



## Complex regulatory frameworks governing private smallholder tree plantations in Gunungkidul District, Indonesia



Ahmad Maryudi<sup>a,\*</sup>, Ani A. Nawir<sup>b</sup>, Dwiko B. Permadi<sup>a</sup>, Ris H. Purwanto<sup>a</sup>, Dian Pratiwi<sup>c</sup>, Ahmad Syofi'i<sup>c</sup>, Purnomo Sumardamto<sup>d</sup>

<sup>a</sup> Faculty of Forestry, Universitas Gadjah Mada (UGM), Indonesia

<sup>b</sup> Center for International Forestry Research (CIFOR), Indonesia

<sup>c</sup> Student at Graduate School, Faculty of Forestry, Universitas Gadjah Mada (UGM), Indonesia

<sup>d</sup> District Forest Service, Gunungkidul, Indonesia

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### ABSTRACT

Smallholder tree plantation, now on the increase in Indonesia, has long been practiced by rural farmers as a strategy to optimize the expected utility of land, labor and other constraints. Increasing demand for timber has driven a shift toward commercialization of smallholder forestry. However, smallholders face huge challenges when they seek for commercial markets in the form of complex regulatory frameworks applied to smallholder plantations. This paper discusses the case of smallholder plantations in Gunungkidul District (Indonesia), considered one of the most commercialized timber marketing hubs for local, national and international markets. It analyzes how opportunities and challenges, resulted from different regulatory frameworks, affect the competitiveness of smallholder forestry practices. In this paper, regulatory frameworks are defined as not only regulations issued by public administrators at the domestic (local and national) level, but also cover the emerging market-based regulatory frameworks, i.e. voluntary certification of sustainable forestry and mandatory timber legality verification.

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### 1. Introduction

Smallholder tree planting has long been practiced by rural people throughout the tropics (Nawir et al., 2007a; Manivong and Cramb, 2008; Snelder and Lasco 2008; Bruun et al., 2009; Barr and Sayer, 2012). Nonetheless, it has come to the prominence in forest policy making only in the past four decades. The popularity of smallholder tree planting is very much connected to the pressing situation with regard to the rapid loss of natural forests and chronic rural poverty (Barney, 2008; Snelder and Lasco 2008). Planting trees on private (agricultural) land has since been promoted; “trees outside forest” have increasingly been considered as a potential source of timber (Pandey, 2008; Oduro et al., 2014). Concomitantly, governments of many tropical countries have also granted a variety of tenurial rights, e.g. access to forest resources, to farmers or local communities who participate in tree planting program (Pasicolan et al., 1997; Byron, 2001; Wollenberg et al., 2006; Adhikari et al., 2007; Foundjem-Tita et al., 2013).

The importance of smallholder tree planting is increasingly acknowledged. This includes its role in transforming degraded land

into green areas that eventually provide ecological services, reduce pressures on natural forests, support rural livelihoods and even supply timber for processing industries (Byron, 2001; Clement and Amezaga, 2008; Snelder and Lasco 2008; Southworth et al., 2011; Barr and Sayer, 2012; Santos et al., 2012). In contrast to industrial forestry, which usually concentrates on commercial timber production, smallholder tree growing tends to focus on multiple use management (Scherr, 1995; Arnold and Dewees, 1995; Kehlenbeck et al., 2007; Snelder and Lasco 2008). Wiersum et al. (2005) even make a strong claim for smallholder tree planting being particularly associated with non-financial considerations.

There is nonetheless a shift toward commercialization of smallholder tree growing. Smallholders, in a number of tropical countries, have started to emphasize commercial goals in managing their forests (Emtage and Suh, 2004; Nawir et al., 2007a; Snelder and Lasco 2008, Schuren and Snelder, 2008; Guillerme et al., 2011; Byerlee, 2014). Smallholder timber has even started to enter the global timber markets (Manivong and Cramb, 2008; Rudel, 2009; Wiersum et al., 2013; Harada and Wiyono, 2014). The growing market channels for tree products encourage rural people to intensively engage in tree planting (Schuren and Snelder, 2008; Guillerme et al., 2011; Sikor, 2012). The increasing demand for timber from smallholdings with higher prices, due to the decline in timber production from industrial forestry, is often cited as one of the main rationales that changes the orientation of smallholders to commercial goals (Wiersum et al., 2005; Nawir et al., 2007b;

\* Corresponding author at: Faculty of Forestry, Universitas Gadjah Mada Jln. Agro No.1 Bulaksumur Yogyakarta 55281 Indonesia.

E-mail address: [maryudi76@yahoo.com](mailto:maryudi76@yahoo.com) (A. Maryudi).

Nurrochmat et al., 2014). Further, simple procedures for taking timber to markets are one of the main catalysts for smallholder tree growing (Nurrochmat et al., 2014).

However, smallholders face huge challenges when seeking commercial markets. In many cases, smallholders still reap a small fraction of the commercial benefits from tree plantations and processed wood products (Nawir et al., 2007a). Economic efficiency has often been cited as the principal explanation for why smallholder timber growing may prove less competitive than larger, integrated forestry, since it tends to involve higher production costs per unit for planting, harvesting operations, management and marketing (Roshetko et al., 2008; Rohadi, 2012; Perdana et al., 2012). While such an explanation has its merits, this paper looks at how regulatory frameworks, governing smallholder tree growing, may serve as a constraint.

