Al Murunah المرونة

Building Climate Resilience through Enhanced Water Security in MENA

OPT Resilient Nature-Based Water Solutions Pilot

The upper catchment of Wadi Al-Fari'a in the Tubas Governorate includes the communities of Wadi Al-Fari'a, Ras Al-Fari'a, and Fari'a Refugee Camp, covering 12,000 dunams[1], 10,500 of which are agricultural. The communities face **water scarcity, declining springflow, and wastewater pollution**, which not only threaten agricultural productivity but also hinder economic stability and access to resources, particularly for vulnerable groups.

Pilot project objective: Improve water availability, reduce pollution, and enhance equitable access to natural resources in Wadi Al-Fari'a communities through integrated environmental, economic, and governance solutions that strengthen rural livelihoods, empower marginalized groups, and foster social cohesion.

Physical Innovations

The Fari'a Spring restoration works includes the construction of a **critical retaining wall** around the spring and small restoration works around the spring's boundary to ensure water quality. A strategically designed **small reservoir** at the end of the spring's main channel will expand water availability, directly supporting local agricultural and community needs.

Canal restoration works, such as **repairing leaks, rebuilding damaged structures, and clearing debris**, will simultaneously improve water distribution efficiency and prevent untreated wastewater from contaminating adjoining farmlands. A **biogas production system** will feature a bio-digester linked to ecological toilets, which aims to decrease air pollution and CO_2 emissions and generate natural fertilizer and clean energy.

