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**PROGRAM DESIGN FEATURES ATTRACTING YOUTH IN  
DIEPSLOOT TO URBAN AGRICULTURE:  
EXPLORING RHIZA BABUYILE'S TINY FARM AGRI-PROGRAM**

Nyasha Frank Chibanda

A Capstone Paper submitted in partial fulfillment of the requirements for a  
Master of Sustainable Development at SIT Graduate Institute in Brattleboro,  
Vermont, USA.

10 May 2021

Advisor: Joseph Lanning, PhD.

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Student name: Nyasha Frank Chibanda

Date: 10 May 2021

## **DEDICATION**

I dedicate this paper to my late grandmother, Eva Dhlakama, who lifted me at my lowest. Her inspiring words of encouragement and the reminder that everything happens in God's time kept me going through undergraduate and graduate studies.

## **ACKNOWLEDGMENTS**

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## **ABSTRACT**

The COVID-19 crisis has brought to the fore the fragility of our local, national, and regional food and economic systems. Urban Agriculture (UA) is one solution to rebuilding local food system resilience and creating sustainable livelihood opportunities for the region's growing youth population. Although there is an acknowledgment of the utility of the growing number of interventions promoting youth participation in UA, research on specific program design features that attract youth participation is limited. This Capstone research aimed to determine the program design features that attract unemployed youth (18-35 years) living in Diepsloot, Johannesburg, to participate in UA.

The study utilized a mixed-methods explanatory sequential research approach using a single case study of Rhiza Babuyile's Tiny Farm Agri-Program to answer the research question. The findings indicate that despite the barriers to youth involvement in UA, such as limited access to appropriate and adequate financial services, lack of access to land, lack of access to relevant skills, information, and education required to engage in the sector, and unclear market linkage strategies, youth in Diepsloot see UA as a viable livelihood source. The study found that the four most significant program features that attracted youth to Rhiza Babuyile's program are: market-based agricultural skills training, agribusiness training, access to finance facilitation, and market linkages facilitation. The most significant implication for professional practice from these findings is that organizations and governments must ensure that interventions seeking to promote unemployed urban youth participation in UA must address youth participation barriers holistically.

# **1. INTRODUCTION AND STATEMENT OF RESEARCH QUESTION**

## **1.1 Introduction**

The world is currently grappling with the impact of the COVID-19 pandemic. The pandemic exposed our health systems and brought to the fore the fragility of our local, national, and regional food systems and economies (Bene, 2020). The lockdown policies imposed by governments to control the pandemic led to income losses. The income shocks translated into food insecurity for low-income households (Arndt et al., 2020). The situation has left devastating socio-economic impacts across the globe.

On the one hand, governments in high-income countries have designed fiscal and monetary interventions to compensate for the income losses experienced by businesses and workers and curtail possible economic crises (Laborde et al., 2020). On the other hand, governments in low and middle-income countries (LMICs) have had limited relief interventions to address the lockdown measures' secondary impacts (IPC SA, 2021). As a result, food insecurity experienced at the local levels (households, communities, districts) in LMICs are particularly distressing, and the lack of robust fiscal and monetary interventions will potentially draw out hardship (particularly food insecurity) induced by an economic decline (Laborde et al., 2020; Arndt et al., 2020; Bene, 2020).

The pandemic's impact has amplified the calls to build local food system resilience (Battersby and Hunter-Adams, 2020; Joubert, 2020). The rebuilding process presents an opportunity to strengthen local food systems and address structural issues such as lack of local (i.e., urban and peri-urban suppliers) market integration and rising food prices due to increased production costs, particularly rising fuel prices (Pereira, 2014). It also presents an opportunity to encourage and support youth participation in UA.

There is an acknowledgment among policymakers, development practitioners, and academia that agriculture can unlock Africa's economic potential and create sustainable

livelihood opportunities for the growing youth population (FAO, 2013; Metelerkamp et al., 2019). Most studies and policy interventions have focused on examining the potential and ways of creating opportunities for rural youth (Cheteni, 2016; Sinyolo and Mudhara, 2018; Nhamo and Chikoyo, 2017). However, there is limited analysis of urban youths' participation in agriculture. Consequently, little understanding of their experiences and perceptions contributes to their non-engagement and failure to tap into agricultural value chains.

This urban youth disengagement is not sustainable, especially in an environment characterized by high food insecurity<sup>1</sup>, a bulging urban youth population<sup>2</sup>, and chronic youth unemployment<sup>3</sup>. This realization has led to a proliferation of interventions that promote youth engagement in Urban Agriculture (UA). As a youth development practitioner, I have been involved in some of these initiatives. In response to the COVID-19 induced food insecurity in the communities that we serve, my employer, Harambee Youth Employment Accelerator (Harambee), partnered with the Agriculture Development Agency (AGDA) to train 660 young people from three townships (Soweto, Mamelodi, and Olievenhoutbosch) in Johannesburg, South Africa on micro-farming techniques and helped them set up small gardens at home and other open public spaces like churches and schools. I also supported a project run by African Women in Agriculture that trains young women from Johannesburg South in farming as a business through a one-year agricultural incubation program. There are other examples of these interventions tapping into youth's energy and passion for building resilient local food systems in response to a proliferation of various shocks and stressors. These UA interventions focused on addressing structural barriers such as lack of technical and business support to emerging farmers and lack of local (urban and peri-urban farmers)

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<sup>1</sup> 20% of the South African population was experiencing high levels of acute food insecurity in 2020 (IPC, 2021)

<sup>2</sup> 34% of the population is aged between 18-34 years (Stats SA, 2019)

<sup>3</sup> 63% of South African youth 15 – 35 are unemployed (Stats SA, 2020)

market integration. For instance, on the one hand, the Urban Agriculture Initiative (UAI), a social impact agricultural initiative, is centered around addressing social challenges such as burgeoning youth unemployment and urban food insecurity by stimulating job creation or providing entrepreneurial opportunities to reduce the strain on food security and improve food resilience by providing inner-city inhabitants with business opportunities in the farming sector (as farmers or agro-processors). While on the other hand, the Nedbank Learnership in Horticulture and African Greeneurs provides an opportunity for skills development, particularly in strengthening good agricultural practices, farming as a business, and entrepreneurial skill development focused on youth.

## **1.2 Research question**

Although there is an acknowledgment of the utility of the growing number of interventions promoting youth participation in UA, research on specific program design features that attract youth participation is limited. This study seeks to fill that knowledge gap by asking the question: What program design features attract unemployed youth (18-35 years) living in Diepsloot to participate in urban agriculture? The study will ask three sub-questions (i) What are the urban agriculture perceptions of youth living in Diepsloot? (ii) What are the barriers to youth involvement in urban agriculture? and (iii) What are the strategies used by the project implementers to target, recruit, and retain youth participants for optimal impact?

The study builds on previous research on UA, its utility, barriers, perceptions, and productivity of urban farming systems to zoom in on youth involvement and program design features that attract and encourage youth participation. This study's broader impact is to inform youth and UA organizations, specifically program designers, implementors, and funders, of attractive program features that they could incorporate in their interventions to attract and retain youth participation. Additionally, the research informs policymakers about

practical solutions addressing barriers to youth involvement in UA by critically analyzing RB Tiny Farm Agri-Program's case and offering suggestions for addressing UA's youth participation barriers.

## **2. LITERATURE REVIEW**

The literature review will explore key concepts: UA, sustainable development, youth unemployment, and barriers to youth involvement in urban agriculture. Additionally, the review will examine the contributions that UA makes towards sustainable development and the types of UA youth intervention models adopted by organizations and development practitioners.

### **2.1 Urban Agriculture**

Although not always acknowledged as 'Urban Agriculture,' the concept of farming in cities and the benefits of food production and self-sufficiency in growing cities is longstanding. These practices have been documented across the world, from Europe, the Middle East, Africa, and the U.S in different ways (Green, 2012). For instance, there have been reports of farmers from Mesopotamia farming in cities as far back as 3,500 BC. While in the 1880s, the Salvation Army's early projects in London focused on establishing "farm colonies" designed to ensure self-sufficiency in urban areas (Grant, 1987), today's eco-villages are likened to these farm colonies (Green, 2012). In the 1950s, Israel saw the establishment of "*kibbutz*," which are collective communities organized around protected lands set aside for agriculture (Leviatan, 2013). The term urban agriculture was popularised by Jac Smit, founder of the information and consulting organization, The Urban Agriculture Network (TUAN), founded in 1992. His first publication on the subject dates to 1980 (Bellows and Nasr, 2010). Smit et al. (2001) define UA as:

An industry that produces, processes, and markets food, fuel, and other outputs, largely in response to the daily demand of consumers within a town, city, or metropolis, on many types of privately and publicly held land and water bodies found throughout intra-urban and peri-urban areas. Typically, urban agriculture applies

intensive production methods, frequently using and reusing natural resources and urban wastes to yield a diverse array of land-, water-, and air-based fauna and flora, contributing to the food security, health, livelihood, and environment of the individual, household, and community (p.1).

