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International Water Management Institute

Al Murunah
Adoption readiness
Technical Brief

Al Murunah: From Pilot to Practice, Building Readiness for Adoption and Scaling of Resilient Nature-Based Water Solutions

Al Murunah Project

- Led by the **International Water Management Institute (IWMI)**
- In partnership with the **International Union for Conservation of Nature (IUCN)**
- Supported financially and technically by **UK International Development**
- In coordination with **Ministries of Water, Environment and Agriculture** in project countries (Egypt, Jordan, Lebanon and Palestine)

Figure 1. Map of Al Murunah implementation countries
Source: Authors (2025)

Bridging the Gap from Science to Impact

In fragile, water-scarce environments, even the most promising solutions can fail or otherwise remain a one-off pilot unless the right conditions exist for them to take root and spread. Farmers may be reluctant to adopt new irrigation practices without trusted local support. Ministries may face resource constraints or overlapping mandates. Women and youth may find themselves left out of value chains, decision-making spaces, or training opportunities.

Adoption readiness is about closing these gaps. In Al Murunah, pilots (Figure 1) are designed not just to deliver short-term results, but to prepare communities, institutions and markets for wider uptake. From the outset of pilot design, they focus on technical feasibility, institutional capacity, economic viability and social acceptance and inclusion. This approach shortens the journey from a small-scale pilot to systemic change so more people, in more places, can benefit sooner.

What Adoption Readiness Means for Al Murunah

For Al Murunah, adoption readiness is the blend of technical, institutional, social and policy preparedness that makes it possible for local stakeholders to sustain and scale an innovation (Figure 2). It is not just about training; it is about building the systems, relationships and resources that enable farmers, agencies and communities to keep expanding successful practices long after the project ends. Crucially, it means making sure women, youth and marginalized groups are part of the process and share in the benefits. Al Murunah recognizes that even the most technically sound interventions can fail without supportive governance and institutional capacity to manage and grow them. Strengthening both top-down systems and bottom-up adoption ensures pilot sustainability so that pilots become true stepping stones to systemic change and the impacts endure well beyond the project lifecycle.

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Economic viability
Supporting affordable solutions that improve livelihoods, have clear returns on investment, and are amenable to accessible financing for smallholders

Institutional capacity
Strengthening ministries, local councils and agencies, water user associations, and cooperatives to manage, adapt, maintain and scale solutions

Community ownership
Building trust, leadership, inclusive decision-making structures, and shared responsibility among farmers, women, and youth

Policy alignment
Positioning interventions within national strategies for water, agriculture, rural development, and climate resilience to support achievement of national objectives and inform policy improvements

Figure 2. Key components of adoption readiness. *Source*: Authors (2025)

The Challenge

In the Middle East and North Africa (MENA) region, a range of barriers are slowing or preventing the uptake of resilient nature-based water solutions (RNBWS). These challenges are often magnified in fragile and conflict-affected settings where governance systems are already under strain:

Weak institutional capacity and fragmented governance

Water and agriculture responsibilities are spread across ministries, local councils and community bodies. Implementation of policies and enforcement of regulation are challenging due to limited resources, governance overlaps and gaps, complex physical systems, competing interests and in some places, conflict, refugee-hosting dynamics or political instability. This makes it hard to apply consistent approaches, leaving farmers and investors uncertain. For RNBWS, activities like spring rehabilitation, natural flood management or support for agro-ecological approaches often fall between institutions. Also, national actors are just beginning to structure institutional coordination mechanisms and regulatory frameworks explicitly to facilitate and incentivize climate change adaptation at the community level.

Limited technical know-how and access to information

Farmers, extension agents and local water managers often lack practical, context-specific information and knowledge on nature-based solutions for water and soil management, or broader climate change adaptation. For RNBWS, awareness of options such as managed aquifer recharge, saline-tolerant crops, or agroforestry systems is low but growing. Also, there is still limited evidence on the economic effectiveness of RNBWS, especially at broad scale, in the MENA region.

Policy-to-practice gaps

Many national adaptation plans, sectoral policies and international commitments emphasize water efficiency, climate resilience and inclusive governance. But moving from policy to locally-led adaptation and operational programs is difficult. Without clear approaches to embed pilots and scale them within existing investment frameworks, RNBWS interventions risk remaining as isolated projects rather than drivers of systemic change.

