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The Shape of Forest, Social and Economic Conditions of Community Living Around Production Forest with Industrial Plantation Forest Permit (Case Study: Forest Management Unit of KPH Meranti)

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Abstract. The industrial plantation forest (HTI) has changed the structure of forest management from natural forest to constructed forest. The changes occurred on the biophysical, ecology, area management, and social aspects. The development of HTI has caused not only positive impacts, but also land-based conflicts and issues related to access to forest resource. This research aims to analyze the existing condition of the forest and the social and economic problems faced by the local community living around the concession area. The research was conducted in the vicinity of PT Sentosa Bahagia Bersama's using qualitative approach and data extracting through in-depth interviews with predetermined key informants. This study finds that the shape of forests in the HTI concession area could be defined based on its cultivation patterns, age and growth of plants, land clearing and area accessibility, forest management organization, ecology and productivity of the area.

Keywords: Plantation Forest, Community, Resources, Social

1. Introduction

Forest should not be treasured as an economic resource only, but also as a holistic unit of ecological and social resource **Error! Reference source not found..** Therefore, forest utilization must be made based on sustainable development principles that are built on three main pillars, namely the society, environment and economy **Error! Reference source not found..** On the other hand, the management of forest resource cannot be separated from the social and economic conditions of the community, especially those living in villages around the forest **Error! Reference source not found..** Yet, communities as the main parties in the management of production forests only been involved in a small portion in forest management policies **Error! Reference source not found..**

Forest management policies have failed to secure the realization of sustainable forest management, as it is now challenged by the developing networks of power that dominate the utilization of forest [5]. On contrary, it has made forest management as an arena of conflict and cooperation of various interests with the forests as an open access resource. Forest and land conflicts have rocketed in Indonesia in recent years. More than 20% of the forest area is affected mostly by permit disputes for mining, industrial plantations or oil palm plantations **Error! Reference source not found..** Conflict, in expert's opinion, is defined in different ways; some argue that conflict is a method to achieve goals



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by deteriorating the opposing party, without taking the prevailing norms and values into account **Error! Reference source not found.** Forests as a property is often become the object of disputes of various groups trying to benefit from the forest in inappropriate ways or fight to be the first to gain significant benefits **Error! Reference source not found.**

In order to safeguard and to improve forest productivity, adjustments in policies and operation system at the site level are required. The adjustment should be made by accommodating all aspects and dynamics of social, economic, cultural and proper livelihood. Social forestry is a forest management strategy that focuses on solving local people's problems and preserving the environment, as the main forest products are not only timber, but also various kinds of commodities needed by the surrounding community [9]. The partnership scheme forms strategic partnership between local farmers and large companies. The partner companies act as providers of production facilities, prepare the marketing as well as processing of products. Whilst, farmers will be the active actors of farming business **Error! Reference source not found.** The community is given the right to manage the forest under profit sharing mechanism while conserving the forest at the same time [11]. Therefore, this research was conducted with the aim of analyzing the existing condition of the plantation forest, social and economic conditions as well as problems related to local communities living around the Industrial Forest Plantation (HTI) concession area.

2. Research method

The research was conducted within the area of Meranti Production Forest (HP). The area is burdened by Forest Timber Product Exploitation Permit for Industrial Plantation Forest (IUPHHK-HTI) of PT. Sentosa Bahagia Bersama that covers an area of 52,160.11 Ha. Based on regional government administration data, the company's working area covers 5 (five) villages of two sub-districts, including Sako Suban, Lubuk Bintialo, Pangkalan Bulian and Talang Buluh villages which belong to Batanghari Leko District and Pagar Desa Village of Bayunglencir District, Musi Banyuasin Regency, South Sumatra Province.

The research was conducted using qualitative approach. The unit of data analysis in this study is individual person. The criteria for informants expected in this research are village leaders, community leaders who have more knowledge about the village, and village community as well as other actors who are active farmers and depending on forest as their farming land. Informants were selected from each village of research location. The research was started with an initial survey on research location. Once the initial survey was completed, the next step was to collect qualitative data. Qualitative data collection was made by conducting in-depth interviews and literature researches.

When the data collection is finalized, data analysis was carried out. There are three steps of qualitative data analysis, namely data reduction, data presentation, and conclusion [12]. The data analysis steps were carried out by peer discussion and data triangulation. Peer discussion is an activity to discuss the results of data collection with other interest group who understand the context of the problem being studied. These discussions were made mainly with related parties and policy makers who have conducted similar studies earlier. Whilst, data triangulation was carried out to check and recheck the data collected from research informants.

3. Results

PT. Sentosa Bahagia Bersama secured its industrial plantation forest permit that covers a definitive area of 52,160.11 Ha in 2009. There are 5 (five) villages with a population of 7,823 people or consisting of 1,799 families living around the company's concession area. The villagers are generally work as farmer (71.23%), labourer (21.5%), and others (7.27%). Agricultural land is important as it is serve as the capital and strategic assets for the survival of the community. Based on ethnicity and origin, the population is a mixture of indigenous people and new settlers, both from outside the province including Java, Bali, Jambi, Medan and Lampung, and from neighbouring transmigration settlements. The location of the company and community settlements are described in Figure 1, while the detail of population distribution is presented in Table 1 below.

