

AFR100 PULSE

HARNESSING AFRICA'S FLR SPIRIT

PROTECTION AND RESTORATION OF DEGRADED FORESTS AND LANDS IN THE DRYLANDS OF AFRICA

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We support the



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1. INTRODUCTION

The loss of biodiversity in Africa is driven by a combination of human-induced factors. The population of Africa is estimated at 1,397 billion in April 2022, representing 16.72 percent of total world populationⁱ. Furthermore, poverty and unemployment of women and youth have increased in Africa as well as food and nutrition insecurity. This has led to a growing demand for natural resources, resulting in land use change and the unsustainable use of species. These changes place a great pressure on natural resources, biodiversity and ecosystem services. Consequently, deforestation, forest and land degradation are continuing in Africa. Over three million hectares of natural habitat are converted for other uses each year in Africa (FAO et al, 2020)ⁱⁱ. The major causes of deforestation and forest degradation come from subsistence and commercial agriculture, unsustainable timber and non-timber tree harvesting, urbanization, unsustainable biomass energy use, and the rise of biofuel plantations (FAO and UNEP 2020)ⁱⁱⁱ. As a results, the drylands of Africa and their biodiversity are threatened.

This has driven communities into food insecurity, dependency on food aid, wild harvest from forested areas and charcoal burning resulting into forests and biodiversity loss, and more vulnerability to climate change^{iv}. Therefore, important issues this information note aims to address are a) how to sustainably manage the remaining natural resources in the drylands of Africa and b) how to restore the already deforested, degraded forests and lands in order to increase the environmental, social, economic and livelihood benefits of these important and yet neglected ecosystems.

2. AFR100 AND THE DRYLANDS OF AFRICA

Under the AFR100 initiative, 34 countries have committed to restore 129,7 million hectares of degraded forests and lands by 2030. Several of these AFR100 countries are in the dryland belt of West, Central, Eastern and Southern Africa. For example, in the Congo Basin of Central Africa, drylands are found in Northern Cameroon, Northern Central African Republic and part of the Democratic Republic of Congo. In West Africa, many countries have drylands: Benin, Burkina Faso, Northern Côte d'Ivoire, Guinea, Northern Ghana, Niger, Nigeria, Mali, Chad, Togo, Senegal. In Eastern Africa, Uganda, Tanzania, Ethiopia, Somalia have drylands. In Southern Africa, Botswana, Eswatini, Zimbabwe and South Africa have drylands.

Dryland ecosystems cover 60 percent of the African continent. They are home to more than 525 million people dependent on the land for their food and livelihoods, largely through farming and pastoralism. It contains some of the continent's most celebrated wildlife and plant species, and produce much of the continent's food^v.

Drylands are terrestrial landscapes where the evaporation and transpiration of water into the atmosphere is at least 150 percent greater than the amount of rainfall. Drylands cover more than 40 percent of the world's terrestrial area. Drylands hold one third of all biodiversity hotspots and 44 percent of agricultural land. They are categorized based on their aridity, rising from dry and sub-humid lands such as savannahs and grasslands up to hyper-arid lands like the Sahara^{vi}.



Mr Ibrahim Thiaw, Head of United Nations Convention to Combat Desertification (UNCCD), outlined the five most common myths about drylands: that they a) are unproductive; b) have little to offer to the biodiversity and climate crises; c) don't contribute to economies; d) are wastelands unworthy of investment, and that e) their inhabitants are the cause of their destruction. These myths need to be challenged because drylands offer opportunities for restoring degraded forests and lands and improving the livelihoods of surrounding communities. This message needs to be understood by all actors involved in forest landscape restoration and particularly private investors and financial institutions. Therefore, there is an urgent need to regain the ecological function of the degraded forests and lands in the African drylands.

3. PROTECTION AND RESTORATION OF AFRICAN DRYLANDS

The protection and restoration of drylands are very important to improve the well-being of the populations and conserve natural resources.





3.1. Protection of African Drylands

The key issue about the protection of African drylands is how to sustainably manage the remaining natural resources in these ecosystems? Indeed, the protection of natural resources in the drylands of Africa requires to address the drivers of deforestation, and forests and land degradation. This can be done through policy interventions, sensitization, awareness raising, capacity building and finding new sustainable technologies. For example, a) improving harvesting techniques for natural resources; b) finding alternative biomass energies which reduce cutting trees for firewood and charcoal production; c) better collaboration between the forestry administrations and local communities (co-management; d) giving more voice to community leaders in resource management and to combat opportunistic behavior etc...); e) enterprise and value chain development: if rural communities benefit more from the sales of forests products they harvest from trees, they will be willing to leave these trees in order to continue to benefit from them which will enable them to diversify their sources of incomes and to improve their food security and nutrition.