The Al Murunah model works across different levels to ensure solutions are embedded in the systems that can sustain them and help them scale.

Social exclusion and inequitable access to resources

Women, youth and displaced populations often face extra hurdles to access or participate in decision-making about land, water and financial resources. In some cases, existing governance structures reinforce these inequalities if they are not actively addressed. When solutions do not reflect the needs of these groups, they risk being contested, underused or abandoned. Because RNBWS require collective action (e.g., joint maintenance of terraces or irrigation networks), exclusion of these groups undermines sustainability and fuels mistrust around resource use.

Financial constraints and market barriers

Adopting new practices often requires up-front investment, which can be out of reach for smallholder farmers without access to credit. Financial returns are not always immediate, especially for nature-based solutions or climate-resilient crops. Financial products rarely target RNBWS specifically, meaning farmers, municipalities and community organizations struggle to access affordable finance for interventions such as spring rehabilitation, agroforestry investment, soil conservation measures or tree planting, even though these generate long-term value. A core challenge lies in the fact that many RNBWS benefits are public goods, while some of the costs are typically borne privately. This misalignment between who pays and who benefits makes it difficult to unlock investment through conventional markets or lending systems.

Fragility, conflict and environmental degradation

In contexts affected by political instability, occupation or protracted conflict, water systems are particularly vulnerable to neglect, damage or politicization. Security and mobility restrictions can halt infrastructure work, while land degradation, pollution and reduced water availability make local livelihoods more unstable. These pressures can feed into cycles of environmental stress and social tension. Riparian buffer zones, reforestation and decentralized wastewater treatment require secure land tenure and cross-boundary cooperation, conditions that are difficult to establish in fragile or contested areas.

Ensuring Al Murunah Innovations Can be Adopted and Scaled

Jordan – Spring and irrigation canal rehabilitation and climate-smart agriculture with cooperatives

In Jordan, Al Murunah's resilient nature-based water solutions pilot included spring and irrigation canal rehabilitation, the formation of the Wadi Seer Springs Cooperative and training for smallholders, canal committee members, extension officers and water managers on the maintenance of built and natural infrastructure, agro-ecological and climate-smart practices and agricultural value chains. This has increased water availability and quality, helped smallholder households increase productivity, improve livelihoods and build resilience and led the Ministry of Water and Irrigation to request project support to update their Nationally Determined Contributions. contribution.

Egypt – Improving surface water irrigation systems, governance and smallholder access to value chains

In Izbat Al-Hamra, the pilot brought together 16 smallholders to establish a Water User Association (WUA) that manages the new solar-powered irrigation system in their district, which also has new laser levelling, improved drainage and application of natural salinity treatments. Women in the community now run three neighborhood nawallas — small agro-processing units — that improve their livelihoods. A local task force facilitates dialogue and action between different groups and liaises with the National Project Advisory Committee (NPAC), which links project learnings with national policy systems.

Palestine – Spring and wadi rehabilitation, agrobiodiversity garden and community space improve water security and social cohesion

In the upper catchment of Wadi Al-Fari'a, the pilot rehabilitated the spring and wadi channel supported the formation of a WUA to manage distribution of spring water and developed an agrobiodiversity garden and community space for women and youth to market products. Despite challenges in mobility and access, the pilot works are complete and provide a scalable example for nearby areas.

Al Murunah+

Al Murunah+ focuses on the "softer" but equally critical side of adoption readiness and scaling, ensuring that the systems, institutions and people are ready and able to adopt innovations. It strengthens the enabling environment by building capacity of husbands and wives in communication, financial and business planning and supporting positive gender social norms that underpin women's involvement in agricultural value chains. Further, it supports local leaders to embed gender equality, youth engagement and inclusive governance in local institutions involved in water management and agricultural systems. This means building capacity in ministries and local councils, supporting women's cooperatives and market spaces and creating platforms for community voices in decision-making. By addressing social, institutional and policy readiness, Al Murunah+ ensures that technical solutions are not only implemented but also embraced, maintained and expanded by the communities and institutions they benefit.

