficulties of gaining entry to the market are highlighted by Expert 8 and 9, noting that there is no real recognition in the differentiation in production methodologies for organic produce and the need to sell such produce at a higher price. Expert 8 further noted that because their space is mostly not big enough to generate adequate volumes, smallholder urban farmers need to identify different complimentary systems that can ensure there is consistent production. Expert 4 and 5 also noted that other elements of the agricultural system that need systemic change are the inefficiencies of the long value chains and a greater focus on the primary supply chain. The former issue can be addressed through intelligent systems, ICT and or word of mouth to shorten the supply chain, while the latter needs more attention to be paid to the opportunities in the secondary supply chain. According to Expert 4, the overall ecosystem is fragmented, which is also the case in the urban agriculture ecosystem in Johannesburg. Therefore, the creation of 'Communities of Practice' (CoPs) made of smallholder farmers, can alleviate problems such as volume of produce, quality check, transportation, and markets by leveraging on the economies of scale.

3.2. Access to Farming Land

One of the biggest challenges with urban farming according to Expert 3 is limited farming land., He suggested that the best way to make farming successful in urban areas is through intensive farming methods such as hydroponics and broiler layers, where small piece of land can be effectively and efficiently used to generate enough profit to sustain the business. Expert 5 acknowledged that food gardens in the city are structurally small, and therefore appropriate design and technology are important to maximise limited space. Expert 9 provided an alternative view by suggesting that there are large tracts of land in the peri-urban areas which are privately owned and underproductive which would be ideal for cooperative structures to exploit and use. Expert 8 however, cautioned against technology being the first step when deciding to set up an urban farming system. Technology should be carefully selected to suit the needs of the farm. Expert 9 suggested that there since there are plenty of open public spaces designated for City Parks, the local government needs to allocate some of this land for agriculture use.

3.3. Operational Challenges

Expert 2, a manager of an urban farm in Johannesburg, offered some key insights into the different operational challenges faced by different projects. Speaking to issues that are specific to his project, he mentioned that the soil in the area is not very good and that much attention and effort had to be invested to enhance and rectify the soil status, a fundamental issue in agriculture. Another challenge was availability, cost, and efficient use of water. The other major problem was that the staff weren't sufficiently skilled. Specific difficulties that Expert 2 had to overcome on their farm are listed below:

- Skills transfer was key problem. This was not easy to address because people have different strengths and weaknesses resulting in different levels of understanding and experience. Training then becomes labour intensive because there needs to be one-on-one interactions with the staff to identify their capabilities. Personnel needed to be upskilled and then transfer these skills and knowledge to the next person. Some of the labourers do not have any formal education but as noted by Expert 3, farming is skills based and thus proficiency is mainly learned by practice. According to Expert 2, the best way to change someone's mindset is to involve them in a personal and meaningful interaction. Getting to understand the person and connect with who they are and their aspirations, will ensure connecting points where communication is internalised on an individual level.
- The issue of poor soil quality had to be tackled. The aim was to enhance the soil using a range of appropriate interventions and least destructive methods. These included using compost and soil enhancers, having a proper rotation system and planting crops that benefit the soil. The interviewee mentioned that a soil management system was put in place and that the soil has been improving each year. Similarly, many methods and technologies that help effective management have been developed.
- Some of the other key challenges faced by the farm are funding, environmental factors such as the changing climate and lack of a proper seedling propagation system. Respondent 2 added that important factors such as good operational management and the implementation of short-term turnaround strategies to demonstrate quick results while simultaneously working on longer-term solutions.

