

Enhancing Joint Parliamentary Action Among Global South Countries to Counter Developmental and Environmental Challenges

Promoting the logistic factors to fight against desertification and land degradation

Material and presentation

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Desertification

A natural phenomenon that refers to land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, such as climatic variations and human activities...

Article 1 of the United Nations Convention to Combat Desertification and Drought (UNCCD)

The consequences of desertification

Environmental consequences

- Soil depletion
- Degradation of ecosystems and biodiversity
- Decrease in soil carbon storage capacity and increase in global warming
- Water scarcity.

socioeconomic consequences

- Increased poverty
- Deterioration of living conditions
- Food insecurity
- Unequal access to natural resources
- Population migration
- Geopolitical challenges.

Deserts

Sahara Desert, panoramic view aboard a RAM flight, photo by Antonio Micha



Kalahari Desert, view of the region from aboard a Rwandair flight, photo by Antonio Micha



Fertile land exposed to drought and cracked due to lack of rain.



Soil degradation

Changes in soil health resulting in a decrease in the ecosystem's ability to produce goods or provide services to its beneficiaries.

Degraded soils can no longer provide the normal goods and services of an ecosystem.

Deforestation

A phenomenon of reduction in forest areas. It is caused by multiple factors, both natural and human, and has irreversible consequences on the environment.



