Empowering communities in the face of climate change in Egypt

WFP
World Food Programme

SAVING LIVES
CHANGING LIVES

February, 2024

The **United Nations World Food Programme** is the world's largest humanitarian organization, saving lives in emergencies and using **food assistance** to build a pathway to **peace, stability** and **prosperity** for people recovering from **conflict, disasters** and the impact of **climate change**.

around 24,000 staff worldwide

Present in over 120 countries

160 million people assisted in 2021

US$23.5 billion needed to reach over 150 million people in 2024

+900 Inter/National partners

Relies on 5 SDG outcomes

4 Cross-cutting priorities

- Protection & Accountability to Affected Populations
- Gender Equality & Woman's Empowerment
- Nutrition Integration
- Environmental Sustainability

WFP acts towards climate change

WFP IS A MAJOR SUPPORTER IN THE FIGHT AGAINST CLIMATE CHANGE GLOBALLY:

Over US$300 million mobilized for climate action since 2009

Nearly 3 million people protected with climate risk mitigation insurance in 2021

Over 15 million people benefiting from climate risk management solutions in 2022

WFP PROGRAMMES SUPPORT COUNTRIES AND COMMUNITIES TO:

- **ANTICIPATE** CLIMATE HAZARDS BEFORE THEY TURN INTO DISASTERS
- **RESTORE** DEGRADED ECOSYSTEMS AS NATURAL SHIELDS AGAINST CLIMATE HAZARDS
- **PROTECT** THE MOST VULNERABLE WITH SAFETY NETS AND INSURANCE AGAINST CLIMATE EXTREMES
- **ENERGIZE** TO SUPPORT SCHOOLS AND COMMUNITIES TO ACCESS SUSTAINABLE ENERGY SOLUTIONS

HAPPENING NOW:
CLIMATE CHANGE IN EGYPT

Why it matters?

Climate change is the defining issue of our time and we are at a defining moment. From shifting weather patterns that threaten food production, to rising sea levels that increase the risk of catastrophic flooding, the impacts of climate change are global in scope and unprecedented in scale.

Egypt faces serious risks from climate change. As one of the most populous countries in the world, it relies on the Nile river for over 80 percent of its water and imports over 40 percent of its food needs; the supply of both is affected by climate change.

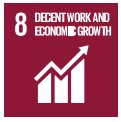
As a region heavily dependent on agriculture, Egypt is at risk of losing up to about 30 percent of its food production by 2050 as a result of declining agricultural land availability, soil degradation, sand encroachment, increasing temperatures and water scarcity. Agriculture is a major component of the Egyptian economy, contributing to over 11 percent of the country's gross domestic product. Communities in Egypt rely predominantly on agriculture, accounting for 28 percent of all jobs. While agriculture is a source of income for over 55 percent of Upper Egypt's rural households, it is a sole source of income for more than half of its rural households.[1]

For already economically stressed households that rely on agriculture for a living, climate change can inflict significant deductions on their income and can impact their ability to afford basic needs such as food, healthcare and education. Climate change not only affects farmers and their families, but also those involved in raising livestock, post-harvest activities and products. It exacerbates inequalities, threatens women's' jobs and livelihoods and dramatically increases women's and girls' unpaid care and domestic work.

[1] USAID. 2022. Egypt Agrriculture and Food Security

Areas supported by WFP activities under the rural development programme

As part of the national development initiative, **'Decent Life'**, WFP is actively changing the lives of rural communities in Upper Egypt.



ADDRESSING **CLIMATE CHANGE** THROUGH **INTEGRATED RURAL DEVELOPMENT**

Watch an overview of WFP's agricultural activities

In Egypt, WFP in partnership with the Ministry of Agriculture and Land Reclamation is supporting smallholder farmers to overcome climate-related challenges in **over 100 of** the poorest villages under the Presidential **'Decent Life'** initiative in **Aswan, Assiut, Luxor, Sharqiya, Sohag, Qena, and Menia**.

