



Désertif'actions 2026 – National Preparatory Workshop Report – Palestine

Desertif'actions 2026

For drought-resilient communities and territories: let's act right now!



Organizers



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General information

Organizers and their logos: Palestinian Agricultural Institutional Coalition (PAIC) and members (PARC, ARIJ, Al-Ard, MA'AN, LRC, PHG)

Date: 2 September 2025

Venue and Location: Red Crescent Society Hotel, Ramallah

Sources of funding (donors and their logos): European Union

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Workshop Objectives: The agenda of the one-day workshop (**Annex 1**) aimed to explore strategies for reducing community drought vulnerability by focusing on transforming farming systems and improving water resources management. Key objectives included supporting farms and livestock producers in enhancing drought resilience and reconciling diverse water uses to effectively manage drought while minimizing conflicts.

Methodology: The methodology for this report involved a comprehensive desk review of literature and data on drought, desertification, and environmental management in Palestine (**Annex 4**). It included synthesizing peer-reviewed articles and scientific reports, reviewing national policies such as Palestine's National Action Programme and National Adaptation Plan, integrating recent case studies and project findings, analyzing statistical data from local and international sources, and incorporating expert insights from agricultural and water specialists. The focus was on evidence published within the last five years to maintain relevance.

Extended Summary

The National Preparatory Workshop for Désertif'actions 2026 in Palestine, held on September 2, 2025, convened a diverse group of 33 participants from 18 entities, including government ministries, NGOs, academic institutions, and local communities. The workshop aimed to explore strategies to reduce drought vulnerability by focusing on two key themes: the transformation of farming systems and improved water resources management.

Palestine's semi-arid and arid climate, combined with political and economic constraints, has created severe challenges for agricultural sustainability and rural livelihoods. Water scarcity, land fragmentation, and recurrent droughts have led to declining agricultural productivity, food insecurity, and increased poverty among vulnerable populations. The workshop underscored the urgency of adopting integrated, community-based solutions to build resilience.

Participants noted that agroecological approaches improve diversification, soil health, and water efficiency. Major challenges include limited finance, weak extension services, wild pigs, and land and water restrictions under the Israeli occupation. Collective fencing and community cooperation were suggested as practical responses.

Water management discussions emphasized the need for territorial-scale governance that balances competing demands from domestic, agricultural, and environmental sectors. Technical solutions like improving soil water retention, rainwater harvesting, and wastewater reuse were complemented by calls for participatory governance structures involving local water committees and stakeholders.

Workshop analyses highlighted Israeli restrictions on land and water as key obstacles. Palestinians are lobbying authorities, donors, and civil society to protect these resources. Priority messages promote sustainable land and water management, stronger institutional coordination, and inclusive policies for vulnerable groups.

Importantly, gender and social inclusion were integrated into the dialogue, acknowledging the critical roles and specific vulnerabilities of women, youth, and marginalized farmers. The workshop set a foundation for collaborative action that bridges technical innovation with political advocacy to address the intertwined environmental and socio-political drivers of desertification and drought in Palestine.

The organizers committed to systematically documenting and disseminating the workshop findings in both Arabic and English, contributing to national policy development and the broader regional and international efforts under Désertif'actions 2026 and the UNCCD framework.

1. Context of droughts in Palestine

1.1 Background on droughts

Palestine lies within the Eastern Mediterranean's semi-arid to arid belt, where warming trends and rainfall variability are intensifying drought risk. [Regional assessments in the IPCC 2022 Sixth Assessment Report \(AR6\)](#) show that droughts in the Mediterranean are becoming more frequent and intense. There is also a long-term drying trend. Heatwaves are intensifying, increasing both evaporative demand and soil moisture stress (IPCC, 2022). These dynamics reduce effective rainfall available to crops and rangelands.

Exposure and vulnerability are high: agriculture is dominated by smallholders, with extensive rainfed cropping and mixed crop–livestock systems. Recurrent dry spells translate into yield losses, degraded soils, and reduced household income. Water scarcity compounds the problem. In 2022, Palestinians purchased 98.8 million m³ of water from the Israeli company Mekorot—about 22% of all water available in Palestine—reflecting structural supply constraints (PCBS, 2024). In Gaza, chronic over-abstraction and contamination mean that the vast majority of groundwater fails drinking-water standards (UN, 2023), while conflict-related damage has further disrupted supply. In parts of the West Bank, communities periodically face acute shortages and delivery interruptions, affecting domestic use and farm irrigation (Reuters, 2025).

