

Combating Land Degradation: Future Directions

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ABSTRACT

Following from the 1992 Earth Summit, where desertification was recognised as one of the biggest environmental challenges hindering sustainable development, the UN Convention to Combat Desertification (UNCCD) was established in 1994. UNCCD, now with 197 Parties, is a legally binding international agreement that aims to bring together environmental and developmental issues with sustainable land management solutions. Marking the day of its adoption, 17th June each year is Desertification and Drought Day.

Desertification refers to the land degradation in drylands. These arid, semi-arid and sub-humid areas make up 40% of global land area and support the livelihoods of two billion people worldwide, particularly in developing countries. Drylands are present in every continent and are mostly prevalent across Africa and Asia.

The degradation of drylands is caused by climatic variations and other human activities such as deforestation and unsustainable land use amongst other factors. This has severe implications, for example resulting in the loss of 24 billion tons of fertile soil per year, putting peoples' livelihoods and lives at risk.

KEYWORDS: *land degradation, combating, future, reforestation, drylands, desertification, sustainable*

INTRODUCTION

Healthy drylands bring a range of important benefits to people and planet, and so addressing desertification is paramount.

The New Climate Economy report estimates that the restoration of 150 million hectares of agricultural land can generate over USD 30 billion extra income for smallholders, as well as food provision for 200 million more people. Restoration also brings important wider environmental benefits, such as carbon storage and the protection of biodiversity, and has a crucial role to play in a green recovery from the COVID-19 pandemic. [1,2]

Amongst the many ways to help restore degraded land is reforestation, including tree regeneration. This includes agroforestry – a natural resource management system where trees are grown on the same land used for agriculture. Agroforestry has the potential to address a range of important environmental, economic, and social issues, such as conserving nature whilst also responding to the ever-growing demand for food. According to the newly published UNEP report on Ecosystem Restoration,

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restoring degraded land through agroforestry alone can increase food security for 1.3 billion people. Further, tree plantations in agroforestry systems are habitats for species and provide a buffer zone against deforestation that allows for species migration.

Efforts to restore degraded land through reforestation and agroforestry systems highlight the interlink ages between desertification, climate change, and biodiversity loss. There are crucial areas of overlap between the UNCCD and the other two Rio Conventions, the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC).

UNEP-WCMC Programme Officer Abisha Mapendembe addressed this topic whilst supporting sustainable development in Namibia through the synergistic implementation of the three Rio Conventions. He remarks that:

“At this critical juncture for the global crisis of biodiversity loss, climate change, desertification and inequality - all covered under the three Rio conventions adopted in 1992- there isn't time to

address these pressing problems sequentially. We need to address these critical challenges simultaneously, seeking synergies and integrated solutions. The Sustainable Development Agenda and its Sustainable Development Goals provide a ready-made set of goals and targets that reflect key development and environmental challenges, and how to address them in a coordinated manner for the benefit of people and the planet. This, however, requires joined-up government thinking and policy development and implementation.” [3,4]

One example of the efforts to address the links between these conventions is the Reducing Emissions from Deforestation and forest Degradation (REDD+) initiative. REDD+ actions tackle climate change through reducing greenhouse gas emissions and enhancing sequestration, and also reduce forest degradation as well as support the conservation and sustainable use of biodiversity.

For example, in Côte d'Ivoire, cocoa production is both the main driver of deforestation, and thus land degradation, and also supports the livelihoods of many smallholder farmers. Spatial analysis work led by UNEP-WCMC to map restoration opportunities across the country has the potential to identify places where agroforestry actions could be implemented to support more resilient agricultural ecosystems, improve food security as well mitigating climate change. This work contributes to UN-REDD Programme implementation and to the CocoaSoils collaboration. [5,6]

DISCUSSION

During the UNCCD COP13 in 2017, countries committed to achieve Land Degradation Neutrality by 2030, goal comprehensively addressed in the UNCCD 2018-2030 Strategic Framework. This will be supported by the UN Decade on Ecosystem Restoration, which in the next 10 years will also aim to facilitate synergies between all three Rio Conventions.

