



GreenCape

CASE STUDY

Urban rooftop agriculture and the Agri-Incubator Model:

A case study for replication

Acronyms

B-BBEE	Broad-Based Black Economic Empowerment
ED	Enterprise Development
ESG	Environmental, Social and Governance
FAO	Food and Agriculture Organisation of the United Nations
IPCC	Intergovernmental Panel on Climate Change

NDP	National Development Plan (SA)
NGO	Non-Governmental Organisation
NQF	National Qualifications Framework
QLFS	Quarterly Labour Force Survey
SA	South Africa
SED	Socio-Economic Development
Stats SA	Statistics South Africa

Key insights



The Urban Growers model has been implemented in retail and corporate property settings across South Africa.

- **Proven and scaling:** 12 farming hubs across 7 provinces, 800+ individuals impacted, with a clear pathway for replication.
- **Resource-efficient and off-grid:** ~90% less water than conventional agriculture, zero grid electricity (no exposure to loadshedding) and high-density vertical growing on roughly 240 m².
- **Skills and enterprise pipeline:** Each incubator trains 16–24 unemployed youth per year through accredited NQF Level 2, 4 and 5 qualifications (University of Venda), with graduates equipped to run their own urban farms.
- **Blended financial model:** Produce sales (basil baseline ~R12 800 per month per incubator, with scenarios pointing to higher figures for premium crops) combine with corporate Socio-Economic Development (SED) and Enterprise Development (ED) contributions to make the model financially viable, and every rand of funder contribution earns recognised B-BBEE impact.

The model represents an opportunity for urban property owners and managers to implement high-impact ESG and socio-economic development programmes on assets they already own.

- **Activates an idle asset:** Underutilised rooftops become productive, climate-smart spaces with no permanent change to the building and minimal operational burden on the property.
- **Dual B-BBEE benefit:** Donated or below-market rental of the rooftop counts as a benefit-in-kind, while contributions to programme expenditure qualify for ED and SED recognition.
- **Verifiable ESG data:** The TouchAfrica platform tracks crop cycles, training, yield and socio-economic outcomes in real time, providing the auditable evidence corporates and ESG investors need.
- **Triple bottom line:** Social impact (youth jobs and accredited training), economic impact (commercial produce and youth-led enterprises) and environmental impact (water-efficient, off-grid, climate-smart food production).

This case study is written for Urban property developers, corporates, retail centre managers and Environmental, Social and Governance (ESG) investors seeking to implement space efficient, climate-smart urban agriculture that delivers measurable and verifiable ESG impact, Broad-Based Black Economic Empowerment (B-BBEE) benefits and unlocks socio-economic development.



Context and background

Across Southern Africa, urban populations are facing food insecurity, rising food prices, a growing youth unemployment rate¹, and the increasing effects of climate and resource instability. Conventional agriculture remains dependent on land, water infrastructure and reliable energy resources that are increasingly constrained or costly in many urban and peri-urban contexts. At the same time, cities and commercial centres

contain large areas of underutilised rooftop space. For property owners and corporates, these spaces present an opportunity to deliver visible ESG and socio-economic impact while activating otherwise idle infrastructure. The African Grower model responds to this opportunity by converting unused rooftops into productive agri-incubators that combine food production, skills development and enterprise support.

¹ The national unemployment rate stood at 32,7% in Q1:2026, the burden was disproportionately carried by the youth, with those aged 15-24 facing the highest unemployment rate at 60,9%, followed by those aged 25-34 at 40,6% (STATS SA, Quarterly Labour Force Survey, Q1 2026)

Case study

The Kenilworth Shopping Centre

Launched in November 2022, the HandPicked CityFarm at Kenilworth Shopping Centre was the first retail urban rooftop farm established in the Western Cape, brought to life through a multi-partner collaboration that offers a replicable model for property owners across South Africa. Redefine Properties, as landlord of Kenilworth Centre, donated the rooftop space as a benefit-in-kind directly supporting their B-BBEE Enterprise Development obligations while activating an otherwise idle asset.

The Mr Price Foundation's HandPicked Programme serves as the primary operator, channelling farm income back into the project and training two unemployed youth from Langa each month; 16-24 agripreneurs annually, equipping each graduate to establish their own urban farm upon completion. Fresh Life Produce supplies the African Grower vertical tower technology, while the SA Urban Food & Farming Trust and Oranjezicht City Farm contribute training expertise and urban farming knowledge, piloting the commercial viability of rooftop hydroponic production for wider replication.

The Black City Farm Project in Langa provides community linkage, embedding the initiative directly within the township economy it serves. Produce from the farm flows through multiple offtake channels: mall restaurants purchase fresh vegetables directly, iChilli le Langa uses crops like chillies in its sauce range, a dedicated kiosk sells to shoppers, and fresh produce is donated to at least two to three local NGOs each month. The Kenilworth model demonstrates that a landlord need not carry this initiative alone – by convening the right partners, a single rooftop can meet compliance obligations, generate verifiable social impact, and contribute to a circular local economy with minimal operational burden on the property itself.

The model directly addresses 13 of the UN's Sustainable Development Goals and 7 of the South African National Development Plan's priorities.



