



# Do commercial forest plantations reduce pressure on natural forests? Evidence from forest policy reforms in Uganda



John Herbert Ainembabazi <sup>a,b,\*</sup>, Arild Angelsen <sup>a</sup>

<sup>a</sup> UMB School of Economics and Business, Norwegian University of Life Sciences, P.O. Box 5003, N-1432 Ås, Norway

<sup>b</sup> International Institute of Tropical Agriculture (IITA) – Uganda, Plot 15B, Naguru East Road, P.O. Box 7878, Kampala, Uganda

## ARTICLE INFO

### Article history:

Received 14 October 2013

Accepted 4 December 2013

Available online 11 January 2014

### JEL Classification:

Q15

Q23

Q28

### Keywords:

Forest policy

Commercial forest plantations

Extraction

Conservation

## ABSTRACT

This paper investigates if and how the establishment of private commercial forest plantations in degraded forest reserves can conserve natural forests in Uganda. It uses difference-in-difference and decomposition analyses on household data collected from intervention and control villages in the neighborhood of forest reserves. We find that commercial forest plantations are weakly effective in conserving natural forests. The reduction in forest use is unevenly distributed across households depending on location and resource endowments such as farmland and livestock. The results suggest that the conservation effectiveness can be enhanced by complementary interventions that change characteristics that reduce forest use, such as more education for forest users.

© 2013 Elsevier B.V. All rights reserved.

## 1. Introduction

Faced with shrinking forest cover and degradation, many countries in Africa, Asia and Latin America have adopted devolution and decentralization policies of forest management (Edmunds and Wollenberg, 2003; Colfer and Capistrano, 2005; German et al., 2010).<sup>1</sup> In many countries, decentralization and devolution policies have been formulated in ways that deprive the local forest users of their rights or excludes them from decision-making (Sikor et al., 2010). The forest policy reform in Uganda, which is part and parcel of a comprehensive decentralization policy, is an example where conditions of deprivation and exclusion of local forest users exist. In response to severe forest degradation and deforestation, the government of Uganda in 1998 classified forests into two: local and central forest reserves (Nsita, 2005).<sup>2</sup> The former was decentralized to local governments, while the latter would, from 2003,

be managed by a semi-autonomous body, the National Forestry Authority (NFA) (Nsita, 2003, 2005).

Mandated by the forest policy of 2001, NFA's mission is to "manage central forest reserves on a sustainable basis ... through expanding partnership arrangements [including private investors] ... to increase the size of the central forest reserves" (<http://www.nfa.org.ug>, 2011). NFA is a for-profit parastatal that seeks to raise revenue while at the same time attempts to restore and conserve central forest reserves (CFRs) by, among other activities, leasing parts of CFRs to private investors to establish commercial forest plantations (MWLE, 2001). Whether this form of forest restoration policy, which aims to exclude local users, is effective in restoring and conserving CFRs is an empirical question that we attempt to answer in this paper: Do commercial private forest plantations reduce pressure exerted by the rural poor on (the remaining) forest reserves?

Studies to answer this question, especially those focusing on individual forest plantations (IFPs), remain limited. The literature deals with drivers of expanding IFPs. The practice of IFPs has mainly occurred in densely populated countries in Asia, particularly those undergoing industrialization coupled with rural–urban migration (Mather, 2007; Rudel, 2009). These driving forces are part of the forest transition, where countries enter into a phase of a net increase in forest cover (including plantations), and forest plantations are mainly occurring on abandoned farmland (Rudel et al., 2005). This typical pattern is in contrast with the IFPs policy initiative in Uganda, where the establishment of IFPs is occurring in forests (CFRs) that have been degraded by the rural poor. The government, through NFA, leases part of the CFRs

\* Corresponding author at: International Institute of Tropical Agriculture (IITA) – Uganda, Plot 15B, Naguru East Road, P.O. Box 7878, Kampala, Uganda. Tel.: +256 414285060/256 753869102.

E-mail addresses: [JAinembabazi@cgiar.org](mailto:JAinembabazi@cgiar.org) (J.H. Ainembabazi), [arild.angelsen@nmbu.no](mailto:arild.angelsen@nmbu.no) (A. Angelsen).

<sup>1</sup> Devolution refers to the transfer of specific decision-making powers from central authorities to community organizations, whereas decentralization refers to the transfer of powers from central authorities to lower levels in administrative and territorial hierarchy (Larson and Soto, 2008).

<sup>2</sup> Central forest reserves in Uganda are defined as forests covering an area of at least 100 ha, while local forest reserves are forests covering an area of less than 100 ha.

to (wealthy) individuals or private companies to establish commercial forest plantations in forest reserves that have been heavily degraded or deforested.

This policy is expected to reduce pressure on natural forests through a number of channels. First, privatizing parts of the forest reserves will increase scarcity – at least in the short term – of forest products for the people living adjacent to these reserves, which may trigger on-farm tree planting, in particular for woodfuels. Second, higher scarcity may induce adoption of measures to increase fuel efficiency or switch to other energy sources. Third, by partitioning out degraded or deforested areas, the government expects to improve the enforcement of forest protection laws and the management of remaining forest reserves. Fourth, private owners of IFP are expected to provide efficient management and protection of their plantations, and to become suppliers of forest products in the future.

These positive effects cannot, however, be taken for granted. The local people who depend on or extract forest products from these CFRs are in practice excluded from participating in commercial forest plantations due to their limited wealth that denies them a chance to acquire leases. Having been expelled from the new plantation areas, the forest dependent households may shift collection of forest products to the neighboring parts of the forest reserves or to distant and intact forests that have previously been conserved by their remoteness (Robinson and Lokina, 2011). Thus, we may experience what is referred to as 'displaced emissions' or 'leakage' in the climate change debate and literature.