Consequences include lower agricultural output, rising production costs (water trucking, well deepening, feed), livelihood stress and indebtedness, and growing pressure on peri-urban labor markets. Drought impacts also cascade to ecosystems via vegetation dieback and biodiversity loss, and to food security as local supplies tighten amid import dependence and price volatility.

1.2 Policy responses to droughts

Palestine's policy and institutional responses focus on building water and agricultural resilience while engaging with regional and global processes. National institutions—the Palestinian Water Authority (PWA), Ministry of Agriculture (MoA), and Environment Quality Authority (EQA)—coordinate planning across water security, sustainable agriculture, and

climate adaptation. International partners support these efforts through financing and technical assistance. Recent operations include World Bank-administered grants for Water Security and Resilience and for resilient municipal services (World Bank, 2023), complemented by multi-donor trust funds. Statistical and environmental reporting by PCBS and EQA provides the evidence base to track scarcity, consumption, and environmental pressures (PCBS & EQA, 2024).

At the global level, Palestine aligns with the UNCCD's drought-resilience agenda and contributes to multi-stakeholder platforms such as Désertif'actions 2026. Global assessments underline the urgency of proactive risk management, early warning, demand-side efficiency, nature-based solutions, and inclusive governance (UNCCD, 2023; UNCCD & IDRA, 2025). These priorities are relevant to the Palestinian context, where integrated water resource management, equitable allocation, wastewater reuse, rainwater harvesting, drought-tolerant crops, and targeted social support can reduce risk while enabling adaptation at farm and community scales. [Al-Ard for Agricultural Development](#) highlighted its efforts to enhance farmers' capacity to adopt agroecological techniques, such as restoring local seeds and improving soil health. In review and analysis of agroecology workshop (PHG, 2025), [Al-Ard for Agricultural Development](#) emphasized promoting sustainable practices and reducing reliance on chemical inputs through initiatives like seed banks, experimental farms, and community awareness programs. [The Palestinian Ministry of Agriculture \(MoA\)](#) has advanced strategies to strengthen agricultural resilience to drought and desertification. It promotes drought-resistant crops (e.g., wheat, barley, chickpeas) and conservation agriculture practices, including minimal tillage, crop rotation, and mulching, enhancing yields and climate adaptation (CARE Climate Change, 2018; Dhehibi et al., 2023.). Efficient irrigation (drip systems, treated wastewater reuse) and organic soil management maintain productivity under water scarcity (FAOLEX, 2011). Agroforestry with drought-resistant trees and sustainable land management mitigates desertification while providing additional income (FAOLEX, 2011). National frameworks, such as the Agriculture Sector Strategy 2017–2022 and the National Drought Management Plan, guide coordinated drought response and institutional capacity building for climate-resilient agriculture (MoA, 2017; UN Sustainable Development, 2017)..

According to the World Bank (2023), promoting green and resilient cities requires a multi-faceted approach, including climate-informed urban planning and adaptive land use, investment in resilient and nature-based infrastructure, enhancement of resource efficiency through circular-economy solutions, stronger enforcement of regulations alongside operations and maintenance, and improved disaster risk management governance.

1.3 Role of Local Agricultural Institutions in Combating Desertification

This national workshop on the role of local institutions in combating desertification was generously funded by the **Palestinian Agricultural Local Institutions Coalition**, which plays a pivotal role in promoting sustainable agriculture and protecting natural resources in Palestine. Through its programs and initiatives, the Coalition supports farmers, environmental projects, and enhances the capacity of local institutions to address environmental challenges such as desertification and drought. By funding this workshop, the Coalition reinforces its commitment to fostering cooperation between governmental and local sectors, promoting innovation in sustainable agricultural practices, and providing a platform for sharing experiences and best practices to strengthen the resilience of Palestinian lands and safeguard resources for future generations.

1.4 Local Institutions and Desertification: Key Achievements

Over the past years, national and local institutions in Palestine have played a pivotal role in addressing desertification and drought, one of the most serious environmental and humanitarian challenges in our lands. These institutions have proven their ability to translate national strategies into practical interventions on the ground through programs such as rangeland rehabilitation and protection, enhancement of water harvesting, and adoption of climate-smart agricultural practices.

These efforts have contributed to improving land productivity and supporting livelihoods for smallholder farmers, herders, and vulnerable groups, with a strong focus on engaging local communities, building their capacities, and empowering women and youth to become active partners in managing natural resources. Coordination with government agencies has further

ensured consistency in planning and implementation, amplifying the positive impact of these initiatives.