3.4. Organisational Structure

Most of the urban farming initiatives in Johannesburg have been set up as Co-operatives. According to Expert 1, cooperatives have a lesser success rate than small businesses. Expert 8 mentioned that most of the small farms in Johannesburg farmers are members of NGOs or government initiatives. and only do the bare minimum and simply tick the required 'administrative boxes' on the basic government forms. Expert 5 adds that the problem is that the Co-operatives are established as producer (primary) co-operatives, which are administratively the most complex of co-operatives. Thus it is almost impossible to measure how much time or how hard people work to produce the required crops. Expert 4 commented that co-operatives do not work effectively nor efficiently because they do not fully understand the Co-operative model and thus are not profit driven. The initial passionate motivation behind co-operatives is too weak to make them sustainable in the long-term. This point is further substantiated by Expert 8 who commented that Co-operatives are complicated and are mostly unproductive because there are often inequalities in effort, resources, and motivation. The authors of this paper concur with these findings based on their personal experience. Expert 4, 5 and 8 concurred that secondary Co-operatives, which bring together a few different individual farmers with suitable and complementary skills and produce, could be a possible solution. These secondary Co-operatives can be in the form of marketing or buying co-operatives where farmers can either sell or buy inputs at a better deal but still produce on their own. This is a strategy that can be implemented at local government level and could create the critical mass to achieve viable businesses. It will also allow comparative analyses to be done so farmers can specialise in various aspects of agri-business.

3.5. Measuring Impact

Furthermore, a holistic human development understanding when measuring the impact of social enterprises is sorely needed. Expert 1 suggested that one way to measure the impact of the business is to apply the Theory of Change concept, whereby assumptions are made that by developing social enterprise models, it will impact on people in a certain way. This is an issue that will require social understanding and interventions around the emancipation and liberation of people and their mindsets. Thus, social entrepreneurship is mooted to empower people to a point where they believe in themselves again. Some of the practical examples of the social impact of having farms in urban communities cited by Expert 8, include people from the community coming to the farm for extension support when they need advice about farming, people buying the produce to resell it at a profit and social cohesion from the activities that take place at the farm.

3.6. Funding

The responses from the interviewees suggested that most urban farms receive some form of government funding to start up. Expert 5 commented that although government grant funding is an enabler, it also precludes an opportunity for the farmers to exercise some form of entrepreneurial thinking. The funding should be combined with an entrepreneurial development programme and this must be informed by the latest thinking and 'cutting edge' agricultural theory, which is moving towards sustainable agriculture and agroecology that is much more profitable and environmentally sensitive than the mainstream production. Expert 7 commented that key factor for success is that once farmers receive the funding, they need to adhere as much as possible to the original plan as laid out in the application for the finance but also remain adaptable to inevitable shocks. Expert 1submitted that money, both capital or equity, is not the only constraint to small business development but a professionalisation of small business services and taking products to different markets must be seriously considered. This respondent also mentioned the need to develop sustainable funding models for social enterprises in terms of applying business principles to address social issues. Achieving this objective, one needs to develop a suitable business model to optimise both social and profit outcomes. The necessity for fostering and expanding sustainable funding models for urban farms is highlighted by the manager of an urban

farm. Expert 2 noted that urban farms cannot be self-sustainable until they have suitable systems that address the range of problems mentioned during the interview. Building and implementing those systems takes time and much effort. Expert 5 raised the point that small farmers' needs for large investment into agricultural technology is linked to the sustainability of urban farms. Expert 7 cited global production statistics that indicate food production is on the rise while profit margins are becoming smaller which necessitates investment into technology to lower production costs. He further mentioned that the banks have been mostly unsuccessful in implementing this option with small farmers which illustrates the importance for farmers to collaborate which in turn would make it easier for a bank to lend to the aggregator who would then distribute the funds to the individual farmers. Other challenges that hinder funding sources for small urban farmers is the lack of adequate historical production data and poor record keeping of financial documents, which makes it difficult for funding institutions to determine their credit worthiness.

3.7. Role of Different Stakeholder Groups

Expert 4 expressed concern about the lack of collaboration between the different stakeholders because farmers mostly operate in silos. There needs to be a conscious effort to break down working in isolation. The urban agri-business ecosystem will not evolve on its own but rather it requires a dynamic hub or centre involving key stakeholders including government for it to materialise. Although there is the expectation that government should be responsible for creating a framework that caters for the different agri- businesses, universities, corporates, NGOs and the farmers must contribute to this agenda. This expert also suggested that national government needs to foster strategic partnerships to allow business growth to evolve, develop and flourish. This could materialize especially when several government cluster departments can generate integrated policies and strategic interventions within which they collaborate engaging the with the private sector, facilitating discussions to establish common ground between parties and making resources available. Expert 9 suggested that breaking down the silos between government and private enterprise will help streamline the communication and enable cooperation so that it can implement programmes more effectively at a national level.

