

# Al Murunah: Building Climate-Resilient Water and Food Systems in Jordan's Fragile Areas

## Al Murunah Jordan Pilot

- Led by the **International Water Management Institute (IWMI)**
- In partnership with the **International Union for Conservation of Nature (IUCN)**
- And the **Ministry of Water and Irrigation, Jordan**
- Supported financially and technically by **UK International Development**



**Figure 1.** Map of Al Murunah pilot site in Wadi Seer, Amman Governorate, Jordan. *Source: Authors (2025)*

## Why Fund This Now?

Jordan faces severe water scarcity, with already limited supplies expected to shrink even further with climate change. Rapid urban growth, the arrival of refugees from neighboring conflicts and more frequent flash floods and droughts are placing growing strain on fragile land and water systems. In rural areas, farmers are facing worsening soil degradation, poor irrigation access, drying springs and degrading water quality. In cities hosting large refugee populations, communities are vulnerable to flooding and lack adequate systems for disaster preparedness. The Al Murunah Project addresses these interlinked challenges by working directly with national government, local institutions and communities to enhance water management and build resilience from the ground up. With additional support and investment, these community-driven, integrated approaches can be scaled up to strengthen water security, climate resilience and sustainable livelihoods across Jordan and the wider region.

## Our Approach for Vision and Impact

In Wadi Seer (Figure 1), Al Murunah co-develops resilient nature-based water solutions (RNBWS) that combine green and grey infrastructure, farmer-led regenerative practices and inclusive governance structures.

In parallel, Al Murunah+ strengthens the social foundation of resilience. It integrates gender-transformative approaches, supports women's economic empowerment through access to cooperatives, asset transfers and revolving funds, to foster inclusive leadership and shared household decision-making and provides learning opportunities for women to build financial and business-planning skills that expand opportunities for smart agriculture and agribusiness.

**Together, these interventions are shaping investible, scalable models for climate resilience that can be deployed in similar contexts across the MENA region.**

- 1. Resilient water and land solutions (rehabilitation of springs and canals and agro-ecological approaches on smallholder plots)**
- 2. Inclusive governance (form and strengthen local cooperatives, canal committees and participatory decision-making structures)**
- 3. Women-led enterprise development through cooperatives that unlock economic opportunity and shift social norms**
- 4. Capacity-building (training farmers, cooperative members and agricultural water management professionals)**
- 5. Linking lessons from Wadi Seer to Jordan's Nationally Determined Contributions for policy alignment and scale**

### Addressing multi-layered fragility

Jordan is ranked among the top five most water-scarce countries globally, with an annual per capita water availability below 100 cubic meters, well beneath the international scarcity threshold. Climate change projections indicate rising temperatures, erratic rainfall patterns and increased frequency of extreme weather events. These stressors, compounded by overextraction of groundwater and widespread land degradation, are eroding food production systems and community resilience. Water scarcity also creates additional social pressures between communities, converging with climate pressures.

Rural smallholders face uncertain water availability and declining water quality, reducing yields and making investment in better practices more difficult. Urban areas and informal settlements suffer from poor infrastructure and flood risks. Displacement from regional conflicts adds additional strain on services and governance. And fragmented institutional coordination, under-resourced municipal planning and limited access to adaptation finance make recovery less attainable. Al Murunah and Al Murunah+ offer integrated, community-driven solutions that can restore resilience and create broader system change.

**In Jordan, Al Murunah and Al Murunah+ are being implemented in Wadi Seer, part of Greater Amman Municipality. Together, they offer a layered approach to ensure climate resilience for rural agriculture areas.**

### Al Murunah – Rural Pilot in Wadi Seer

This pilot aims to restore local water systems and support smallholder agriculture through community-driven approaches. Two springs have been rehabilitated, and a third is planned to enhance irrigation reliability for farmers in Wadi Seer. Deteriorated irrigation canals are being repaired with RNBWS and the project supported the formation of the Wadi Seer Springs Cooperative (WSSC), which engages with the pre-existing canal committees and collaborates with the downstream community group in Iraq Al-Amir. The WSSC, with 24 founding members (13 women), now acts as an anchor institution for sustainable agriculture. With additional investment, a demonstration farm is planned to showcase regenerative practices such as intercropping and composting, along with aquaponics systems and solar-powered irrigation. Over two dozen additional farms are planned to receive tailored support packages to pilot innovations, including, for example, water harvesting tanks, composting equipment and saffron cultivation.