Blazheva (2019, p. 432) views it as "a type of informal food supply system." Weissman's (2014) definition also includes the elements of "agricultural production including the cultivation of crops and animal husbandry within and in the fringes of the metropolitan area." (p.356). He also lists typical locations of UA - backyards, patio, and rooftop gardens, commercial operations of all sizes, vacant lot cultivation, institutional gardens, and community gardens. Van Tuijl et al. (2018) identify other types of UA, including vertical farms, plant factories with artificial lighting, zero-acreage farming, agro-park, and agro-tourism.

## **2.2 Benefits and critiques of urban agriculture**

UA has gained popularity, and scholars have invested time researching the benefits of UA on urban communities and the environment. In their study, Van Tuijl et al. (2018) argued that UA could promote "social, economic, and environmental aspects of sustainable city development." (p. 20). Arguing for the economic benefits of UA, Smit et al. (2001) assert that UA is an "easy-in, easy-out entrepreneurial activity for people at different levels of income" (p.2). They suggest that UA can achieve varying outcomes for different economic classes: (1) providing food access to the poorest of the poor, (2) providing a source of income and affordable, nutritious food to the stable poor, (3) offers the possibility of savings and a return on the urban property for middle-income families, and (4) a profitable business for small and large entrepreneurs. In the same vein, several researchers, including Olivier (2019); Prain and Lee-Smith (2010); Nkrumah (2019), also view UA as a viable option for improving not just economic livelihood options but also urban ecosystems and human nutrition and health. The analysis of who uses UA as an urban livelihood strategy and its contribution to household

income and savings by Prain and Lee-Smith (2010) is helpful. It provides a deep dive into UA's economic benefits and reinforces the argument of using UA as a source of livelihood.

The studies presented thus far provide evidence that there is merit in viewing UA as a solution to the socio-economic challenges in a community like Diepsloot<sup>4</sup>. Youth in Diepsloot could lift themselves from unemployment and strengthen their communities' food resiliency through UA.

There exists a considerable body of literature on other benefits of UA. Benefits like promoting social cohesion and gender equity (Orsini et al., 2013), providing an alternative to the hegemonic corporate agro-food system (Weissman, 2014), and regenerating the environment through city waste reduction, recycling, upcycling, and reusing, improving urban biodiversity and air quality, and minimizing environmental impact related with the transportation and storage of food (Orsini et al., 2013).

Previous studies identify three challenges with UA. Firstly, it is perceived as an elite activity for those with the means to practice (Poulsen, 2014 & Olivier, 2019). I can relate to this critique of UA because, in the context of South Africa, the majority of urban youth who could benefit from UA's income generation potential live in informal settlements where access to land, security, and water is limited. Therefore, the dynamics on how they experience UA are already different from those who live in the plush suburbs with security of tenure, access to potable water, and land use permissions. The second challenge is that although UA may address the availability of fresh, local produce, most of the food produced locally, especially by for-profit entities, is expensive, therefore failing to meet the affordability component in food and nutrition security (Siegener et al., 2018). Following this argument, Ryan-Simkins (n.d, p.1) contends that "UA may actually perpetuate food inequity" by "benefitting already privileged communities, contributing to the ongoing marginalization

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<sup>4</sup> An overview of Diepsloot is provided in section 3.1

and even displacement of disadvantaged groups." Thirdly, UA produce may not be as healthy and fresh as expected, especially in cities with high pollution levels. This is particularly true of a city like Johannesburg built on previous mining land. Previous research findings highlight that mining chemicals are seeping into water sources and soils (Ochieng et al., 2010). Moreover, food grown using new techniques such as soilless growing may lack essential nutrients (Van Tuijl & Hospers, 2018; Game & Primus, 2015).

### **2.3 Urban Agriculture and sustainability**

With the ever-increasing need to build resilient local food systems in response to the climate crisis and other shocks and stressors, rising poverty levels, inequality, and food and nutrition insecurity; the question arises: can we look to UA, among other solutions, as an answer to building resilient communities? In their paper, titled the *Unattainable Trifecta of Urban Agriculture*, Herrera and Porter (2015) explored the expectation that UA can address the following expectations and achieve these goals without outside funding:

1. Provide good and adequate food to people with limited financial resources at affordable prices.
2. Provide job training, work experience, and leadership development for people traditionally excluded from employment and leadership roles.
3. Generate income for producers and create jobs funded by profits from sales (p.21).

The study found that with the proper funding and policy, UA can achieve any of these goals. Therefore, it is evident that with the support structures and intentionality on which outcomes to chase, UA has a significant role in attaining sustainable development goals (SDGs). Specifically, goal 1 and 2 - decreasing hunger and poverty; goal 8 - creating decent livelihoods; goal 10 - reducing inequalities; goal 12 - creating sustainable food production patterns; and goal 15 - promoting the integration of environmental values in development

(Game & Primus, 2015, p.4). Despite these apparent links between UA and the SDGs discourse, the connection is not evident in previous studies.

## **2.4 Youth unemployment and youth participation in agriculture**

We now know that Africa's population is becoming increasingly urban and characterized by a youthful population (Banks, 2016; Guengant & May 2013). This bulging youthful population presents opportunities for the continent to leverage the demographic dividend. However, the continent has not been creating enough job opportunities for the increasing number of young people entering the labor market annually. Out of an estimated youth population of 420 million aged 15-35, 31% are unemployed and discouraged, 19% are inactive, and 50% are in wage or vulnerable employment (African Development Bank, 2016).

In July 2020, Statistics South Africa reported that over 8,5 million (41,7%) of the 20,4 million young people aged 15-34 were not in employment, education, or training. In a country struggling to bridge the inequality gap, these are worrying figures. This continued exclusion of youth from the workforce and economic opportunities perpetuates the poverty cycle among the 'poorest of the poor.'

In South Africa, youth unemployment is a systemic challenge stemming from the legacy of apartheid and the slow pace towards redressing that legacy by the current government. The government has invested many resources in creating policy frameworks to enhance youth economic participation and establish the National Development Agency to implement some policies (Graham and Mlatsheni, 2015). Much research and resources have gone into employability interventions. Most of these interventions address some of the underlying challenges from the supply and demand side. However, the stagnant economy, which is not creating enough new jobs, remains the most significant barrier. Due to the formal economy's limitations, young people participate in informal livelihood activities such as market trading, handcrafts or sewing, building, welding, and motor mechanics (de Satgé,

2002). Graham and Mlatsheni (2015) encourage the government and the civic society to support young people in strengthening their capacity and assets to operate effectively in the informal economy.

The agriculture value chain presents opportunities that could offset the strained formal employment pathways. There is an acknowledgment that agriculture can unlock Africa's economic potential and create sustainable livelihood opportunities for the growing youth population (Yeboah, 2018; Swarts & Aliber, 2013). The agricultural sector is about 65% of the total workforce in Sub-Saharan Africa (AGRA, 2015). However, the active participation of youth in the sector remains low. Most governments across Africa are still struggling to include and harness young women and men's potential to grow the sector (Mukembo et al., 2024). This study defines youth involvement, participation, or engagement in agriculture as "the active, empowered, and intentional participation of young women and men aged between 18 and 35 years as stakeholders, problem solvers, and change agents in all the activities along the agricultural value chain" (FAO, 2014). The activities include production, trading and marketing, processing and value addition, retail, and wholesale (Maiga et al., 2020).

The question then is, if there is consensus on the potential of the agricultural sector to address the chronic challenges of unemployment and food insecurity in Africa, why are we not seeing more youth involvement? Several authors have recognized the following barriers to youth participation in the sector:

- Limited access to knowledge, information, and education (FAO, 2014; Maiga et al., 2020; AGRA, 2015).
- Limited access to land (Maele et al., 2015; Yeboah, 2018; AGRA, 2015)
- Inadequate access to financial services (Weidinger et al. 2015; FAO, 2014)
- Limited access to markets (AGRA, 2015; FAO, 2014 )

- Limited involvement in policy dialogue (FAO, 2014)
- Wrong perceptions about the sector. Swarts and Aliber (2013, p.25) articulate the perceptions of urban-based youth of agriculture well when he states that they view it as "alienating from youth popular culture and of low status, offering little opportunity for making money and only reserved for the elderly and the poor in rural areas." With such perceptions, program designers of youth in agriculture interventions have to creatively think about what features to include in their interventions to attract urban youth.