2 The African Grower technology

The African Grower system forms the enabling technology within the broader agri-incubator ecosystem developed by Fresh Life Produce. It is a hybrid-hydroponic vertical growing system made from recycled materials and uses coconut coir as growing medium.

- **Design and capacity:** Each vertical tower consists of stacked growing pots capable of supporting up to 16 plants.

A standard incubator setup features about 160 towers, giving it the capacity to grow approximately 2 500 plants at a time.

- **Footprint and flexibility:** The average incubator occupies 240 m² (20 meters x 12 meters). The infrastructure is modular, easily configured to suit any shape of real estate, flat-pack logistics-friendly, and can be completely removed from a rooftop without altering the infrastructure.

Crop selection and production yield

The system's-controlled environment (utilising growing tunnels) permits year-round crop production with 20–30% faster growing cycles.

- **Summer crops:** Tomatoes, cucumbers, bell peppers, chillies, and heat-tolerant basil.
- **Winter crops:** Spinach, kale, broccoli, rocket, and various lettuces. As shown in Table 1, basil provides a useful baseline for current production economics, generating approximately

160 kg per month per incubator and around R12 800 in monthly revenue at an average price of R80/kg. However, crop selection is a key driver of commercial performance.

Scenario analysis using indicative market prices for microgreens suggests that higher-value crops could materially improve revenue potential, provided that yield consistency, crop suitability and premium offtake channels are secured.



Resource efficiency

The model achieves massive resource efficiencies that bypass standard infrastructure barriers. It requires just 1/10th of the water of conventional agriculture (approximately 2 litres per tower per day), creating roughly 90% water savings. Vertical growing saves up to 83–84% of space compared to traditional soil farming, increasing plant density from 4–6 plants per m² to up to 40 per m². The system requires zero grid electricity, ensuring high resilience against power outages and load shedding.

Table 1: Indicative prices and monthly revenues for different crops per incubator

Crop scenario	Indicative price	Indicative monthly revenue
Basil baseline	R80/kg	R12 800
Microgreens, bulk supply equivalent	R365/kg	R58 400
Microgreens, retail equivalent	R800-R900/kg	R128 000 - R144 000

Note: these figures are indicative and should be treated as revenue scenarios rather than confirmed operating results.

3 The business and finance model

The African Grower model operates on a blended financing approach that combines sponsor/corporate funding for infrastructure and operational costs. It has relatively low capital costs compared to traditional commercial hydroponics. Table 2 outlines the indicative costs for an incubator setup.

Ultimately, this is a human development ecosystem wrapped in agricultural infrastructure. A single incubator can run up to three parallel training programs, empowering 16 to 24 participants every year. Community Interns are trained to become Farming Assistants, who then progress to Agri-Interns (Farm Operators), and eventually graduate as “Agri-Innopreneurs” capable of managing their own urban farm hubs. The qualifications from the programme are accredited in partnership with the University of Venda offering NQF Level 2, 4, and 5 agricultural qualifications.

This formalises the skills of township and rural participants without them needing to abandon their communities to attend traditional universities. To provide verifiable metrics for corporate ESG reporting, the ecosystem utilises the TouchAfrica™ platform. Operating on low-bandwidth cellular networks, it tracks operational variables in real-time, including crop cycles, mentoring progress, yield outputs, and socio-economic behavioural change. Property developers can offset these operational and capital costs via their ED and B-BBEE obligations.

Table 2: Indicative costs per incubator

Cost item	Indicative cost (ex. VAT)
Five-tunnel incubator setup, including office tunnel, seedling tunnel, towers and 2 500-plant capacity	~R500 000 (of which the African Grower vertical towers account for ~R190 000 - R200 000)
Smaller 3m x 4m tunnel with 32 towers	~R54 000
Training and mentorship programme	~R360 000 per year
Participant stipends for 16-24 participants	~R252 000 per year
Fertiliser refill pack	~R250 every six months
Coconut coir growing medium	~R400 per year

4 Pathway to replication

Fresh Life Produce has already proved the concept with a footprint spanning 12 farming hubs across 7 provinces, positively impacting over 800 individuals.

For property owners and retail managers looking to activate this on their own rooftops, the proposed replication framework follows five clear steps:

- 1. Site assessment:** Identify a suitable underutilised rooftop or commercial area for an on-site viability assessment and cost analysis.
- 2. Stakeholder review:** Present the resulting hardware and operational proposal to corporate stakeholders (focusing on ED/B-BBEE synergies).
- 3. Implementation planning:** Design a deployment timeline suited to the specific property constraints.
- 4. Deployment:** Deploy hardware (often flat-packed and rapidly assembled) and transition incubates to the site.
- 5. Scaling:** Identify a shortlist of additional portfolio sites for Fresh Life Produce to assess remotely.





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Concluding thoughts

The African Grower Rooftop Agri-Incubator demonstrates how underutilised urban infrastructure can be transformed into productive, climate-smart assets that support food production, youth development and local economic participation.

By combining off-grid vertical growing technology, accredited training, digital impact tracking and corporate B-BBEE and enterprise development mechanisms, the model offers property owners and corporates a practical way to activate idle rooftop space while delivering measurable ESG and socio-economic outcomes.

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