# United Nations Environmental Assembly (UNEA)

*Formulating Best Practices to Combat Desertification*

# ***Research Report***

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*"Out of this world"*

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# Introduction

Desertification is a contemporary environmental issue that is painstakingly dealing with and putting ecosystems, the lives of people, and the entire planet at risk. This process, which is the conversion of productive land into desert, is a phenomenon that has impacted a number of people around the globe and poses risks to biological diversity, global warming, and food security. With the world in the face of more environmental challenges, it has become paramount that an effective best practice to counter desertification is established, more so by the world.

We must broaden our understanding of the processes involved with desertification and fully grasp the consequences as well as possible scenarios for prevention. Understanding the timeframes and risk registers of different stakeholders, previous cases and new actions will allow some creative and efficient approaches to the problem to be implemented. As we examine in detail desertification, it will be derived that desertification is one of the environmental problems that requires a systematic and multifaceted response that has to do with the environment, social aspects, and economic factors.

## Definition of Key Terms

### Desertification:
It is the deterioration of the land in the arid, semi-arid, and subtropical dry areas caused by more than one reason, climate change being one of them and human intervention coming second. It refers to the loss of biological and productive units of cropland, pasture, and woodland.

### Land degradation:
The decrease or diminution of the biological and/or economic capacity, productivity, or potential of land. This may be caused by soil and water erosion, loss and degradation of the soil, or the chronic elimination of the natural cover.

### Drylands:
These are regions with significantly low moisture levels that limit their two most important interconnected functions such as production of primary products and cycling of nutrients. Over 41% of the Earth's land area is dry lands and over 2 billion of the Earth's population live in these areas.

### Sustainable Land Management (SLM):

The use of land resources consisting of soils, water, animals and plants in the production of goods for the purposes of satisfying the changing human requirements without compromising the future productive capacity of such resources and the environmental services that such resources provide.

### Ecosystem restoration:

It is the act of stopping or reversing the process of degradation, thereby enhancing the functioning of ecosystems and biodiversity loss. The restoration may come about in many forms – for instance through active replanting or through removal of stressors so that the ecosystem is able to recuperate by itself.

## General Overview

Desertification may appear to be a simple phenomenon but it involves a number of environmental and anthropogenic factors. One of these natural factors is climate change, where more severe and recurrent droughts with changes in rainfall and increased evaporation arise. Another factor that contributes to climate change is climate variability, which makes dry spells last longer and in extreme cases, exhaust ecosystems beyond the dry limit of their adaptations. The situation is made worse in dry areas, where topsoil is blown away by the wind leading to land degradation and reduction of agricultural activities.

However, it is mankind's actions that are responsible for the rapid advancement of desertification. The practice of removing trees and or other types of plants results in the exposure of soil; making it easy for washing or wind erosion, and reduces its ability to store water. Tame animal herding degrades vegetation by eating off protective grasses and plants, crushing the soil and making it hard for water to penetrate. Bad agricultural methods such as land over-cultivation and growing only one type of crop instead of many ruin the quality and the number of nutrients in the soil. More often than not, groundwater has been overused as in the case of irrigation methods that are considered to be unproductive, and it eventually destroys the hydrological balance of the earth. Changes in land use and urban development bring about soil coverage and disintegration of the animal habitat. Contaminated soil and aquatic ecosystems are caused by mining and cattle raising. These factors induced by human beings sometimes work together, which hastens the process of desertification and makes it harder to reverse.

### Impacts of Desertification

The effects of desertification are many and crosscut both the environment and the social economy. From an environmental perspective, desertification causes the extinction of many forms of plant and animal life as the species can no longer adapt to the impoverished conditions. This impact is not solely contained within the constraining boundaries – disruption of whole food webs and habitats occurs. Erosion processes accelerate; the land's capacity to hold particles weakens, and as a result, more and denser clouds of dust are formed and transported over vast areas, academically related to and further interfered with a host of other manners of daintier contact pollution. The inhabited vegetative cover is lessening which implies that the capacity of the land to absorb atmospheric carbon is as well reduced causing an increase of CO2 in the atmosphere and hence aggravating the climate change

phenomenon. The natural water cycle is interfered with since soil degradation decreases the ability of the soil to absorb and hold water thereby allowing less groundwater recharge and altering local climates.