### Al Murunah+ – Gender and Inclusivity

Resilient rural systems are born in resilient households. It is within households that norms are reshaped, decisions are shared, including steps toward climate adaptation. Al Murunah+ nurtures this space by fostering equity and stability as the roots of resilience. Households grow stronger when women are equipped with financial and business planning skills. With access to cooperatives, asset transfers and revolving funds, over 300 women are transforming smart agriculture and agribusinesses into pathways of sustainability. In Jordan, the Al Murunah approach extends further by linking water management, land restoration and social empowerment to strengthen rural livelihoods. By linking household resilience to systemic change, Al Murunah+ offers a model for governments and development actors to mainstream gender and climate adaptation at scale.



### What we have achieved

- **Rehabilitated 2 springs**, with a third planned, restoring access to safe water in Wadi Seer
- **Launched irrigation canal upgrades** in late 2024, benefiting over 500 farmers, with Phase II designed and ready for investment
- **Formed and formally registered the Wadi Seer Springs Cooperative** with 24 founding members (13 women, 11 men). The cooperative now coordinates community farming, training and market engagement
- **Linked the cooperative with 3 active irrigation canal committees** and engaged local government stakeholders to strengthen local water governance
- **Delivered targeted training** for farmers, cooperative members and professionals in agriculture and water management
- **Designed site-specific agricultural interventions** based on high-resolution climate downscaling and local market analysis, which is now ready for investment
- **Planned for a 4,000 m<sup>2</sup> (0.5 hectares) demonstration farm** featuring aquaponics, intercropping, solar irrigation and water harvesting
- **Formed a national-local task force** to guide learning, coordinate implementation and shape scale-up pathways
- **Hosted Jordan's first National Policy Dialogue on Scaling Resilient Nature-Based Water Solutions, in partnership with the Ministry of Water and Irrigation** with strong participation from government ministries, FCDO and other international development partners, Wadi Seer community organizations and local stakeholders
- **Visit from the Minister of Environment, Governor of Wadi Seer and FCDO** who support replication of the Al Murunah approach in additional municipalities

## Our Next Move

With strong early outcomes and growing visibility, the Jordan team is now focused on deepening impact and preparing for scale. In Wadi Seer, the next phase includes extending irrigation and spring rehabilitation, scaling regenerative agriculture to new farms and strengthening value chain activities through the WSSC. The team will support Jordan's Ministry of Water and Irrigation to incorporate resilient nature-based water solutions into the Nationally Determined Contributions 3.0. This will support alignment between the objectives of community-led water strategies as well as Jordan's National Adaptation Plan and Green Growth Strategy.

Local and national authorities, including the Ministry of Water

and Irrigation, Ministry of Environment, Ministry of Agriculture, Jordan Cooperative Corporation, Greater Amman Municipality and Miyahuna (the Jordanian water utility, that operates a municipal supply station that draws from Wadi Seer springs), remain engaged and supportive.

Further investment would accelerate:

- NbS rehabilitation across adjacent communities
- Support to more farmers with proven regenerative techniques
- Growth of the WSSC's agro-processing and value addition work
- Policy uptake and integration of NbS into municipal development plans



Source and irrigation canal rehabilitation in Wadi Seer. (Photos: IUCN Regional Office for West Asia/IWMI)

### Our work in numbers

47

people from institutions and companies educated on NbS tools and resilience approaches

3

canal committees linked to the local cooperative and local governance

0.5

hectares of planned demonstration farm to showcase integrated NbS and agroecological practices

500+

farmers to benefit from rehabilitated irrigation canals

28

farms planned for support with irrigation systems and regenerative crops



High-level interest from active donors and development agencies in supporting the project

24

members (13 women, 11 men) now driving cooperative-led farming

2

national workshops held, on RNBWS with validation of readiness assessments and for a policy dialogue



Ongoing support to the Ministry of Water and Irrigation to integrate RNBWS into the NDC water sector update

27

participants in the Farmer Field School and technical training workshops

1

video documentary under production to showcase project impacts

## Local Solutions, Scalable Models and Sound Investment

- Investing in the Jordan pilot under Al Murunah offers a unique opportunity to support scalable, cost-effective and community-driven climate resilience models.

