

# Re-greening the Sahel: making the difference in Niger



**Land degradation threatens the traditional livelihoods of millions of people in the Sahel. Both ENDS and local partners in Niger support a locally devised method for restoring degraded land with original vegetation. This successful low-cost, low-technology method enhances local food security and ecological stability in a participatory way.**

## THE CHALLENGE: LAND DEGRADATION THREATENS LIVELIHOODS

Today, 70% of the land on earth is dryland and the livelihoods of as many as 2.6 billion people are affected by ongoing land degradation. In Niger, one of the most drought-affected and food-insecure countries in the Sahel, the loss of productive and fertile land threatens the livelihoods of both farming communities and pastoralists. Unsustainable agricultural practices, notably over-cultivation and overgrazing are major drivers of land degradation. On top of that, the process is exacerbated by changes in climate that cause even more variations in rainfall, longer periods of drought and unpredictable growing seasons. As a result, conflicts between farmers and pastoralists over access to water and grazing grounds are intensifying. In many places, people are basically left with one choice: claim their land back from the desert and increase agricultural production - or leave.

## THE APPROACH: TAKING ON THE DESERT BY RESTORING NATIVE VEGETATION

With the support of Both ENDS (see box 1), farmers in Niger have started pioneering a low-cost land restoration method that accelerates the revival of natural vegetation: Farmer Managed Natural Regeneration (FMNR). The crux of the method is to restore the native vegetation of trees and shrubs by nurturing and protecting spontaneous growth of tree seedlings, using pruning techniques that allow young trees to grow faster, and planting indigenous tree species.

This is significantly different from conventional reforestation methods (e.g. soil preparation, composting and planting), which are more labour and knowledge intensive and thus costly and less easy to spread on a large scale. Moreover, reforestation efforts sometimes use non-native crops or trees that prove unsuitable for the harsh climates. For the FMNR method of **restoring** the original, drought-resistant vegetation, special techniques have been developed to minimize water use. The regenerated trees and shrubs are integrated into farmland and grazing pastures. They help to improve soil fertility by fixing nitrogen in the soil, increase the water holding capacity of the soil through shedding of leaves (mulch), and provide shade, fruit, fodder, timber and ingredients for medicinal use. The full regeneration of native trees typically takes 20 years, but farmers already notice benefits within 5 to 7 years.



*Local shepherd*

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### Cooperation is key: Both ENDS and local CSOs

This project is carried out by Both ENDS together with CRESA Niger (Université Abdou Moumouni de Niamey) and a handful of local civil society organisations. Both ENDS took the lead in international fundraising and in sharing insights with other organisations interested in restoration activities in drylands. The local CSOs offer training and encourage farmers to use the FMNR techniques during routine farm maintenance. The CSOs are also instrumental in advocating for the inclusion of FMNR in national development policies and programmes.



*The ground water level is rising in the vegetable garden of farmer Batodi*

### THE RESULT: TREES THAT MAKE THE DIFFERENCE

In 2010, Both ENDS and CRESA Niger introduced FMNR in four municipalities in Dosso province in western Niger: Dogon Kirya, Tébaram, Soucoucutan and Sanam. This area is used by farmers and pastoralists (Touareg and Peul tribes).

#### Improved livelihoods

The FMNR method has changed the lives of the farmers. In four years' time, the vegetation density in the project area more than doubled. The fragile water system has improved, and ponds and wells that had nearly dried up are once again filled with water. Rare plant species and indigenous wildlife are returning to the region, as well as insect

predators such as birds and lizards. This means that pests can once again be controlled in a natural way, which makes farmers less dependent on expensive and harmful chemical pesticides. Thanks to the improved soils, productivity has gone up on the farms where FMNR is practiced (see box 2). Farmers started cultivating cowpea plants, which serve as food for local communities and fodder for livestock. Grain planting has become 100% successful because the seedlings are protected against violent sandstorms. Before, crops often had to be replanted three or four times. FMNR has also had a positive impact on the livelihoods of pastoralist. The health of their livestock has improved and mortality has gone down because there is now enough fodder during the long dry season. The animals also suffer less from the scorching heat because they can enjoy the shade of the trees in the fields.



**An evaluation study found the following results of the FMNR programme in the period 2010-2014:**

- 140 farmers are trained in FMNR
- 6968 households were reached in 83 villages
- FMNR is practised on 621.800 ha of farm and grazing land
- Average tree density rose from 30/ha to 70-80/ha
- 10 native tree species with medicinal use returned to the area
- Cereal harvest went up from 300 kg/ha to 500 kg/ha
- Harvest of cowpeas increased from 400kg/ha to 800-1000 kg/ha
- 91 Village Committees were created that work closely with Environmental Extension Services



*Farmer using special pruning technique*

### Reduced conflict

In resource-poor areas of the Sahel, farmers and nomadic pastoralists increasingly clash over access to water and grazing lands. This is also happening in Niger. FMNR can help to reverse this trend. Farmers produce more fodder and trade this for the manure that herders passing through their fields leave behind. The farmers realise that livestock – normally seen as a threat to vegetation - can actually be a source of re-greening and restoration as their manure contains seeds of trees and bushes. As part of the project, communities have been trained in 'social fencing': agreements between farmers, community members and herders on how to prune the trees and use their resources. This has significantly raised the survival rates of tree seedlings, providing benefits for all.

### Engaged government

The restoration of degraded lands is a collective effort. Village Committees, involving village chiefs, local officials and farmer innovators, enforce local agreements in close cooperation with the Environmental Extension Services. One example is that villagers agree to leave part of the fruits on the trees, instead of harvesting all, so that wind, birds and insect pollinators can spread the seeds to contribute to the regeneration process. High government officials have visited the project sites and farmers report that their relationship with the Forestry Service has improved. An important factor is that farmers practising FMNR have been given individual ownership over the trees in their fields. Before, naturally regenerated trees on farmland were claimed to belong to the State, which hugely discouraged farmers to restore vegetation on their land. There is now a growing understanding that this policy needs to change if anti-desertification measures are to be successful.

### THE WAY FORWARD

The success of FMNR in the four municipalities has advanced the scaling up of the local approach into regional and national agricultural extension programmes. The government of Niger has committed to supporting communities in land rehabilitation and re-greening programmes. The Ministry of Environment is about to approve the National Agroforestry Development Strategy and is reviewing the new Forest Code, which recognises farmer ownership and the right to prune and harvest one's own trees under FMNR. Both ENDS stresses the importance of a multi-stakeholder approach that gives farmers and village committees control over their own achievements. If so, FMNR has great potential for 'Re-greening the Sahel' by restoring the original vegetation in a relatively cheap and participatory way, helping smallholder farmers create more complex, more productive and more drought-resilient farming systems.

#### FOR MORE INFORMATION:

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#### Further reading:

<http://africa-regreening.blogspot.nl/>  
<http://fmnrhub.com.au/>

[www.bothends.org](http://www.bothends.org)

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