Expert 6, a Gauteng Department of Agriculture and Rural Development (GDARD) official pointed out that "the GDARD department is divided into three units in relation to urban farming One unit is focused on food security through the establishment of small food gardens; the second unit is responsible for farmer support development which assists large commercial farmers, and the third unit manages the Agri-parks. These government departments operate in 'compartments' which often results in duplication of tasks and poor utilisation of limited resources targeted for the farmers According to Expert 6, GDARD aims to set up one Agri-park per district in Gauteng. Farmers within a 20-kilometer radius of the Agri-parks can then supply their produce to these Agri-parks. This allows for the aggregation of produce from all the farmers and for scheduling of supply which improves shelf life and productivity. Buying of agricultural inputs are bought in bulk by the Agri-parks. Therefore, there is the benefit of discounts from the suppliers. This model is still being tested. Local government provide land and services (water, electricity, and security) to the farmers and the provincial government provides infrastructure and technical expertise. Local government ultimately own the infrastructure provided by the provincial government and the farmer owns the production. This is done with the intention that over time the farmer will be upscaled to become a commercial business but remain linked to the Agri-park and supplying produce to it.

Expert 5 commented that the role of the state should be more focused on stakeholder engagement. Small farmers need to be promoted in conjunction with outside stakeholders which would benefit from cross fertilisation of skills, ideas and methods which together with social innovation can build new societal alliances and disrupt previous rigid vested interests. Expert 8 sees government playing a three-pronged role in assisting small urban famers:

- *Land*: promote land use rights to secure tenure for local communities who wish to establish food gardens. Farmers should be able to apply for funding using their land user rights.
- *Social Support*: there needs to be consolidated specialised extension support which goes beyond training but also involves farmer profiling and determining farmers' individual needs.
- *Economic Support*: this requires some form of agrarian reform that can promote economic activity. Government should create private public partnerships to help farmers gain access to existing markets.

4. Discussion

4.1. Alternative Business Models

Several authors [20,25] argue that we need to have a broad view of food security that looks beyond the availability of food and starts on a journey towards transformation of existing food systems to achieve a triple-bottom-line of economic, social, and environmental sustainability. South African and African business models in general should have aspects of socio-economic development entrenched in them. The outcomes of urban farming should extend beyond those of business profits and include social benefits such as health, nutrition, local economic development, social cohesion, water management and ecological services. The development of consolidated conceptual frameworks, which consider key factors such as entrepreneurial orientation, social innovation, network embeddedness and sustainability orientation within a mediating environment is a prerequisite to achieve social and economic value. The experts interviewed stated that most urban agriculture initiatives fail mainly because of a lack of entrepreneurial orientation. A supporting argument came from Expert 8 who described that "their farm saw a drastic improvement in economic activity and a reduction in donor dependency after adoption a more entrepreneurial approach". There is a consensus amongst the experts that most primary co-

operatives have not been successful but that secondary (marketing or buying) co-operatives can assist farmers with complementary skills and produce which can create a critical mass and allow farmers to develop specialised agri-businesses.

4.2. Holistic View of the Urban Farming System

Several key experts indicated that the current value chain is fragmented with different stakeholders operating the diverse segments of the value chain. The lack of incorporation of the whole value chain by farmers results in inefficiencies within the various links in the value chain. There is clearly a lack of application of stakeholder theory to fashion both economic and social value. Another observation is the unnecessary inefficiencies due to the long value food chain. This puts farmers in a vulnerable position because they are then unable to reach the customer directly and still maintain competitive pricing models. In addition, the respondents agreed that the current focus of many of the private and public urban farming initiatives is focused on further developing the primary activities within the agricultural value chain.

