



Food and Agriculture  
Organization of the  
United Nations



# WATER PRODUCTIVITY IN AGRICULTURE

FUNDED BY



# PROJECT FOR ENHANCEMENT OF AGRICULTURAL WATER PRODUCTIVITY

## CONTEXT

Egypt is facing serious challenges due to the COVID-19 pandemic (and associated unemployment), the Ukraine-Russia crisis (and associated escalating food and agricultural input prices), climate change (and associated challenges). These issues are negatively affecting the livelihoods of tens of millions of rural people across the agricultural areas of Egypt, particularly in the northern Nile Delta and Upper Egypt regions. According to Intergovernmental Panel on Climate Change (IPCC) reports, the Nile Delta Region is one of the most extremely affected river deltas in the world by climate change impacts due to seawater intrusion. Not only is the physical loss of land of major concern, but the loss of soil fertility, deteriorating surface and groundwater quality and loss of biodiversity. Soil salinisation is a real threat to the livelihood of millions of smallholder farmers in the Nile Delta (particularly the Old Lands of Kafr El Sheikh Governorate) and throughout Egypt. It has been estimated that between 12 and 15 percent of the Nile Delta's irrigated land is already suffering from problems of waterlogging, salinisation and sodicity.



Mission to identify the demonstration field for one of the farmer field schools in Qena.

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## PROBLEM

Warming temperatures and increasing frequency and intensity of extreme weather events (e.g. heat waves, cold spells (including frosts) and strong winds/sandstorms) and outbreaks of weather-related plant and animal pests and diseases, shortages of irrigation water, soil infertility and soil erosion are affecting the agricultural production and diversity of most popular crops across Egypt. This is particularly so in the poorest villages of the Upper Egypt Region (e.g. Minya and Qena Governorates), which hosts 66 percent of the country's "extreme poor" people, most of whom are women, who have very low adaptive capacity to deal with all kind of shocks, including climate change. It has been shown that these farmers tend to over-exploit water resources and over-use fertilisers in the hope to enhance their production in limited patches of land, which in turn results in its degradation and deterioration of biodiversity (e.g. date palm agroecosystems), soil health and water quality. Such misuse of already scarce resources is irreversibly impacting the sustainability of their natural resource-based livelihoods in a way that will pull them deeper into food insecurity and poverty.

## THE PROJECT

In response to these challenges and in alignment with FAO's strategic framework as well as Egyptian government priority areas for agriculture and modernization in irrigation; with financial support from the government of Japan, "The Project for Enhancement of Agricultural Productivity" has been launched to contribute to reducing rural poverty and building resilience of vulnerable farming families in the Upper Egypt and Nile Delta Regions of Egypt through improving the utilisation of water for



Farmers of the sugar cane farmer field school in Qena.

agriculture as well as increasing agricultural productivity for smallholder farmers, raising incomes and creating economic opportunities for poor rural households in three selected governorates; Menia, Qena and Kafr ElShiekh.

The project is implemented by the Food and Agriculture Organization of the UN in Egypt in cooperation with the Ministry of Water Resources and Irrigation (MWRI) as lead government agency; with support from the Ministry of Agriculture and from Land Reclamation (MALR) and the technical assistance and partnership with Tottori University (TU), Japan, National Water Resource Center (NWRC), Regional Center for Training and Water Studies (RCTWS), as well as the International Center for Agriculture Research in the Dry Areas (ICARDA).

## OBJECTIVES

The project aims to:

- Increase the efficiency of water use by smallholder farmers by at least 20 percent.
- Increase crop yields by ten and 20 percent.
- Increase household income by at least 20 percent.

## OUTPUTS

The expected outcome of the project will be achieved through the generation of the following four inter-related outputs:

1. Irrigation modernization demonstrated to optimise energy use and water productivity.
2. Technical knowledge and skills of small farmers enhanced to effectively promote sustainable irrigation and efficient climate smart water management practices through the implementation of farmer field schools (FFS).
3. Capacities of smallholder farmers are enhanced to effectively promote modern irrigation technologies and CSWM practices in line with good agricultural practices.
4. Smallholder farmers engaged in sustainable income-generating activities and their income increased.

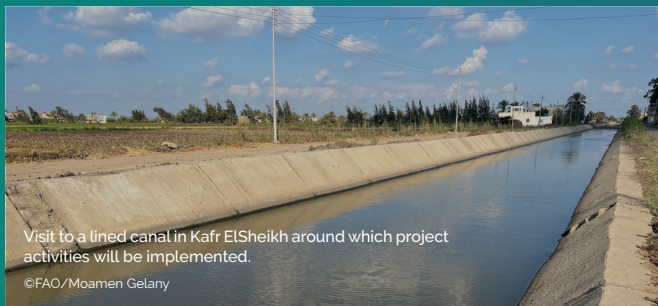
## OUTCOMES

Main outcomes expected from the project comprise:

- Increased crop yields per unit of irrigation water used over time.
- Improved income generation in selected Haya Karima villages of Minya, Qena and Kafr El Sheikh Governorates through the demonstration and upscaling of tested and validated modern irrigation technologies and CSWM practices.

## METHODOLOGY

The Project will work towards achieving increased crop yields per unit of irrigation water used over time and improving food security and income generation in selected Haya Karima villages of Minya, Qena and Kafr El Sheikh Governorates through the upscaling of tested and validated modern irrigation technologies (such as solar-powered pumps and hybrid (low energy drip and/or sprinkler) irrigation systems and CSWM practices and GAP principles (such as drought, heat and saline-tolerant crops and crop varieties, greenhouses, on-farm water management, raised beds, integrated plant soil nutrient management (maximising the use of organic fertilisers and minimising chemical fertilisers), microtopography-induced soil salinity control during soil leaching measures, conservation agriculture (i.e. minimum/zero tillage, cover crops/mulching and intercropping of leguminous crops), integrated pest management (maximising the use of biopesticides and beneficial predatory insects and minimising chemical pesticides) and system of rice intensification/paddy rice diversification



Visit to a lined canal in Kafr El Sheikh around which project activities will be implemented.

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– all accommodating (GAP) – all integrated with improved post-harvest management (PHM) and agri-business development.

## BENEFICIARIES

- Smallholder men and women.
- Unemployed and unskilled workers.
- Rural women.
- Men and women leaders and members of agricultural co-operatives, farmers associations, community development agencies (CDAs), and women's groups and micro and small-sized enterprises.

## GOVERNMENT COUNTERPARTS

- Ministry of Water Resources and Irrigation (MWRI).
- Ministry of Agriculture and Land Reclamation (MALR).

## GEOGRAPHIC COVERAGE

Selected Haya Karima villages of Minya, Qena and Kafr El Sheikh Governorates.

## PROJECT DURATION

1 April 2023 – 31 March 2024

## PROJECT FUNDING

USD 3 750 000 by Ministry of Foreign Affairs (MOFA), Japan.

## SDGS COVERED



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