Krott (2005) argues that regulations have been formally promulgated to solve a societal problem. However, Sahide and Giessen (2015) point out that instead of producing a positive result for those concerned, regulations may be more of a constrain. Quite often, smallholder tree planting is highly regulated that disincentives for farmers to plant trees (see Weyerheuser et al., 2006; Guillerme et al., 2011; Foundjem-Tita et al., 2013). Governments even imposed a ban on tree planting on farmlands (Jagger and Pender, 2003). In addition, a policy framework for smallholder tree growing has often been developed with reference to industrial-based forest management regulations (Nawir, 2014). These policy barriers have resulted in significant transaction costs beyond the capacity of an individual smallholder, at the farm and processing levels, and has affected the continuity of timber production and its competitiveness (Scherr et al., 2003; Adhikari and Lovett, 2006; Nawir et al., 2007a; Roshetko et al., 2007; Hoch et al., 2012; Duguma, 2013).

This paper discusses the case of smallholder tree plantations on private farmlands in Gunungkidul District (Indonesia). Smallholding tree plantations in the district is often regarded as one of Indonesia's success stories of reforestation activities, and is often considered one of the most commercialized timber marketing hubs for local, national and international markets (Nawir et al., 2007a; Awang et al., 2007). The paper specifically analyzes how opportunities and challenges have resulted from the existing regulatory frameworks that affect the competitiveness of smallholder tree growing practices in the district. The analysis will cover domestic regulations (local and national) concerning private smallholder tree growing along the supply chains from harvest to marketing and processing, as well as global and market-based regulatory frameworks.

## 2. Scope of study and research methods

The paper is a part of the project “Development of timber and non-timber forest products' production and market strategies for improvement of smallholders' livelihood in Indonesia”. The project aims to identify, enhance and expand smallholders' involvement in the management of commercial, forestry-based products to enhance their livelihood through integrated production and marketing systems. This paper is primarily the result of a scoping study on the regulatory frameworks concerning private smallholder tree growing in Gunungkidul, conducted between October 2013 and September 2014.

The preliminary study identified three different regulatory frameworks that govern commercial marketing of timber from private smallholder tree plantations (Table 1, details are presented in Results). Two regulatory frameworks—implemented by the government—relate to the legality control of timber from private smallholder plantations, i.e. Certificate of Timber Origin (*Surat Keterangan Asal Usul Kayu/SKAU*) and timber legality verification (*Sistem Verifikasi Legalitas Kayu/SVLK*). Another regulatory framework governing marketing of timber from smallholding plantation is the voluntary and market-based certification of sustainable forestry. There are two certification bodies operating in Indonesia: the national certification scheme of the Indonesian

**Table 1**  
Regulatory frameworks governing private smallholder tree plantations.

Regulatory frameworks	Character of implementation	Governing bodies
Certificate of Timber Origin ( <i>Surat Keterangan Asal Usul Kayu/SKAU</i> )	Mandatory (fully implemented)	Implemented by Ministry of Environment and Forestry
Certification of sustainable forestry	Voluntary – market based regulatory regime	Implemented by certification bodies (there are two certification bodies operating in Indonesia: LEI and FSC)
Legality Verification ( <i>Sistem Verifikasi Legalitas Kayu/SVLK</i> )	Mandatory – market based regulatory regime (in transition phase for full implementation)	Implemented by Ministry of Environment and Forestry

Ecolabelling Institute (LEI) and an international scheme of the Forest Stewardship Council (FSC).

The study involved three approaches. The first was a study/review of the existing literature on smallholder tree planting in Gunungkidul and existing regulatory frameworks. The second employed in-depth interviews in three villages (Bejiharjo, Karangduwet and Dengok) with various stakeholders: smallholding farmers (100 respondents in each village), village leaders (3 in each village), officers of district forest service (4), and group committees. In the third, two-stage focused group discussions (FGDs), at the village and district levels, were conducted to present the results of the literature study to the interviewed stakeholders and to gather other information uncovered in the first two approaches. The village-level FGDs involved twenty five participants, while the district-level FGD involved more participants from other villages (total fifty participants). The participants for all FGDs included most of the potential stakeholders relating to smallholder tree growing in Gunungkidul, i.e. government institutions (district forestry service and other institutions related to trade and industry), District' House of Representatives, District Mayor, research institutions and universities, farmers and farmers' groups, timber traders, processing industries and village leaders.

## 3. Private smallholder tree plantations in Gunungkidul: General overview

Gunungkidul District is located in the south of Java Island with a total land area of about 150 thousand hectares and the soil layer in this area is thin and fragile (Fujiwara et al., 2011). In the 1950s, the district was among the most degraded areas in Indonesia with little forest cover, only about 3% of its total land area (Filius, 1997). More than 50% of the district was degraded; erosion, leaching and oxidation had diminished soil fertility (Soerianegara and Mansuri, 1994; Filius, 1997). Only a third was hospitable for agricultural cultivation (Soerianegara and Mansuri, 1994). Today, nearly a third of Gunungkidul is covered by forest, more than two thirds of which is private smallholder tree growing (Langford, 2012). In fact, private smallholder tree growing is practiced in all villages of the district. In 2011, Gunungkidul had approximately 35 thousand hectares of private smallholder forest and production had reached 180 thousand cubic meters (Provincial Forest Service, Internal data).

The impressive development of smallholder tree planting in the district was first instigated by the central government's greening programs in 1970s–80s (van der Poel and van Dijk, 1987; Soerianegara and Mansuri, 1994; Filius, 1997; Nibbering, 1999; Nawir et al., 2007b). Free seedlings were provided as well as cash incentives for the participants (Nibbering, 1999). Between 1976 and 1984 more than 30 million trees were planted (Soerianegara and Mansuri, 1994). At the time, the then district Mayor also played important roles in encouraging rural people to plant trees, principally the high quality teak, through a number of initiatives (Nawir et al., 2007b).

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