Stages of deforestation and land degradation

Deforestation and very advanced degradation



Deforestation and very advanced degradation

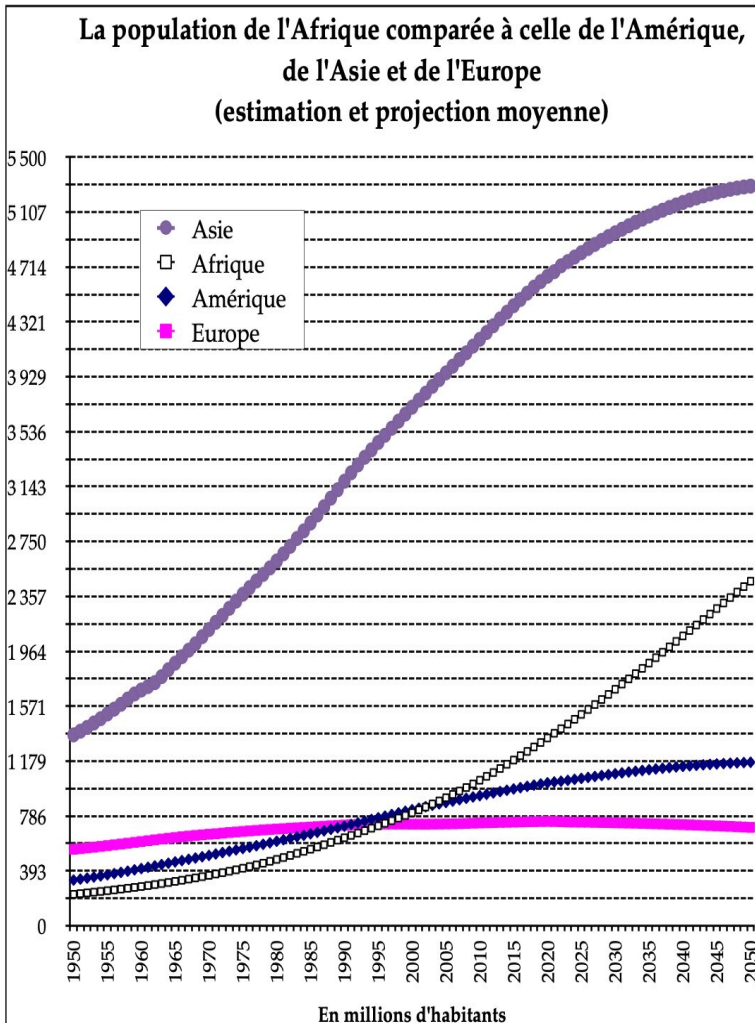
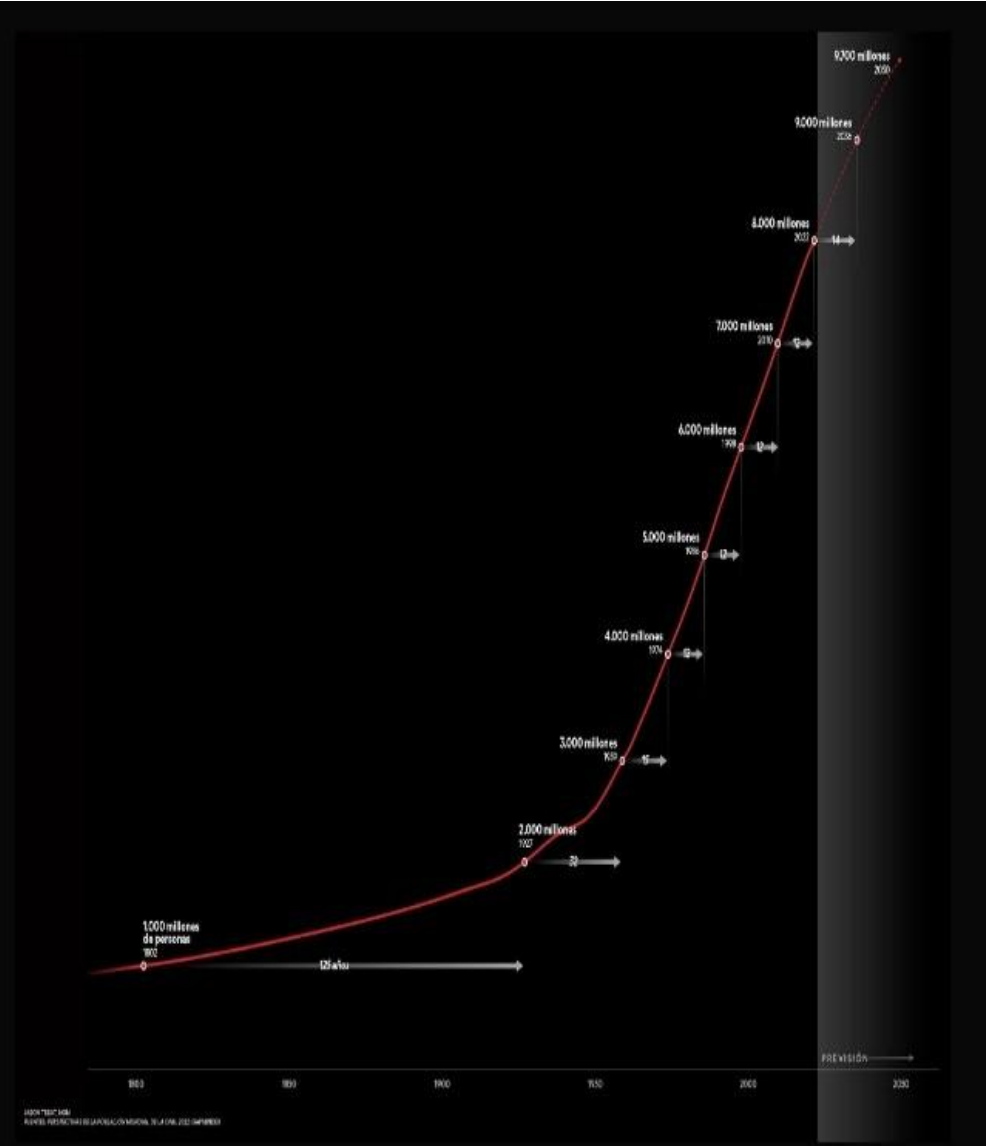


Extremely advanced deforestation and degradation



The world population continues to grow and humans need more and more space to get food resources and other goods and services.