With relatively modest infrastructure investments, the Al Murunah pilots have improved local water availability and governance and inclusive livelihood opportunities and laid the groundwork for sustainable resource management and stronger climate resilience. Communities have played an active role from co-designing interventions to managing irrigation through newly formed cooperatives.

The complementary project Al Murunah+ has embedded gender equality and GBV prevention into all existing areas of work. Together, these projects offer a layered, adaptable model already influencing national discussions on nature-based solutions, climate-resilient planning and cooperative development.

**Donor support will accelerate the replication and scaling of these models across similar rural-urban fringe settings in Jordan and beyond and advance long-term resilience and social stability in fragile environments.**

**Al Murunah's experience in Jordan offers an adaptable, cost-effective model for rural water resilience and sustainable agriculture to scale across other climate-vulnerable regions of the country and the MENA region.**



Workshop at Wadi Seer Springs Cooperative in Jordan, held on January 12-13 2025. (Photo: IUCN Regional Office for West Asia/IWMI)

## Authors

**Isis Palay**, Consultant, International Water Management Institute (IWMI), Nairobi, Kenya

**Stephen Russell Fragaszy**, International Researcher – Water Climate Change and Resilience and Al Murunah Project Lead, IWMI, Cairo, Egypt

**Wasudha Prabodhani Abeyrathna**, Project Coordinator, IWMI, Colombo, Sri Lanka

**Ali Hayajneh**, Programme Manager, the International Union for the Conservation of Nature - Regional Office for West Asia (IUCN-ROWA), Amman, Jordan

**Faizah Slehat**, Nature- based Solutions Manager, IUCN-ROWA, Amman, Jordan

## Acknowledgments

This brief provides information about the Resilient Nature-Based Water Solutions pilot project in Al Murunah, which is led by the International Water Management Institute (IWMI) in partnership with the International Union for the Conservation of Nature - Regional Office for West Asia (IUCN-ROWA).

## Project

Building Climate Resilience through Enhanced Water Security in MENA (Al Murunah) is a five-year project (2021-2026) supported financially and technically by UK International Development. The International Water Management Institute (IWMI) is leading the project in partnership with the International Union for Conservation of Nature (IUCN). <https://www.iwmi.org/projects/al-murunah/>

## Contact

Stephen Fragaszy, Al Murunah Project Lead ([s.fragaszy@cgiar.org](mailto:s.fragaszy@cgiar.org)).

## Citation

Palay, Isis, Stephen Russell Fragaszy, Wasudha Prabodhani Abeyrathna, Ali Hayajneh, and Faizah Slehat. 2026. "Al Murunah: Building Climate-Resilient Water and Food Systems in Jordan's Fragile Areas." International Water Management Institute.

© 2026 International Water Management Institute. Some rights reserved. This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).

## Disclaimer

This publication has been prepared as an output of the Al Murunah project and has not been independently peer-reviewed. Responsibility for editing, proofreading and layout, opinions expressed and any possible errors lies with the authors and not the institutions involved. The boundaries, colors, denominations and any other information shown on maps do not imply any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries, on the part of IWMI, its funders, or its partners.

Please send inquiries and comments to [IWMI-Publications@cgiar.org](mailto:IWMI-Publications@cgiar.org)

For access to all IWMI publications, visit [www.iwmi.org/publications/](http://www.iwmi.org/publications/)



The International Water Management Institute (IWMI) is an international, research-for-development organization that works with governments, civil society and the private sector to solve water problems in developing countries and scale up solutions. Through partnership, IWMI combines research on the sustainable use of water and land resources, knowledge services and products with capacity strengthening, dialogue and policy analysis to support implementation of water management solutions for agriculture, ecosystems, climate change and inclusive economic growth. Headquartered in Colombo, Sri Lanka, IWMI is a CGIAR Research Center with offices in 17 countries and a global network of scientists operating in more than 55 countries.



## International Water Management Institute (IWMI)

### Headquarters

127 Sunil Mawatha, Pelawatte, Battaramulla, Sri Lanka

### Mailing address:

P. O. Box 2075, Colombo, Sri Lanka

Tel: +94 11 2880000

Fax: +94 11 2786854

Email: [iwmi@cgiar.org](mailto:iwmi@cgiar.org)

[www.iwmi.org](http://www.iwmi.org)