Desertification threatens human welfare and the ranked system quite seriously in all socio-economic aspects. Food production and infrastructure in particularly affected regions dwindle, triggering famine and other economic deficits. Rural populations, who commonly rely on agriculture, endure loss of income and grow poorer. They begin to be stressed out economically and tend to emigrate from drought stricken places in search of greener pastures which also brings about competition and unrest in other areas. The negative impact on the economy also reaches the national level and in some situations the rates of per capita GNI drop largely due to the desertification. Similarly, health consequences are high: there is malnutrition due to a decrease in the food output, there are various respiratory diseases as a result of sandstorms, there is no clean water or sanitation etc.

## Major Parties Involved

### United Nations Convention to Combat Desertification (UNCCD):

Adopted in 1994, the UNCCD is the only international legally binding instrument which links environment, development and sustainable land management. It seeks to enhance action by novel approaches, effective science and technology and mobilisation of funds to construct transformation and strengthen land restoration.

### Food and Agriculture Organization (FAO):

Considering its international role as a UN agency fighting against hunger, it is no surprise that some of the technical components of the FAO's mandate, such as that of Land and Water Management, Sustainable Agriculture and Climate-Smart Agriculture Practices, aim for the combat of desertification. As regards the FAO which has its specific areas of focus and programmes, the Global Soil Partnership is adequate to addressing the issue of soil erosion further seemingly.

### United Nations Environment Programme (UNEP):

UNEP mobilises action and seeks collaboration in environmental management. It is involved in environmental assessment of the state of the world, development of policy instruments, and strengthening the institutional capacity for sustainable development. Ecosystem management and climate change are two aspects of UNEP's work, which closely relate to the problem of desertification.

## Timeline of Events

***1977*** The United Nations Conference on Desertification (UNCOD) was convened in

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| | Nairobi, Kenya and drew the international community's attention to the problem |
| ***1992*** | The UN Conference on Environment and Development (Earth Summit) held in Rio de Janeiro gives the idea of developing a convention to eliminate desertification |
| ***1994*** | The UN finally adopts the United Nations Convention to Combat Desertification |
| ***1996*** | The Convention comes into force |
| ***2006*** | International Year of Deserts and Desertification was declared towards the UN General Assembly |
| ***2010*** | The UN decade for deserts and the struggle against desertification (2010-2020) was declared |
| ***2015*** | UNs Sustainable Development Goals (SDG's) adopted with 15.3 on land degradation through neutral goals |
| ***2017*** | UNCCD COP13 made history by passing the first gender action plan in all of the Rio Conventions |
| ***2019*** | Launch of the UN decade on Ecosystem Restoration (2020-2030) |
| ***2022*** | UNCCD COP14 strives to achieve land degradation neutrality by the year 2030 |

## Possible Solutions

### Integrated Sustainable Land Management

This phenomenon is achieved by proper combination of local practices and modern scientific knowledge in the fight against desertification. It involves agro-pastoral activities, introducing irrigation efficiency improvement strategies, and water conservation practices. This kind of solution is applicable to a good number of countries but may call for greater commitment on education and infrastructure.

### Technology-Driven Monitoring Systems

The use of satellite imagery systems coupled with artificial intelligence forecasting models and farmer friendly mobile apps can further enhance efforts to eliminate desertification. While this side of the solution favours advanced nations, international collaboration can attempt to fill the void for developing nations.

### Economic Incentives and Policy Reforms

And hence, this kind of solution aims to develop economic incentives for the sustainable management of the land by means of employing ecosystem service payment programs, reformation of agricultural policies containing subsidies, and trading concerning a reduction in carbon emission. It is a highly political solution that requires political will but it addresses a market oriented strategy that is non circumstantial.

### China-Specific Afforestation Program

The project ‘Great Green Wall of China' which mainly focuses on desertification control by establishing a wide belt of trees in northern China can be improved and scaled up. This kind of solution takes advantage of the central government system of China and its abundant resources by carrying out ecological engineering at a massive scale.

### Use Of Community Participation For Land Management In Developing Countries

As opposed to the hierarchical format that exists in China, countries like India or countries in sub-Saharan Africa may attempt to emphasise on the local people in managing land resources in a sustainable manner. This includes incorporating local wisdom, using microcredit for sustainability practices, and setting up society operated verification systems. Such an approach is preferable in regions with multiple local conditions and centralised funding constraints.

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