With 23 % of global land area no longer productive, and 75 % of land transformed from its natural state, our planet's ecosystems urgently require restoration. Let us mark this year's Desertification and Drought Day as the start of an impactful decade, where we restore the over 2 billion hectares of degraded land and improve the livelihoods of more than 1.3 billion people around the world. This will require that available knowledge and tools to support sustainable land management are translated into actions at national and local scales by governments and civil society.

Creating an enabling environment for land degradation neutrality—an approach that counterbalances the expected loss of productive land with the recovery of degraded areas—can help ensure food security, energy needs, land tenure, gender equality, access to clean water, and biodiversity are considered and meaningfully addressed together[7,8]

The economic and social significance of a good land management, including soil and its contribution to economic growth and social progress is recognized in paragraph 205 of the Future We Want. In this context, Member States express their concern on the challenges posed to sustainable development by desertification, land degradation and drought, especially for Africa, LDCs and LLDCs. At the same time, Member States highlight the need to take action at national, regional and international level to reverse land degradation, catalyse financial resources, from both private and public donors and implement both the United Nations Convention to Combat Desertification (UNCCD) and its 10- Year Strategic Plan and Framework (2008-2018).

Furthermore, in paragraphs 207 and 208 of the Future We Want, Member States encourage and recognize the importance of partnerships and initiatives for the safeguarding of land resources, further development and implementation of scientifically based, sound and socially inclusive methods and indicators for monitoring and assessing the extent of desertification, land degradation and drought. The relevance of efforts underway to promote scientific research and strengthen the scientific base of activities to address desertification and drought under the UNCCD is also addressed.

Combating desertification and drought were discussed by the Commission on Sustainable Development in several sessions. In the framework of the Commission's multi-year work programme, CSD 16-17 focused, respectively in 2008 and 2009, on desertification and drought along with the interrelated issues of Land, Agriculture, Rural development and Africa.[9,10]

In accordance with its multi-year programme of work, CSD-8 in 2000 reviewed integrated planning and management of land resources as its sectoral theme. In its decision 8/3 on integrated planning and management of land resources, the Commission on Sustainable Development noted the importance of addressing sustainable development through a holistic approach, such as ecosystem management, in order to meet the priority challenges of desertification and drought, sustainable mountain development, prevention and mitigation of land degradation, coastal

zones, deforestation, climate change, rural and urban land use, urban growth and conservation of biological diversity.

The sectoral cluster of land, desertification, forests and biodiversity, as well as mountains (chapters 10-13 and 15 of Agenda 21) were considered by CSD-3 in 1995 and again at the five-year review in 1997.

The UN Conference on Environment and Development (UNCED) called upon the United Nations General Assembly to establish an Intergovernmental Negotiating Committee (INCD) to prepare, by June 1994, an international convention to combat desertification in those countries experiencing serious drought and/or desertification, particularly in Africa. The Convention was adopted in Paris on 17 June 1994 and opened for signature there on 14-15 October 1994. It entered into force on 26 December 1996.

Deserts are among the "fragile ecosystems" addressed by Agenda 21, and "combating desertification and drought" is the subject of Chapter 12. Desertification includes land degradation in arid, semi-arid and dry sub humid areas resulting from various factors, including climatic variations and human activities. Desertification affects as much as one-sixth of the world's population, seventy percent of all drylands, and one-quarter of the total land area of the world. It results in widespread poverty as well as in the degradation of billion hectares of rangeland and cropland.[11,12]

Integrated planning and management of land resources is the subject of chapter 10 of Agenda 21, which deals with the cross-sectoral aspects of decision-making for the sustainable use and development of natural resources, including the soils, minerals, water and biota that land comprises. This broad integrative view of land resources, which are essential for life-support systems and the productive capacity of the environment, is the basis of Agenda 21's and the Commission on Sustainable Development's consideration of land issues.