## **2.5 Typology of youth in agriculture interventions**

These barriers, among other factors, have contributed to the declining participation of youth in agricultural activities since 2000. In response to this decline, governments and development practitioners have invested in various interventions that promote young women and men's active participation in agriculture (Maiga et al., 2020). With an understanding of the barriers stated above, extraordinary interventions are the ones that build the capacity of youth to engage in agriculture through agriculture education and skills training, link young people to markets, provide mentorship and ongoing support, and the ones that provide access to finance and other capital goods (AGRA, 2015).

With that in mind, if I were designing an intervention targeting youth participation in agriculture, I would consider how I incorporate the above to mitigate some of the identified barriers.

### 3. RESEARCH DESIGN AND METHODOLOGY

#### 3.1 Research site description

Diepsloot is one of South Africa's most densely populated townships, 30 km north of Johannesburg. The City of Johannesburg identified it as one of the fastest growing and most impoverished areas in Region A. It ranks high on deprivation - 91st out of 420 wards in Gauteng (De Wet et al., 2008). The extreme levels of poverty in Diepsloot are characterized by 70% of the population living in informal housing, which is housing to which the occupants occupy illegally or have no legal claim and is often

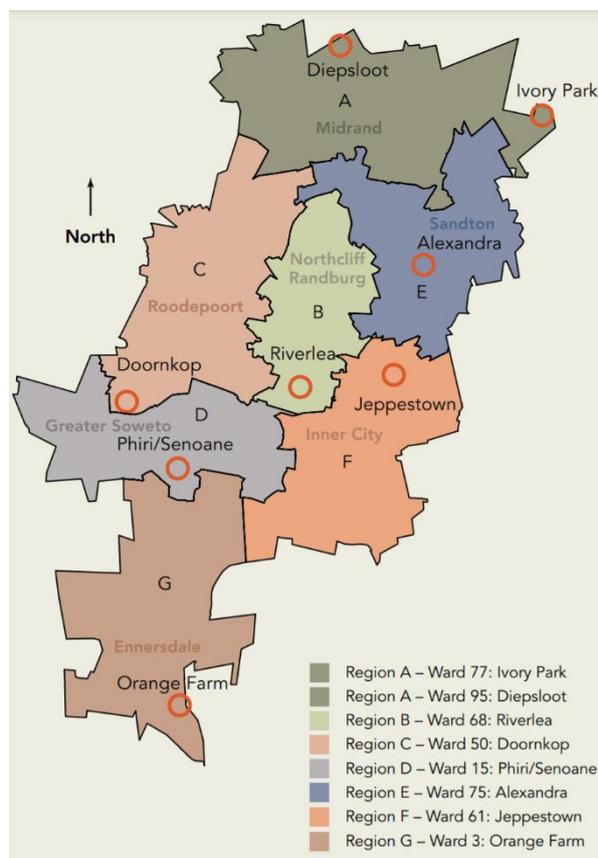


Figure 1: Geographic distribution of the selected poorest wards in Johannesburg (De Wet, et al., 2006, p.6)

characterized by lack of compliance with building or planning regulations, a lack of energy and basic sanitation and hygiene services and other public amenities such as healthcare (Weimann &by Oni, 2019). Additionally, there are high numbers of households receiving one or more of the seven types of social grants, high levels of households experiencing food insecurity (52%), and rising numbers of families per stand (5.20 per stand) (De Wet et al., 2008). The high youth unemployment rates (estimated at 47% by Stats SA, 2020) exacerbates the situation.

To address these chronic socio-economic challenges and many others, several civil society organizations, registered entities, and groups of non-governmental actors comprising faith-based organizations and community-based organizations with a mission; set up operations in Diepsloot. One of those organizations is Rhiza Babuyile (RB). They were

established in 2005 by Alef Meulenberg under the name Babuyile Community Development. RB's work targets and is deeply rooted in marginalized communities like Diepsloot, and their focus areas are healthcare, skills development, enterprise development, and education. In 2019, RB bought a 2-hectare plot in Diepsloot, and they converted it to a tiny farm. They intend to get youth in Diepsloot involved in UA through the 1-year Tiny Farm Agri-Program. The program equips participants with the knowledge and skills in sheep husbandry, poultry farming, beekeeping, and agriculture business skills. The program's overall goal is to improve the livelihoods and food security situation of youth and households living in Diepsloot.

This study will use this program as a case study to explore program design features that attract youth living in Diepsloot to participate in UA.

### **3.2 Tiny farm concept and model**

After purchasing the plot in Diepsloot, RB agreed with Big Inja Farming to adopt the tiny farm model at the site and for the Agri-Program. Big Inja Farming is a social enterprise established on regenerative farming practices. Ryan Meiring founded it in 2012. Ryan has been running a Tiny Farm on his property in Johannesburg, South Africa, since 2011. The tiny farm runs on a closed-loop regenerative agriculture system referred to as the MOB, MOW, MOVE methodology. Sheep are MOBBED close together; they MOW the grass, POOP, and MOVE to the next patch of grass. Chickens follow the sheep. The methodology mimics nature. They also keep beehives for honey production at the property.

Having seen success with this model, Big Inja turned this farming methodology into a plug-n-play tiny farm model that can be deployed on sites as small as one acre. They have created a network of these tiny farms that collectively produce, at scale, local nutrient-dense grass-fed lamb, pasture-raised chicken, protein-filled eggs, and raw, unadulterated

honey. With a big pool of tiny farms in their network, now Big Inja Farming provides a brand under which the farmers operate. They provide offtake agreements and help ensure quality standards are maintained by innovating supply while bringing down the costs with their collective buying power (Personal communication, 23 September 2020).

### **3.3 Researcher positionality**

I approached this research from a critical research paradigm perspective. The critical research paradigm asks the researcher to address two key questions (1) How will the research findings affect those studied? Moreover, (2) How will the results be used to change those studied or similar groups' social conditions? (Lin, 2015). According to Asghar (2013), critical research has immense potential to "challenge and improve the status quo, offers new and refreshing perspectives to explore issues and make a difference not only to the world of knowledge but literally to the world itself." (p.3126). That argument speaks to where I am. As indicated in the introduction section, my work with Harambee and my youth development passion drew me to this study.

Having been involved in designing youth employability interventions over the past five years, I know the value of being intentional about program features incorporated into the development interventions. I am also aware of the importance of sustainability, ownership, replication, and scaling-up interventions. As more organizations and government entities launch youth in agriculture interventions, I am keen to understand how they are thinking about the program features and whether there are components of a particular intervention that attract young people. Additionally, of interest to me is this shift from focusing on the narrative that youth, particularly urban youth, are not interested in agriculture activities to explore youth participation's positive elements to replicate at scale.

I chose the case of RB's Tiny Farm Agri-Program mostly because they adopted the regenerative agriculture model. The model is concerned with food production and income

generation and restoring the environment by building back the topsoil and working with nature. That is the primary feature that attracted me to the program. However, for a young person living in Diepsloot who has never heard about regenerative agriculture, would the knowledge that the program adopted that model influence their decision to join the program?

### **3.4 Research methodology**

To understand program design features that attract unemployed youth living in Diepsloot to participate in UA, I designed a mixed-methods explanatory sequential research. An explanatory sequential design "consists of first collecting quantitative data and then collecting qualitative data to help explain or elaborate on the quantitative results." (Subedi, 2026, p. 572). I chose this approach because the quantitative data and results from a survey provided an overall picture of the research problem, while the qualitative analysis, through the semi-structured interviews, helped me refine, extend, and explain that general picture.

### **3.5 Sampling strategy**

I divided the study population into two groups (1) program participants who are the beneficiaries of the Tiny Farm Agri-Program and (2) key informants who include RB staff and key partners.

#### ***Program participants***

RB's Tiny Farm Agri-Program targets unemployed youth between the age of 18-35 years. Participants should satisfy a minimum of three criteria, specifically, having attained grade 11, currently residing in Diepsloot, and coming from a low-income household. Additionally, the Program prioritizes female participants with a target of 65% participation. RB's team aims to recruit 50 participants at any given time; however, the Diepsloot intervention only managed to kick off with a cohort of 20 participants, 18 females and 2 males. They attribute the lower than anticipated numbers to COVID-19 induced delays in starting the program.

The survey questionnaire was sent to all 20 participants. For the semi-structured interviews, the study used a non-probability sampling technique to select the participants, particularly purposive convenience sampling. The sample was drawn by ensuring an equal distribution of three age groups (18-24 years, 25-30 years, and 30-35 years) among the female participants.