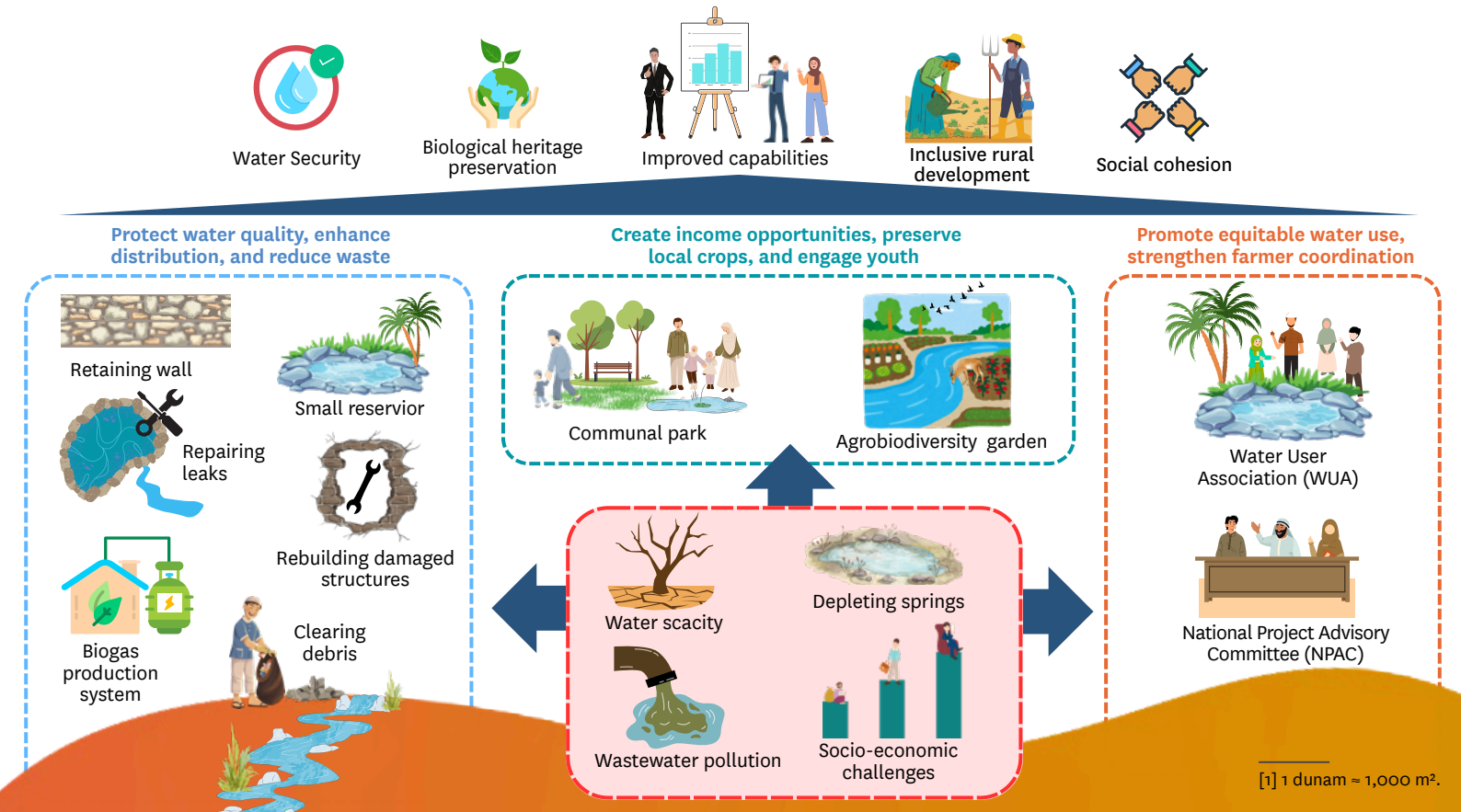
Market and Economic Development

A communal park around the Fari'a Spring will house market kiosks for women to sell locally produced goods such as grape leaves, olives, thyme, and vegetables from home gardens and family farms. An **agrobiodiversity garden**, co-designed with the local community, will cultivate and preserve indigenous species. The garden will create opportunities for young people to engage in innovative farming practices while generating potential economic value. These spaces will not only generate additional income but also strengthen community knowledge networks.

Social and Institutional Transformation

The pilot supported formation of a **Water User Association (WUA)** to promote fair water distribution and foster more equitable income generation. The WUA will play a vital role in managing the water supply, enhancing cooperation among farmers, and advocating for community interests. Additionally, the project established a multi-layered governance structure, consisting of a **National Project Advisory Committee (NPAC)**. The NPAC provides high-level policy direction, with a particular emphasis on integrating Resilient Nature-based Water Solutions (RNBWS) into water policy. It also approves work plans, monitors progress, and addresses implementation challenges, offering crucial insights throughout the process.

Anticipated project impacts



[1] 1 dunam ≈ 1,000 m².

Capability Building

The project assessed capability building needs for pilot implementation and long-term sustainability and is implementing training aimed at diverse stakeholders, including government agencies, local councils, the water user association, women's groups, and youth. These programs focused on both "hard" and "soft" skills, with a strong emphasis on inclusion to ensure marginalized groups can actively participate in decision-making. Specific training was tailored to partners. For example, training modules include natural fertilizer application for farmers, environmental dispute resolution for local councils, agricultural water management for WUA members, pollution risk assessment for government agencies, and the preservation of traditional ecological knowledge for community leaders.

Future Impact and Scaling Potential

The Wadi Al-Fari'a intervention has transformative potential across environmental, economic, and social domains. Through spring rehabilitation as well as water quality and ecosystem preservation, the pilot demonstrates a comprehensive approach to inter-linked water, social, and environmental challenges.

Strategic Alignment with Climate Adaptation and Sectoral Policies

The Wadi Al-Fari'a intervention supports priorities of the Palestinian Authority for water security, sustainable agriculture, and rural resilience, aligning with national adaptation plans and the SDGs. By addressing water scarcity, pollution, and land degradation, it combines infrastructure upgrades with economic empowerment, particularly for women and youth. The project's integration of nature-based solutions and governance frameworks enhances community leadership, while its scalability offers a replicable model for broader national climate adaptation efforts.

Water User Association (WUA)

National Project Advisory Committee (NPAC)

- **Ministry of Agriculture**
- **Environment Quality Authority**
- **Palestinian Water Authority**
- **Khadouri University**
- **Ramallah Municipal Council**

Images: (1) Shadehouse nursery for seed propagation and business to business sale (Ras Fara'a), (2) Existing dam in Wadi Fara'a where wastewater collects, and (3) Spring outlet (Ein Fara'a) in Wadi Fara'a - site of rehabilitation efforts. Photo credits: Stephen Fragaszy/IWMI

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