Growing human needs and growing economic activities



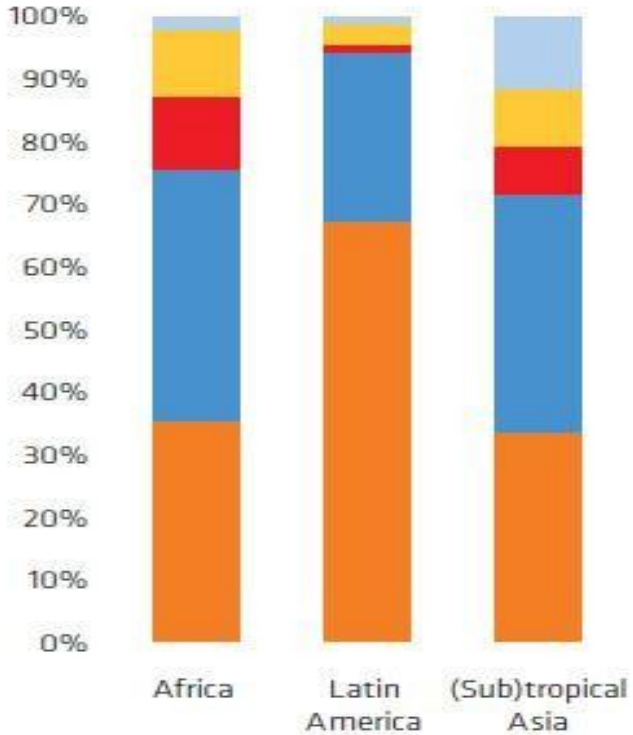
They are putting increasing pressure on land resources

They create competition and conflicts

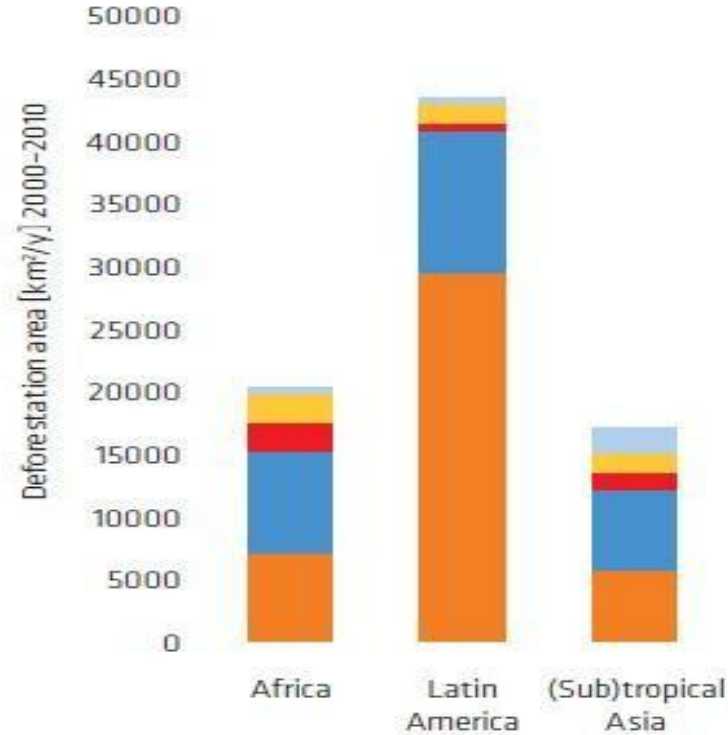
They lead to misuse of resources

Proportion of deforestation and land degradation in relation to growing human needs and increasing economic activities.

