

**RIGHTS TO TREES AND  
LIVELIHOODS IN NIGER**

**Niger**



➔ After receiving rights to benefit from trees on their land, farmers encouraged the growth of roots and stumps in once barren land. They were then able to improve the soil, grow more food, and harvest wood for fuel and fodder. *Photo: Tourist Maker*

By Mercedes Stickler


**INTRODUCTION**

Among the most impoverished countries in the world, Niger has suffered from recurring droughts and famines over the past century. Rainfed agriculture is possible in the more humid lands of the south, where some 94% of the population lives, but productivity has declined over decades of resource degradation. Beginning with the French colonial government, farmers were discouraged from maintaining valuable trees on their property by a series of laws and regulations that made all trees state property and penalized tree felling and pruning on farms (Boffa, 1999).

Once farmers were relieved of these restrictions, they began allowing young seedlings and tree stumps in their fields to regrow - producing food, fodder, fuelwood, and other goods. This brief explores the historical tenure policies that discouraged local efforts to protect and manage trees on farms and then shows how reformed policies and institutions have incentivized native tree management and increased rural productivity.



Mercedes Stickler has expertise with the World Bank and the World Resources Institute in conducting grassroots and participatory research with agricultural and pastoral communities in a variety of sub-Saharan African countries.



Colonial policies that nationalized all vegetation contributed to a “tragedy of the commons.” Decades later, rights to use tree products began to reverse that tragedy.

→ Women in Niger prepare sorghum grain for storage. Photo: Darren Jacobson, 2005

## HISTORY OF LAND TENURE AND LAND DEGRADATION

Traditionally, farmers in Niger cultivated small plots in long rotation with fallows that allowed trees to regrow (Winterbottom, 2008). Rural communities across the Sahel developed rights, obligations, and sanctions to regulate access to and the sustainable use of trees and tree products. Permanent landholders (whose rights derive from inheritance) typically held rights to trees in agricultural fields, and were usually the exclusive holders of tree planting and felling rights. Tree planting and felling rights were usually exclusively held by permanent landholders (Boffa, 1999). However, the landholder could allow other community members to prune their trees or gather some tree products, such as fruits and fodder for cattle that move seasonally through their fields (Thomson & Coulibaly, 1995; Boffa, 1999). Traditional authorities also used specific rules and sanctions to protect the most valuable species. For example, ceremonies were used to regulate the harvesting of tree crops, and edicts punished those who cut *Faidherbia albida*, whose leaves can be used for fodder or fertilizer (Boffa,


1999).

The arrival of the French colonial government in the late 19th century altered both tenure and land use patterns in the Sahel. The French encouraged Nigerien farmers to grow export crops and introduced improved veterinary and medical care that increased, respectively, the populations of both animals and humans. These policies increased pressure on land and natural resources and contributed to overgrazing and overharvesting of fuelwood. To regulate the use of wood, the ‘Aubreville Decree’ of 4 July 1935 nationalized all vegetation and required Nigeriens to purchase permits to cut and use wood (Brough & Kimenyi, 2004; Montagne & Amadou, 2012).

However, the colonial government had little capacity or resources to manage all vegetation (Boffa, 1999). Furthermore, a decree of 15 November 1935 made all lands not occupied or used for more than ten years state property (Boffa, 1999). Such policies competed with and undoubtedly weakened customary rules and practices governing access to land and natural resources. Combined with rising human and animal populations and the new economic focus on export markets,

these policies ultimately contributed to a “tragedy of the commons” characterized by overuse of trees and underinvestment in tree management (Brough & Kimenyi, 2004).

After independence, Niger’s postcolonial government maintained state ownership over all forest resources. The Forest Code of 1974 distinguishes between the ‘forest domain’ that includes ‘classified’ and ‘protected’ forests, and the non-forest domain, which includes cultivated and short-fallow land, registered land, and urban land (Boffa, 1999). The government held exclusive rights to classified forests, which it used to meet specific objectives, such as forest production, protection, or wildlife sanctuaries. In contrast, regulated customary land uses were permitted in protected forests so long as they did not unduly endanger the forest (Boffa, 1999). The Forest Code, like its colonial predecessor, focused primarily on the tenure and management of the forest domain. However, the State, by establishing lists of protected tree species without reference to geographical boundaries, exercised its authority “beyond the forest domain and [regulated] the use and harvesting declining precipitously in an era of weak national economic growth affected by



After independence, the government retained state ownership of all forest resources, giving farmers little incentive to invest in protection and management of on-farm trees.

