



Corporate–society engagement in plantation forestry in Indonesia: Evolving approaches and their implications



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ABSTRACT

Forest plantations have been an important land-use pattern in Indonesia for centuries. Yet the role of timber plantations, their specific goals, perceptions, actors involved, and management systems had been redefined in the past and they continue to evolve today. It is important to understand the driving forces and historical trends shaping timber plantations in Indonesia in order to critically reflect on their changing roles in the forestry sector. This article traces the development of Indonesian forest plantations through time by categorizing them into paradigms. Proposed explanatory framework helps to see the historical legacies in the Indonesian plantation sector. The identification of historical plantation modes is based on a literature review while current approaches and specific policy instruments are discussed based on exploratory empirical case-study material from three Indonesian forest plantation estates (involving joint forest management, community forest management and large private timber company). The historical review shows a range of continuities and helps to explain the problems forest plantations in Indonesia face today. It points to socially-oriented community forest management as highly praised by its stakeholders, able to improve rural livelihoods and secure environmental benefits.

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1. Introduction

In recent years forest plantations in Indonesia have attracted much public attention due to, on the one hand, long-standing concerns about plantation monoculture replacing the natural forest, but on the other the potential climate change mitigation benefits that can result from carbon sinks created by plantations (Syahrudin, 2005). However, discussions of the pros and cons of plantation forestry in Indonesia are not a new phenomenon. Timber plantations have been on the political agenda since colonial times and they have always been a lively and controversial topic (Beckford, 1972; Boomgaard, 1992; Peluso, 1991). The current debates surrounding forestry plantations focus particularly on the insufficient timber supply from plantations to feed the pulp mills and the resultant pressure on the natural forests to fill the gap (Pirard and Cossalter, 2006; Pirard and Irland, 2007; Obidzinski and Chaudhury, 2009). Consequently, timber plantations are accused of being an incentive to clear-fell natural forests (Kartodihardjo and Supriono, 2000; Pirard and Rokhim, 2006). Critical attention is also

directed at hastily formulated and ambitious government programs for expanding large scale Industrial Timber Plantations (*Hutan Tanaman Industri* – HTI) and promote Community Timber Plantations (*Hutan Tanaman Rakyat* – HTR) schemes (FAO, 2001). However, timber plantations are also praised for being a renewable wood supply and seen as a big opportunity for employment and value added creation (ITTO, 2009). The prevailing perception seems to be that while timber plantations and the pulp sector have the capacity to make important economic contributions, these are significantly undermined by negative social and environmental effects of such plantations (Cossalter and Pye-Smith, 2003).

The diverse economic, social, and environmental impacts of timber plantations in Indonesia have been a subject for debates since at least the mid-1850s when the first large expansion of forestry plantations had taken place under colonial rule in the form of teak estates (Ball et al., 1999).

It is therefore informative to study Indonesian plantations in a historical perspective because doing so enables a more profound understanding of the problems we are facing today. Historical contextualization is also useful for improving policy responses by examining corrective or remedial measures taken in the past. Therefore, this paper adopts a historical approach to take stock of the past experience and the current situation with Indonesian forest plantations. It highlights the main actors, their rationale for tree planting activities, and locations of their operations through time. Drawing on the analytical

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concept of a *paradigm in forest plantations* (Szulecka et al., 2014), understood as a set of shared assumptions, values and practices, influenced both by the development of scientific forestry and policy shifts¹ we look at plantation land ownership, its management, governance and discursive justification. Historical legacies in Indonesian plantations cast long shadows on today's policy options. The historical material is complemented with data on contemporary plantation project case studies to show the differences and overlaps between various plantation policy approaches rooted in different paradigms. We propose this conceptual framework as a tool to study and understand the historical plantation development in Indonesia and to compare policy instruments, with their wider contexts, in different plantation cases. Therefore the three main paradigms distinguishable in contemporary Indonesian plantation sector (*national, social and corporate*) are illustrated by case studies focusing respectively on joint forest management, community forest management and a private large-scale timber company.² Having shown the evolution of Indonesian plantation discourses and their implementation in case studies, the paper critically reflects on future policy options.

We begin with an overview of the colonial paradigm that has initiated the establishment of the critical mass of plantations in the country. Subsequently we examine the national paradigm that shares many similarities with the colonial approach. In Sections 4–6 we discuss the diverse spectrum of social, corporate and environmental paradigms that are currently present in the Indonesian plantations. Three plantation governance modes will also be illustrated with empirical case-studies. The paper concludes with a reflection on the historical trends, and the differences in performance of plantations organized under different paradigms as seen on contemporary examples. We suggest some policy amendments that could address the weaknesses of the analyzed policy instruments and enhance their environmental, economic and social contributions and discuss implications of different plantation paradigms.