4.3. Innovative Production Methods

The review of literature and responses from the interviews presented agroecology, and more specifically the concepts and principles of permaculture as one of the most effective urban farming techniques which could ensure long-term sustainable crop production [26,27]. The lack of available land for farming in urban areas was confirmed by the respondents during the interviews and literature reviewed as one of the biggest challenges prohibiting successful urban farming production. However, this pertains to the more conventional thinking about land requirements for farming. There are alternative opportunities to be innovative in the way that fresh food is produced. The literature clearly shows alternative intensive farming techniques such as hydroponics, aquaponics and aeroponics, where small sections of land can be used to generate enough profit to sustain the farmer's business [28]. Several of the interviewees agreed that farmers can increase their production and revenue considerably by incorporating agricultural technology to their farming systems. However, the respondents also cautioned against thinking that technology will be the panacea for urban farming systems and that technology should be carefully selected to suit individual needs and which will require much training support systems and very importantly good security.

4.4. Access to Markets

Some of the experts indicated a major challenge in the greater Johannesburg is that all enterprises operate under the same compliance framework. This, together with the fact that there is no real recognition of the differentiation in production methodologies, such as organic produce and the need to sell these crops at a higher price has made it extremely difficult for urban farmers to gain access to markets. The distribution markets need to be developed for the townships and organic food be made more readily available and affordable for the township market.

4.5. Enabling Environment

Studies reviewed highlighted strategies which try to curb urban food insecurity remain unsuccessful because of poor implementation of urban farming initiatives even though adequate policies have been drafted [29,30]. Furthermore, the findings of the study emphasised the lack of collaboration between different stakeholder groups and the government's inability to take up a pivotal role in the agricultural ecosystem.

4.6. The Integrated Value Chain for a Sustainable Urban Farming Business Model

Proposed sustainable social entrepreneurship models for successful urban farming enterprises are illustrated below. The model is drawn from the primary data and strengthened from relevant literature. The proposed models include the Integrated Value Chain (Figure 3), Financial Considerations and Impact evaluation.

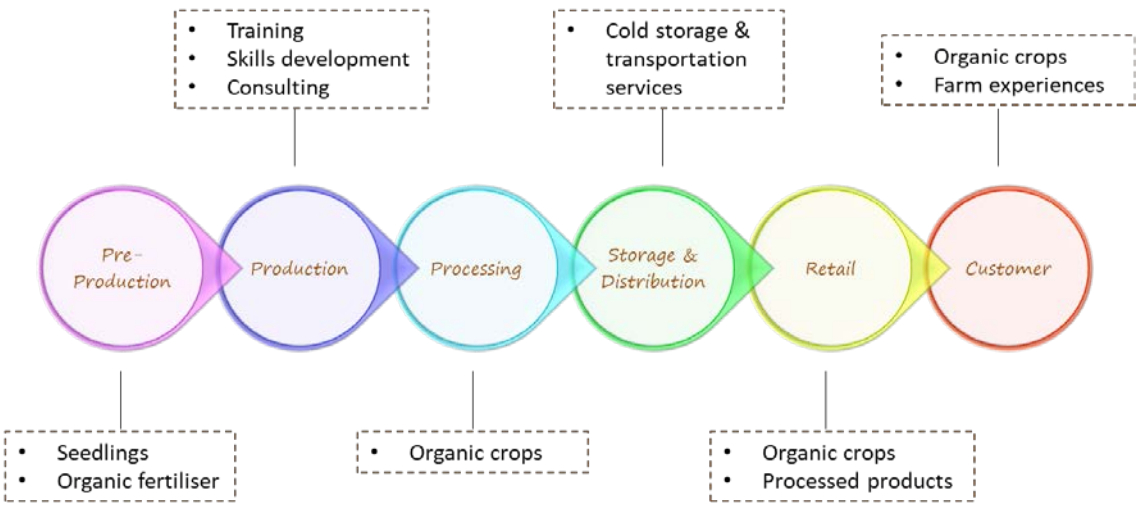

Figure 3. Suggested revenue streams across farming value chain

4.7. Integrated Value Chain

It is essential that urban farming initiatives take a view of the entire food production system and develop appropriate strategies. The Integrated Value Chain provides an opportunity to view the enterprise activities as a continuum. The value chain begins at pre-production planning, production, processing, storage and distribution, retail and customer.