➔ Much of Niger is vulnerable to drought, and natural vegetation is needed to protect the soil. *Photo: CARE*

of trees on cultivated and fallow areas” (Elbow & Rochegude, 1990; Boffa, 1999).

Also following colonial precedent, the 1974 Forest Code enumerated a number of restrictions on the use of forest resources and empowered the Forestry Service to enforce these restrictions through permits and fines (CILSS/LTC 1993a, 1993b). Many of the most economically valuable tree species were listed as ‘protected species,’ and any unauthorized cutting, pruning, or use was strictly prohibited (Article 16). To improve implementation of these regulations, the colonial government had armed the Forestry Service, and the newly independent government maintained it as a ‘paramilitary’ force that forbade the felling, harvest, or sale of trees without permits (Dan Baria, 1999; USAID et al., 2002). Offenders were fined - some even imprisoned - for pruning branches from trees on their own land (Rinaudo, 2005). The Forest Code’s emphasis on state interference in tree management and fines to regulate the harvesting and sale of tree products gave farmers little incentive to invest in the protection and management of on-farm trees.

Meanwhile, the state agricultural extension service encouraged farmers

to plant in rows, use animal traction, and adopt other measures that discouraged farmers from maintaining trees in their fields (Rinaudo, 2005). As a result, farmers continued to clear new fields and overcut the remaining areas of fallow and uncultivated brushland to meet demand for food and fuelwood from Niger’s growing population. The erosion caused by clearing fields of all natural vegetation and denuding upland watersheds reduced soil fertility and yields (Polgreen, 2007). Declining yields pushed farmers into cultivating ever more marginal lands that further decreased their ability to grow enough food (Brough & Kimenyi, 2004). By the late 1960s, farmers had become extremely vulnerable to the droughts that periodically sweep across the Sahel. Beginning in 1969, when the first of a series of deep droughts struck the Sahel, famine resulted and affected 50 million people across the region (Dan Baria, 1999).

In response to this natural disaster with far-reaching human impacts, the government of Niger, with assistance from its international donors, invested in initiatives to train foresters in the production of fuelwood plantations of exotic tree species like eucalyptus. Establishing these centralized

reforestation programs cost over \$1,000 per ha, plus annual maintenance costs. In some cases, natural vegetation was replaced with exotic species (McGahuey & Winterbottom, 2007). Local people were rarely consulted in the tree planting schemes, and farmers and herders often lost their land when the government appropriated it for plantations (Rinaudo, 2005). Some 60 million trees were planted in the 1970s and early 1980s, but less than half survived due to the dry conditions and lack of participation by local communities (Tougiani et al., 2009).

## GRADUAL REGREENING OF NIGER

By the early 1980s, there was growing donor recognition that simple, low cost soil and water conservation techniques combined with agroforestry practices to manage indigenous trees for fuelwood, fodder, and edible leaves and seeds held the most promise for restoring rural livelihoods in Niger (Amoukou, 2006; Gallegos et al., 1987; Rinaudo, 2005). Forestry Service budgets were declining precipitously in an era of weak national economic growth affected by another round of severe

another round of severe droughts. As such, Forestry Service agents did not have the financial resources to monitor tree management in farmers' fields and instead focused on enforcing road checks for wood products (Sendzimir et al., 2011). Freed from state control over their forest resources and armed with improved agronomic techniques for managing trees, soil, and water, farmers were once again experimenting with tree management in their fields.

Meanwhile, beginning in 1983, the Maradi Integrated Development Project (MIDP) pioneered a new approach to reforestation that came to be known as farmer-managed natural regeneration (FMNR) in the Maradi region of southern Niger (Rinaudo, 2005). Rather than planting trees, the MIDP encouraged farmers to experiment with simple, low-cost techniques to regenerate "underground forests" of dormant stumps and manage these naturally occurring trees for sustainable use (Rinaudo, 2005). In addition to producing fuelwood, fodder, and other tree products, on-farm trees can improve crop yields by reducing wind and water erosion and increasing soil fertility through leaf litter, livestock manure, and sometimes nitrogen fixation (Rinaudo, 2005). Since natural regeneration costs a fraction of the cost of exotic plantations, even

resource-poor farmers can adopt and benefit from FMNR. This, in combination with the rapid benefits from increased crop yields and income from tree products makes FMNR "self-scaling" (Rinaudo, 2005). Despite these benefits, the early spread of FMNR was slow due to the litany of restrictions and fines for cutting valuable trees specified in the Forest Code of 1974. The Forestry Service continued to confiscate wood products at road blocks, which suppressed the development of a legal commercial market for fuelwood (Rinaudo, 2007). In the late 1980s, the Maradi Integrated Development Project encouraged the Maradi Forestry Department to suspend enforcement of tree cutting regulations (Rinaudo, 2007). Unfortunately, no formal rights to trees were transferred to farmers in the Maradi region. Yet, the suspension of cutting fines in Maradi increased farmers' perception of their rights to on-farm trees, which incentivized tree regeneration and management and allowed FMNR to gain acceptance and credibility (Rinaudo, 2008a; Cunningham, 2010; Winterbottom, 2012).