2. The colonial paradigm

The first teak planting trial plots in Indonesia date back to 1650 (Bass, 1992, p. 58). An early push for establishing forestry plantations by colonial powers, typically interested in extracting natural resources from the colonies, came due to realization of the diminishing timber stocks in natural forest (Boomgaard, 1992). Teak had excellent properties for shipbuilding and other construction, due to its weather and vermin resistance (Pandey and Brown, 2000). The Netherlands, lacking national forest resources of its own but possessing a powerful fleet, had long been dependent on hardwood import from Germany, Eastern Europe and Scandinavia. With the conquest of Java in the 16th century by the Dutch East India Company (VOC) and the emergence of The Netherlands East Indies (NEI) around 1800, teak quickly emerged as a welcome alternative to European timber supplies and timber began to be extracted and exported in large quantities (Evans, 2009). It soon became clear, however, that natural forests cannot sustain large scale exploitation and that teak plantations would be a necessary long-term option to guarantee a permanent supply of quality raw material. The

¹ The concept of a paradigm and paradigm change in scientific disciplines was elaborated by the philosopher Thomas Kuhn (1962. *Paradigms in our typology should be understood as theoretical constructs or discourses (knowledge structures)* that developed around certain promoted and established plantation management types. Apart from technical characteristics, plantation paradigms differ in functional and ideational aspects. We analyze plantation history and politics in Indonesia based on the stepwise development of five crucial paradigms: colonial, national, social, corporate and environmental. Each paradigm may be clearly linked to specific actors that benefit from its dominance but also to specific policy instruments that we try to analyze at the case study level. Therefore the coming analysis also looks at particular stakeholders in different plantation categories.

² Those case studies point to the local effects of particular policy instruments. We present the results of our exploratory research that could be seen as a departure point for detailed studies of particular socio-economic and environmental effects of different plantation paradigms.

loss of natural teak forests in Java was indeed extensive in the early colonial period. It is estimated that between 1776 and 1840 about 40% of natural forests in Java had been deforested and further 30% were damaged between 1840 and 1870 (Boomgaard, 1992, p. 12). As a result, already in 1776 the majority of districts in Central Java reported reforestation activities, some involving direct sowing of seeds and silvicultural practices. The preferred method, however, was regeneration of teak forests by closing instead of reforestation (Ibidem: p. 8–9). Dutch teak experiments in Indonesia are considered the first strategic forest plantation development by colonial powers. The British Navy followed in 1840 switching from oak to teak as raw material for shipbuilding and initiating similar timber plantations in India (Ball et al., 1999).

In the late 19th century, teak plantations gained in popularity as they changed from strategic to commercial purposes. First large-scale forest plantations in Indonesia started in Java in the second half of the 19th century (Ball et al. 1999, p. 1; ITTO, 2009, p. 95). These plantations were driven by the expansion of railway networks in Asia and the growing demand for railway sleepers and associated construction (Peluso, 1991, p. 72). This growth is reflected in planting intensity. Between 1837 and 1842, 375,000 teak trees were planted every year; while between 1856 and 1865 this number increased to 1–2 million (Boomgaard, 1992, p. 11). In 1897 tree planting practices were institutionalized by the newly created Forest Office which issued specific decrees regulating planted and natural forest management (The Forest Service, 1957: 45). Most forestry management experts at that time in the Dutch East Indies or British India originated from Germany which was regarded as the global leader in forest science (Boomgaard, 1992, p. 11; Peluso and Poffenberger, 1989, p. 334; Bryant, 1996).

Scientific forestry and silviculture together with the centralized institutionalization of forestry governance and the top-down definition of goals for the plantations (firstly strategic, later commercial) mirrored the European approach but completely overlooked local realities. Large tracts of land were removed from public access and classified as state forests, fixed boundaries between forest lands were established and police forces controlled access to specific areas and species (Peluso, 1991, p. 73). Timber plantations constituted a new symbol of power and wealth, a concentration of land and resources, attractive for both state and private actors. But as plantations, especially in the initial period, require labor, teak from the 1870s onwards was planted on Java in the “taungya” (*tumpang sari* in Javanese) system allowing the farmers to tend the plantation while intercropping it before the canopy closure (The Forest Service, 1957, p. 10). However, taungya attracted only the worst-off farmers and guaranteed them only temporary access for land cultivation and forced them to live in temporary conditions and re-settle with the new teak plantations, creating a class which Peluso calls a “forest-dependent proletariat” (1991, p. 71).

Although teak was the dominant tree species planted and harvested in colonial Indonesia, as demand for timber increased, softwood species also began to be planted (National Research Council, 1993, p. 422). One of the earlier examples of softwood plantations are pine plantations in Sumatra developed in 1916 (FAO, 2012). In the 1940s, at the end of the period of plantation development under the industrial colonial paradigm, Indonesia was the world's leader in timber plantations' area, and possessed 75% of the total planted surface in the tropical countries, reaching 500,000 ha (Lanly, 1982 in. FAO, 2012).

Under the first paradigm of modern timber plantations, the key actors in teak undertakings emerged: state, private enterprises and the forestry service. The initial teak plantations were tested by the Dutch East India Company (VOC), a hybrid corporation under Dutch sovereignty (with a monopoly in the period 1745–1808). From 1808 onwards, following Governor Herman Willem Daendel's reforms, a system of forest management by the state was initiated, leading to conflicts between the state and private companies (Boomgaard, 1992, p. 10; Peluso, 1991, p. 67). Since 1897, the government's central role was assured with the establishment of the Forest Service acting on its behalf (PP, 2012a). Reforestation efforts were a key element of Dutch forestry

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