In our research, we focused on five case studies, each offering unique insights into the realities of urban and peri-urban gardening in Gauteng.

1. **Siyakhana Food Garden** – located in Johannesburg’s inner city, this project transforms unused public land into a highly productive urban farm using permaculture and drip irrigation.
2. **Orange Farm Backyard Gardens** – a community-driven initiative where households convert their small backyards into food gardens, benefiting thousands of families.
3. **Abalimi Bezekhaya Soweto Garden** – a woman-led initiative empowering female gardeners with the tools and knowledge to grow food despite land and safety challenges.
4. **Diepsloot Youth Project** – a youth-led movement transforming dump sites and vacant land into productive spaces through mentorship, training, and community gardening.
5. **EduPlant School Gardens** – a national program that equips schools with the knowledge and resources to grow food for learners while teaching sustainability and environmental stewardship.

Each case helped us understand what works, what needs improvement, and how these gardens impact their communities.

Let’s start with Siyakhana in Johannesburg. This project uses just **1,500 m²** but produces an impressive **1.5 tons of vegetables annually**, feeding around **50 families**.

What makes it unique is its **vertical gardening system**, which maximizes space in a dense urban environment, and **drip irrigation**, which reduces water waste. However, water remains a challenge—especially during droughts when Johannesburg imposes restrictions.

The garden uses up to **25,000 liters of water per month** during peak season and needs up to **10 tons of compost per year**. Financially, it operates at about **R15,000 monthly**, with much of this coming from donors—raising concerns about long-term sustainability.

* **Water supply** is unreliable. During droughts, municipal restrictions force reduced planting.
* The garden uses around **25,000 liters of water per month** during peak growing seasons—but this is not always available.
* **Compost access** is inconsistent. The garden needs between **5 to 10 tons annually**, but sourcing organic compost is expensive and logistically difficult.
* Financially, the project runs on roughly **R15,000 per month**, relying heavily on donor funding, which is not sustainable long term.
* Lastly, managing pests without chemicals requires constant hands-on care, making maintenance very labor-intensive.

Now turning to the **EduPlant Programme**, which supports over **300 schools** across South Africa, including many in Gauteng.

These schools use plots ranging from **400 to 1,000 m²**, producing up to **1,000 kg of crops annually**—enough to supplement meals for **200 to 400 learners per school**.

Beyond food, EduPlant offers **hands-on environmental education** and supports community involvement

This program has strong educational value and community impact, but several issues persist:

* **Soil quality** is poor—most gardens have less than 2% organic matter, leading to lower crop productivity.
* Water supply is another hurdle. Schools often rely on small **1,000 to 5,000-liter rain tanks**, which are inadequate during long dry periods.
* **Seasonal vulnerability** is a challenge: gardens are hard to maintain during school holidays, meaning some crops are lost or neglected.
* **Theft and vandalism** are common. In fact, nearly **1 in 5 schools** in the programme have experienced damage or stolen crops, which lowers morale and discourages investment in the gardens.

Despite these challenges, EduPlant continues to be one of the most structured and impactful food gardening initiatives in schools.

After analyzing all five projects, we identified **several recurring challenges** that cut across different contexts:

1. **Water insecurity** is the most common problem. Whether it’s schools, backyard plots, or urban gardens, everyone struggles when water is limited or irregular.
2. **Poor soil quality** significantly reduces harvests. Without composting or soil enrichment, yields drop as much as 40%.
3. **Space constraints** affect many projects, especially in dense areas like Soweto and Diepsloot. In some cases, families are working with as little as **10–30 m²**.
4. **Lack of gardening knowledge**—especially for first-time growers—makes it difficult to sustain healthy crops. Many participants start with enthusiasm but give up due to crop failures.
5. **Security issues** such as vandalism and theft directly impact productivity and community motivation. Some gardens even have to pause planting because of repeated theft.
6. **Financial instability** affects almost all the projects. Most rely on external donations or short-term grants, with no stable income model to keep them going.
7. **Access to basic resources**—like tools, seeds, and compost—is uneven. Many projects depend on donations or personal funds, which limits growth.
8. **Institutional support** varies. Projects connected to schools or NGOs tend to be more stable, but those run independently face isolation.
9. **Community participation** is a strong factor in success. Projects with deeper local engagement are more likely to survive setbacks.
10. And finally, **monitoring and evaluation** is weak in most cases. Without regular tracking, it’s hard to measure success or identify problems early.

These patterns helped us form our final recommendations, which I’ll explain shortly.