Through an integrated rural development approach, WFP and the Government are:

Improving agricultural infrastructure

Going green with technology

Promoting education and youth employment through green solutions

Economically empowering women

Promoting zero waste

Over **500,000** direct beneficiaries supported (**65 percent** men and **35 percent** women)

Over **1,700,000** indirect beneficiaries supported

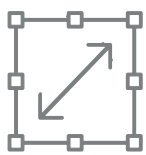
Improved land and water management in over **13,500** acres of agricultural land

Outcomes of WFP & the Government's rural development programme

- Increased land availability 30%
- Reduced cost of agricultural inputs 40%
- Reduced water & energy usage 35%
- Reduced harvest losses 50%
- Increased productivity 40%
- Mitigated climate shocks 50%

WFP Egypt adopts an integrated approach insuring

REPLICABILITY



SCALABILITY

SUSTAINABILITY

IMPROVING AGRICULTURAL INFRASTRUCTURE

Resource scarcity and the loss of arable land limits the production of sufficient amounts of nutrient-rich food at affordable prices. With a rapidly growing population, ensuring the sustainability of domestic food systems will become crucial in the coming years to meet growing demands.

ADDRESSING WATER SCARCITY BY CANALS

Piped water canals are lined with cement to reduce water seepage during irrigation and to more efficiently provide water to downstream plots. Through this enhancement, water usage, diesel fuel and maintenance costs of canals are significantly reduced for smallholder farmers.

Piped canals **reduce water loss by 30 percent - 60 percent,** limiting evaporation and **saving round up 1780 m3 of water annually per kilometer**. This increases cultivatable surface area, reduces safety hazards, and requires less maintenance by minimizing issues with sediment build-up, erosion, and vegetation growth.

Piped canals reduce the risk of water contamination from surface runoff, debris, and pollutants, promoting a healthier environment.

View WFP's agricultural infrastructure activities

ADDRESSING LAND FRAGMENTATION THROUGH LAND CONSOLIDATION

About 10-15 neighbouring smallholder farmers, with holdings of 0.25 acres to 1 acre each, join hands to consolidate their fragmented lands (while maintaining individual ownership). The farmers cultivate the same seeds in their consolidated plot, where borders between their individual holding have been removed.

Land consolidation, increases the cultivated area by up to 25 percent, saves up to **25 percent in water consumption**, reduces use of other **inputs (seeds, fertilizers and labour) by 25 percent** and allows for use of larger-scale machinery for tillage and land leveling. Overall, this results in an increase of **50 percent in farmers' productivity** and **45 percent in their income.**

Bastawy Nasser Mohamed, smallholder farmer in Aswan

Bastawy always relied on his ancestors' agriculture techniques. As part of WFP and the Government's rural development programme, he was empowered with the know-how and resources to increase his production using a variety of heat-tolerant seeds and modern agricultural practices.

"We did not know what seeds to use and how to tell the most suitable time to start the agriculture process, we just did what our grandparents used to do."

Mohamed Kamal, smallholder farmer in Luxor

WFP has been helping farmers to adapt to climate change by improving the quality of their crops using the latest agricultural techniques, such as modern irrigation methods and canal lining. Farmers can save water by adopting drip-irrigation methods and new scraping and grading machinery. WFP has helped Luxor's farmers overcome many challenges they have been facing.

"The heat always struck and damaged our land and productivity was always very low. Using the new seed varieties helped us improve the quality of our crops. They impacted our land and households."

GOING GREEN WITH TECHNOLOGY

Egypt's rising level of energy consumption is a factor behind the country's pollution levels. Over the last 20 years, Egyptian energy consumption has risen by more than 200 percent.

Providing green & sustainable energy through SOLAR ENERGY

As part of the rural development model, solar-energy systems that consist of solar panels combined with a power supply and other electrical and mechanical hardware are installed to power irrigation systems serving **35** acres of land owned by an average of **50** smallholder farmers.

The systems used are off-grid home solar systems which involve a generator that stores electricity in the event that solar energy alone is not enough.

The use of renewable energy provides a sustainable, cost-effective and environmentally friendly alternative to the use of diesel fuel.

Preparing for climate shocks & changes through EARLY WEATHER WARNING SYSTEMS

A simple early warning system on weather helps reduce crop loss during erratic weather changes and climatic shocks by providing a 5-day weather forecast.

The forecast is shared with farmers through loudspeakers, mobile apps, Facebook pages, and expert counselling with technical recommendations to protect and sustain crops.

Using this information, communities then set a plan to help manage climatic changes with the support of partner non-governmental organizations.

WFP supports smallholder farmers to generate approximately **30 KW/hr per solar station.**

PROMOTING EDUCATION & YOUTH EMPLOYMENT THROUGH GREEN SOLUTIONS

Many schools in underprivileged communities are prone to extreme climatic events affecting children's regular school attendance and having to face challenges such as water scarcity.