Around the same time, in 1982, the government of Niger initiated a series of discussions about rural land and natural resource tenure issues around the country. These discussions ultimately

resulted in a 1993 framework ordinance that defined the guiding Principles of a new Rural Code to govern land and natural resource policy in rural Niger (République du Niger, 1993; Jamart, 2010a). The principles clarified and

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Some 60 million trees were planted in the 1970s-early 80s, but less than half survived due to dry conditions and lack of local participation. But things began to change in the 1980s as development projects created local rules to privatize rights to trees, promoting improved environmental management.



Donors supported NGOs and community-based organizations to reform informal rules governing natural resource rights at the local level. *Photo:* Darren Jacobson



strengthened local rights to protect, manage, harvest, and benefit from on-farm trees (McGahuey, 2008; Winterbottom, 2011). “Rights to access and use natural resources are equally protected,” whether they are derived from statutory or customary law (Article 5), and ownership of agricultural land includes rights to all natural and artificial resources on the land (Article 16) (Jamart, 2010b).

Over the next ten years, a series of sector-specific policies, laws, and regulations were passed that together encouraged decentralized governance and management of natural resources. The Rural Code exemplified best the dramatic evolution of government policy and law. This included, in 2004, a new Forest Code that formally recognized customary rights within forest reserves, including the collection of firewood, removal of timber for tools, and collection of fruits and edible or medicinal plants (Article 52). The Forest Code also recognizes customary rights to use forest resources located in areas held by local communities, but only for subsistence (non-commercial) uses (Article 51). Although the revised Forest Code did not go so far as to devolve freehold rights to trees to local individuals or communities, campaigns to disseminate these reforms changed public perceptions about tree ownership that encouraged farmers to manage on-farm trees (Winterbottom, 2012).

Donors also supported NGOs and community-based organizations to reform informal rules and institutions governing rights to access and use trees and other natural resources at the local level. Although tree tenure rights differ across the country, many communities allow free public access to some tree products, such as livestock fodder, regardless of who owns the land on which they are located (Boffa, 1999; Rinaudo, 2008b). In addition, “it was considered anti-social to expose anybody who had felled trees” in Maradi (Rinaudo, 2008b). By reducing the private benefits accruing to tree managers, these traditional tenure rules discouraged farmers from investing in on-farm tree management.

The Maradi Integrated Development Project thus complemented education



Today, although tree tenure rights differ across the country, many communities allow free public access to some tree products. Photo: World Food Program

on FMNR with investments in advocacy and the creation of local rules and institutions to privatize rights to trees. This thereby promoted improved environmental management. These informal reforms - developed through consensus and with support from village and district chiefs - helped communities resolve resource conflicts, sanctioned uncontrolled tree cutting and livestock grazing, and reinforced local efforts to regenerate on-farm trees. Moreover, during an era of government encouragement for decentralized governance, these informal initiatives were backed up by both official policy and law. These new rules and institutions proved crucial to the rapid adoption of FMNR techniques across the region (Rinaudo, 2008b; Sendzimir et al., 2011).

Other factors also contributed to the success of FMNR in Niger. Donors provided critical assistance to help the Forestry Service move from a “command and control” mode of interacting with local populations to

provide more enabling and participatory approaches to forestry extension. These reforms helped discourage Forestry Service agents from engaging in rent-seeking and other practices that undermined the legal sale of tree and natural products in local markets, such as threatening farmers caught pruning trees in their field with extra payments for permits and taxes on wood harvested for sale. Together with CBOs and NGOs, development projects also organized farmer-to-farmer visits, local training events, extension outreach, and capacity building activities to facilitate the spread of effective natural resource management practices, such as water harvesting and FMNR. Finally, investments in improved rural infrastructure helped producers access markets for their crops, poles, fodder, and other products (Winterbottom, 2011).

