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L'AFRIQUE DE L'OUEST

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More success stories in Africa's drylands than often assumed¹

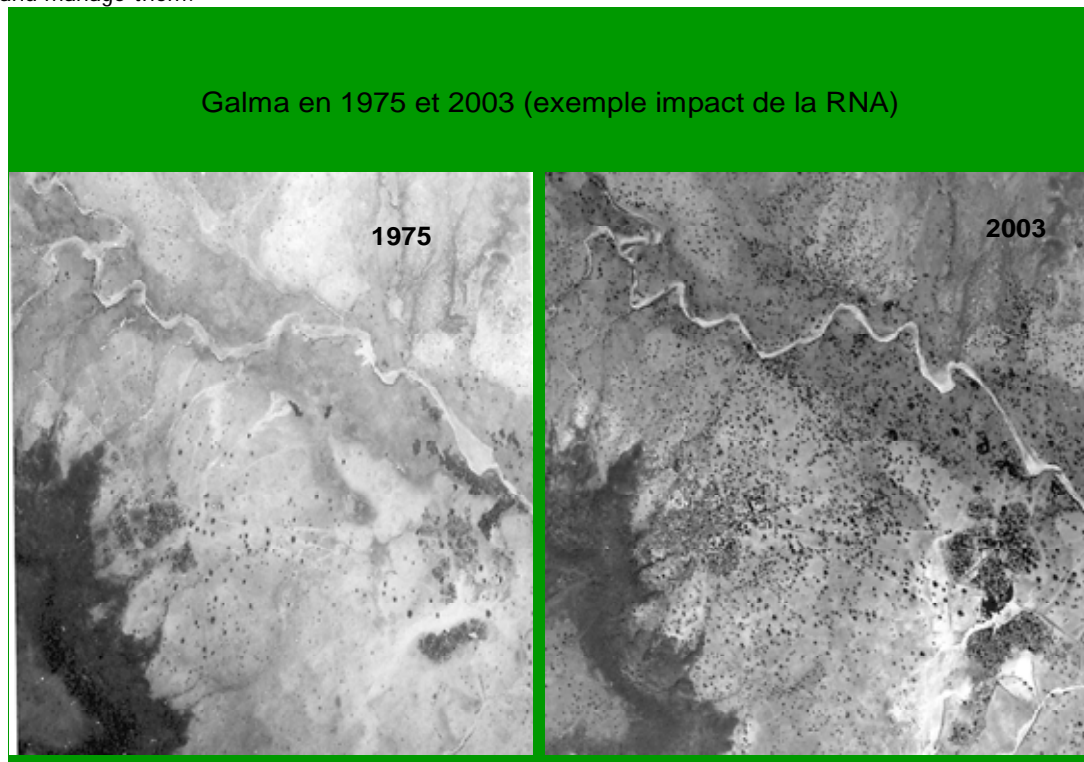
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¹ This is an expanded version of a short note that I recently sent to IIED for inclusion in their next *Haramata* bulletin

The general consensus is that Africa's drylands continue to degrade and that the large sums of money invested in agriculture and natural resource management during the last 30 years have produced little or no impact. Some recent studies in Burkina Faso² and Niger show a very different picture. One reason why impacts of investments are underestimated is that we do not adequately measure impacts. When economists calculate the costs and benefits of investments in soil and water conservation they tend to limit the benefits to impacts on crop yields and ignore, for instance, impacts on groundwater recharge and on vegetation. If such impacts would also be expressed in monetary terms then the cost-benefit calculations would change dramatically.

Niger is a particularly interesting case to consider, because this country went through a major environmental crisis in the 1970s and 1980s and a major economic and political crisis in the 1980s and 1990s. Everyone will also remember the images shown by BBC and CNN in August 2005 of thousands of women and starving children in feeding centers. In August 2005 a team of national researchers began a study on long term trends in agriculture and environment in Niger and they also tried to identify the multiple impacts of investments in natural resource management. The preliminary results of this study show that Niger and its technical and financial partners have invested substantially in the rehabilitation of strongly degraded land. **Since the middle of the 1980s at least 250,000 ha of strongly degraded land have been rehabilitated. Dry season cultivation has been expanded considerably** and according to FAO statistics Niger produced in 1980 100,000 tons of dry onions, but 270,000 tons in 2004, which was a drought year. Most of these onions and other vegetables are exported to Nigeria.