### ***Key informants***

The study utilized purposive sampling to identify three groups of key informants: Program Designers, Recruitment and Program Management Team, and Founders of the Tiny-Farm Model. Consequently, four key informants were selected for this study. The first group of key informants was the Program Designers. They designed and conceptualized the RB Tiny-Farm Agri-Program. These participants were key because they had the background information and rationale for all the program elements and were part of the team that conducted the Diepsloot needs assessment to understand the challenges youth in the settlement face and their aspirations. The second group of key informants were members of the Recruitment and Project Management team. These participants were key because they managed the advertising and recruitment process for this program. As a result, they had vital insights into applicants' general profile, questions raised by applicants during recruitment, and questions raised by participants at contracting; furthermore, they have valuable perspectives and insights into the program's retention strategy. The final group of key informants was the founders of the Tiny-Farm model. These participants were key because they provided technical insights on the rationale for adopting a regenerative agriculture approach. As a result, I identified key personnel at RB, key partners, and experts in agriculture youth interventions.

### **3.6 Data collection and analysis**

The data collection process consisted of three phases. First, I sent out a survey questionnaire developed through Microsoft Forms, an online survey creator. I sent the link to

the survey via WhatsApp to all 20 participants and got 16 responses. The survey questionnaire (Appendix A) consisted of categorical survey questions, ratio questions, and open-ended questions (Kabir, 2016). I used an online survey platform because online data collection minimizes the time to complete the "pre-processing steps that prepare data for further analysis, specifically data entry, cleaning, and formatting (Taheri et al., 2014). Using the online platform also helped with limiting face-to-face interactions, thereby limiting the spreading of Coronavirus. Second, out of the 12 female participants who chose to participate in a semi-structured interview, I interviewed nine.

Additionally, I interviewed one male participant to bring the total interviewed to 10 (50% of program participants). I used the interview guide (Appendix B) to cover all the relevant themes. All interviews with the program participants were conducted at RB's youth center in Diepsloot, where the program's theoretical components are delivered. Finally, I conducted semi-structured interviews with four key informants. Three of these were conducted over ZOOM and one in person at the informant's Johannesburg offices.

The data collection and analysis for participants focused on understanding (1) participants' perceptions of urban agriculture and barriers to involvement and (2) program implementers' strategies for program development and implementation. Saunders et al. (2012) state that in semi-structured interviews, data validity is determined by the respondent's ability to clarify questions and the interviewer's ability to probe for deeper meanings of responses. To ensure a high validity level, I conducted the interviews carefully and provided the respondents scope and space to clarify questions. I also probed for deeper meanings of words used to describe or explain perceptions to explore responses and themes from various angles.

The data consolidation process included the transcription of the interviews and thematic analysis. 'Discovery' of themes, patterns, and trends from the data was initially drawn from the interview guides' themes; however, new themes emerged during the interviews.

### **3.7 Ethics of research**

The School for International Training's (SIT) Institutional Review Board (IRB) 's approval of my human subject review application ahead of this study highlights the consideration I put into ensuring ethical research practice during the research process.

I was guided by the "do no harm" principle across the entire research process and in dealing with participants. I paid considerable attention to ensuring that I received signed consent from participants, communicated, and ensured that participants' privacy and confidentiality were maintained and that all direct identifiers are excluded in this paper. Although I knew that there were no apparent risks to participants, I took the responsibility to avoid or minimize risk seriously, and fortunately, no participant reported any mental or physical harm because of this study.

## **4. FINDINGS AND ANALYSIS**

### **4.1 Respondents' demographic and socio-economic profile**

Of the 20 program participants who agreed to participate in the research, 16 completed the survey. The survey results, which comprised 15 females and one male participant, highlights the disproportionate gender split among program participants. 44% of the respondents (n=7) are in the 25-30 years age group, while 18% (n=3) are in the 31-35 years age group, and 38% (n=6) are 18-24 years age group. All the respondents were black. Two respondents reported that they have children, while only one participant reported being married.

Survey results show that 44% (n=7) completed matric (the qualification received upon graduating from high school in South Africa), 19% (n=3) did not complete secondary school, 25% (n=4) have a certificate or diploma, and 12% (n=2) have a degree. Most of the respondents (10) indicated that they had been involved in agricultural activities in the past.

The involvement ranged from subsistence agriculture (4) to self-owned crop farming (5) and self-owned vegetable farming (2).

As illustrated in Figure 2, participants were asked to identify the various ways they support themselves financially. Most of the respondents identified at least two income streams. Survey results reveal that most respondents (10 participants) receive government grants (e.g., child support grant and the special COVID-19 social relief grant) as a source of income. Other significant income sources included self-employment activities such as running a small business, part-time work, and support from family members and friends.

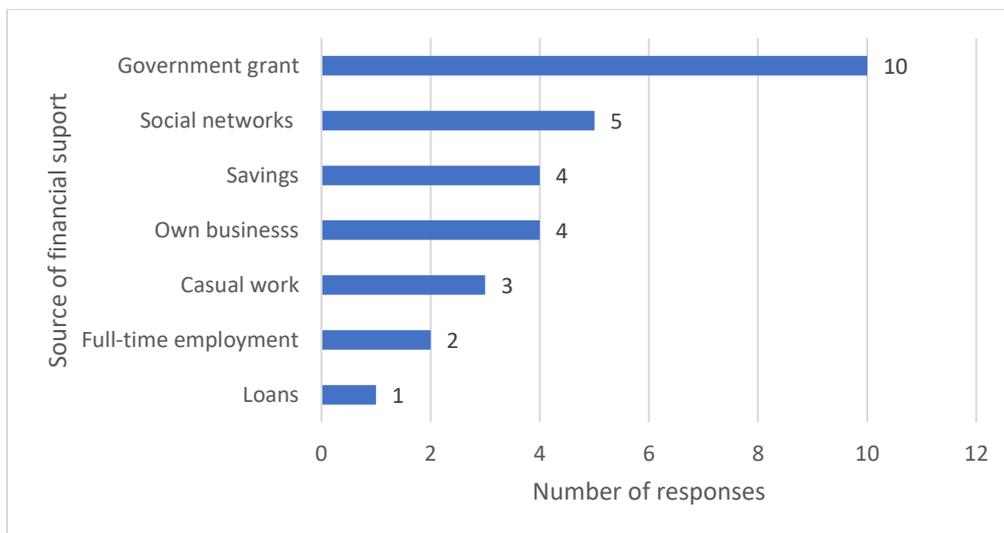


Figure 2: Participants' financial sources

#### 4.2 Urban agriculture perceptions of youth living in Diepsloot

To understand youth's perceptions of urban agriculture, the survey included a series of statements with five response options. The choices ranged from strongly disagree to strongly agree, which provided us with a holistic view of participant's opinions. Table 1 is an extract of the statements that elicited strong responses from the respondents.

Table 1: Urban Agriculture perceptions of youth

Statements to gauge youth agriculture perceptions	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<i>It is better to stay idle than be involved in agriculture</i>	13	3	0	0	0
<i>Only youth from the rural areas will take up agriculture as a livelihood</i>	6	9	0	1	0
<i>With farming, a person can be their own boss</i>	3	0	2	5	6
<i>Youth involved in agriculture have an old and unattractive lifestyle</i>	9	5	1	1	0
<i>Farming allows a person to take care of their family members</i>	0	1	6	7	2
<i>Old people dominate agriculture, and youth have no say in it</i>	7	3	3	3	0
<i>The agriculture sector can significantly reduce the high youth unemployment rate of the country</i>	5	0	0	4	7
<i>Attracting youth to agriculture will help ensure food security</i>	0	0	4	5	7
<i>There is no quick profits in agriculture</i>	0	5	3	7	1
<i>Agriculture is challenging but rewarding</i>	0	0	6	5	5
<i>If given the opportunity, my peers would engage in agriculture</i>	0	0	4	9	3

The interviews provided an opportunity to delve deeper into understanding these responses. During the interviews, all the participants indicated that they joined the program as an alternative pathway to earning a livelihood, with some narrating how exceptionally difficult it was to secure full-time employment.