Pathways to impact

533 participants engaged in intervention planning, policy, or business roundtables

336 community members educated on tools, approaches, and methods for implementing RNBWS

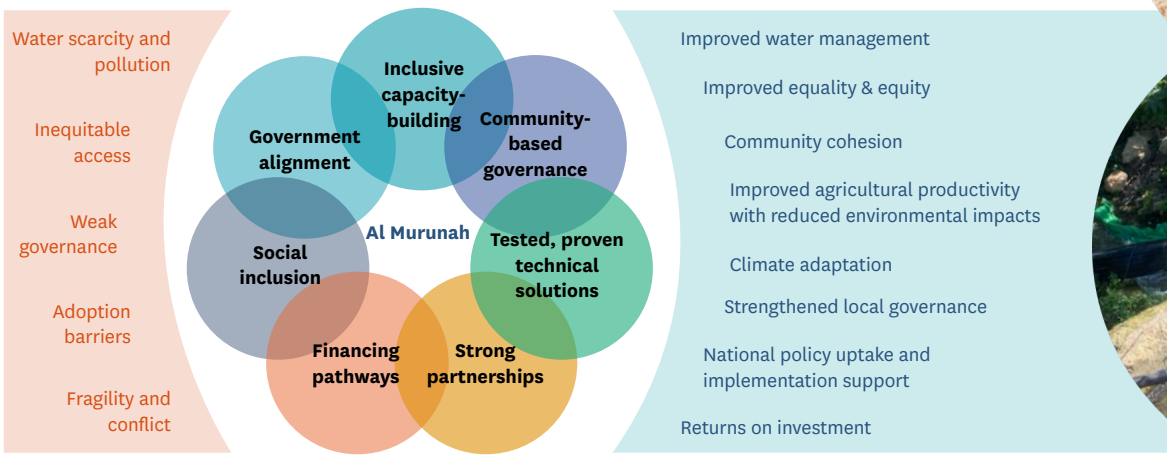
1,372 people supported to better adapt to climate change

123.5 Hectares of land that received sustainable land management practices


Photo: Hamish John Appleby / IWMI

Adoption readiness in Al Murunah, from challenges to scale

Adoption readiness in Al Murunah moves from addressing key barriers to enabling scale and impact (Figure 3).



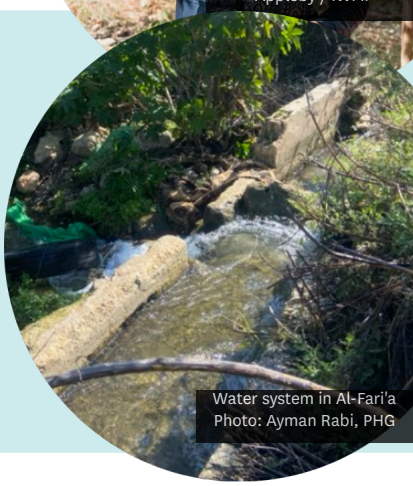

Water system in Al-Fari'a Photo: Ayman Rabi, PHG

Figure 3. Replicable models documented for use in other fragile and water-scarce areas.
Source: Authors (2025)

Why This Matters

In fragile, water-scarce areas, proven approaches can shift communities from vulnerability to resilience. By combining RNBWS with infrastructure, governance improvement and inclusive planning, Al Murunah has boosted water access and productivity, strengthened institutions and improved equity of outcomes. Scaling these solutions across MENA will support climate adaptation and enhance food and water security. Strengthening capability and embedding inclusive governance can build community cohesion and support resilience through sustainable livelihoods.

Investing in Our Approach

Al Murunah is built to deliver strong results for every pound invested (Figure 4). By working with local partners and through existing institutions, WUAs and cooperatives and local governance systems, the program keeps costs low and

speeds up adoption. Each pilot brings together infrastructure upgrades, governance improvements and capacity-building, tackling urgent needs while building long-term resilience. Partnerships with ministries, NGOs and farmer groups help secure co-financing, in-kind contributions and local expertise.

Having proven the model, future pilots can now be replicated more efficiently and at larger scale, delivering greater impact at lower cost in other contexts facing similar challenges, building long-term resilience.

Figure 4. Investing in our approach. *Source*: Authors (2025)

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Project

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