3.2. Restoration of African drylands

The restoration of African drylands provides the following benefits: increased forest cover, biological diversity, land fertility and carbon sequestration in order to reduce the negative effects of climate change; furthermore, the restoration of African drylands improves food, nutritional and water security for the populations; it increases green employment opportunities and incomes for populations, especially women, youth and minorities (indigenous or pygmy populations) and the well-being of households. The role of agroforestry is very important because it allows in the longer term to have multi-strata-agroforestry systems that could be equivalent to secondary forests. This is even more interesting with tree domestication which has reduced the production cycle of many important agroforestry trees while maintaining their characteristics and particularly their consumer preference attributes. CIFOR-ICRAF is the world leader in agroforestry tree domestication (Leakey et al., 2022)^{vii} and fortunately it is an AFR100 technical partner.

Important agroforestry trees in the drylands of Africa that can be used in the restoration of degraded forests and lands are: madd (*Saba senegalensis*); shea butter (*Vitellaria paradoxa*); tamarind (*Tamarindus indica*); sounp or dattier du Désert (*Balanites aegyptiaca*); moringa or nebeday (*Moringa oleifera*); baobab (*Adansonia digitata*); néré (*Parkia biglobosa*); cashew (*Anacardium occidentale*); gum arabic (*Acacia* spp); jujube (*Zizyphus mauritiana*); passion fruit or maracuja (*Passiflora edulis*); marula (*Sclerocarya birrea*); oshipeke (*Xmelina africana*); umemezi (*Cassipourea flanaganii*). These agroforestry trees are rich in vitamins A, B, C, D, E, K and minerals: calcium, magnesium, iron, potassium, sodium, zinc, phosphorus, manganese.

It should be noted that several agroforestry trees are also melliferous (honey) trees. Few examples are shea (*Vitellaria paradoxa*), néré (*Parkia biglobosa*), and gum arabic (*Acacia* spp) trees.

3.2.1. Restoration through Public–Community Partnership (PCP) under NDC

Under Nationally Determined Contribution (NDC) as part of the Paris Agreement on climate, the governments of African drylands have engaged in massive restoration of degraded forests and lands by planting trees of environmental, economic, social and livelihood values. In each country the forestry administration could sign tree planting, maintenance and monitoring contracts with local communities and to enable them to obtain in return a commercial use right on trees whose fruits could be harvested while ensuring the preservation of the trees themselves. Thus, local communities will have the right to consume and market the fruits of the trees planted to meet their basic needs, which will further motivate them to continue maintaining and monitoring planted trees. In each country the forestry administration should discuss with local communities for the choice of agroforestry trees to plant in the different landscapes in order to integrate their needs and interests, which are among others, strengthening of food security and nutrition, green jobs, availability of fuelwood for cooking, income and shade. Based on these discussions, the forestry administration will start producing the different seedlings which will be planted by local communities.

3.2.2. Restoration through Farmer Managed Natural Regeneration (FMNR)

FMNR is a low–cost land restoration technic very useful for smallholder farmers. Through the restoration of vegetation, FMNR addresses multiple problems simultaneously, including: land degradation, soil infertility and erosion, biodiversity loss, food insecurity, fuel wood, building timber and fodder shortages and dysfunctional hydrological cycles (exacerbated flood and drought events, reduced ground water recharge, drying of springs, wells and streams)^{viii}. Niger is a champion in FMNR but many countries in the Sahel and other parts of Africa use this land restoration technic^{viii}. A very recent study by Abasse et al., (2023) have shown that in Niger new agroforestry parklands have been developed not by planting trees but by using FMNR to increase the number of trees and shrubs on smallholder farmers' fields^x.