The use of innovative solutions and renewable energy can present solutions to such challenges, while also presenting new vocational fields for the employment of young community members.

Promoting education using access to water **through RAINWATER HARVESTING WELLS**

To address water scarcity among Bedouin communities in frontier governorates and remote communities, WFP and the Government, established rainwater harvesting wells and solar power arrays to improve access to water and electricity through community schools.

These improvements made a notable difference for students who struggled with frequent water and electricity cuts. Community members also shared that they were keen to optimize these improvements by cultivating school gardens.

The established water wells and solar panels provided a consistent and environmentally friendly source of water and electricity for schools throughout the academic year, helping enhance sanitation levels.

Watch how rainwater harvesting wells serve schools and promote education

Reducing the youth unemployment gap in rural communities through vocational opportunities in green solutions

In support of youth employment, WFP and the Ministry of Manpower launched a Technical and Vocational Education and Training (TVET) programme to help youth meet modern labour market needs.

The programme includes the provision of TVET trainings to youth in the most disadvantaged communities in Upper Egypt, under the 'Decent Life' initiative, helping improve livelihood opportunities and reduce risks of irregular migration by facilitating access to employment opportunities and private sector employers.

The programme provides trainings on green solutions including the use of solar energy, solar cell maintenance and installation, and solar drying for fruits and vegetables, among other.

PROMOTING ZERO WASTE

Lack of agricultural waste management poses several environmental and health risks for rural communities. Most farmers burn their waste in the field or throw them on the roads and/or in the nearest waterway.

These practices cause detrimental air, soil and water pollution and pose great heath risks for rural communities. They also lead to lost opportunities in generating additional income.

Agricultural waste is an outcome of agricultural production following the different harvesting activities. Data on agricultural waste in Egypt reveals that there is about **33.4 million tons of waste** generated annually. Despite the availability of large amounts of agricultural waste, the majority remains unused and is mostly burnt directly in fields creating environmental pollution.

As part of the programme, WFP and its partners implemented waste management methods, including alternative fodder, green silage, briquetting, composting, biogas, and palm waste recycling.

These techniques offer sustainable and cost-effective livestock feed options, enhancing resilience to droughts and soil degradation.

- Composting converts organic waste into nutrient-rich soil amendments, promoting healthy plant growth while reducing greenhouse gas emissions.
- Briquetting transforms biomass into energy-dense fuel sources, providing renewable energy solutions and waste reduction.
- Biogas initiatives offer clean cooking fuel, mitigate indoor air pollution, and promote energy independence.
- Palm waste recycling creates economic opportunities and waste reduction by diverting organic waste and establishing income streams throughout the value chain.

This technique:

Eliminates the need to burn agricultural waste, hence reducing air pollution and health risks for rural communities.

Provides an alternative, healthy and cost-effective source of animal fodder.

Increases profitability for smallholders by reducing their feeding costs.

Reduces the demand for clover and maize which consequently reduces the demand for water and land to cultivate, availing more of these scarce resources

View WFP's waste management activities

WOMEN ECONOMIC EMPOWERMENT

Over the past several years, there has been increasing evidence regarding the importance of women's economic participation, both for the advancement of women's rights and gender equality, as well as for the economic well-being of families, communities and nations. Advancing women's status and economic empowerment is central to helping fight climate change and achieving the Sustainable Development Goals.

Building more resilient livelihoods through ECONOMIC INCLUSION

To promote the diversification of livelihoods within rural communities, women receive cash or in-kind micro-loans and trainings in various fields, including livestock raising. The in-kind loans are provided in the form of improved breeds of ducks and goats that are more tolerant to the higher temperatures prevailing in the region. Veterinary services, training and technical assistance on animal nutrition are also provided to help ensure sustainable and healthy animal production. WFP also supports women to set up their own aquacultures to cultivate fish which they may sell at local markets for income or consume as a source of protein for their families.

The loans have helped increase women's income by **30-50 percent** and contributed to the regularity of their households' income. Moreover, **88 percent** of supported women felt more financially secure after running their businesses and were able to afford better living conditions for their families.

Cycle for the provision of cash microloans

Reducing agri-waste & increasing crop value through AGROPROCESSING TECHNIQUES

Agro-processing techniques, such as improved postharvest practices and small-scale food processing, are introduced to diversify and augment income sources.

