Sustainable Drylands

ISSUE Drylands are a vital part of the earth's human and physical environments, encompassing grasslands, agricultural lands, and dry forests and shrublands. Drylands cover approximately 40% of the world's land area and support two billion people, 90% of whom live in developing countries, where women and children are most vulnerable to the impacts of land degradation and drought.

Pristine dryland landscapes provide freshwater, food, fuel and fiber, climate regulation, and habitats for wildlife. Drylands also store 46% of global terrestrial carbon reserves. Forests in drylands are now known to be much more extensive than previously reported, covering an area similar to that of tropical rainforests or boreal forests. Nonetheless, they have been largely overlooked in the conservation and development agendas.

Dryland biodiversity is relatively rich and is critical for the provision of dryland services. Out of the 25 global biodiversity hotspots, eight are in drylands. The proportion of drylands designated as protected areas is close to the global average, but the proportion of dryland threatened species is lower than average. At least 30% of the world's cultivated plants originated in drylands and have progenitors and relatives in these areas.

Governance challenges such as inadequate institutional capacity, low investment of public resources, weak penetration of government services, and insecure land tenure and resource rights, in combination with poor land use practices and inadequate soil management worldwide, pose grave threats to dryland ecosystems. It is estimated that 25–35% of drylands are already degraded, with over 250 million people directly affected and about one billion people in over one hundred countries at risk. These dryland ecosystems increasingly face environmental problems, especially desertification and drought, habitat loss, and vulnerability to climate change. Transformation of drylands to cultivated croplands is leading to significant, persistent decrease in overall dryland plant productivity. Reduction of rangeland vegetation cover through grazing of forage and collection of fuelwood exposes the soil to erosion.

Climate change will impact different dryland zones in different ways. Projections suggest that about one-third of temperate drylands may decrease in size, transitioning to sub-tropical drylands. This change will influence ecosystem functions, and the services that drylands provide, such as wildlife habitat, agriculture, carbon storage, and soil conservation, among others.

SOLUTION

The international community is working to halt and reverse the loss of drylands through a commitment to land degradation neutrality (LDN), the overarching concept of the UN Conference to Combat Desertification (UNCCD). The Convention defines LDN as "a state whereby the amount and quality of land

resources necessary to support ecosystem function and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems." Unlike past approaches, LDN creates a measurable target for sustainable land management (SLM), promoting a dual approach of measures to avoid or reduce degradation of land combined with measures to reverse past degradation. The minimum objective is to balance losses with gains to achieve a position of no net loss of healthy and productive land.

Due to the high levels of poverty in countries with extensive arid, semi-arid, and sub-humid drylands, there is a crucial need to integrate LDN priorities with food and water security, poverty reduction, income generation, and livelihood security. Private sector involvement and access to finance is important to link smallholder producers and pastoralists to markets, introduce sustainable supply chains, and create stable revenues with such dryland commodities as cotton, wool, leather, fuelwood, and charcoal.

Land-based investments should deliver multifunctional land use including (simultaneously) food production, water supply, carbon storage and climate change mitigation, biodiversity protection, and others. Investments in drylands must also be anchored in risk management and resilience, and greater attention is needed to the impact of land degradation on drought caused by the disruption of hydrological cycles and soil moisture.

Innovative approaches that support the efficient use of land, soil, water, and vegetation in crop and livestock production systems will have an important role to play. Such approaches include temporal and spatial diversification at various levels, including plot, farm, and landscape (e.g. crop rotation, intercropping; mixed farming as crop-livestock and crop aquaculture systems; measures of sustainable land and soil management, etc.).

The sustainable management of dryland landscapes requires measures to create a better enabling environment for land use policies, and for clarifying land tenure and supporting rational land use planning across landscape mosaics. In this context, the international community should strengthen its support for multi-stakeholder partnerships, local participation, and gender equality. Any effort to slow or reverse land degradation must improve the conditions of women through better access to resources, services, and opportunities, and empower them to make decisions and be better represented in various decision-making bodies.

LOOKING AHEAD

The international community will need to support countries in their implementation of convention guidance by facilitating coordinated investments in SLM to achieve LDN. Since land degradation has both poverty and global environment dimensions, integrated solutions are required to support interventions that address both dimensions. Building synergies, sharing knowledge, and learning from each other will improve the cost effectiveness of interventions and deliver multiple outcomes toward environmental, social, and economic sustainability.

Comprehensive landscape approaches are the best way to address the multi-faceted nature of land degradation across the range of agro-ecological and climatic zones globally. Safeguards must be applied to avoid negative impacts on vulnerable people. To achieve sustainable management of drylands, multiple environmental benefits need to be generated simultaneously with enhancing local livelihoods. Landscape approaches will allow to tailor implementation packages to a wide range of dryland landscapes contexts. Drylands encompass critical landscapes for potential global environmental benefits, especially through:

1. building resilience to climate change in environments particularly vulnerable to anticipated impacts of climate change;
2. sequestering carbon, managing watersheds to reduce sediment yields and conserving scarce water resources; and
3. protecting rare and endangered biodiversity.

An important focus of work in GEF-7 is to avoid, reduce, and reverse further degradation, desertification, and deforestation of land and

ecosystems in drylands. GEF and its partners will promote the sustainable management of production landscapes, addressing the complex nexus of local livelihoods, land degradation, climate change, and environmental security. UNCCD's LDN concept will help to advance sustainable land and forest management aiming at avoiding further land degradation and desertification and improving the quality and maintenance of ecosystem services.

New and enhanced partnerships of all stakeholders will be essential to efforts to bring about sustainable dryland landscapes globally, ranging from governments, the private sector, and smallholders.

Financing of sustainable land management in drylands is of paramount importance. The LDN Fund is one vehicle to invest and to crowd in private sector funding. Providing access to finance for smallholders is essential. Investments in drylands must also be anchored in risk management and resilience and greater attention is needed to the impact of land degradation on drought. Innovative approaches that support an efficient use of land, soil, water, and vegetation in crop and livestock production systems will have an important role to play in this context.

From a policy perspective, sustainable management of dryland landscapes requires the appropriate enabling environment for land use governance, and for clarifying land tenure and supporting rational land use planning across mixed-use landscapes. Global and regional NGOs and CSO are actively working in drylands and should be involved in sharing their experience and lessons, including through a coordination with the GEF Small Grants Program.