The suggested approach entails the establishment of easily accessible physical and digital platforms that farmers can use to collaborate and share market information. These should act as a marketplace where farmers can interact on issues of supply and demand. The platforms will also be used as a multi-stakeholder engagement vehicle to drive collaboration and the sharing of ideas [31]. This environment/space is where farmers can harness their complementary skills and assist one another to help improve the collective rather than a few individuals. The high levels of cell phone adoption and wide community penetration should make it viable to scale digital platforms in the form of a user-friendly mobile application and web service. Although technology makes it easier to communicate with others, there is still a need for personal interactions to allow face to face relationships and communication. These platforms will allow farmers to connect directly with consumers in a mutually beneficial relationship. This direct interface will help shorten the value chain and create additional value for farmers as well as consumers, for reasons such as:

i. Farmers gain an alternative entry to the market.
ii. Farmers increase their margins because they can supply their goods at a price that is less than the retail price but higher than what they can currently sell to wholesalers.
iii. Consumers benefit by having access to good quality organic food at a lower price than the current market price.

One of the key pillars that has made many organisations successful is having proper management structures in place. The urban farming initiative needs to have management systems that cover the following critical aspects:

- Clearly defined roles and responsibilities for all the employees within the organisation.
- Daily work processes and routines.
- Well defined communication and reporting protocols.
- Standards and internal controls.

4.8. Financial Considerations

Funding social entrepreneurship projects is challenging because social ventures are not solely profit driven. Other barriers to funding is inadequate historical production data and poor record keeping of financial documents which limits credit worthiness.

In addition to the traditional sources of funds, the proposed urban farming model (Figure 4) will explore alternative funding mechanisms. This hybrid investment funding strategy allows for greater flexibility and gives organisations access to a wider spectrum of financing streams.

4.9. Impact Measurement and Scaling

Impact measurement and scaling (Figure 5 and Figure 6) is indispensable for farmers and all related stakeholders to plan and better mitigate risks. This can be achieved by having a shared database which can be managed by the local government structures i.e., City of Johannesburg with all the relevant information, including production and market demand numbers. The wide-spread implementation and dissemination of the broad social and agri-entrepreneurship project addressing food and nutrition security in the greater Joburg metropole during and post Covid 19 is an integral and high priority for our global city. Scaling up of these initiatives can optimise triple bottom line impact. Successful small models can be scaled to other regions using the insights and lessons learnt from these projects.

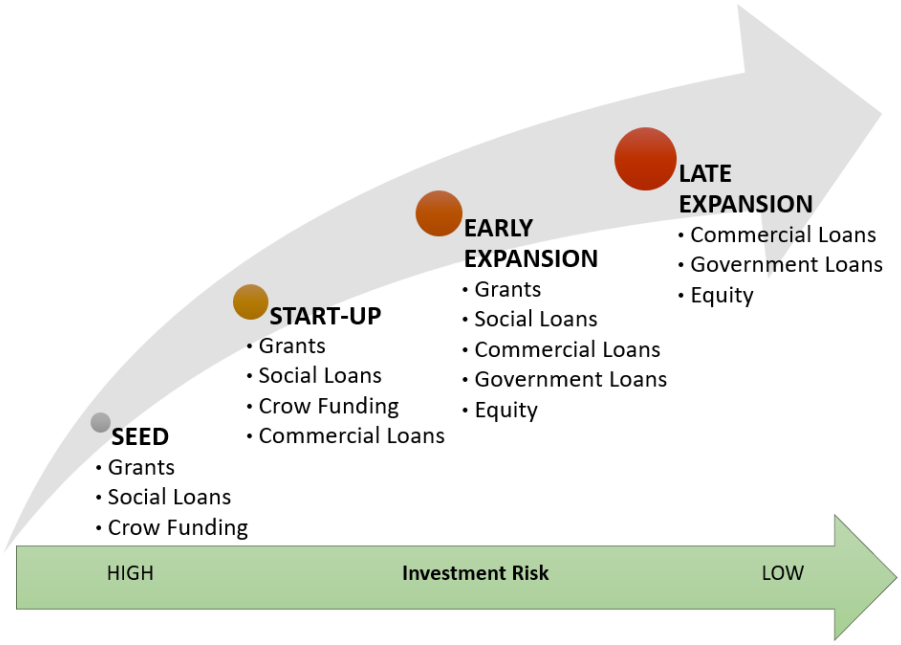

Figure 4. Hybrid funding model (adapted from [32])