Expanding human requirements and economic activities are placing ever increasing pressures on land resources, creating competition and conflicts and resulting in suboptimal use of resources. By examining all uses of land in an integrated manner, it makes it possible to minimize conflicts, to make the most efficient trade-offs and to link social and economic development with environmental protection and enhancement, thus helping to achieve the objectives of sustainable development. (Agenda 21, para 10.1) The Food and Agriculture Organization of

the United Nations (FAO) is the task manager for chapter 10 of Agenda 21.[13]

RESULTS

Land is being degraded rapidly worldwide. Ensuring food security for a growing global population requires healthy land resources and flourishing ecosystems. Yet our current agricultural practices are causing soils worldwide to be eroded up to 100 times faster than natural processes replenish them.

We have already altered 70 percent of all ice-free land, impacting over 3.2 billion people. At current rates, 90 percent of land will bear our imprint by 2050. The impacts of land degradation will be felt by most of the world's population. Land degradation also changes and disrupts rainfall patterns, exacerbates extreme weather like droughts or floods, and drives further climate change. It results in social and political instability, which drives poverty, conflict, and migration.

The UNCCD's goal of land degradation neutrality (LDN) can halt, and then reverse, this alarming picture of the future. We are already helping 129 of the world's 196 countries that have pledged (or are aiming) to arrest land degradation by 2030. More than 100 countries participate in the Changwon Initiative, which supports national voluntary target setting processes to achieve land degradation neutrality (LDN). We define LDN as "a state whereby the amount and quality of land resources necessary to support ecosystem functions and services to enhance food security remain stable, or increase, within specified temporal and spatial scales and ecosystems." [14,15]

Achieving LDN requires three concurrent actions:

- firstly, avoiding new degradation of land by maintaining existing healthy land;
- secondly, reducing existing degradation by adopting sustainable land management practices that can slow degradation while increasing biodiversity, soil health, and food production; and
- thirdly, ramping up efforts to restore and return degraded lands to a natural or more productive state.

The UNCCD's objectives for LDN include:

- maintaining or improving the sustainable delivery of ecosystem services
- maintaining or improving land productivity to enhance global food security
- Increasing the resilience of land and the populations dependent on it

- seeking synergies with other social, economic, and environmental objectives
- reinforcing and promoting responsible and inclusive land governance[16,17]

Land degradation is caused by multiple forces, including extreme weather conditions, particularly drought. It is also caused by human activities that pollute or degrade the quality of soils and land utility. It negatively affects food production, livelihoods, and the production and provision of other ecosystem goods and services. Desertification is a form of land degradation by which fertile land becomes desert. Land degradation has accelerated during the 20th and 21st centuries due to increasing and combined pressures of agricultural and livestock production (over-cultivation, overgrazing, forest conversion), urbanization, deforestation and extreme weather events such as droughts and coastal surges, which salinate land. These social and environmental processes are stressing the world's arable lands and pastures essential for the provision of food and water and quality air. Land degradation and desertification can affect human health through complex pathways. As land is degraded and deserts expand in some places, food production is reduced, water sources dry up and populations are pressured to move to more hospitable areas.[18]

The potential impacts of desertification on health include:

- higher threats of malnutrition from reduced food and water supplies;
- more water- and food-borne diseases that result from poor hygiene and a lack of clean water;
- respiratory diseases caused by atmospheric dust from wind erosion and other air pollutants;
- the spread of infectious diseases as populations migrate.

CONCLUSIONS

Since 1996, regular meetings known as Forums for Integrated Resource Management have enabled farmers and extension service providers to exchange locally-relevant information which in turn informs decision making for sustainable crop and livestock management. Central to the forums' success is a decision support tool known as "local level monitoring" in which farmers identify and monitor critical indicators such as rainfall, livestock condition and fodder availability. Addition information concerning marketing of livestock, animal health and nutrition, rotational grazing and other rangeland management practices was provided by government agricultural extension workers through the forum.

Together, this information has enabled farmers on the ground to make appropriate decisions for sustainable natural resource management.[19,20]

In general the forums have been successful not only in building institutional capacity and social capital at the local level, but also in nurturing a feeling of inclusiveness and trust between remote rural communities and central government. The approach has succeeded by giving ownership to those involved, and therefore empowering local solutions to land management issues. While the initiative has greatly improved communication between decision makers and local farmers, it has yet, however, to make a significant impact on national level laws. Funding is also an issue, as the forums tend to be donor-supported, rendering them unsustainable when donor financing dries up.[20,21]

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