3.2.3. Restoration of mangrove forests in dryland areas

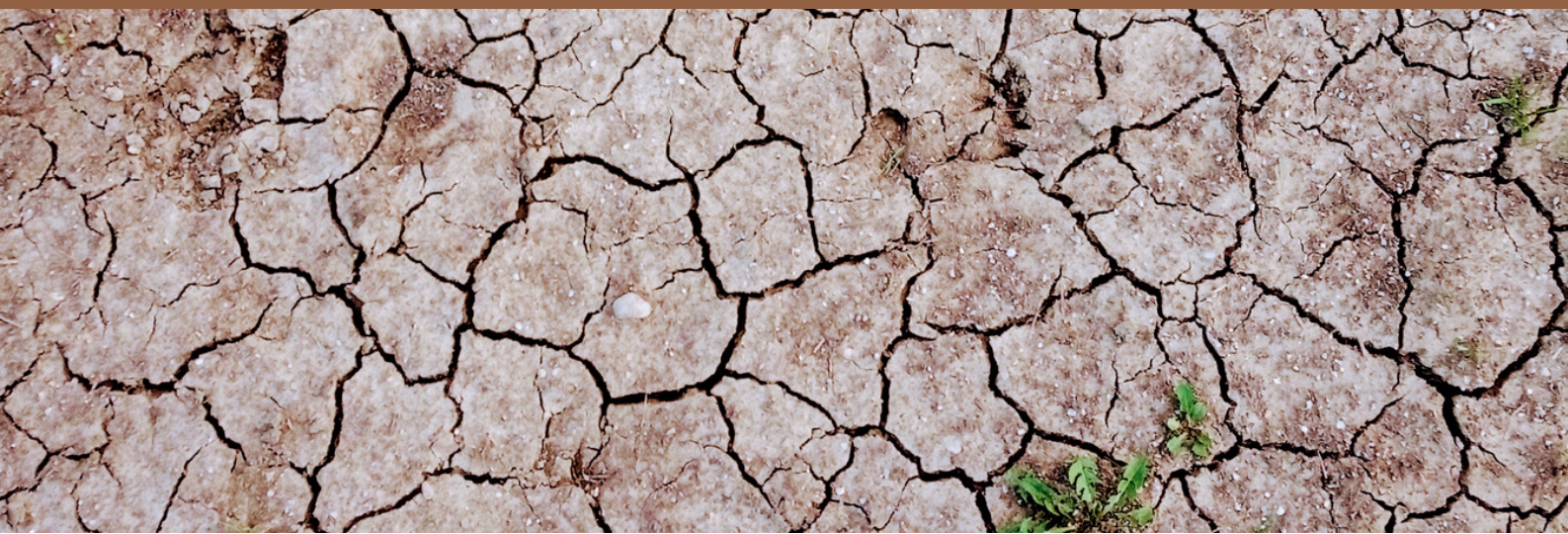
Senegal has 185,000 ha of mangroves, especially in the South, but they are disappearing at an alarming rate^{xi}. With support from The Livelihood carbon fund, Oceanium ran a 10 years' mangrove restoration project in collaboration with the Ministry of Environment. The environmental, social, economic and livelihood benefits are impressive: increase in employment and fish stocks, increased number of shrimps, crabs, shells, honey, fodder, improved biodiversity, increased mangrove forests, protection against saltwater and waves, improved food security, increased incomes, reduction in level of poverty^{xii}

3.2.4. Restoration for soil fertility and livelihood improvement

A GIZ project in the Far North Region of Cameroon has restored the fertility of degraded lands that were no longer productive and which were abandoned by local communities. In collaboration with the Ministry of Forest and Wildlife and the Ministry of Environment of Cameroon, GIZ helped local communities restore those unproductive lands in 2 years by using traditional technics and producing compost with organic manure mixed with *Crotalaria retusa*, *Bracharia* spp. and *Mucuna pruriens*. In addition, tree planting had been initiated through the project to enable local communities protect watersheds, get fuelwood for cooking and non-timber forest products such as Gum Arabic (*Acacia* spp.), neem (*Azadirachta indica*) and cashew (*Anacardium occidentale*) to increase soil fertility and their revenues. With the GIZ project, local communities now valorize biomass for livestock feed instead of burning it as it was done in the past^{xiii}.

