

14. Rooftop farming in the Greater Cairo Region

This pilot project, "Urban Agriculture in the Greater Cairo Region – The Example of Rooftop Farming in Informal Settlements," aimed to reduce climate vulnerability in Cairo's informal settlements through rooftop farming. Implemented in 2014, the project utilized hydroponic systems to grow various crops on rooftops, offering economic benefits and improving microclimatic conditions. The initiative demonstrated positive impacts on food security, income generation, and community involvement, particularly among marginalized groups.

Tags: Vulnerable communities, Rooftop farming, Urban agriculture, Community involvement.

CHALLENGES ADDRESSED:

- **Irregular water supply:** limited and inconsistent access to water creates difficulties for sustaining agricultural activities.
- **Heat stress** that impacts crop productivity and the health of urban residents.

MAIN OBJECTIVES:

- **Reduce climate vulnerability:** in informal settlements through rooftop farming.
- **Improve food security and income:** for low-income communities in Cairo.
- **Promote sustainable urban agriculture:** as an adaptation strategy to climate change.

+ FACTS

Project type: Rooftop farming pilot project

Partners: GIZ

Beneficiaries: Greater Cairo Region

Date: 2014 - 2016

+ PROJECT DESCRIPTION

The "Urban Agriculture in the Greater Cairo Region – The Example of Rooftop Farming in Informal Settlements" project aimed to explore rooftop farming as an adaptation strategy to reduce climate vulnerability and improve living conditions in Cairo's informal settlements. With the Arab region experiencing rapid urbanization and rising temperatures, traditional electricity-based cooling solutions like air conditioners have proven ineffective and overburden the grid. In contrast, rooftop farming provides an eco-friendly alternative, reducing heat stress, improving food security, and generating income.

In 2014, a pilot project was implemented in the Ezbet el-Nasr informal settlement. Using a hydroponic waterbed system, low-income families received training and technical support to grow various crops such as mint, tomatoes, and molokheya on their rooftops. To cover the costs of the system, participants took out repayable loans, which they repaid through the sale of their produce. The project also aimed to empower marginalized groups, such as women and youth, by promoting community participation and local economic development.

The key findings highlighted the importance of extensive capacity building, improved information on financial aspects, and addressing technical challenges like irregular water supply and electricity cuts. Additionally, the project's success depends on the collaboration of NGOs, microfinance institutions, and social enterprises.

The lessons learned from this pilot suggest that rooftop farming has strong potential for climate adaptation, income generation, and community engagement in urban areas.

+ IMPACTS AND RESULTS

- **Capacity building is crucial:** The project emphasized the need for in-depth training, particularly through urban producer field schools. This approach helped participants gain hands-on knowledge and empowered them to manage rooftop farms effectively.
 - **Improved engagement through transparency:** providing more detailed information on costs and operations allowed residents to better engage with the project, ultimately taking full responsibility for their involvement and contributing to its success.
 - **Technical innovation and adaptation:** Various farming methods, including hydroponic and soil-based systems, were tested. The results revealed that further experimentation is needed to identify the most suitable system for local conditions, highlighting the importance of adapting to specific challenges.
 - **Overcoming challenges through financial support:** Despite facing issues like irregular water supply and electricity cuts, the project demonstrated that income generation was a key motivator. The introduction of microcredits and micro-insurance could help ease financial barriers, ensuring the sustainability and scalability of rooftop farming initiatives.
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