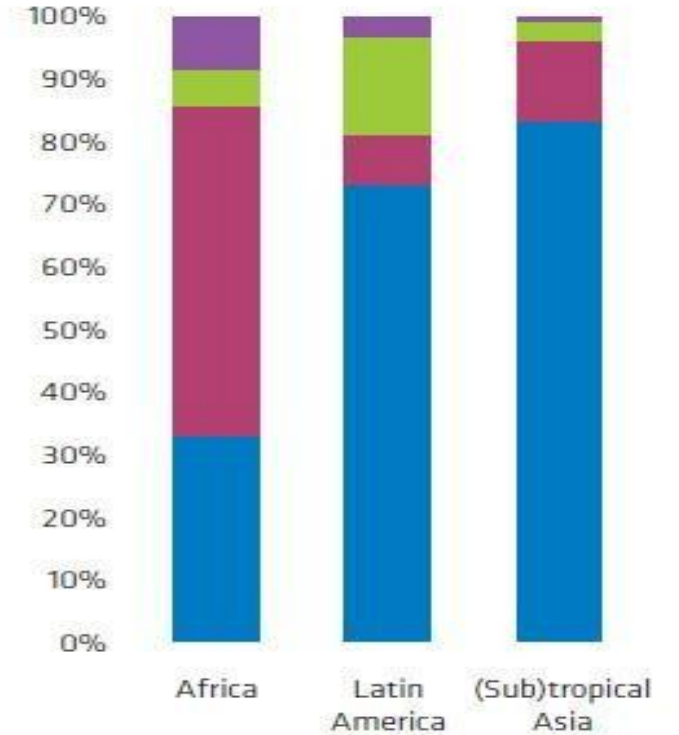
a) Proportion of deforestation factors



b) Proportion of area of deforestation factors



c) Proportion of forest degradation factors

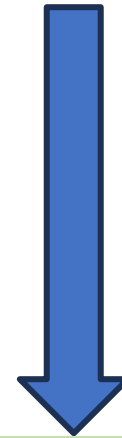


- Urban Expansion
- Infrastructure
- Mining
- Agriculture (local/ subsistence)
- Agriculture (commercial)

- Cattle grazing in the forests
- Uncontrolled fires
- Charcoal, firewood
- Forestry
- Timber logging

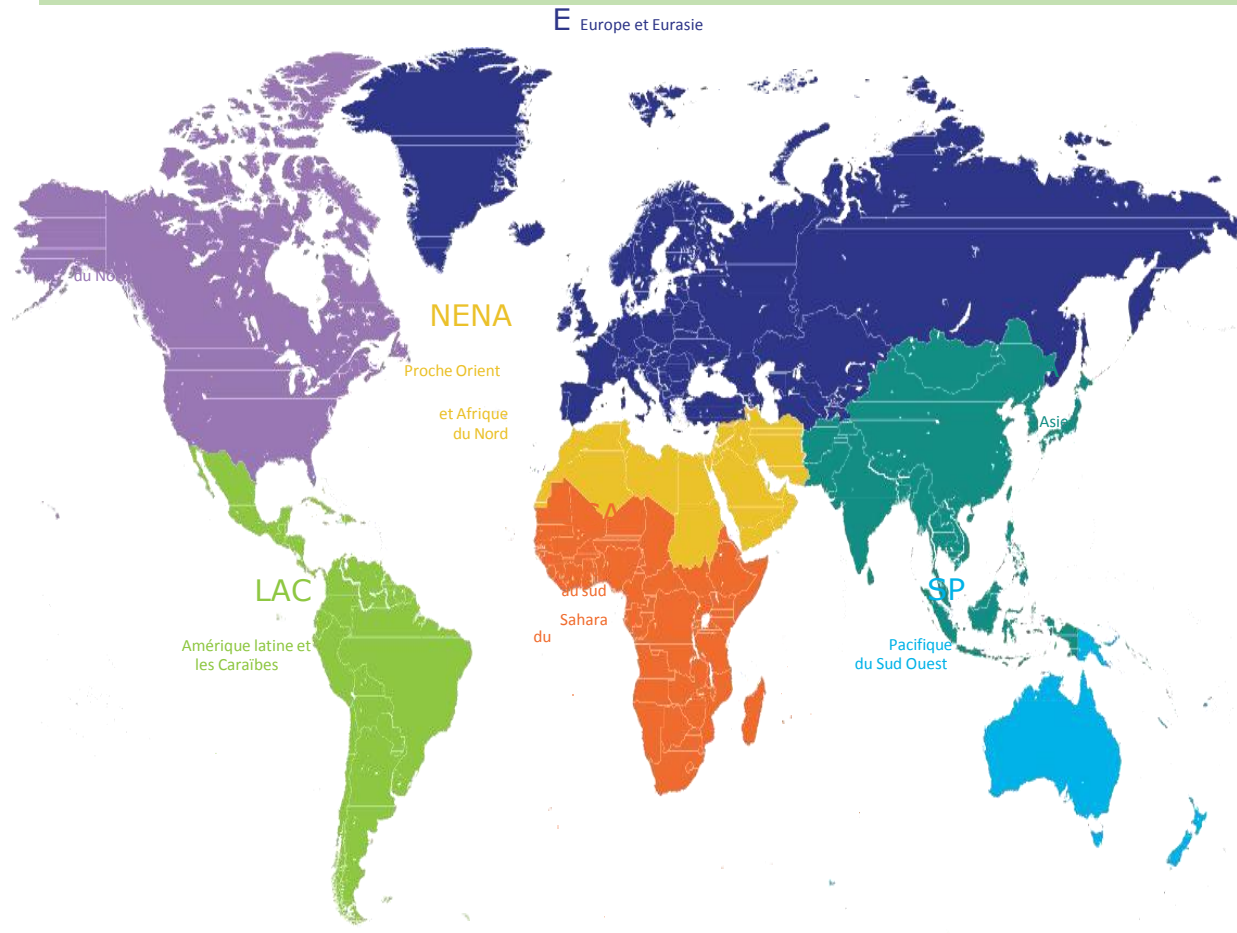
The 20th century witnessed extraordinary economic and demographic growth, coupled with a revolution in agriculture.

