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SÉMINAIRE INTERNATIONAL SUR LA PRÉSERVATION ET LA RESTAURATION DES SOLS FORESTIERS EN AFRIQUE DE L'OUEST

ABIDJAN - 15-17 MAI 2023



INTERNATIONAL SEMINAR ON THE PRESERVATION AND RESTORATION OF FOREST SOILS IN WEST AFRICA

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FARMERS UNION NETWORK OF LIBERIA



LAND DEGRADATION IN WEST AFRICA

PRESENTED

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Land Degradation

WHAT IS LAND DEGRADATION?

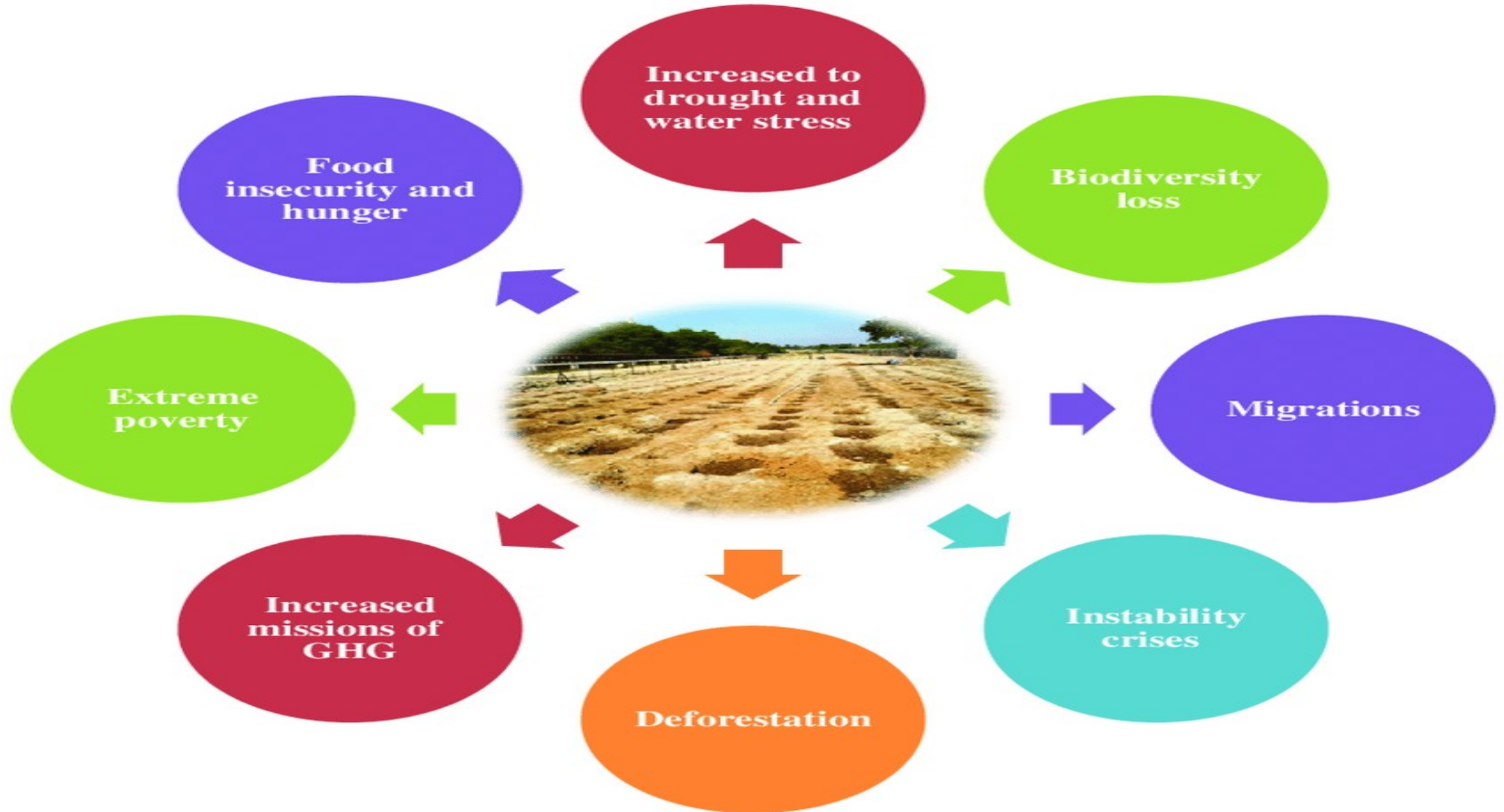


Land degradation is a process in which the value of the biophysical environment is affected by a combination of human-induced processes acting upon the land.