From analyzing the responses, it is evident that agriculture is becoming an attractive livelihood due to the lack of employment opportunities for youth in urban areas. Ten respondents indicated that they had been involved in some form of agricultural activity in the past. Some mentioned that their upbringing exposed them to subsistence and commercial forms of agriculture. This exposure included hands-on experience helping their grandparents and seeing other successful farmers in provinces with economies that depend on agriculture<sup>5</sup>. Some youth explained that their interest was ignited through seeing other young peoples'

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<sup>5</sup> South Africa has nine administrative divisions named provinces. Diepsloot is located in the highly urbanized Gauteng province. This province's economy is heavily dependent on the financial, manufacturing, transport, technology, and telecommunications sectors. Other provinces namely, Eastern Cape, Northern Cape, Limpopo and KwaZulu Natal economies are centred around the agricultural sector.

successes in agriculture, either through television shows or observing peers in their community. This exposure 'conditioned' them to understand the benefits of farming as a business.

On the other hand, some respondents explained that finding full-time employment was difficult, so youth are "forced into agriculture." One participant suggested that youth perceive agriculture as a sector for those with savings since it does not offer quick returns and seldom creates an opportunity to establish a lavish lifestyle. As a result, it is not an attractive livelihood for youth that "like quick cash, and... do not like farming". One respondent added to this and indicated that if pursuing agriculture as a livelihood becomes unsuccessful (or if other more lucrative or opportunities outside the sector arose), knowledge of good agricultural practices in urban settings would still contribute to food self-sustenance, particularly in horticultural products.

#### **4.3 Barriers to youth involvement in urban agriculture**

As illustrated in Figure 3, participants were asked to identify the various barriers to youth involvement in urban agriculture. Most of the respondents identified at least three barriers. Limited access to knowledge and information, limited agricultural skills training, and limited appropriate and adequate financial services for setting up and investing in agrarian enterprises were the key barriers identified.

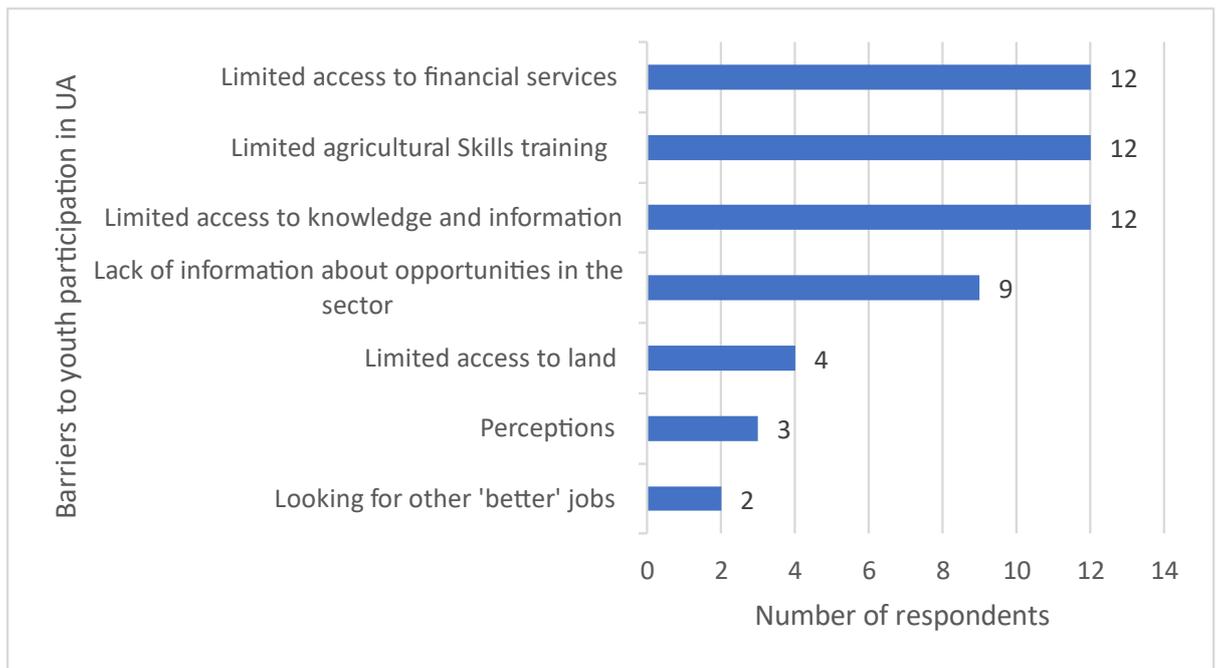


Figure 3: Barriers to youth participation in UA

Surprisingly, only 4 responses described limited access to land to engage in agricultural production as a barrier. The interviews revealed why the response was low, but the variable's importance remained key to youth participation in agriculture. Land, in and of itself, and particularly in a high-density urban setting such as Diepsloot, Johannesburg, is challenging to secure. The interviewees acknowledged that although municipalities offer land for agriculture, "persistence and patience" would be needed to pursue it as the process to secure land is very tedious, lengthy, and complicated. As a result, some participants indicated that they would train in Diepsloot then move to a Province where agriculture is a more dominant economic activity and where land is more accessible. One participant explained that access to resources to pursue a livelihood in agriculture is almost in a continuum, where access to knowledge of good agricultural practices, information about opportunities in the sector, access to finance and markets needed to be secured to develop a form of business plan then the land would be secured. This participant's views also indicated that just having land without the other resources might potentially be a disservice to the land, as the additional resources will enable full utilization of the land.

There were no significant differences between the barriers identified by the program participants and those identified by the key informants. This is because the key informant's perspectives were primarily influenced by a needs assessment conducted in Diepsloot. The needs assessment highlighted lack of adequate training on managing agri-businesses, limited financial knowledge and access to financial services, lack of inclusive networks into existing supply chains, or finding sustainable customer base for produce as key barriers.

A deeper dive into and analysis of the key informants' perceptions of barriers to youth in urban agriculture' demonstrates that they all discussed the lack of market linkages as a barrier to youth participation in agriculture. They highlighted that it is vital for youth to understand local (within the settlement and surrounding areas) opportunities. To substantiate this view, one key informant explained that if someone produces quality agricultural products, selling to their neighbors or local food markets could be more profitable than delivering to big chain operators because of no or limited transport costs<sup>6</sup>.

The key informants also acknowledged the lack of knowledge and access to finance as barriers. The regenerative model integrated into the program design was used as a design feature to showcase how input costs can be lowered by applying systems thinking to inputs. For instance, feed as an input to poultry farming could be derived from the outputs or waste from other systems (e.g., domestic food waste) to reduce feed costs, mitigating the barrier of access to finance for inputs such as feed.

Furthermore, limited or no access to land presented a barrier to urban agriculture, particularly to youth. One key informant explained that the program design with the tiny-farm model was an opportunity to showcase that youth do not have to own land to pursue a UA livelihood. They could simply lease land in someone's backyard, at a school or church, especially if they go into poultry farming or honey production, requiring small pieces of land.

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<sup>6</sup> In South Africa, fuel and energy prices/costs are key determinants of food prices.

The key informants intrinsic understanding of needs and challenges faced by youth played a pivotal role in the program addressing barriers to youth participation in UA, particularly the barriers based on perceptions of "must-haves" of agricultural systems.

#### **4.4 Motivation for joining the program**

The survey and interviews helped unpack why participants joined RB's Tiny Farm Agri-Program. Four themes were identified; specifically (1) knowledge and skills development, (2) getting an accredited qualification, (3) contribution towards social impact (through their Agri-enterprises), and (4) establishment of a livelihood.

In response to the question of why they joined the program, Participant 10 shared that "...to gain experience and get more knowledge in agriculture so that I can be able to have my own agri-business one day." The passion for agriculture also came through in participants' responses during the interviews. One participant explained that choosing to join the program despite not being paid a stipend demonstrates dedication and passion towards UA. Another participant reasons that they will get the technical and business skills plus the support to set up their enterprises; therefore, it is a worthy investment. Explaining why she joined the program, Participant 8 explains that she does not want to work for someone else. She wants to be her 'own boss', "...when I found out that they will also teach us agribusiness skills, provide us with startup capital and connect us with existing customers, I decided to apply."

#### **4.5 Strategies to target, recruit, and retain youth participants for optimal impact**

##### ***Key program features***

While reflecting on existing strategies to target, recruit, and retain program participants, key informant 1 explained that the program targeted youth living in Diepsloot aged between 18-35 years, and they had to be intentional about program features that would attract them to the program. He went on to state that:

during the needs assessment we conducted, we found that it is vital to design the right curriculum with the right basics of technical skills, soft skills, and entrepreneurial skills

and that the program is accredited through the Agriculture Sector Education Training Authority (AgriSETA). We communicated this to prospective participants and the fact that we will only use AgriSeta certified service providers for all components of the program.