Between 1961 and 2000, the world population increased by 98%, but food production increased by 146% and food production per capita increased by 24%. Crop yields more than doubled and, remarkably, the area of arable land in use increased by only 8%. The area of arable land per capita has thus decreased considerably (from 0.45 to 0.25 ha per capita).



Estimates of global food demand based on these demographic projections and expected dietary changes indicate that production in 2050 will need to increase by 40 to 70% compared to 2010.

Summary of status and trends for the ten land threats, in regions (except Antarctica) – threats are ranked in order of importance.



Menace pour la fonction du sol	Etat et tendance				
	Très mauvais	Mauvais	Correct	Bon	Très bon
Erosion du sol	← NENA	← A ← LAC ← SSA	→ E → NA → SP		
Evolution du taux de carbone organique		↔ A ↔ E ← LAC ← NENA ← SSA	→ NA ↔ SP		
Déséquilibre des nutriments		← A ↔ E ← LAC ← SSA ← NA	← SP	↔ NENA	
Salinisation et sodification		↔ A ← E ← LAC	← NENA ↔ SSA	→ NA ↔ SP	
Imperméabilisation des sols et emprise sur les terres	← NENA	← A ← E	↔ LAC ← NA	= SSA ← SP	
Perte de biodiversité		← NENA ← LAC	↔ A ← E ← SSA	↔ NA ↔ SP	
Contamination	← NENA	← A → E	↔ LAC	← SSA → NA → SP	
Acidification		← A ↔ E → SSA ← NA	↔ LAC ← SP	↔ NENA	
Compaction		← A ← LAC ← NENA	↔ E ↔ NA ↔ SP	= SSA	
Engorgement			← A ↔ E = LAC	↔ NENA = SSA ↔ NA ↔ SP	

Source: FAO, 2016 Status of the world's soil resources

Combating desertification and land degradation is crucial to ensuring land productivity

**Sustainable Development
Goal 15 of the Agenda 2030**



LAND PRODUCTIVITY

The biological productive capacity of the earth, the source of all food, fiber, and fuel that sustains humans (United Nations Statistical Commission, 2016).

Net Primary Productivity (NPP)

Is the net amount of carbon assimilated after photosynthesis and autotrophic respiration over a given period (Clark et al., 2001) and is usually represented in units such as kg/ha/year.

“Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss.”



Losses of soil organic carbon (SOC) and soil biodiversity are generally linked to three dimensions of food security:

