Sustainable Land management – restoring degraded lands for a better future

"The nation that destroys its soil destroys itself"
Franklin D. Roosevelt, 1937

Throughout the world, demand for finite land resources is ever increasing, and can lead to irreversible land degradation, as land is used beyond its "bio-capacity". Against this background, sustainable land management has become extremely important. The benefits are well-known, as are measures and best practices. But implementation is still lagging behind. A plea for more efforts in bringing together the world of conservation with the financial and development sectors.

Globally, there is an increasing demand for goods and services derived from finite land resources. Land available to feed one person decreased from 0.45 hectares in 1961 to just 0.20 hectares in 2005. Climate change, population growth, globalisation and poor land management practices have resulted in a loss of provisioning and ecosystem services (e.g. carbon sequestration and nutrient cycling) maintained by land. Some degradations are natural, like those caused by earthquakes and landslides, while in most cases they are human-induced. Factors influencing them include deforestation, over-grazing and urban sprawl. Declining soil quality results in low crop productivity, prompting farmers to make greater use of fertilisers and chemicals, putting the population into a vicious cycle of land degradation, food shortage and poverty. Degradation also causes loss of forest, biodiversity and vegetative cover, inducing climate change. According to the United Nations Food and Agriculture Organization, one out of every three people on Earth is in some way affected by land degradation. Further,

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a recent study puts the annual global cost of land degradation at approximately 300 billion US dollars (USD).

The global community has reacted with a goal to achieve a state of 'Land Degradation Neutrality' along with the fulfilment of other ambitious climate and biodiversity commitments. To help achieve these commitments sustainable land management (SLM) can play an important role. SLM is a set of implementable practices, technologies and approaches geared to maintaining indefinite ecological resilience and stability of the ecosystem services, while providing sustenance and livelihood diversity for humans. Rehabilitating degraded land by ecosystem restoration and sustainable neighbourhood designs can protect vital ecosystems and empower businesses. SLM can reverse the current trend of degradation, but large-scale interventions need to be based on an assessment of their total value (ecological, societal, economic benefits).

■ Investing in restoration can bring multiple benefits

The United Nations Convention to Combat Desertification (UNCCD) recognises that preventing and reversing land degradation is one of the key priorities for most of the 168 affected countries. Increasing soil carbon storage through land restoration and sus-

tainable land management represents a significant opportunity to mitigate climate change, particularly at a time when the global community is falling short of the Paris Agreement. Many studies indicate that there are strong incentives for taking action against land degradation. According to an Economics of Land Degradation (ELD) Initiative study, on average, every USD investment into land restoration can give a five USD return. According to the World Resources Institute (WRI), restoring 20 million hectares of degraded lands in Latin America and the Caribbean would yield 23 billion USD in net benefits over 50 years. Restoring high-value forests in Nicaragua around coffee plantations generated an average additional 415 USD per hectare from forest products and an additional 161 USD per hectare from ecotourism. A study on large-scale restoration of rangeland in Jordan indicates that the benefits of sustainable land management practices dwarfed their implementation costs.

A number of initiatives are at work at regional and global levels that are helping strengthen the global political momentum in the battle against land degradation. Globally, efforts have been made to achieve land degradation neutrality by 2030 (Target 15.3 of the Sustainable Development Goals [SDGs]), restoring 150 million hectares by 2020 under the Bonn Challenge and 350 million hectares

A restored environmentally degraded site in the desert converted into a beautiful oasis with proper watershed management and rehabilitations to encourage growth of desert plants, animals and arrival of migratory birds.
Photos: Bedanga Bordoloi

by 2030 under the New York Declaration on Forests. Regional initiatives include 20x20 (a country-led initiative on land restoration) in Latin America and the Caribbean and the African Forest Landscape Restoration Initiative (AFR100). Such initiatives follow existing international pledges, including the Convention on Biological Diversity (CBD) Aichi Target 15 and the United Nations Framework Convention on Climate Change (UNFCCC) REDD+ goal. Most recently, the UN Forum on Forests (UNFF) has set a target that would expand the world's forests by 120 million hectares by 2030. The International Standards for the practice of Ecological Restoration, released by the Society for Ecological Restoration, will further support sustainable land management initiatives.

■ Approaches to management of degraded lands

Sustainable land management comprises a variety of agronomic, vegetative, physical and management measures. These include green cover, mulching, use of manure, conservation tillage, plantation of trees and shrubs, crop-rotation, integration of different agro systems like agro-silvi-pastoral integration and building agri-engineering structures like terraces, dams, etc.

Numerous tools and methods exist that can assist private sector play-ers in assessing the value of SLM and implementing it. The land materiality risk assessment tool, which has been developed by the ELD Initiative and the World Business Council for Sustainable Development (WBCSD), provides insight into a business's impact and dependence on land, as well as into related risks and opportunities. This tool enables companies to assess the significance of land for their business. The World Resources Institute's restoration diagnostic method identifies the success factors for forest restoration, and it has an atlas of restoration opportunities to identify opportunities for restoration across the globe.

■ Right investments and policies can halt and reverse land degradation

Incentives to manage land better and reward those who practice sustainable land management need further impetus. Some good examples already exist. Costa Rica provided tax deductions, initiated a Payment for Ecosystem Services (PES) scheme and later introduced a mandatory conservation fee. Over five million hectares of degraded land in the Sahel has been restored through farmer-managed natural regeneration. In Ethiopia, SLM like terracing, crop rotation, pasture-land improvement and green cover has restored around 390,000 hectares of degraded land. From 1991 to 2004, Brazil's grain production more than doubled thanks to the adoption of conservation agriculture and the introduction of improved crop varieties. Further, Brazil has recently committed to restore around 22 million hectares of degraded land. This commitment will help in Brazil's Nationally Determined Contribution (NDC) to the Paris Climate Agreement while supporting

farmers, ranchers and conservationists. However, the implementation of actions towards prevention and restoration of land degradation faces numerous challenges. Many countries lack the necessary methods, data and expertise to monitor and report land degradation. Unclear tenure rights, continued incentives for unsustainable land uses, lack of implementation capacity, insufficient awareness of financing opportunities and investors' lack of understanding are other barriers.

But in many places, numerous measures have already been adapted to local contexts, which can be replicated across wider landscapes. Providing tangible local incentives for taking action against land degradation can include provision of securing land rights, enhancement of education and extension services, and empowerment of local communities. The use of the farmer field school or agro-pastoral field school approach has emerged as a core tool for building capacity of farmers and agro-pastoralists. There is also a need to improve access to financial and social capital to enhance SLM uptake. Local institutions providing credit services or inputs such as seed and fertilisers must not be ignored in the development policies. Today, more than ten private equity impact funds (already operational or in design) seek to invest in landscape restoration projects. Green bonds have the potential to finance a broad range of sustainable land use and conservation efforts.

Transforming the way we think, value, use and manage our land resources can help build a more resilient and sustainable future. SLM practices protect our natural capital and help populations adapt to climate change and build resilience. They can reduce the risk of migration and conflict while achieving food and energy security. SLM holds promise to be the accelerator in achieving commitments set in the national and global sustainability agendas.

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