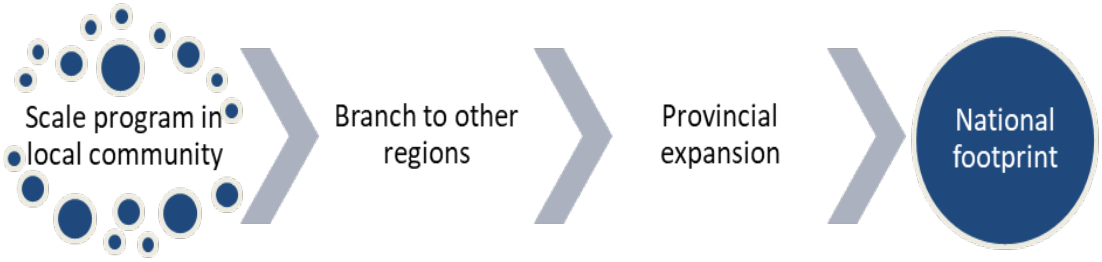

Figure 5. Graphical presentation of scaling model

For measuring impact, social, financial and legitimacy metric are used. The social impact metrices include the number of people employed, change in household income with associated outcomes such as social cohesion, community health amongst others. Financial performance metrices amongst others include growth in revenue, economic and social value. Lastly for legitimacy metrices legal compliance including payment of taxes [33,34].

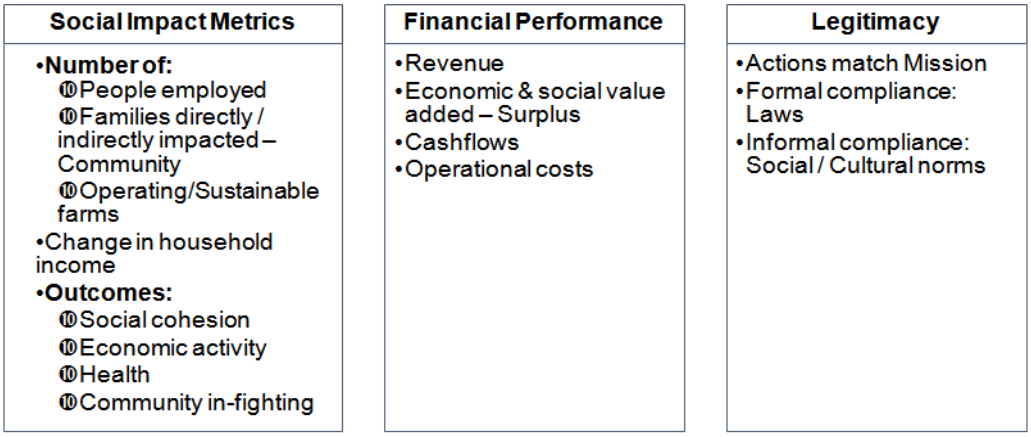

Figure 6. Impact Measurement Metrices [33]

5. Conclusion

Social entrepreneurship in urban agribusiness enterprises or entrepreneurial activities is still not well defined with a range of interpretations and understanding. However, the models described provide frameworks which can be applied at a farm level, broader networks and collaborations and at institutional levels. These models are not solely focused on profitability but also on the social impact which is very much needed to transform society. An examination of existing literature and interviews conducted with experts in urban agriculture and entrepreneurship revealed and highlighted important operational and strategic challenges faced by urban farming initiatives in Johannesburg. The views from the key experts and the literature review contributed to conceptualise a proposed business model based on social entrepreneurship principles for developing and enhancing small agribusiness urban farms in Johannesburg. The proposed business model addresses key operational, management and financial competencies that are required to enable the successful implementation of sustainable social enterprises to address unmet needs in society. This study provides a platform for ongoing research in the area of urban agriculture production systems and the food value chain.

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