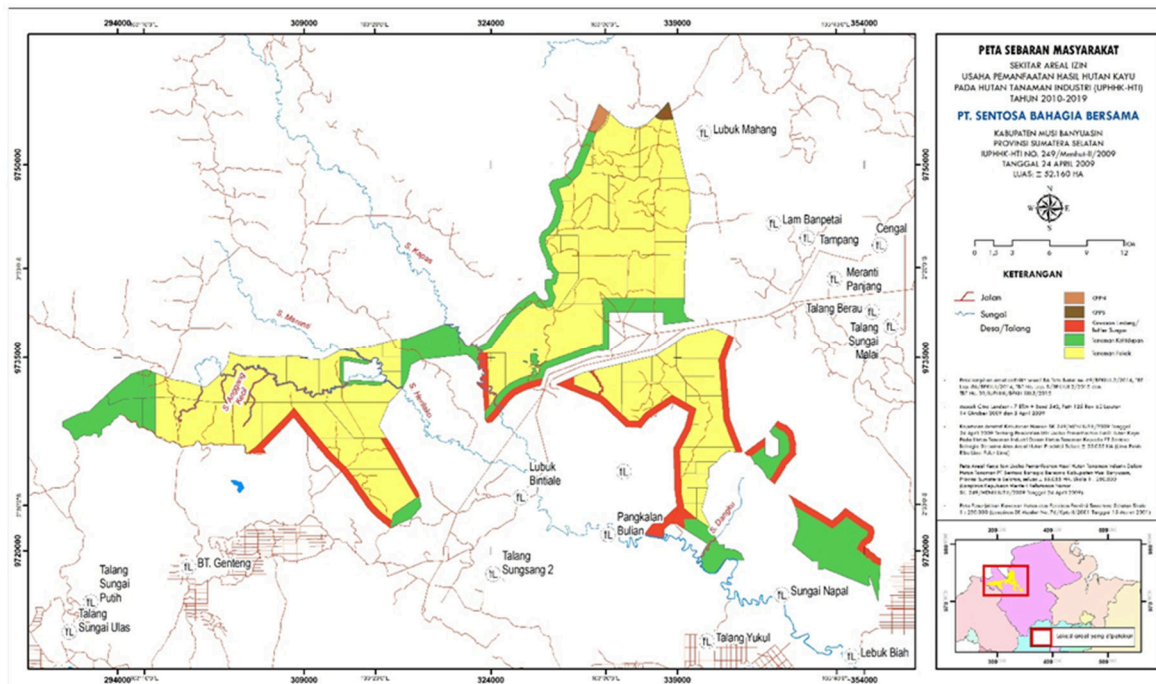


Figure 1. Location of the company and surrounding villages

Table 1. Population of villages around PT. Sentosa Bahagia Bersama

No	District/village name	Population (person)			Sex Ratio	Number of household
		L	P	Total		
A. Batanghari Leko						
1.	Lubuk Bintialo	1,327	1,274	2,601	104	525
2.	Sako Suban	732	614	1,346	119	344
3.	Pangkalan Bulian	1,217	1,148	2,365	106	506
4.	Talang Buluh	271	244	515	111	114
B. Bayung Lencir						
1.	Pagar Desa	538	458	996	117	310

Source: Statistics of Musi Banyuasin Regency, 2018.

Some findings of this study related to the conditions of production forest areas encumbered with permits are as follows:

3.1. Cultivation design

Industrial Plantation Forests (HTI) within Production Forests are in the form of constructed forests. Generally, the types of plant and cultivation arrangement are fast growing plants, short-lived, clear-cut and non-natural regeneration.

3.2. Maturity and growth of plants

PT Sentosa Bahagia Bersama produces forest stands with a homogeneous age and relatively uniform growth in its plantation. This similar design is also applied by the surrounding HTIs including PT BPP. Planting activities are carried out on plot unit-basis in the same planting period by implementing intensive silviculture so as to make the plants grow homogeneously. Up to the half of cycle and above, the plants grow high increment, whilst the diameter and volume tends to slow down. Such condition may be caused by varied productivity of the soil where the plant grows (site quality) [13].

3.3. Land clearing and accessibility

Intensification and optimization of Industrial Plantation Forests (HTI) is marked by the massive land clearing and the construction of road access to the area. Necessary Land Clearing (PWH) is a key requirement for a smooth planning, implementation and supervision of forest production and is expected to create better conditions for its management while also improving the social and economic function of the forests [14]. The success of exploitation activities is highly dependent on the cost of building this road access and the number of road network that serve logistics transportation [15].

3.4. Organization of plantation forest management

The management of PT. Sentosa Bahagia Bersama is led by a General Manager who supervises several other managers. Meanwhile, in terms of territorial division, it is divided into several districts led by a District Head, namely the Kadembo, Kerekai and Batanghari Leko Districts which are supported by the district management unit. The organizational structure is adjusted to the business profile of the company, so that the organization may improve its role and contribution through the core activity, business activity, and supporting activities (enabler) [16].