The key informants identified seven key program features: first, the need to develop an accredited curriculum. The accreditation body, AgriSETA is responsible for accrediting sector-specific training providers and for monitoring the standard of training presented. Therefore, any AgriSETA accredited curriculum is viewed favorably in the market because it signals that the program meets minimum quality standards. Second, training in best agricultural/technological practice. Adopting the tiny farm model centered on regenerative agriculture practices enables participants to be equipped with best-practice training in smart, decentralized, regenerative agriculture and the latest technology in small-scale farming - theoretical training combined with practical training. The model's field management tools such as portable sheep pens and mobile chicken coops allow for the efficient daily moving of livestock onto fresh pasture with minimal effort.

Interestingly, although 14 out of the 16 survey respondents said they know the concept of regenerative agriculture, only 2 out of the 10 interviewees could articulate what it is beyond the fact that it is the model adopted by the program. Third, agribusiness skills training, including financial management, stakeholder/customer management, operations, and branding. Participants are encouraged to see themselves as entrepreneurs, not farmers. Fourth, access to finance facilitation. Program participants will receive 'Agri-preneurial' startup capital and support to apply for outside grants at the end of the program. Fifth, facilitating long-term leases on land for production and supporting participants to apply for land through local municipalities. Sixth, market linkages through existing partners. There is an existing offtake agreement with a leader in sustainable e-commerce food retail. Program participants who successfully establish enterprises will sign offtake agreements and not worry about finding buyers for their produce. Lastly, support will be provided to participants keen

on employment in the agriculture industry through RB's partner job placement agency, Tabula Rasa.

### ***The recruitment process***

Discussions with key informants about the recruitment process reviewed some of the challenges they encountered. This was the pilot program and the first urban agriculture program in Diepsloot, making the recruitment process unpredictable. COVID-19 complicated the process because of the limited face-to-face engagements. Under normal circumstances, they would have conducted information sessions in all the wards and at their center in Diepsloot. These challenges contributed to the failure to recruit and register the required number of 50 program participants.

Additionally, since the Program is grant-funded, they could not secure funding for stipends. Therefore, they competed with Learnership programs where participants are paid stipends to cover travel and meal costs. A Learnership is "a structured learning process for gaining theoretical knowledge and practical skills in the workplace leading to a qualification registered on the national qualification framework." (MERSETA, 2021). Learnerships duration could be anything between 12-18 months. However, the team believes that they recruited participants genuinely interested in the program and not those who sign-up for the sake of receiving a stipend. Therefore, the chances of retaining current participants for the duration of the program are high.

Adverts for the program went up on RB's website and social media sites, the national pathway management network's Facebook Page (SA Youth). Other channels included community radio and word of mouth. A sample of the advert that went up on social media sites is in Appendix C. The survey questionnaire asked program participants how they found out about the program, and 31% (n=5) indicated that they found out at the RB center, 25%

(n=4) through Facebook, 13% (n=2) through word of mouth, and 31% (n=5) through other channels.

### ***Success indicators***

Although there is no documented retention strategy in place, key informants expressed that a 90% participant completion rate would signal the pilot program's success. Other success indicators include at least 60% (n=12) of the participants starting their enterprises and the additional 40% (n=8) finding employment in the agriculture sector.

I asked an almost similar question to participants in the survey. Asked where they see themselves in five years, 100% of the respondents said they see themselves owning a farm – self-employed or engaged in entrepreneurship in agriculture. Some went as far as projecting the number of chickens they would be producing – "...independent Agri-preneur producing broiler chickens to a capacity of 5,000." Another respondent declared that they see themselves as "...a well-established sustainable farmer, having created employment to reduce poverty." Interestingly, only one participant mentioned employment in the sector after completing the program. Participant 7 contended that "I would use the experienced I gain through employment in the sector to start my own business."

## **5. DISCUSSION**

This study was designed to determine the program design features that attracted unemployed youth living in Deiepsloot to RB's Tiny Farm Agri-Program. The findings indicate that the four most significant program features that attracted youth to the program are: (1) market-based agricultural skills training, (2) agribusiness training, (3) access to finance facilitation through the startup small business grants, and (4) market linkages facilitation. I explore these program design features in the following sections.

## 5.1 Market-based agricultural skills training

Program participants' identification of a lack of agricultural skills training opportunities as one of the main barriers to youth's participation in agriculture is in line with Maiga et al.'s. (2020) findings. In their paper, the authors identified a lack of agricultural skills among youth as a barrier to youth engagement in agriculture. This study's findings show that the program did well to attract youth participants by incorporating relevant and accredited skills training into the program. Program participants identified with the program's three technical skills: poultry farming, sheep husbandry, and beekeeping. Having experienced the success of those in poultry farming within their communities, participants especially liked the idea of learning more about it.

It is important to note that market needs informed the three technical skills covered in the program. Therefore, it is not just training for the sake of training – the idea is that with market-relevant skills, participants can start their enterprises or get employment at the end of the program, thereby addressing the country's chronic youth unemployment problem. This approach answers the question of potential markets asked by most young adults seeking to get involved in agriculture. In addition to the market needs approach, offering AgriSETA accredited curriculum also contributed towards attracting youth to the program. Findings show that program participants believe that having a recognized certificate at the end of the program would enhance their credibility in the market. The issue of accredited credentials also appears to be a case of perceived elevated social status upon graduation. This argument is in line with Sommers' (2007) argument about the importance of understanding youth's beliefs and aspirations before launching a youth-targeted program.

This finding has two important implications for organizations seeking to attract youth to UA interventions. First, program designers should take the demand-led approach adopted by most progressive employability programs that design their interventions based on the

needs of employer partners who hire their program participants. UA program designers should invest time conducting a market analysis to identify market demands. Only after being clear on the market needs can they then design competency-based practical skills training to build participant's capacity to produce targeted products. The demand could originate from producers, processors, or consumers. Second, organizations must consider young people's need for an accredited certificate. In cases where it is not practical to go the accreditation route, organizations should consider alternative incentives like partnering with universities and other popular brands among youth whose logos can then go on the certificate of completion.

## **5.2 Agribusiness training**

Divergent to the perception that youth are not interested in agriculture either as a career or source of livelihood (Wuni et al., 2017; Mathivha 2012; Cheteni, 2016), the findings demonstrate that program participants view agriculture as a viable alternative pathway to earning a livelihood. All participants see themselves owning and running a farming enterprise in the next five years versus settling for employment in other sectors. These findings seem to be consistent with Metelerkamp et al. (2019), who found that youth aspire to start their agricultural businesses despite the lack of skills, role models, and resources.

The finding that 15 out of the 16 respondents to the survey were involved in some form of self-employment activities such as running a small business in the last year suggests that most program participants possess an entrepreneurial inclination. This trait might explain why incorporating entrepreneurship education into the program to enhance the curricula by including a broader agriculture perspective to match changing economic and sectoral trends resonated well with participants and their aspirations to run agribusinesses. The inclusion of entrepreneurship education is contradictory to the findings of Weidinger et al. (2015) that "current agricultural education and training programs for youths (in Sub-Saharan Africa) fail

to sufficiently include agricultural entrepreneurial skills that are adapted to the needs of communities and markets." (p.68).

The reality on the ground in most Sub-Saharan African countries is that urban youth are forced to become necessity entrepreneurs because of the limited formal employment opportunities. This study shows that the experience of trading or providing services in the informal economy motivates youth to acquire more business skills. Therefore, program designers can leverage this existing motivation by including entrepreneurship education in their UA programs targeting youth.

### **5.3 Access to finance facilitation**

Program participants' identification of lack of appropriate and adequate financial services for setting up and investing in agriculture enterprises as a barrier to youth participation in agriculture supports previous studies' findings (Weidinger et al., 2015; FAO, 2015). Despite the increase in the number of Financial Service Providers' (FSP) services in the agricultural sector, young people still struggle to access their services because of lack of collateral needed to secure loans and other services, lack of appropriate tailored products for youth, and high-interest rates charged to youth due to the perceived increased risk (FAO, 2015).

Given these constraints, RB's inventiveness to source funds to provide startup small business grants to participants upon graduation is commendable. The prospect of developing agricultural technical and agribusiness skills and getting a startup grant to facilitate setting up their enterprises at the end of the training year was more than appealing to the program participants, especially in an environment where it is difficult to get a loan or any form of public or private financing. This group of youth would know the challenges considering their previous involvement in running small informal businesses. This feature may explain why participants joined the program despite the lack of a stipend. In some respondents' words,

"the long-term benefits of participation outweigh the instant gratification of getting a stipend now."

By providing a startup grant and facilitating access to finance, the program is advancing women's economic empowerment. Research shows that women struggle to gain access to startup funding (Afande, 2016; Morsy, 2020). Despite these disparities in accessing finance, the International Finance Corporation study found a link between the financing and growth among women-owned small and medium enterprises compared to the rest (CDC Group, n.d).