Key practical activities include:

- **Rangeland Rehabilitation:** Improving the quality of natural pastures in areas such as the Jordan Valley and South Hebron, planting drought-resistant local species, and promoting sustainable grazing.
- **Water Harvesting Enhancement:** Constructing tanks and cisterns to collect rainwater and water storage basins to reduce reliance on groundwater.
- **Climate-Smart Agriculture:** Training farmers on protected cultivation, drip irrigation, and nutrient-rich soil techniques to increase productivity and crop quality.
- **Capacity Building and Community Empowerment:** Organizing training workshops for women and youth on land reclamation, natural resource management, and sustainable agricultural techniques.
- **Multi-Sectoral Coordination and Partnerships:** Collaborating with universities, research centers such as ARIJ and PHG, and the private sector to develop innovative solutions like Geographic Information Systems (GIS) for monitoring environmental degradation and analyzing soil and water data.
- **Awareness Raising and Sustainable Practices:** Conducting awareness campaigns in villages and agricultural communities about desertification impacts and climate adaptation strategies.

These achievements not only improved productivity and resource protection but also strengthened the resilience of small farmers and vulnerable groups, demonstrating the ability of local institutions to turn environmental challenges into opportunities for sustainable development and community collaboration.



2. Results of Work on the Sub-Themes

2.1 Sub-theme 1: Transformation of Farming Systems

Question posed: How can Palestinian farming and livestock systems adapt to drought?

Key issues: monoculture, limited access to finance, lack of extension services, wild pigs.

Local innovations: small-scale agroecology initiatives, water-efficient irrigation, water retention landscape, drought tolerant varieties, zero tillage.

Table 1 summarizes the key challenges with affected parties with practices and recommendations to overcome. During the group discussion, wild pigs severely hinder agriculture, forcing farmers to abandon large areas of land. They also accelerate soil erosion in mountainous regions by destroying terraces and causing rainwater runoff. Collective fencing is the most effective solution.

Table 1: Challenges of agricultural sector pertinent to desertification and drought in Palestine

#	Challenge	Affected parties	Practices and recommendations
1	Occupation	All	- Pressure in all its forms, such as boycotts and advocacy at the international level - Continuous local documentation to monitor violations against the Palestinian agricultural sector, including acts of pastoral terrorism by Israeli settlers in recent years. - Use of treated water as an alternative source of irrigation water
2	Climate change	Eastern slopes directly	- Cultivation of drought-tolerant and water-efficient plants and reliance on local varieties and species - Application of water harvesting, including direct water harvesting in the soil, to feed groundwater and improve rain-fed and irrigated agricultural production - Increase in pastoral reserves and forests, due to their role in mitigating the effects of climate change
3	Bad agricultural practices	Farmers, especially in irrigated agriculture	- Gradual shift towards ecological agriculture - Adopt and introduce different methods and applications of ecological agriculture - Apply no-till farming to improve soil organic matter content and reduce carbon dioxide emissions - Adopt water-saving irrigation methods - Adopting crop rotation and mixed cropping
4	Laws, policies, statistics, research	All	- Governance - Adopting national indicators for desertification, in addition to internationally adopted indicators - Conducting joint studies and research with universities and research centers
5	Culture and awareness	All	- Benefit from regional experiences - Cooperate with and benefit from regional research centers such as ICARDA, ACSAD, and the Arab Organization - Share national reports with other partners and actors in the agricultural sector and publish them for the general public - Involve all relevant parties in the preparation of national reports

6	Natural and geographical factors	All	- Organize a series of national conferences on desertification and drought - Agricultural zoning according to the prevailing climate in each geographical region - Land use - Adopt early warning systems (monitoring and measurement)
7	Financial resources	Farmers and agricultural workers	- Conducting field studies of needs and assets - Mobilization and advocacy campaigns to support farmers and agricultural workers - Transparent government support - Transparent incentive system

2.2 Sub-theme 2: Water Resources Management

Question posed: How to reconcile competing uses of water to anticipate and manage drought?

Key issues: competition between agriculture, domestic, and environmental needs.

Local innovations: rainwater harvesting, wastewater reuse, community-level water committees.