Since the middle of the 1980s farmers in the most densely populated parts of Niger have begun to protect and manage young trees and bushes regenerating on their cultivated fields. **This has happened on at least 3 million hectares, which is a spectacular scale, unique for the Sahel and probably even unique for Africa³.** This farmer-managed natural regeneration is not spread evenly. It is strongest in the regions with higher population densities. This positive change (**more people, more trees**) seems to have been largely unobserved. This greening is stimulated by some years of good rainfall, but it is **mainly the result of a change in human management**. In 1984 the perception of the farmers was that the trees belonged to the State, but in 2006 they say they own the trees on their fields, which explains why they carefully protect and manage them.



The black spots are mature trees. The aerial photo on the left shows that there were very few trees in the village of Galma in 1975. The SPOT satellite image on the right shows not only that the village has increased in size, but that there are also many more trees.

² Reij, C. et T.Thiombiano (2003) La réhabilitation de la capacité productive des terroirs sur la partie nord du Plateau Central de 1980 à 2001. Ouagadougou. USAID, GTZ/PATECORE, Ambassade des Pays-Bas.

³ So we're not talking here about planting trees, but about protecting trees and bushes on fields, which regenerate naturally. The scale of natural regeneration dwarfs the tree planting efforts of the last 2 decades.

Farmers interviewed all stated that the environmental crisis of the 1970s and 1980s triggered them to begin protecting the trees. They express this in terms of “fighting the Sahara”. Because there were few trees remaining in those years, wind-blown sands razed their young crops and they often had to plant crops three times to succeed. As they now have trees on their fields, wind speeds have reduced and their crops are better protected. The trees have improved the micro-climate. Tree densities are variable, but usually range from 20 to 150 trees/ha. If there are an average 40 new trees/ha on 3 million ha then we talk about 120 million new trees, which means that farmers have sequestered a lot of carbon on their fields.

Very high densities are found in the Zinder region where *Faidherbia albida* is the dominant tree. It is a species which fixes nitrogen from the air on their root system and having 20 or more of these trees on a hectare helps to maintain and improve soil fertility.

Whereas at the end of the 1970s a major fuelwood crisis was predicted for the Sahel⁴, this crisis has been averted in Niger, but also in other parts of the Sahel. Women in the most densely populated parts of the Zinder region spend much less time now on the collection of firewood than they did 20 years ago (about 0.5 hours/day now instead of 2.5 hours/day in 1984).

Another striking development is that women have invested in livestock. They now own 80% or more of the small ruminants (goats and sheep), which provides them with income. Fodder is much less of a problem now than 20 years ago as the trees produce pods and leaves, which are a major source of fodder in the dry season.

Household food security has improved substantially in villages which have invested in land rehabilitation. During interviews in the village of Dansaga (Maradi region) villagers claimed that not a single child had died during the 2005 food crisis. A major reason was that they had protected trees for many years and had cut some trees and branches, sold these as firewood at the market. With the money obtained in this way they were able to buy some expensive cereals, which helped them through the food crisis. Similar stories were told by villagers in parts of the Zinder region. Trees literally saved many lives.

Where farmers have used simple water harvesting techniques (improved planting pits and half moons) to rehabilitate degraded land, cereal production has increased and household food security has improved.

The food crisis of 2005 was due to a combination of circumstances, which include, amongst others, a drought, a locust invasion, export of cereals from Niger to the markets in Nigeria, an undeclared drought in northern Nigeria, which triggered an influx of drought refugees from northern Nigeria to feeding centers in southern Niger.

The study shows that rural producers in Niger are remarkably successful and have created more complex and more productive farming systems by integrating agriculture, forestry and livestock. They have achieved this under unfavorable macro conditions⁵. Much of the improvement is due to farmers investing their labor in protecting and managing trees, but in several regions projects have played a key role by supporting farmers with tools and inputs, but also by transferring new knowledge and skills.

There is an urgent need to look at long-term trends in Africa’s drylands and to draw lessons from success stories for policy and practice as well as for upscaling of successes. Some of the doom and gloom stories about Africa’s drylands are not based on facts, but on fiction.

When we told the president of a women’s group in the Tahoua region, which has reclaimed hundreds of hectares of degraded land, that many reports and experts claim that the environment in the Sahel continues to degrade, her reaction was straightforward: “these experts have never visited us”.

⁴ E.g. Erik Eckholm (1975) The other energy crisis.

⁵ The results of the study will be published in September 2006. A documentary will be shown before the end of 2006 by BBC World Service (Earth Report) on how villagers in Niger battle successfully against land degradation.



A new agroforestry parkland in Niger's Zinder region (Kantché department). High density stands of *Faidherbia albida* improve soil fertility