Two implications for this finding are: (1) Organizations interested in designing, implementing, or funding urban agriculture initiatives that promote youth participation and involvement in the agriculture value chain, have to find ways to provide startup small business grants to participants. For programs providing skills and business management training, complimenting that by facilitating access to finance increases the chances of success (Buvinic and O'Donnell, 2016). (2) UA interventions targeting youth can apply a gender lens to program design features by striving to provide startup grants, facilitate access to finance, and financial literacy training, particularly for women from marginalized backgrounds.

For unemployed youth who want to participate in UA interventions, two factors to consider before enrolling are (1) How is the program planning to actively link participants with various financing opportunities? (2) How does the business management component of the program equip participants with the essential financial capabilities needed to make sound financial decisions within their enterprises?

#### **5.4 Market linkages facilitation**

The findings show that RB will link program participants who successfully set up agriculture enterprises to private offtake markets through established partnerships. The agreement with Big Inja includes a provision that will see participants leveraging on existing

offtake agreements. Once they start producing, they will not need to worry about finding buyers for their produce. Considering that youth in Diepsloot have limited knowledge and experience of how markets work and have limited business experience, including pricing and negotiating, this support in market linkages empowers them to focus on maximizing innovation and production.

When designing or funding UA programs for unemployed youth from low-income households, program designers and funders need to consider that their target population has limited or no social networks that can support and connect them to sustainable markets for their produce. Therefore, it is essential to consider how the program will make market linkages. RB's guaranteed offtake agreements for participants are an excellent example. Another great example is the UAI's approach of clustering the farmers in their network and marketing their products through the UAI brand. Again, program designers ought to establish partnerships across the board to diversify market opportunities for program participants. For example, UAI sells its farmers' produce at the Johannesburg Fresh Produce Market, local restaurants, and local fruit and vegetable shops.

The findings have gone some way towards enhancing our understanding of youth perceptions of UA. Youth view UA as an alternative livelihood source. To fully maximize the potential of UA to provide a sustainable income, one would have to produce quality products and be able to sell the product at a profit. Therefore, when considering joining UA programs, youth should fully understand the level of market linkage support that the program will provide.

## **5.5 Other important program design features**

Two other design features were identified. Firstly, the literature review identified limited access to land as a barrier for youth participation in urban agriculture (Maele et al., 2015; Yeboah, 2018; AGRA, 2015). Findings show that program participants did not rank it

high among the barriers that youth in Diepsloot face because they believed that with the correct information, skills, and financial capital, they could find ways to access land. However, program designers acknowledge limited access to land as a barrier to youth participation in agriculture. That is why the intervention is committed to facilitating youth's access to land to boost their participation. By granting access to the RB's land in Diepsloot for the first year and committing to facilitating land lease agreements with the local municipality, program designers address this barrier. Additionally, the adopted regenerative agriculture principles adopted by the program maximizes production on minimum spaces. Thus, it can be suggested that in future recruitment drives, perhaps, communicating these features well could help attract more young people living in Diepsloot to participate in the program.

Secondly, as indicated in the researcher positionality section, I was drawn to this program because of the principles of regenerative farming practices adopted at the RB Diepsloot site. As a sustainable development student, the idea of farming and grazing practices that, among other benefits, reverse climate change by rebuilding soil organic matter and restore degraded soil biodiversity – resulting in both carbon drawdown and improving the water cycle (Rhodes, 2017) is attractive. However, one surprising finding was that despite it being spotlighted in the program advert, participants did not know much about regenerative agriculture, and the adoption of the approach by RB did not play a role in attracting them to the program. After explaining the concept to the participants, I interviewed, they liked the idea of being involved in farming practices that work with nature and not against nature to reverse the damage done by commercial agriculture. If participants successfully adopt this model in their agriculture enterprises, it will be a significant step towards rebuilding resilient local food systems that can withstand the stresses emanating from climate change, environmental damage, biodiversity loss, and shocks like the COVID-19 pandemic.

Participants will produce food for their households, earn an income from their produce, and in the process regenerate the soil biodiversity.

One unanticipated finding was that even though one of the program's outcomes is improving the food security of the Diepsloot community, food security is not a priority for the program participants. The top priority is the need to strengthen their livelihoods through UA. A possible explanation for this might be that, because of the prevailing economic challenges resulting in limited earning opportunities for youth, participants' focus is on the livelihood aspect more than the food security issues. However, the good thing is that successfully setting up productive enterprises at the end of the program will reduce food insecurity for their families and local communities. Similarly, the success of other youth UA initiatives in Johannesburg mentioned earlier (UAI and the Nedbank Learnership in Horticulture and African Greeneurs) will improve the local food systems and food security.

## **6. CONCLUSIONS**

This study used the results of a mixed-methods approach to determine program design features that attract unemployed youth living in Diepsloot to participate in urban agriculture. The study asked three sub-questions (1) What are the urban agriculture perceptions of youth living in Diepsloot? (2) What are the barriers to youth involvement in urban agriculture? and (3) What are the strategies used by the project implementers to target, recruit, and retain youth participants for optimal impact? The study focused on a single case study of RB's Tiny-Farm Agri- Program to answer the research question.

The study explained UA's utility in improving economic livelihood options, urban ecosystems, and human nutrition and health through a literature review. In the context of high youth unemployment rates in South Africa, I argued that UA could play a significant role in engaging youth not in employment, education, or training. Urban youth with an

entrepreneurial inclination could tap into agriculture value chains' opportunities to start enterprises and employ other youth.

Findings indicate that contrary to previous studies (Wuni et al., 2017; Mathivha 2012; Cheteni, 2016), youth in Diepsloot perceive agriculture as an alternative pathway to earning a livelihood. Program participants acknowledge the sector's opportunities, and given the correct information, technical and business skills training, and financial and market linkages support, they believe the youth would participate in UA. Regarding barriers to youth involvement in UA, this study produced results that corroborate the findings of a great deal of the previous work in this field. Barriers identified in the literature review, such as limited access to agricultural knowledge, information, and skills, limited access to land, financial capital, and markets, were also highlighted by program participants.

Although RB had to compete with some Learnership programs that pay stipends to attract unemployed youth in Diepsloot, they managed to attract dedicated program participants. The program was intentional about incorporating elements that address the identified barriers to youth involvement in UA. Findings of this study show that the following four program design features played a significant role in attracting unemployed youth living in Diepsloot to participate in the RB Tiny-Farm Agri-Program and become active participants in UA: (1) market-based agricultural skills training, (2) agribusiness training, (3) access to finance facilitation, and (4) market linkages facilitation.

Other program design features that could significantly attract unemployed youth living in Diepsloot to participate in UA include the program's commitment to facilitate access to land and the program's adoption of the regenerative agriculture model concerned with environmental restoration alongside food production imperatives.

## **6.1 Implications or recommendations for practice or policy**

The findings of this study have several important implications for future practice. Firstly, organizations (program designers, implementers, and funders) and governments must ensure that interventions seeking to promote unemployed urban youth participation in UA must address youth participation barriers holistically. This calls for programs to adopt an integrated approach that offers or facilitates youth access to complete and complementary packages that address agricultural and business skills, access to finance, and market linkages requirements. To understand these requirements, organizations and governments must place youth at the center of all policies, conversations, and interventions to get them involved in agriculture.

The second crucial practical implication from these findings is that unless young people develop the urgency to interrogate program design features of youth-targeted agriculture interventions to understand precisely how they address the barriers that keep them out of the sector, program designers might not elevate their ideas to match the complexities on the ground when developing interventions.

## **6.2 Limitations**

Three significant limitations need to be considered for this study. Firstly, when I conceptualized this research as a single case study approach, the expectation was that the first cohort of RB's Tiny Farm Agri- Program would kick off in August 2020 with a group of 50 young people from Diepsloot. However, due to COVID-19 induced lockdown policies in South Africa, there were delays in recruiting participants and the program's start. By the time the program started on 15 February 2021, only 20 people had successfully registered to participate. This meant that the number of respondents to the questionnaire reduced from the envisioned 50 to 20. The impact is reflected in that only one male participant responded to the survey questionnaire, laying bare the disproportionate distribution between male and

female participants – 2 versus 18. Therefore, the perceptions of young men are limited in this study.

Secondly, the late kick-off placed time constraints on data collection and analysis. By the time I concluded data collection at the Diepsloot site, I had run out of time to try to triangulate themes and results from similar initiatives in other settlements in Johannesburg and as a way of deepening the study's findings.