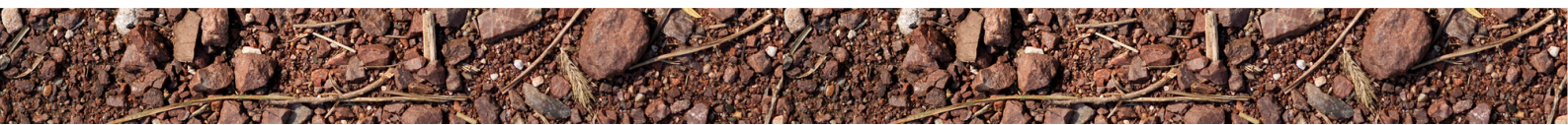
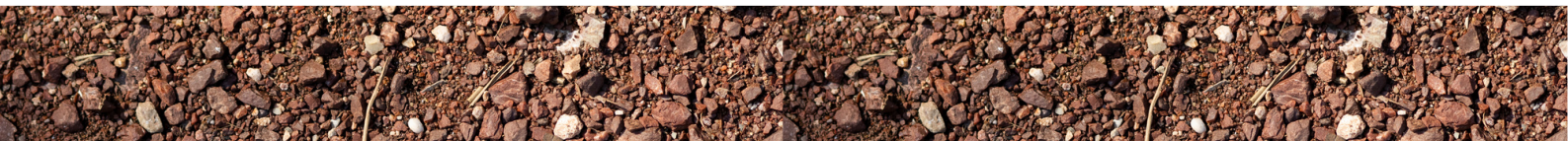
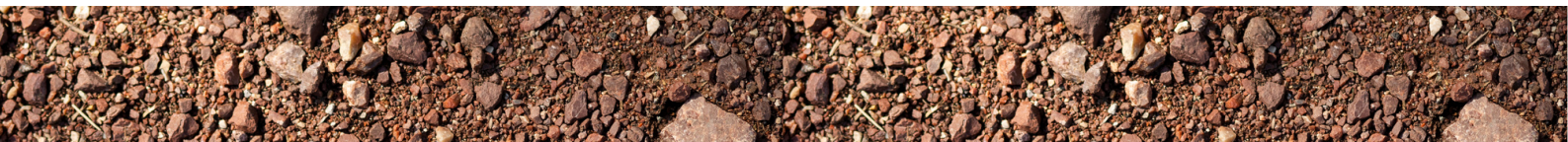
3.2.5. Other types of restoration in drylands areas

The Great Green Wall Initiative (GGWI) has been creating in many countries, Agricultural Integrated Farms called FACIs to restore degraded forests and lands and improve the livelihood of communities, especially women and youth. Currently, Chad has created 15 FACIs and the closest is around 50 kilometers from Ndjamená. The interesting thing is that the involvement of women is very important in each of these FACIs with a strong positive impact at the household level since women invest all their revenues in order to improve the livelihood of family members.



5. CONCLUSIONS

This information note has shown the important role of several FLR interventions in fighting the drivers of deforestation, forest and land degradation in the drylands of Africa. Policy makers, opinion leaders and private and financial investors should understand that there are good restoration opportunities in the drylands of Africa through Farmer Managed Natural Regeneration and by planting agroforestry species and integrating them in agricultural farms. CIFOR-ICRAF being the World leader in agroforestry tree domestication, has reduced the production cycle of several indigenous trees which will facilitate the scaling up of restoration efforts in the drylands of Africa. Fortunately, CIFOR-ICRAF is a technical partner of the AFR100 initiative.





END NOTES

[i]<https://www.worldometers.info/world-population/africa-population/>

[ii]FAO, IFAD, UNICEF, WFP and WHO (2020). The State of World's Forest 2020. Forests, Biodiversity and People. Roma.

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[iv] Protection and restoration of the Shea belt landscape of Uganda. GEF8 project idea template for CI-GEF project agency.

[v] <https://theconversation.com/africas-drylands-are-getting-more-support-how-to-make-the-most-of-this-162665#:~:text=Drylands%20are%20typically%20low%20rainfall,rained%20agriculture%20and%20livestock%20husbandry.>

[vi]<https://theconversation.com/africas-drylands-are-getting-more-support-how-to-make-the-most-of-this-162665#:~:text=Drylands%20are%20typically%20low%20rainfall,rained%20agriculture%20and%20livestock%20husbandry>

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[viii]<https://sustainabledevelopment.un.org/partnership/?p=30735>).

[ix] Susan Chomba, Fergus Sinclair, Patrice Savadogo, Mieke Bourne and Madelon Lohbeck (2020). Opportunities and Constraints for using Farmer Managed Natural Regeneration for Land Restoration in Sub-Saharan Africa. Frontiers in Forests and Global Change, volume 3, Article 571619.

[x] Abasse T, Massaoudou M, Ribiou H, Idrissa S, Dan Guimbo I, 2023. Farmer managed natural regeneration in Niger : the state of knowledge. Tropenbos International, Ede, the Netherlands.

[xi] <http://www.livelihoods.eu/projects/oceanium-senegal>

[xixii] <http://www.livelihoods.eu/projects/oceanium-senegal>

[xiii]<https://youtu.be/wlVNQzJNHJU>