A problem with defining land degradation is that what one group of people might view as degradation, others might view as a benefit or opportunity.

For example, planting crops at a location with heavy rainfall and steep slopes would create scientific and environmental concern regarding the risk of soil erosion by water, yet farmers could view the location as a favorable one for high crop yields

Global Impact of Land degradation



Land degradation in West Africa

LAND DEGRADATION IN WEST AFRICA

- West Africa's population is expected to double by 2050, increasing the demands on already limited land, water, and forest resources.
- The region's landscapes are already affected by degradation, and fragile soils have been exposed to wind and water erosion.
- Since 1975, West African forests have declined from about 131,000 sq km to just 83,000 sq km. Much of that deforestation was driven by agricultural expansion, which doubled in area between 1975 and 2013, and now extends over 1,100,000 sq km — larger than the size of Mauritania.

Much of the 1,100,000 sq km currently in agriculture can benefit from restoration greener landscapes with a mosaic of vegetation cover types provide benefits that boost agricultural productivity, improve food and water security, increase biodiversity, boost resilience to climate change, reduce disaster risk, and improve soil fertility

Farmer-Managed Natural Regeneration (FMNR) Niger



Niger Farmer-managed natural Regeneration

- One of the most successful and beneficial is the practice known as farmer-managed natural regeneration (FMNR). In Niger, farmers use FMNR to regenerate and multiply valuable trees whose roots already lay underneath their land, encouraging tree growth in their fields.
- Niger farmers have improved about 5 million hectares (or 50,000 sq km) of land— now producing more than 500,000 additional tons of cereals per year (Reij and others, 2009).
- Agricultural income is up, and food security has been enhanced, even in drought years. The FMNR approach has increased resiliency and decreased Niger's dependency on external food aid.

Land Degradation Mitigation

- The United Nations Sustainable Development Goal 15 has a target to restore degraded land and soil and achieve a land degradation-neutral world by 2030.
- There are reasons to be optimistic that restoration at scale can be achieved
- A large area of the semiarid Sahel, centered on Niger but also including parts of Mali and Burkina Faso, has shown a remarkable transformation over the past 30 years.
- Landscapes that were once denuded are now home to high- density on-farm trees, which help improve soil fertility and produce fodder for livestock.
- The general term for these techniques is “re-greening” — the transformation of degraded landscapes into productive and resilient farmland through widespread adoption of agroforestry and related sustainable land management practices (Reij and Winterbottom, 2015).

