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Public Dissemination Report - Oxfam

Enhancing Resilience through Sustainable Water Solutions and Climate-Smart Agriculture in Eastern Khan Younis, Gaza Strip

Implementation Period: August 2020 – April 2024

Implemented by: [Oxfam](#), and Palestinian Environmental Friends Association (PEF)

Funded by: European Commission through Water and Environment Support (**WES - Biodiversity and Climate Action**) programme – **GRANT EUR 1,000,000**

1. Project Overview

The European Union-funded project “Enhance the resilience of vulnerable communities through efficient water solutions and addressing climate change in the Eastern area of Khan Younis in the Gaza Strip” aimed to strengthen climate resilience and sustainable water management for vulnerable farming communities in Al Fukhary, eastern Khan Younis.

Implemented by [Oxfam](#)

together with the Palestinian Environmental Friends Association (PEF), the project promoted innovative approaches for treated wastewater recovery and reuse, climate-smart agriculture, and community-led water governance in one of Gaza’s most water-stressed and climate-vulnerable areas.

Despite severe operational challenges—including COVID-19 restrictions, supply-chain disruptions, energy shortages, import restrictions, and the escalation of conflict in Gaza in October 2023—the project successfully implemented approximately 98% of planned activities.

2. Key Achievements

Expanding Access to Sustainable Irrigation Water

The project established an innovative treated wastewater recovery and irrigation model that improved access to irrigation water for vulnerable farmers in Al Fukhary.

Key infrastructure achievements included:

- Construction of **two treated wastewater recovery wells** with a capacity of 60 m³/hour each.
- Installation of approximately:

- **1,950 meters** of main carrier pipelines.
- **9,610 meters** of submain irrigation networks.
- Connection of **357.8 dunums (Dunum is 1000 m²)** of agricultural land to sustainable irrigation systems, exceeding the original target of 300 dunums.

The project enabled:

- **129 farmers and their families** (102 men and 27 women) to gain access to recovered treated wastewater for irrigation.
- Recovery and reuse of approximately **750 m³/day** of treated wastewater for agricultural purposes.

This intervention contributed to reducing pressure on Gaza's overexploited groundwater resources while promoting sustainable agricultural production.

Promoting Climate-Smart Agriculture

The project introduced innovative climate-smart agricultural models to improve productivity and resilience to climate change.

Achievements included:

- Establishment of:
 - **1 Smart Greenhouse (SGH)** using automated climate-control and irrigation systems.
 - **3 shaded grape demonstration farms.**
- Installation of drip irrigation systems and climate-resilient agricultural inputs for targeted farmers.

The smart greenhouse pilot demonstrated:

- **A 4% increase in crop yield** compared to conventional greenhouse practices.
- **A 15.2% reduction in irrigation water consumption.**

The shaded grape pilot also showed improved crop protection and higher productivity, supporting adaptation to rising temperatures and extreme weather conditions.

Strengthening Community Governance and Participation

The project established participatory governance structures to support sustainable operation of the treated wastewater reuse scheme.

Key achievements included:

- Formation of:

- A **community-based RTWW reuse committee**.
- A **Women Farmers' Committee**.
- A registered **Water Users Association (WUA)**.
- Development of:
 - Standard operating procedures.
 - Water tariff systems.
 - Water quality monitoring mechanisms.

Women played an active role in decision-making processes related to water governance and resource management, contributing to stronger gender inclusion and community ownership.

Capacity Building and Awareness Raising

The project invested heavily in knowledge sharing and awareness on safe wastewater reuse, environmental protection, and gender-responsive water management.

Results included:

- Training of:
 - **101 farmers** on safe and sustainable wastewater reuse practices.
 - **20 engineers and operators** on operation and maintenance of the recovery system.
- Delivery of:
 - More than **300 awareness sessions** for farmers, students, and community members.
- Engagement of:
 - Over **4,500 community members**, including women and youth.

The project also achieved significant changes in community perceptions:

- Willingness to consume products irrigated with treated wastewater increased from **11% to 94.5%**.
- Knowledge related to health and safety practices increased from **60% to 89%** among targeted farmers.

3. Advocacy and Knowledge Sharing

The project supported evidence-based advocacy on water scarcity, climate change, and sustainable agriculture in Gaza.

Outputs included:

- Development of:
 - **1 policy brief.**
 - **2 case studies** documenting innovative approaches and lessons learned.
- Organization of:
 - Roundtable discussions with national and international stakeholders.
 - Knowledge exchange activities involving actors from Gaza, the West Bank, and the wider MENA region.

The project contributed to wider discussions on sustainable water reuse, climate adaptation, and integrated water-energy-food approaches in fragile contexts.

4. Challenges and Context

Project implementation took place under highly challenging conditions, including:

- COVID-19 lockdowns and movement restrictions.
- Escalation of conflict in Gaza in 2021 and 2023.
- Delays in importing critical equipment due to restrictions.
- Energy shortages affecting operation of recovery wells.
- Increased costs of construction materials and equipment.

The escalation of hostilities in October 2023 significantly disrupted operations and damaged key infrastructure, including the Khan Younis Wastewater Treatment Plant that supplied the recovery system.

Despite these challenges, the project demonstrated strong adaptability, community engagement, and effective coordination with local authorities and stakeholders.

5. Media Components

The project completed and shared 2 videos, below is a link:

- [Videos and products](#)