

Climate change adaptation in the Arab States

Best practices and lessons learned from country experiences



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The Challenge

In the Arab States, the causes of crises, food insecurity, malnutrition and vulnerability to climate change impacts are deeply interlinked and require multifaceted responses. The Arab region is home to rising levels of conflict and the world's largest population of refugees and displaced people. Simultaneously, it is now the planet's most water scarce and food-import-dependent region, and the only region where malnutrition rates have been rising. Overexploitation of natural resources in the region has also led to severe ecosystem degradation. Poor land and water management are reducing the potential provision of already limited ecosystem services. The impacts of climate change are exacerbating the existing challenges of sustainably managing limited natural resources. Climate change-related desertification has expanded in the Arab region, greatly increasing the vulnerability of the local population. In fragile countries such as Somalia, illegal armed groups such as Al-Shabaab have increasingly attracted young people, who are affected by drought-induced food insecurity and have limited job prospects.

At a glance

Countries supported

Djibouti, Egypt, Somalia, Sudan, Tunisia

Total Current Funding

US\$42 million

Primary Funders



Photo: Albert Gonzalez Farran/UN

Building solutions

To conquer such challenges, the United Nations Development Programme (UNDP) is supporting countries in the Arab region to adapt to climate change impacts and to prepare for disaster risks. A number of recommendations arise from the lessons learned over the past 10 years of climate change adaptation work in the region. These will support countries in their efforts to mainstream, scale-up and accelerate climate change adaptation initiatives and achieve the goals outlined in the 2030 Agenda for Sustainable Development, Paris Agreement and Sendai Framework for Disaster Risk Reduction. Recommendations include:

- **Build local capacity** at all levels.
- **Empower local communities** to participate in the incorporation of adaptation and disaster risk preparedness practices.
- **Improve access to adapted financial services** such as Weather Index Insurances and microfinance services.
- **Identify and incorporate the management of climate and disaster risks** into all governance structures, policies, planning, and monitoring efforts.
- **Reignite growth in agriculture and pastoralism** by supporting extension services.
- **Promote water use efficiency practices** to improve agricultural and pastoral production.
- **Strengthen national capacities to produce data** for improved evidence-based decision making.
- **Promote diversification of livelihoods for farmers and pastoralists** by enabling them to exploit natural resource-based value chains or to use adaptation technologies.
- **Increase public and private investment** to boost productivity and reduce risks.
- **Improve climate information data collection and analysis** and the implementation of early warning systems.
- **Propel women as key agents of climate action** and natural resource protection.

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Innovative Best Practices

UNDP supports the application of innovative water resource management, financial services, livelihoods diversification and empowerment practices for women and youth across the region.

Sand dams permit runoff to infiltrate through sandy river beds and have been demonstrated to be preferable over the traditional approach of storing water in small reservoirs. Such reservoirs are subject to evaporation and contamination. Sand dams are now being used by communities during the dry seasons by digging wells. The sand dam has been awarded as a best practice by the government of Puntland and is being replicated by other development organizations.

Fog harvesting in Djibouti has also been proven to be an innovative technique to capture water moisture in humid forest regions.

Hard and soft approaches for coastal adaptation are being promoted in line with Integrated Coastal Zone Management (ICZM) principles. In Tunisia and Egypt, hard infrastructure designed outside the context of an ICZM Plan led to the failure of accounting for natural sedimentation and flow processes. This led to significant problems with erosion, salinization and coastal flooding. In response, various 'soft' approaches are being implemented such as living shorelines, beach nourishment, vegetative buffers and dune rebuilding measures with native palm and posidonia grasses, with promising results.

A whole of systems approach has been shown to benefit entire ecosystems and has proven to be the preferred choice to protect coastlines based on quantitative cost-benefit analyses and monitoring of interventions.

Community revolving funds and microfinance. A GEF-LDCF-financed project in Sudan indicates that a community-based revolving fund enables local farmers to purchase solar-powered irrigation pumps and gas cooking stoves. The cooking stoves have demonstrated significantly reduced pressure on biomass-based fuel and thereby reduce deforestation. In Djibouti, a three-tiered system of micro-finance enables adoption of adaptation technologies and improved seedlings. The poorest populations use a safety net type of financing, then nanofinance and ultimately micro-finance products.

Ensuring access to financial services in remote locations. As part of a project in Sudan, progressive microfinance structures are being tested to provide loans targeted towards adaptation and tailored to the needs of smallholder rain-fed farmers and pastoralists. Weather Index-based Insurance is linked with micro-finance products targeted to farmers and pastoralists to support compensation and the reduction of damages due to climate change.

Promoting resilience through livelihood diversification. In Djibouti and Somalia, projects support livelihood diversification and job creation schemes for women and youth. Such schemes include gabion construction, nursery development, reforestation and artisanal production.

Empowering women. The projects in Djibouti and Somalia focus on empowering women by training them on the value chain of adaptation technologies that are useful for household chores such as subsistence farming. In the case of Somalia, women have been very keen to participate in women-focused training events on integrative farming techniques, water management and the creation of small-scale businesses on adaptive technologies.

Youth are being empowered by updating university curricula to produce more technical graduates. In countries such as Somalia where the youth employment rate is close to 70 percent, it is expected that there will be increased employment opportunities for youth and subsequently less likelihood that educated graduates will succumb to precarious trades such as illegal charcoal sales and enlisting in terrorist groups such as Al-Shabaab.

Bringing it to scale. UNDP is also supporting countries mobilizing funds from the Green Climate Fund to mainstream and accelerate climate change adaptation in the region. Most recently, UNDP assisted Egypt in accessing a US\$31 million grant from the GCF to protect agricultural areas near the coast, and the vulnerable communities that rely on them, and to help prevent the risk of displacement. GCF and similar funds must be used efficiently and wisely in a transparent manner to gain support for the adaptation cause from outside investors, particularly the growing number of climate finance mechanisms provided by the private sector.

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Climate risks by the numbers

14 of the world's 20 most water-stressed countries.

6% Region's annual internal water resources compared to average annual precipitation (world average is 38%)

4% Annual deforestation rates (largely due to charcoal production and the Gum arabic trade.

15% Current climate change projections show that by the year 2025, the water supply in the Arab region will be only 15% of levels in 1960.

3% Annual population growth

90% Of region lies in arid, semi-arid and dry sub-humid zones

23 Hectares of land lost per minute to desertification

Read the full publication at adaptation-undp.org/CCA-arab-states

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