2.3 Barriers and Levers to Change

Barriers, difficulties, obstacles	Levers for action, favorable conditions
Limited financial resources for smallholders	International donor support (EU, UNCCD, bilateral aid)
Land fragmentation and restricted access due to occupation	Local cooperative models and collective farming initiatives
Weak extension services and technical capacity	Universities, NGOs, and agricultural training centers offering knowledge transfer
Lack of integrated drought risk management	Existing national strategies for agriculture and water management that can be scaled
Political instability and restrictions on water access	Community-based water committees and local governance experiences
Dependence on rainfed agriculture with low resilience	Promotion of climate-smart practices (drip irrigation, drought-resistant crops)

2.4 Priority Advocacy Messages

Advocacy Targets	Advocacy Messages
Local authorities and municipalities	Support rainwater harvesting, community water storage, and local drought response planning, decentralized water management
National government ministries (Agriculture, Water, Environment)	Strengthen policies for (agroecology & climate-smart agriculture and integrate drought resilience into national plans
Donors and international partners (EU, UN agencies, bilateral donors)	Increase funding for small-scale farmers' resilience projects and ensure equitable resource allocation
Private sector (agribusiness, irrigation suppliers)	Promote affordable, innovative technologies for smallholders (e.g., solar irrigation, soil monitoring tools)
Civil society and farmer organizations	Build farmer cooperatives to increase bargaining power and knowledge exchange
Academic and research institutions	Enhance applied research on drought-resilient crops and water-saving techniques Launch annual conference/symposium on "Dryland Futures Conference Series: - 2025: Living with Desertification and Drought - 2026: Building Resilient Communities in Drylands - 2027: Innovation for Water and Food Security in Arid Regions - 2028: Policy Pathways for Sustainable Dryland Management - 2029: Climate Adaptation in Semi-Arid Environments

3. Key Insights and Outcomes from Plenary and Group Discussions

- **Drought Vulnerability and Community Resilience:** The workshop emphasized the urgent need to reduce community vulnerability to drought through a dual focus on transforming farming systems and improving water resource management. Participants acknowledged the compounded challenges posed by climate change, political constraints, and resource scarcity in Palestine.
- **Transformation of Farming Systems:** Agroecology-based strategies, including integrated and diversified farming approaches, were recognized as effective in enhancing farm resilience. However, structural and cyclical obstacles such as limited access to finance, inadequate extension services, and political restrictions hinder the widespread adoption of these practices.
- **Water Resources Management:** Water scarcity remains critical due to over-extraction, pollution, and restricted access. The natural conservation of water in soils through improved humus content and infiltration measures was highlighted as a technical solution. Equally important is participatory governance that harmonizes the diverse water uses among drinking, sanitation, agriculture, and environmental needs to prevent conflicts.
- **Barriers and Enabling Factors:** Persistent obstacles include limited financial resources for smallholders, land fragmentation due to occupation, weak institutional coordination, and political instability. On the other hand, international donor support, local cooperative farming models, community-based water committees, and climate-smart practices serve as levers for change.
- **Multi-Stakeholder Engagement:** Broad participation from ministries, NGOs, civil society, academia, and local communities was key to fostering consensus on national drought resilience priorities.

4. Documented Case Examples and Local Experiences

- **Rangeland Rehabilitation in Za'atara:** Community-led efforts in Za'atara have successfully increased forage availability by up to 30% through the establishment of pastoral reserves, fencing, planting shrubs, and regulating grazing patterns. This model demonstrates practical steps toward combating desertification and improving livestock productivity.
- **Water Harvesting Techniques:** Both traditional (cisterns, check dams, jessour systems) and modern rainwater harvesting methods are utilized to capture runoff for irrigation and groundwater recharge. Treated wastewater reuse is increasingly adopted as a critical adaptation in water-scarce areas.
- **Agroecology Initiatives:** Small-scale projects promoting drought-tolerant crop varieties, drip irrigation, soil moisture conservation (mulching), and agroforestry have shown promise in improving water productivity and farm resilience.

- **Challenges from Wild Pigs:** Wild pigs cause significant damage to terraced lands, accelerating soil erosion and forcing abandonment of agricultural plots. Collective fencing was identified as a practical mitigation measure.

5. Summary of Advocacy Messages and Policy Recommendations

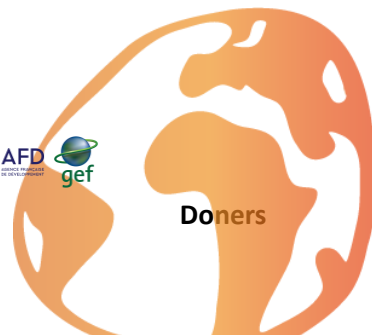
- **For Local Authorities and Municipalities:** Support rainwater harvesting, community water storage, local drought response planning, and decentralized water management.
- **For National Ministries (Agriculture, Water, and Environment):** Strengthen policies promoting agroecology and climate-smart agriculture, integrating drought resilience into national development plans.
- **For Donors and International Partners:** Increase funding for small-scale farmers' resilience projects and ensure equitable resource allocation to vulnerable groups.
- **For the Private Sector:** Promote affordable, innovative technologies such as solar irrigation and soil monitoring tools tailored for smallholders.
- **For Civil Society and Farmer Organizations:** Build and support farmer cooperatives to enhance bargaining power, knowledge exchange, and collective advocacy.
- **For Academic and Research Institutions:** Enhance applied research on drought-resilient crops and water-saving techniques. Establish an annual "Dryland Futures Conference Series" to foster knowledge sharing and policy development.

