
Exceptional Impact of a Novel Approach to Reforestation in Sub-Saharan Africa—an Update.

Tony Rinaudo

Editor: In the October 1997 issue of EDN (#58) we featured a report of an innovative approach to reforestation in sub-Saharan regions that we nicknamed “the underground forest.” The report was written by Tony Rinaudo, an Australian missionary to Niger with SIM. Recent visits to the region show that the technique has now had an incredible impact on a wide area of Niger, spreading primarily farmer to farmer. We asked Tony to share some of the exciting things that are happening.

It has given me great pleasure to compile this manual and record of the history of Farmer Managed Natural Regeneration (FMNR) in Niger. FMNR is a form of tree coppicing and hence depends on the presence of living tree stumps that resprout after cutting. Desired tree stumps are selected. For each stump, a decision is made as to how many stems will be chosen for growth. The tallest and straightest stems are selected and side branches removed to roughly half the height of the stem. The remaining stems are then culled. Returning regularly to prune any unwanted new stems and side branches attains best results. Farmers choose the stumps they will manage, how many stems they will prune, when and how they will prune the stems, and when they will harvest the wood and what they will do with it. Because FMNR can become a grass roots movement, large areas of land can be ‘re-treed’ rapidly for little or no cost, resulting in increased bio-diversity and benefits to people, the environment, soils, crops and livestock.

I had the privilege of returning to Niger in February of 2005 after a six-year absence, and I marveled at the extensive spread of trees across a country that, for all intents and purposes, was barren in 1980 when I first went there. I witnessed wood markets in areas that had been bleak moonscapes less than ten years previously. In 1980, because of misconceptions, trees were considered weeds in farmers’ fields and they were vigorously and proudly slashed and burnt each year. An ill conceived Forestry Code made trees in farmers fields a legal liability, pitting forestry agents against land holders and herders. The code contributed much more to the demise of the trees it was meant to protect than the much feared expansion of the Sahara desert itself.

The call to push back the encroaching desert had existed since at least colonial times. It gained momentum after the devastating drought and famine of the early to mid 1970’s. Seyni Kountche, Nigerian president at the time, exhorted the population to plant trees with poetic abandon in phrases like “A land without trees is like a

people without hope” emblazoned on billboards. Many heeded the call. The World Bank and numerous NGOs spent millions of dollars planting trees. Yet, out of an estimated 60 million trees planted over a 12-year period, less than 50% survived.

Why has FMNR spread where other efforts have either failed, or at best, succeeded only within the confines of the project area? I think many had been looking for the solution in the wrong place. Projects were based on exotic super trees while the indigenous vegetation was dubbed “useless scrub.” Trust was placed in fences and guards and in expenditure of large amounts of money. But FMNR represents a social and environmental breakthrough, rather than a technical one. The greatest barriers were (1) a collective mindset that considered trees as weeds that needed to be cleared and (2) inappropriate laws that put responsibility and ownership of trees in the hands of the government and not in the hands of the people. Additionally, FMNR takes into account the rich natural resources already present in the landscape and works with them instead of despising and destroying them. In the intervening years since 1984, perceptive NGOs recognized the potential of FMNR and have quietly spread the method across the Niger. From there it has been spreading from farmer to farmer.

In June 2004, Professor Chris Reij (Vrije University, Amsterdam) wrote, “Here [in Niger] substantial FMNR is found on both sides of the road. Ten years ago villages could be seen from a great distance as the land was mostly denuded, but now they are hidden behind the trees.” He visited again in early 2005 and wrote “FMNR seems more widespread and therefore more spectacular than I thought in June. On the way back to Niamey (capital of Niger) we had made the following calculation on the back of an envelope about the scale of natural regeneration in Niger. Taking a 100 km wide strip for 800 km of the main East West highway, and assuming that 25% of this area is being managed with FMNR, then 2,000,000 hectares (to be verified) are currently supporting natural regeneration.”

In commenting on Chris’ report, Dr. Mike McCaughley of the USAID International Resources Group talks about how FMNR itself was pivotal in changing the forestry code through what he calls the “sweaty-tee-shirt” approach to policy reform: “FMNR engendered the establishment and enforcement of local rules, thus lending itself to stronger local governance. And, because it graphically broke old paradigms that gave the State eminent authority over forest management, it contributed to changes in the Forest Codes and the Forestry Service. This case supports a policy reform process that builds on experiences from the field initiated and kept up by field practitioners. As Chris noted, what was initiated on a pilot basis in the mid-eighties became a national law in 2004. However, he also noted that it had been a de facto law for much longer. As per Chris’s observation, a key to the transformation was that people “perceived” that they had the right to manage trees on their fields. And, FMNR provided the tangible, fact-based evidence for Natural Resource Management champions to make the case that local management was much more effective than State-directed control and that the more effective role of the State was to be a partner.”

As famine this year tightened its grip on a third of the population of Niger, I was deeply upset at the unnecessary suffering. At the same time, I wondered what, if any, difference FMNR had made. Eric Toumieux, the World Vision Senegal National Director visited south central Niger in September 2005 and wrote this report:

"I just came back from Niger where I witnessed the successful efforts of a community of 36 villages to set in place sustainable mechanisms to overcome natural disasters. I was absolutely amazed by what I saw. In an environment very similar to that of Baba Garage, Senegal (350 mm of rain, widespread millet and peanut farming, threats of desertification with sand encroachment and dust winds), these 36 villages have set in place a mechanism to encourage natural regeneration of trees on their fields. The results are astounding: each farmer now leaves an average of 100 to 200 bush trees to regenerate on his field instead of chopping them down before the rainy season.

"Newly regenerated trees are protected by a committee composed of farmers (both men and women) and herders. Farmers have learned pruning and trimming techniques that allow trees to grow fast vertically, so as not to hinder the growth of millet under them. This year, when a deadly combination of locusts and drought struck the entire area, farmers in the villages overcame the tragedy by selling firewood as well as by-products from the trees. As a result, there is no need for any food distribution in this community, unlike what is happening elsewhere in Niger. Village authorities are even planning to set up a wood market in the area so that they can export their surplus to the capital city and to neighboring Nigeria with better prices! Can you imagine that happening in central Senegal?"

As recently as 1988, villagers in this region were so impoverished that they were 'mining' long dead tree stumps in order to sell them and buy food. One stump might require four days of backbreaking effort to remove. Today, so great is the economic return from FMNR that the elders of these villagers are planning to sell wood to the capital - a distance of 650 kilometers!

With the aid of the CD on Farmer Managed Natural Regeneration, the possibility for spreading this technique even further afield is greatly enhanced. USAID, World Vision and others have already introduced FMNR to other West and East African countries. The potential is simply enormous. My hope is that this simple, cheap and effective technique will spread throughout the world, wherever it is applicable.