The IFP represents a selective engagement towards the local people, that is, those individuals that lease the land. Policy initiatives that encourage local communities to participate in forest plantations have been found to reduce pressure on natural forests in other settings (Köhlin and Parks, 2001; Köhlin and Amacher, 2005). Similarly, policies promoting individual on-farm tree plantations for fuelwood production (Webb and Dhakal, 2011) or technological change involving agroforestry (Evans, 1999) have been found to enhance conservation of natural forests. Nevertheless, Angelsen and Kaimowitz (2004) argue that the effect of agroforestry on forest conservation is conditioned on farmer characteristics, production practices, market and tenure conditions, and hence making broad generalizations difficult.

This paper complements earlier studies (Banana et al., 2007; Turyahabwe et al., 2007; Jagger, 2010), which reveal that decentralization of forest reserves in Uganda has reduced forest quality, and gains from decentralization in the form of higher household income are unevenly distributed due to institutional failures, primarily lack of capacity, funds and mandate in the case of local governments, and selective enforcement of rules in the case of NFA managed CFRs. However, these studies have focused on the effects of decentralization of forest management as a comprehensive policy package and not the individual policy components.

This paper focuses on one component of the forestry policy of 2001 (MWLE, 2001): the establishment of commercial forest plantations in CFRs by private investors, a component that encourages individual rather than communal participation in forest plantations. In addition to focusing on the effectiveness of this policy, the paper goes a step further to identify which households are changing the forest use and why. We test the hypothesis that forest plantations reduce pressure on natural forests, and that the effect is conditional on household characteristics, which include resource endowments, and demographic factors among others. We use two estimation strategies. First, we measure the change in forest reserves conservation due to policy change by using the difference-in-difference method on household data collected from the intervention and control sites on forest extraction before and after the introduction of the policy. Second, we use decomposition analysis to explain the source of any observed change in the amount of forest products collected after the intervention.

The paper is organized as follows. Section 2 briefly describes the history of forestry policy reforms in Uganda. Section 3 describes the data

sources and sampling procedure. Section 4 presents the two different evaluation methods used: difference-in-difference and decomposition. Results are presented and discussed in Section 5, while Section 6 concludes.

## 2. A brief history and nature of forestry policy reform in Uganda

Forest policy reforms in Uganda started as early as 1939 when local forest reserves under district administration were established (Turyahabwe et al., 2007). The Forest Department (FD), the overall authority at the time, controlled the central forest reserves (CFRs). The district administration had a mandate to make bylaws to protect local forest reserves (LFRs). A series of policy reforms have occurred since then. In 1967, the LFRs were centralized under FD and the services offered by the local administration were abolished (Nsita, 2005; Turyahabwe et al., 2007). FD was mandated with full control of all government forest reserves and regulation of harvesting of forest products from these reserves.

The government devolved ownership and management of CFRs to local governments in 1993, but forest management was later recentralized in 1995 (Nsita, 2005; Banana et al., 2007). In 1997, district and sub-county local governments took over the forest management before being restricted again in 1998 when central and local forest reserves were re-created (Nsita, 2005; Ribot et al., 2006; Banana et al., 2007). CFRs and LFRs are now managed and controlled by the central and local governments, respectively.

The Forest Sector reform introduced in 1999 led to a number of policy changes: abolition of the centralized FD, creation of the decentralized District Forestry Service (DFS), introduction of a new forest policy in 2001, development of a national forest plan in 2002, and creation of the National Forestry Authority (NFA) under the National Forestry and Tree Planting Act of 2003 (Nsita, 2003; Republic of Uganda, 2003; Turyahabwe and Banana, 2008; Jagger, 2010). DFS is responsible for issuing permits for extraction of forest products, and offering advisory services to owners of private and customary forests (ungazetted forests). NFA manages CFRs and is responsible for the leasing of forest reserves to private investors for establishment of commercial forest plantations among other functions.

## 3. Data and sampling

The data were collected in 2009 in two districts in western Uganda: Hoima and Kiboga. The districts have a high number of CFRs and parts of these have been leased out for commercial oriented individual forest plantations (IFPs). There are 11 and 15 separate CFRs in Hoima and Kiboga districts, respectively. At the time of the study, Hoima had 300 IFPs established in its CFRs, whereas Kiboga had 104 IFPs. The IFP system has been ongoing since 2002 in Hoima and 2005 in Kiboga.

One sub-county in each district was purposively selected based on the presence of CFRs with and without IFPs. The sub-county selected in Hoima has two CFRs: one with 108 IFPs established in 2005 while the other CFR had no IFPs. The sub-county selected in Kiboga has also two CFRs: one with the largest IFP in the district, established in 2005, while the other CFR had no IFPs. Further, 12 villages in Hoima district and six villages in Kiboga district were randomly selected from two randomly selected parishes with CFRs where IFPs have been established.<sup>3</sup> Three villages in Hoima and nine villages in Kiboga were also randomly selected from two randomly selected parishes with CFRs where IFPs have not been established. From each of the selected villages, a random sample of ten households was selected. In total, the study uses a random sample of 180 households in 18 intervention (IFPs) villages and 120 households in 12 control villages.

<sup>3</sup> A village in Uganda is commonly referred to as local council one (LC1). An LC1 is the lowest administrative unit in Uganda. Also note that the terms village and community are used interchangeably.

Download English Version:

<https://daneshyari.com/en/article/6545001>

Download Persian Version:

<https://daneshyari.com/article/6545001>

[Daneshyari.com](https://daneshyari.com)