World Resources Institute

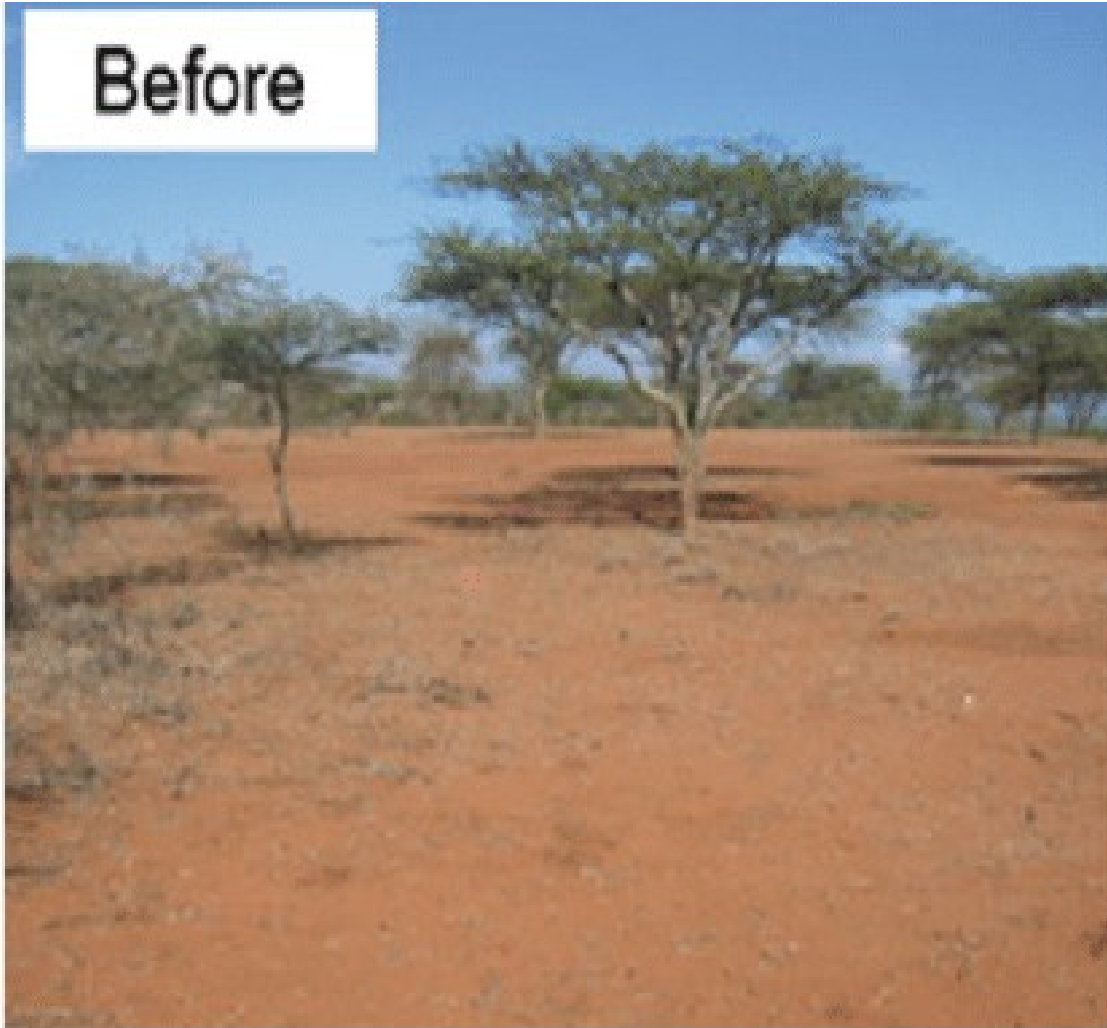
In 2015, the World Resources Institute (WRI) published a report on the steps needed to scale up re-greening to a wider area, providing a practical approach to landscape restoration focuses primarily on re-greening of agricultural lands through a range of processes. (Reij and Winterbottom, 2015).

These include:

- The development of new agroforestry systems by farmers who manage natural regeneration of shrubs and trees,
- Rejuvenation of old agroforestry parklands,
- Management of natural regeneration on abandoned cropland and degraded land,
- Improved management of grazing lands by pastoralists through protection and regeneration of trees and shrubs that are sources of browsing for livestock.

DEGRADED LAND TRANSFORMATION

Before



After



WRI REPORT SUMMARY OF BENEFITS

THE WRI REPORT (REIJ AND WINTERBOTTOM, 2015) SUMMARIZES THE MAJOR BENEFITS OF RE-GREENING:

- Trees help restore, maintain, and improve soil fertility by maintaining or increasing soil organic matter.
- Trees help solve the household energy crisis by providing fuelwood, which reduces the burden on women.
- Trees provide poles for construction and manufacture of furniture and tools, as well as fences for gardens.
- Re-greening practices improve household food security, and fruit and leaves have a positive impact on nutrition.
- Trees are assets that provide “insurance” and banking services,” which can be drawn on in crop-failure years and times of need.
- Many tree species in agroforestry systems produce nutritious fodder.

- Trees increase the total value produced by a farming system and help reduce rural poverty.
- Trees reduce wind speed and wind erosion.
- The shade of trees reduces soil surface temperatures and lowers evapotranspiration.
- Trees contribute to biodiversity and the restoration of ecosystem services in agricultural landscapes.
- Increasing the number of trees in the landscape helps mitigate climate change by sequestering carbon.