This supports Community Development Associations to act as local providers for primary producers, enhancing the value chain of crops in Upper Egypt.

Similarly, pomegranate arils separation and refrigerating units help small pomegranate farmers increase profits in areas with high production volumes of this crop.

Using sun-drying units, fully-operated by women, tomato growers are able to preserve their crop for extended periods of time beyond the standard season. This ten-day processing technique saves farmers from selling their fresh tomatoes when prices are at their lowest and contributes greatly to its market value.

Sanaa, a 55-year-old farmer from Luxor

Today Sanaa is quite popular in her hometown. Men from neighbouring fields offer to help with her chores, but she politely declines. When her husband passed away, Sanaa promised him she would nurture their land until her last breath.

"My husband had a stroke and became bedridden. I couldn't just sit back and let our land go barren. We depend on this land — that's where all our income comes from. In the beginning I could see my neighbours watching me as I headed to the field early in the morning and whispering behind my back. I was criticized for my 'boldness'. But in time, they became quite considerate."

Watch Sanaa's story

Tahia, a 38-year-old housewife from Luxor

Tahia defied social norms and started a job at the sun-drying unit to help her husband generate more income to cover their family expenses. Today Tahia's three girls attend school regularly and she can afford a tutor to help them with their schoolwork.

"The decision to take this job wasn't easy. Women in Upper Egypt are expected to stay at home, tending to house chores and caring for the family. But I pushed myself to try... I want to give my children a better future, I want them to live a fuller life and achieve their potential."

View the sun-drying unit in Luxor

FINANCIAL INCLUSION

As a means of strategic innovative financing for development, WFP in partnership with the Central Bank of Egypt, National Bank of Egypt, and Banque Misr, launched a national programme whereby rural communities are supported with agri-business and financial literacy, **benefiting thousands of rural community members**, supporting their transition and contribution to Egypt's formal economy.

How Financial Inclusion Creates Opportunities

Individuals

Can more easily:
- Manage expenses
- Smooth consumption
- Mitigate shocks & risks
- Invest in education & health
- Save for the future
- Make safe & secure payments

→ Greater social & economic well-being

How to get there?

Transaction account

UNSERVED
- Have no basic bank account
- Have no (or restricted) access to financial services
- Rely on a cash economy

SERVED
- Have a transaction account
- Use broad range of financial services

Banks | Microfinance Institutions | Mobile Network Operators | Card Companies | Postal Networks Financial | Cooperatives

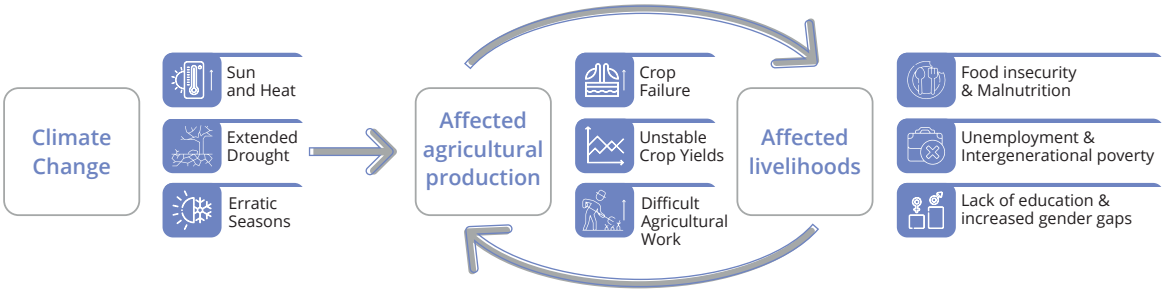
Savings | **Credit** | **Payments** | **Insurance** | **Remittances**

What's needed to get there?