## BENEFITS OF FMNR

Over the past thirty years, FMNR

### + FACT

A new Forest Code (2004) recognized customary rights within forest reserves. In the past several decades, farmers have “re-greened” five million hectares using FMNR. This has increased agricultural productivity, incomes, and food security, benefiting 4.5 million people.

has contributed to improved rural livelihoods and environmental management in Niger. Some five million ha of land - nearly half of all cultivated land in the country - have been 're-greened' with natural vegetation that has restored agricultural lands to increased productivity (Tappan, 2007). Some 4.5 million people - roughly 30% of the population - have benefited from increased incomes and food security thanks to improved crop yields, increased production of fuelwood, fodder, and other non-timber forest products (Buffle & Reij, 2011). It is estimated that farmers in Niger produce an additional 500,000 tons of cereals worth some \$240 million, thanks at least partly to improved natural resource management practices, including FMNR (Eshelmen, 2012). However, further research is needed to determine how other factors, such as higher rainfall in the early 2000s and improved infrastructure and market conditions, may have influenced these outcomes.

Women and other vulnerable groups, in particular, have benefited from adoption of FMNR. In villages that adopted FMNR, women spent on average just half an hour collecting firewood, compared to 2.5 hours in villages that did not adopt FMNR (Reij, 2006). For women, widows, and the landless poor, restoring previously degraded lands through improved natural resource management has improved their access to land and increased their income generation opportunities (McGahuey & Winterbottom, 2007). Women's role in restoring degraded lands through FMNR has also improved their social status (Reij, 2006; Diarra, 2006).

Despite early reports that the implementation of decentralized land management policies - exemplified by the Rural Code - would increase conflicts over land and natural resources (e.g., Lund, 1993; Gnomou & Bloch, 2003), the expansion of improved natural resource management practices appears to have helped minimize

implementation of decentralized land management policies - exemplified by the Rural Code - would increase conflicts over land and natural resources (e.g., Lund, 1993; Gnomou & Bloch, 2003), the expansion of improved natural resource management practices appears to have helped minimize conflicts by increasing the productivity of natural resources and thus reducing competition for scarce resources, such as fodder for livestock (Winterbottom, 2012). For instance, because FMNR increases the availability of tree fodder for browsing livestock, farmers can leave crop residues in their fields to recycle nutrients and still allow nomadic herders to graze their cattle on the tree fodder (instead of crop residues) during the dry season (Rinaudo, 2008b). The manure deposited by browsing livestock also increases soil fertility - an added benefit for farmers.

## LESSONS LEARNED

Strengthening and clarifying rural producers' rights to manage, harvest, and sell trees and tree products through new policies and laws promoting decentralized resource management undoubtedly played a role in changing farmers' incentives to maintain trees on their farmlands. However, other related factors were perhaps even more critical than the new policies and laws created by the Rural Code and accompanying legislation. These include the wide dissemination of the Rural Code in local languages and at regional workshops, the consensual development at the local level of informal rules and institutions to manage private property rights to trees, and the transformation of the Forest Service from a paramilitary institution that punished farmers for cutting trees into an extension service that helped farmers adopt simple tree management practices (USAID et al., 2002; Rinaudo, 2008b; Winterbottom, 2012).

These legal and institutional reforms were facilitated by the long-term engagement of the government of

Niger, international donors, and NGOs. The government of Niger has long been committed to devolving resource governance to local communities and farmers. However, the success of Niger's tenure and institutional reforms - through both formal and informal mechanisms - was aided by international donor and NGO support over a thirty-year period. This partnership between the government of Niger and the international community created the political space that encouraged farmers to adopt improved natural resource management practices.

Moreover, despite their significance, Niger's policy and institutional reforms alone are insufficient to explain the dramatic improvements in rural livelihoods and landscapes that farmers in southern Niger have cultivated over the past thirty years. Interviews with hundreds of farmers suggest that household-level economic impacts are the primary motivation for adopting FMNR and other improved natural resource management practices (USAID et al., 2002). In addition to improved rainfall, the expansion of FMNR in southern Niger coincided with on-going changes in the local economy, including a World Bank project that showed the economic potential of forest products and broader economic reforms, such as local currency devaluation, that improved rural marketing opportunities (USAID et al., 2002). Thus, strengthening local property rights to trees and tree products helped farmers take advantage of these new economic opportunities and helped make sustainable natural resource management profitable.

Still, much work remains to be done to ensure that all Nigeriens benefit from improved land and tree tenure and devolved natural resource management. Sustained support from the government of Niger, international donors, and NGOs will be required to fully disseminate and implement the policy and institutional reforms envisioned by the Rural Code. Nonetheless, Niger's successful launch of decentralized resource governance based on strong local rights to trees and other natural resources suggests that similar

partnerships between governments, international donors, and NGOs can help identify and implement the reforms necessary to export the benefits of Farmer Managed Natural Regeneration widely elsewhere.

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