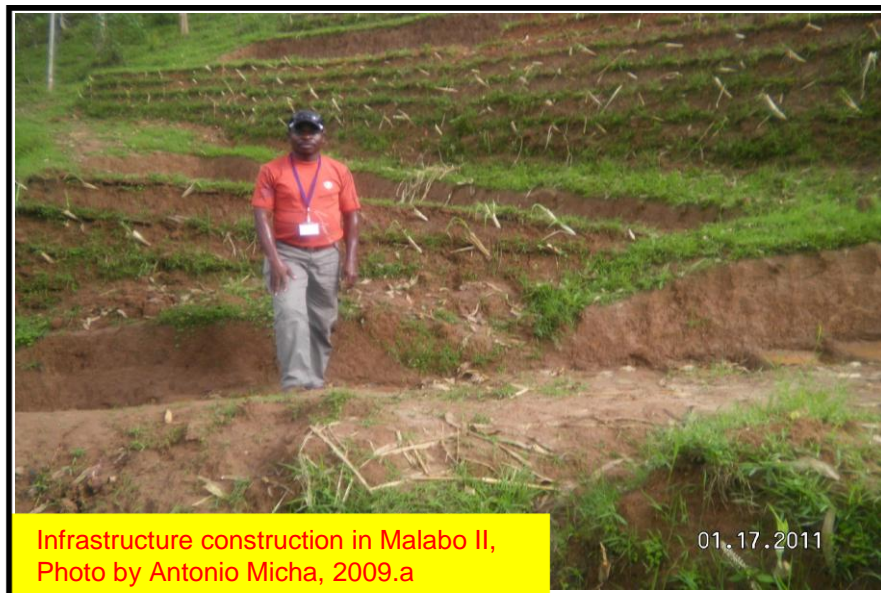
- 1) Food availability,
- 2) Restoring the productivity of degraded soils and
- 3) Flexibility of food production systems.

Some Best Practices for soil Productivity

Example of areas cut out in Burundi to stop erosion and improve soil productivity



Prepare dissected
lands and forest
nurseries with
biological
material



The need for soil enhancement



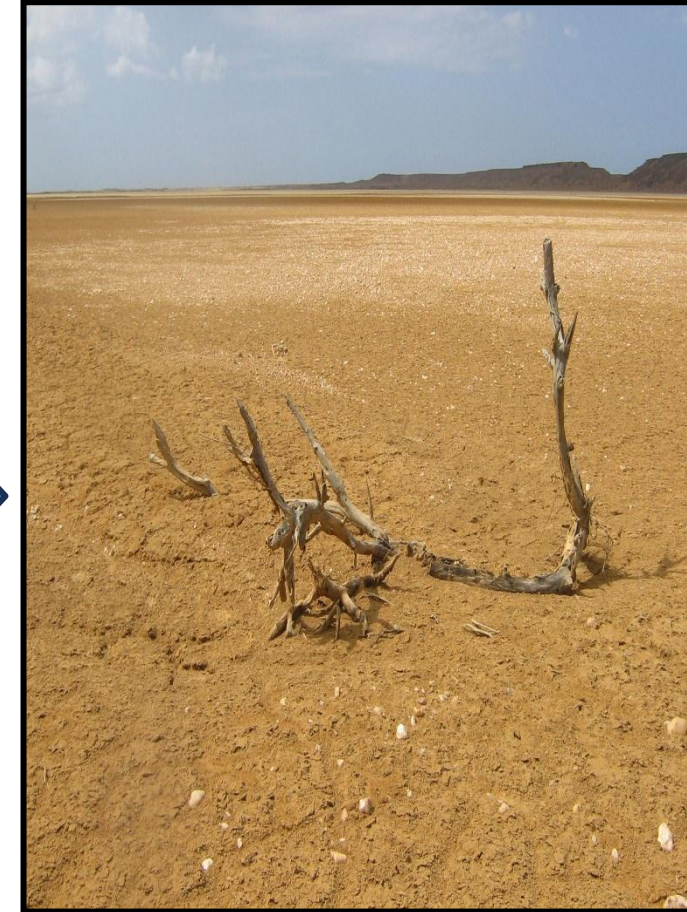
Infrastructure construction in Malaboll,
Photo by Antonio Micha, 2009.a



Infrastructure construction in Malaboll,
Photo by Antonio Micha, 2009.a

Instead of wasting productive land in humid tropical regions, such as land exposed to erosion due to infrastructure construction, this land can be transferred to other regions:

COOPERATION BASED ON SOIL HEALTH AND PRODUCTIVITY



Logistical factors for combating desertification and land degradation

(A): Model programmes and projects



The Great Green Wall of China

Considered as the largest in the world in forest engineering, **launched in 1978 and scheduled to continue until 2050 to create a huge 4,480-kilometer-long forest strip** that will stop the advance of the Gobi Desert. This initiative is also known as the Three Norths Project, since this green strip is located in the Northwest, North Center and Northeast of the country, the regions most affected by desertification and crop losses.