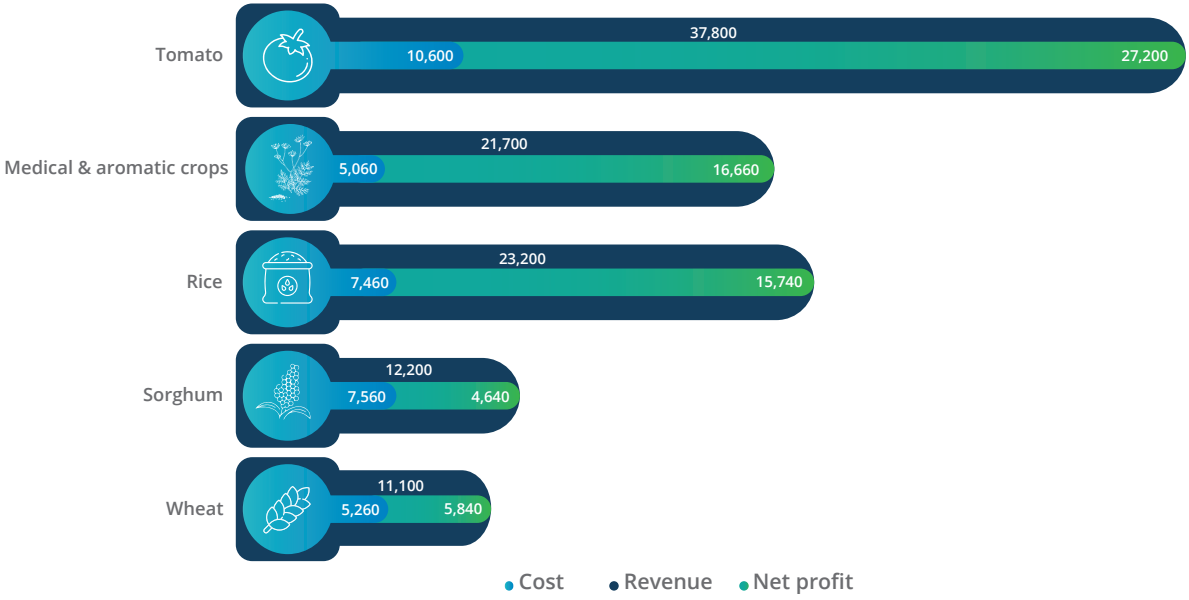
- Board inclusion
- Customer-centred product innovation
- Financial capability
- Strong consumer protection
- Better financial infrastructure
- More & interoperable access point
- Enabling legal & regulatory frameworks
- Public & private sector commitment
- Open & balanced playing field

Source: the above diagrams have been adapted and modified from the World Bank - https://www.worldbank.org/en/news/immersive-story/18/05/2018/gains-in-financial-inclusion-gains-for-a-sustainable-world

WFP's rural development programme in summary



Impact of WFP agricultural interventions on household income (in EGP)



But we can **only** achieve this with our **partners**

Government of Egypt Ministries

Ministry of Local Development

Governments

Financial Institutions

CENTRAL BANK OF EGYPT

BANQUE MISR

NATIONAL BANK OF EGYPT

Private Sector

ADAPTATION FUND

THE Coca-Cola FOUNDATION

NGOs

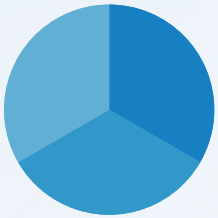
Academia

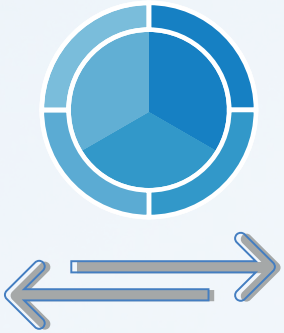
UN Agencies

LOCAL OWNERSHIP at the heart of what we do

To promote local ownership, WFP engages and partners with governmental and local entities to carry out activities under this programme. This allows WFP to "hand over" activities so that they may continue to be **replicated, sustained and scaled** to benefit more people in need, even beyond the programme lifetime.

WFP achieves local ownership through 3 pillars





WFP engages stakeholders to enable local ownership

- Building ownership among the different stakeholders
- Encouraging the different stakeholders to work collaboratively towards one goal
- Enhancing capacities of the different stakeholders

- Local communities
- Local directorates
- Community-based organizations
- Local steering committees

Men and women representatives of local communities are also involved in the planning of activities and the capacity of local Community Development Associations is constantly being developed through trainings, enabling them to implement and sustain activities at the village

WAY FORWARD

Building on the success of the rural development programme, WFP seeks to expand its interventions to benefit more communities under the national 'Decent Life' initiative, increasing its target from 145 to **500 Egyptian villages** to reach **1,000,000 smallholders**.

Egypt hosted the **27th United Nations Climate Change Conference** offering a strategic opportunity to showcase the Government and WFP's successful rural development model for climate change adaptation to garner new and dynamic partnerships and mobilize resources to assist more vulnerable communities in Upper Egypt.

Be part of our story.

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