Lastly, findings on the urban agriculture perceptions of youth living in Diepsloot need to be interpreted cautiously because the sample population comprises young people who were most likely to perceive agriculture favorably, as demonstrated by their willingness to join the program. Unfortunately, the scope of the study did not allow for the inclusion of youth outside the program.

### **6.3 Recommendations for further research**

A natural progression of this work would be conducting a longitudinal study of RB's Tiny- Farm Agri-Program participants to examine whether the program's various elements that attracted them to join the program helped them successfully set up their agriculture enterprises. Given the unexpected finding that participants did not know much about regenerative agriculture (despite its central role in the program), another possible area of future research would be a study focused on technical design features of youth in agriculture interventions and their influence on enrolment, retention, and successful transitions for participants. Lastly, a further study could conduct a comparative analysis of UA programs seeking to promote urban youth involvement in agriculture. This work could shed more light on effective program design features attracting youth participation, varying success rates among various youth groups - educated versus not educated, female versus male, and different age groups.

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## APPENDIX A: CAPSTONE RESEARCH QUESTIONNAIRE

### ADMINISTERED TO PROGRAM PARTICIPANTS

Thank you for participating in this research project. This research study explores program design features that attract unemployed youth in Diepsloot to participate in urban agriculture. Please complete this questionnaire so that we can learn more about you and Rhiza Babuyile's Tiny Farm Agri-Program. We will use this information for research and publication, but we will not identify or associate your responses with your name. No identifying information will be included in the final capstone paper. This survey will take between 30-45 minutes to complete.

The questionnaire is divided into two parts: multiple-choice questions and open-ended questions. Please answer each question/statement as honestly as possible. Thank you.

#### Section A: Questions about you

1. *Gender?* ( )

- A. Male
- B. Female
- C. Other
- D. Prefer not to say

2. *Race?* ( )

- A. Black
- B. White
- C. Indian
- D. Colored
- E. Other, please specify\_\_\_\_\_

3. *Age?* ( )

- A. 18 – 24 years
- B. 25 – 30 years
- C. 31 – 35 years

4. *Marital status?* ( )

- A. Single
- B. Married
- C. Other, please specify\_\_\_\_\_

5. *Do you have any children?* ( )

- A. No
- B. - Yes

6. *What is the highest level of education you have completed? Do not include any courses that you did not complete?* ( )

- A. Less than Matric
- B. Matric Certificate/NQF Level 4 equivalent
- C. Certificate or Diploma

- D. Degree
- E. Other (e.g., short course, informal training)

**Section B: Questions about your employment history**

7. *Have you done any self-employment activities such as running a small business or working for yourself in the last year?* ( )
- A. Yes
  - B. No
8. *In the past year, have you done any casual or piece job/s (work that is not permanent)?* ( )
- A. Yes
  - B. No
9. *How do you support yourself financially (get money to live)? (Choose all that apply)* ( )
- A. Other people support me (give me food, money, a place to live, etc.)
  - B. I earn money from regular work
  - C. I earn money from running my own business
  - D. I borrow money
  - E. I use the money that I have saved up
  - F. I get a bursary or money from volunteering
  - G. I get a grant from the government (e.g., a grant for my child)
  - H. I earn money from piece jobs/casual work
  - I. Investment
  - J. Saving
  - K. Others

**Section C: Questions about agriculture and the Agri-Program**

10. *How did you find out about Rhiza Babuyile's Tiny Farm Agri-program?* ( )
- A. Facebook
  - B. Word of Mouth
  - C. Rhiza Babuyile Centre
  - D. Radio
  - E. Other
11. *Have you been involved in agricultural activities in the past?* ( )
- A. Yes
  - B. No
12. *If you answered yes to the previous question, please select the type/s of agriculture involved in the past.* ( )
- A. Family Owned Subsistence agriculture
  - B. Self-Owned Crop Farming
  - C. Self- Owned Vegetable Farming
  - D. Self- Owned Animal Rearing
  - E. Other

13. *What are the barriers or challenges that young people in Diesploot encounter when it comes to agriculture participation? Choose all that apply ( )*

- A. Lack of access to knowledge and information
- B. Lack of agricultural skills training opportunities
- C. Lack of information about opportunities in the agriculture sector
- D. Lack of appropriate and adequate financial services for setting up and investing in agriculture enterprises.
- E. Busily looking for other 'better' jobs
- F. Limited access to fertile land to effectively engage in agricultural production
- G. The perception that agriculture is for older people and those living in rural

14. *Do you know the concept of regenerative agriculture?*

- A. Yes
- B. No
- C. Not really

## Section D: Your views towards agriculture

In this section, you will find 21 statements. We would like to get your honest view on each statement. Please select one option from; strongly agree, agree, neutral, disagree, or strongly disagree to indicate your opinion towards the statement.

	Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	It is better to stay idle than be involved in agriculture					
2	Only youth from the rural areas will take up agriculture as a livelihood					
4	Scientific farming is always profitable					
5	Farming is the most laborious profession					
6	Educated youth should come to the agriculture sector					
7	Farming requires extensive skills and training in agriculture					
9	Agriculture as a profession has a bleak future in the country					
10	With farming, a person can be his own boss					
11	Youth involved in agriculture have an old and unattractive lifestyle					
12	The government is doing enough to inform youth in Diepsloot about the opportunities in agriculture					
13	Farming allows a person to take care of his family members					
14	Old people dominate agriculture, and youth have no say in it					
15	The agriculture sector can significantly reduce the high youth unemployment rate of the country					
16	Attracting youth to agriculture will help ensure food security					
17	There is no quick return of money in agriculture					
18	Agriculture is challenging but rewarding					
19	Peer pressure moves the youth out of agriculture					
20	It is difficult to earn a stable income from urban agriculture					
21	If given the opportunity, my peers would engage in agriculture					
22	Mentorship is critical to encourage longterm youth participation in agriculture					

*Adapted from (Tripathi et al., 2018)*

**Section D: Open-ended questions**

1. 15. Why did you apply to Rhiza Babuyile's Tiny Farm Agri-Program?
2. 16. What do you like about the Tiny Farm Agri-Program?

**This is the end of the questionnaire.**

Thank you so much for your patience. Please click on submit to send your responses. We will use this information for research and publication, but we will not identify you or associate your comments with your name

Thank you so much for your participation.

Nyasha Frank Chibanda

[Nyasha.chibanda@sit.mail.edu](mailto:Nyasha.chibanda@sit.mail.edu)

## APPENDIX B: INTERVIEW QUESTIONS

### Program Participants' Interview Questions

1. Can you briefly tell me about yourself, mainly focusing on your educational and post-high school experiences?
2. How long have you been living in Diepsloot?
3. Can you tell me about your employment status before joining the Agri-Program?
4. Before joining the Program, what was your involvement with agriculture?
5. What comes to mind when you hear about agriculture, and what does urban agriculture mean to you?
6. In your opinion, what are the barriers to youth involvement in urban agriculture? Think of yourself and your peers.
7. How did you find out about the Program and the first thing that came to your mind?
8. What attracted you to the Program? There must be some things that made you say; "I want to apply and become part of this Program. What are those?"
9. What surprised you the most when you started the Program?
10. How would you describe the Program to a friend who has not heard about the Program before?
11. Now that you enrolled in the Program, what does success look like for you?
12. Is there anything that we have not discussed that you would want us to talk about?

## **APPENDIX C: ADVERT - RB'S TINY FARM AGRI-PROGRAM**

### **Rhiza Babuyile Agri-programme**

Want to be a trailblazer in a fantastic opportunity to feed your family, community and earn an income? Rhiza Babuyile is looking for unemployed youth in Diepsloot with energy and passion for learning, an interest in urban agriculture, and the desire to gain financial freedom through agripreneurship. Participants will have an opportunity to set up tiny farms on Rhiza Babuyile's property and get to learn and earn during the 1-year training period starting on 4 January, 2020. The program's objective is to develop youth agripreneurship skills for employment in the agricultural sector and help them set up tiny farms.

Throughout the year, participants will be trained in three different farming disciplines:

1. Sheep rearing
2. Poultry farming
3. Beekeeping

#### **Application Requirements:**

- 18 -35 years old
- Grade 11
- Must be based in and around Diepsloot
- Must possess a 13-digit barcoded SA ID or other documents recognized by the South African Government

#### **How to apply:**

1. Email your CV and motivation letter to [thapelo@townshipleva.co.za](mailto:thapelo@townshipleva.co.za) with the subject line "Agri-programme", OR
2. Drop off your CV and motivation letter at:  
Rhiza Babuyile  
Bophelong Skills Centre  
Extension 6  
Diepsloot

Deadline for applications: 11 December 2020