6. Reflections on Gender, Inclusion, and Participation of Vulnerable Groups

- The workshop recognized the disproportionate impacts of drought and desertification on vulnerable groups, especially women, youth, smallholder farmers, and pastoralists.
- Women, often responsible for household water and food security, face increased burdens due to scarcity and environmental stress.
- Youth experience limited opportunities in agriculture, leading to unemployment and migration pressures.
- Inclusive planning and adaptation strategies are critical to ensuring these groups benefit from resilience-building efforts.
- The workshop prioritized broad representation, encouraging active participation from women's groups, youth representatives, and marginalized communities to foster equitable outcomes.

References

- Al-Titti, O. (2015). Establishing Rangeland Reserves as a Tool to Combat Desertification and Drought: The Experience of the Towns of Tuqu' and Za'atara. (Arabic). Al-Ard for Agricultural Development. Al-Bireh/Ramallah, Palestine.
- CARE Climate Change. (2018). *Final report on drought-tolerant seeds distribution in Palestine*. <https://careclimatechange.org/wp-content/uploads/2019/07/Final-Report-Feb-2018.pdf>
- Dhehibi, B., Haddad, M., Alimari, A., Shadeed, S., Strohmeier, S., Nofal, I., et al. (2023). Potential of water harvesting as a strategic tool for resilience, sustainable livelihoods, and drought mitigation in the olive farming system in Palestine. International Center for Agricultural Research in the Dry Areas (ICARDA). <https://hdl.handle.net/20.500.11766/68288>.
- EQA, Environmental Quality Authority. (2018). Guide to Good Practices for Preserving Soil Organic Matter and Moisture Content in Palestine. (Arabic).
- LRC, Land Research Center – Jerusalem (2024). Combating Desertification in Palestine – A Case Study (Arabic), Hebron, Palestine.
- IPCC. (2022). Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.
- MoA, Ministry of Agriculture. (2017). National Agriculture Sector Strategy 2017–2022: Resilience and sustainable development. Ministry of Agriculture. <https://www.lacs-mopic.ps/public/files/Strategies%20%26%20Plans/Agriculture%20Strategies/Agriculture%20Strategy%20English.pdf>.
- PCBS, Palestinian Central Bureau of Statistics. (2024). World Water Day Press Release: Water availability and purchases from Mekorot (2022 data). Ramallah: PCBS.
- Palestinian Central Bureau of Statistics (PCBS) & Environment Quality Authority (EQA). (2024). Environment Status Report in Palestine, 2023. Ramallah: PCBS & EQA.
- Palestinian Hydrology Group (PHG). (2025). Review of Concepts and Approaches in Agroecology. A publication from a workshop on “Agroecology: A Sustainable Approach to Food Production and Environmental Protection,” held in Ramallah, July 16, 2024.
- Reuters. (2025). West Bank communities face acute water shortages amid rising demand. Reuters News Agency.
- World Bank. (2023). Water Security and Resilience Project in the Palestinian Territories: Project Overview. Washington, DC: World Bank.
- World Bank Group. (2023). West Bank and Gaza: Country climate and development report. World Bank. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099112823094030933>
- UN. (2023). Gaza Strip: Water, sanitation and hygiene situation reports. United Nations Office for the Coordination of Humanitarian Affairs (OCHA).
- United Nations Convention to Combat Desertification (UNCCD). (2023). Global Drought Snapshot 2023. Bonn: UNCCD.
- UN Sustainable Development. (2017). Progress for the Implementation of the National Drought Management Plan for Palestine.
- UNCCD & International Drought Resilience Alliance (IDRA). (2025). Drought Hotspots Report 2023–2025. Bonn: UNCCD.





Annexes

1. Workshop Agenda (attached)
2. List of Participants (attached)
3. Presentation Slides (attached)
4. Desk Review Report on Desertification & Drought Palestine (attached)
5. Photographs from the workshop (provided via email in compressed format)

