Photo by Ollivier Girard/CIFOR

Impacts of Co-Management Activities on Forests and Households in Guinea

CGIAR | Independent Science and Partnership Council

Standing Panel on Impact Assessment (SPIA)

February 2018

Brief Number 65

BACKGROUND AND CONTEXT

Guinea has 147 forest reserves, encompassing more than 1.2 million hectares, managed by Guinea's Direction Nationale des Eaux et Forêts (DNEF). Most of these reserves have experienced severe resource degradation and human encroachment. From 2005 to 2008, the Landscape Management of Improved Livelihoods (LAMIL) project operated in four of Guinea's forest reserves. The project—managed by DNEF, the Center for International Forestry Research (CIFOR), the World Agroforestry Centre (ICRAF), and the U.S. Forest Service (USFS)—was designed to improve forest governance and raise the incomes of farmers and foresters. A recent study by researchers from Virginia Tech and CIFOR assessed the impacts of this forest co-management project on forest cover and indicators of household well-being.

CATALYZING FOREST CO-MANAGEMENT

In 2005, to combat degradation, DNEF, CIFOR, ICRAF, and USFS launched the LAMIL project in four forest reserves: Nylama, Sincery Ousa, Balayan-Souroumba, and Souti-Yanfou. The project had two major goals: (1) to improve governance and institutions through forest co-management and thereby slow or reverse forest degradation, and (2) to increase farmers' and foresters' income in villages surrounding the forest reserves through improved agricultural and forestry technologies.

To improve forest governance, LAMIL reformulated existing local forest management committees (FMCs) to address identified constraints and drew up management plans in collaboration with the DNEF. It built on a prior project, in these reserves and two others, run between 1999 and 2005 with limited success[1]. To raise households' productivity and incomes, the project demonstrated and distributed improved groundnut and maize seeds, and supported the planting of high-value tree orchards and live fencing. LAMIL project activities ended abruptly in December 2008, following a military coup in Guinea.

DATA AND METHODOLOGY

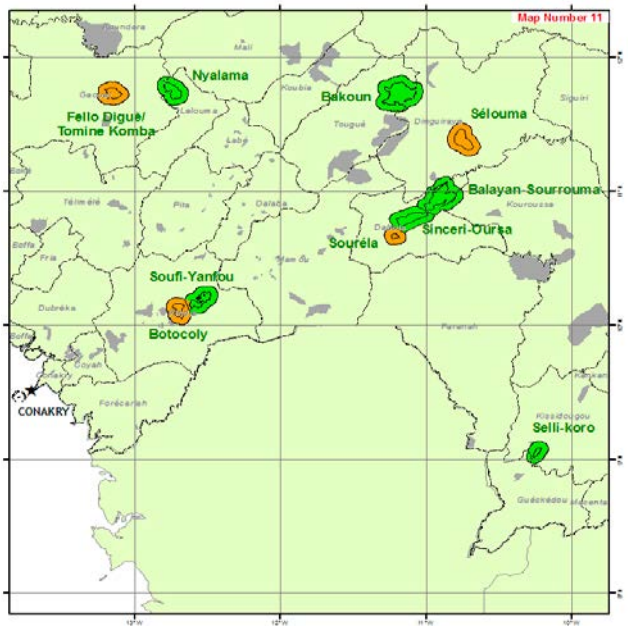
In 2016, eight years after cessation of the project, researchers examined the impacts of the LAMIL project by comparing a treatment group (that is, the four forest reserves and adjacent households that were exposed to project activities) with a counterfactual group (similar, proximate reserves[2] and nearby households that were not exposed to LAMIL). Analysis of remote-sensing imagery for five years (1999, 2004, 2010, 2014, and 2016) quantified changes in land use—natural forest, human use, and 'other'. Value of retained carbon was used to estimate the social value of natural forest cover changes. A difference-in-difference model was used to estimate changes before (1999–2004), during (2004–2010), and after (2010–2014 and 2014–2016) the project. A cross-sectional survey, of 240 treatment and 240 counterfactual

[1] Extensive interviews and fieldwork in the LAMIL reserves helped establish why previous co-management efforts had not worked: self-interest, domination by men, and lack of legal recognition of local FMCs. Incentives to encourage residents to engage in forest protection were identified.

[2] Namely, Botocoly, Fello Digue, Selouma and Sourela.

households, assessed effects on households' well-being from sustained functioning of FMCs as well as adoption of LAMIL-promoted technologies.

Figure 1. LAMIL, counterfactual, and non-LAMIL forest reserves, Guinea



CO-MANAGEMENT HELPED REDUCE FOREST DEGRADATION

Rate of decline of natural forest cover slowed following the project. In the four counterfactual reserves, natural forest cover shrank by 1.5 percent in 2004, 2.5 percent in 2010, 3.4 percent in 2014, and 4.3 percent in 2016 relative to 1999 levels. Rates of decline in the LAMIL reserves are significantly lower starting immediately after cessation of the project: 2.0 percent lower compared to counterfactual reserves in 2010, and 4.2 percent lower in 2014. For 2014, this meant that the decline offsets the 3.4 percent decline in counterfactual reserves, and is suggestive of regeneration of forests in LAMIL reserves. In 2016, the effect is smaller (2.5 percent lower) but still significant.

The project led to moderate amounts of retained natural forest and sequestered carbon. The amount of natural forest retained in reserves due to LAMIL was about 11 square kilometers (km^2) in 2010, 24 km^2 in 2014, and about 14 km^2 in 2016. The associated social value of sequestered carbon ranges from US$ 6.9 million to US$ 13.8 million (at US$ 20 and US$ 40 per ton of carbon, respectively) in 2014.

Functional FMCs but variable participation. FMCs created in 2005 were still operating in LAMIL villages in 2016 but there are no spillovers (to date) to counterfactual reserve area villages.

FMCs restricted access to LAMIL forest reserves. The average value of forest products harvested by households was significantly lower in LAMIL reserves than in counterfactual reserves. In LAMIL reserves, equity concerns do arise because FMC member households showed significantly higher combined benefits from forest products and net receipts from membership than did non-FMC households.

Evidence of economic impacts on households was mixed. Households adjacent to LAMIL reserves were no more likely to plant improved groundnut seed and have tree plantations than were households adjacent to counterfactual reserves. LAMIL households were, however, more likely to use improved maize seed and live fencing, and to plant more varieties of fruit in tree plantations. The study found some evidence of higher levels of food security, but no evidence of higher income flows from the production of maize, groundnuts, tree plantations, or live fencing.

SOURCE

Mills, B., Nelson, C., and Achdiawan, R., (2017). *Into the Forest With or Without a Trace? A Multi-Level Impact Analysis of Forest Co-Management in Guinea*. Unpublished report submitted to the Standing Panel on Impact Assessment (SPIA) of the ISPC.