Logistical factors for combating desertification and land degradation

(A) : Model programmes and projects

The Great Green Wall of Sahel

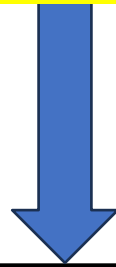
In 2007, an initiative led by African Union floated **the idea of planting a line of trees that would stretch about 8,000 kilometers long and 15 kilometers wide** across the driest areas of the Sahel. The project would be known as the Great Green Wall of the Sahel, and the barrier, designed to halt the advance of the desert, would stretch from Senegal in the west to Djibouti at the opposite end of the continent, **crossing a total of 11 countries and restoring about 100 million hectares of land.**

The main ambition is that **by 2030, 100 million hectares of degraded land** will have been restored, absorbing 250 million tons of carbon dioxide emissions and **creating 10 million green jobs.**

Logistical factors for combating desertification and land degradation

(A) : Model programmes and projects

The National Forestry and Reforestation Program (PRONAR) of the Republic of Congo



Diversify the national economy.

The public and private plantation program will contribute to:

- the creation of small and medium-sized forestry enterprises based on forest plantations,
- **the creation of thousands of green jobs and the fight against poverty, especially in rural areas among young people,**
- supplying the national and international market with wood forest products (timber, energy wood, service wood, industrial wood) and non-wood forest products (essential oils, resins, honey, fruits, vegetables, etc.),
- **the creation of industrial economic sectors and the extension of national forest cover with a view to combating deforestation, forest degradation and climate change**

Logistical factors for combating desertification and land degradation

(A): Model programmes and projects

Asian Forest Cooperation Organization (AFoCO)



An organization proposed by the Government of the Republic of Korea at the Association of Southeast Asian Nations (ASEAN)-Republic of Korea Commemorative Summit in June 2009, its objective is to facilitate collaborative actions on the ground, primarily addressing issues related to sustainable forest management and climate change in the region. AFoCO's activities will involve translating sound forest policies and proven technologies into actions to achieve the mission of preventing deforestation and rehabilitating degraded forests.

Logistics factors to fight against desertification and land degradation

(B): strategic frameworks

Enhancing cooperation

States express their concern about the challenges posed by desertification, land degradation and drought for sustainable development; for this, cooperation must be practical: sub-regional, regional, international, North-South, South-South, etc.

Catalyzing financial resources

The need for action at national, regional and international levels to reverse land degradation, catalyze financial resources, from private and public donors, and implement the United Nations Convention to Combat Desertification.

Logistic factors to fight against desertification and land degradation (B): strategic frameworks

Research promotion

The relevance of initiatives undertaken to promote scientific research and strengthen the scientific basis of activities aimed at combating desertification and drought.

Governance and involvement of different socio-cultural actors

Sustainable development through a holistic approach, such as ecosystem management, to address 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.

Logistic factors to fight against desertification and land degradation (C) : Interventions

Prevention : involves the use of conservation measures that maintain the productivity of natural resources and their environment.

Deforestation and initial degradation

Mitigation: Intervention intended to reduce ongoing degradation. It results in a step once degradation has begun. The main objective is to stop continued degradation and begin improvement of resources and their functions. The impacts of mitigation tend to be visible in the short to medium term.

Advanced deforestation and degradation

Deforestation and degradation

Rehabilitation: is necessary when the land is already degraded to such an extent that its original use is no longer possible and it has become virtually unproductive. Therefore, long-term and more expensive investments are required to achieve an impact.

Malabo Programme on Soil Health and Protection

Every 5 years
Carrying out
assessment of
the
achievements
made and the
needs
identified .

Strategic axis 1.
Institutional strengthening
and harmonization of
standards and policies

Strategic axis 2.
Education, Training and
Awareness

Strategic axis 3. Strengthening
environmental and sectoral
planning instruments

Strategic axis 4. Strengthening
environmental and sectoral
planning instruments

Strategic axis 5. Research, innovation
and technology transfer

Strategic axis 6. Land preservation,
restoration and sustainable use

Strategic axis 7. Financial mechanisms
and economic instruments

Each strategic line concerns some of the relevant actors for the achievement of the proposed objectives and activities that will be defined