3.5. Ecology of the area

The existence of ecology and an ecosystem are inversely proportional to the development of Industrial Plantation Forests. It was in line with changes in initial baseline through the process of land clearing, use of chemicals, and disruption of flora, fauna, and aquatic biota and loss of natural forests. As for the function of the ecosystem shows a causal relationship that occurs between components in the system as a whole [17]. Fundamental and fluctuated changes in land cover have occurred in HTI areas due to massive land clearing [18].

3.6. Area productivity

The development of Industrial Plantation Forest (HTI) has the potential to grow forest resource assets. According to [18]. HPH (Natural Forest Management Permit) exploitation model has reduced forest wood potential, diminished the ability of natural forests to provide raw materials for forest-related industry, especially the plywood industry. Therefore, the development of HTI is also aimed at providing raw materials for plywood and carpentry, improving forest productivity and opening new employment opportunities. This goal is also commonly known as pro-growth, pro-job and pro-poor.

The main problems related to social and economic conditions of the communities living around the concession area of PT. Sentosa Bahagia Bersama are described below:

3.6.1. Social

a. Information and Technology Advancement

By observing the availability of learning and knowledge transfer facilities around PT. Sentosa Bahagia Bersama and according to statistical data, we found that there are six units of primary schools, one junior high school and one senior high school in the area. This fact indicates the fundamental problems in the transfer of knowledge to the surrounding communities, which has impacted the slow progress of knowledge and expertise development.

In this global era, there has been a paradigm shift in human civilization towards a knowledge-based society that is being faced by millions and even billions of people on the world. The shift has led to a shift of development paradigm globally, including the Republic of Indonesia, from natural resource-based development to knowledge resource-based development [19]. The progress of knowledge transformation and insight upgrading in rural areas is still relatively slow. In the context of improving human resources' knowledge and skills in managing forest and land resources, science and technology should not be limited in a narrow definition, as for the interests of workplaces and industries only. When the community is able to adapt to science and technology, it will easier for them to manage the forest area which serves also as their residential area.

b. Perception and Behavior

The perception and behavior of rural communities tends to be conservative and anti-change which also reminds us of the existing and hereditary culture and customs, and the obligation to always preserve them in community's life. Such condition is revealed in the communities living around the KPH Meranti area, where the people tend refuse the concept of openness to anything beyond their habits [20]. People's perceptions will be better if they understand that their livelihoods are depending on forest natural resources, thus these resources should be managed sustainably [21].

3.6.2. Business and economic investment

Investments in forest management are expected to enable economic improvement of the community, especially those who live in forest areas. However, the progress of business and economic investment is still relatively slow around the KPH Meranti area due to factors such as the area's carrying capacity, accessibility, and capacity of the people. Forests as natural resources serve an important role in human life because they are producing goods and services, and create environmental stability [22]. So the forest must be placed as a target for investment and local economic growth so that it must be managed appropriately. The key to successful forest resource management is determined by the success in solving community socio-economic problems. Failure to do so will also weaken forest management efforts [23].

3.6.3. Regional Aspect

a. Legality and Access to Use Natural Resources

Delays in legalization have an impact on long-winded access to utilize natural resources in forest areas. This issue is also experienced by the community living around the KPH Meranti area. The regional government is in process of developing a bottom-up concept that seek to accommodate the community's interest by providing the community with the authority to manage local conservation areas in regulations made by the local governments [24]. Meanwhile, the people living around the area feel that they are also entitled to benefit from the area [25].

b. Commitment of Stakeholders at Site Level

In the vicinity of PT Sentosa Bahagia Bersama's concession area which is part of the KPH Meranti Management Unit and selected as the site of this research, there was a lack of commitment among stakeholders. Stakeholder mapping will help the management to involve and build stakeholder commitment in achieving its goals [26] as commitment is the key to the success of the development program and forest area management, thus it must be introduced to all stakeholders. Freeman (1984) in **Error! Reference source not found.** defines stakeholders as parties who have influence or be affected (impacted) by decisions taken. It can also be defined as people, groups or institutions that have concerns and/or influence the outcome of an activity.

c. Forest Area Boundaries

The typical problems in forest management are mainly the status of forest delineation that led to tenurial conflicts. Most of the forests in KPH Meranti KPH area are not in a clear and clean status, or in other words, there are many non-forestry activities within the forest area, such as housing and community infrastructure, mining, and plantation activities. The rise of non-forestry activities in the forest has often led to various inter-sectoral and inter-communities conflicts, and between the government and investors (private companies) [28].

d. Pest Control Strategy

Forests as one interconnected ecosystem have become the habitat for several animal species. Along with the change in function of land around villages and forest areas in KPH Meranti area, there is also the threat of pests. In general, pests in forest are animals that cause destruction and loss to forest resources, whereas in particular, they are limited to species that cause damage beyond the tolerance limit of loss (economic threshold). This damage resulted in a significant level of economic loss [29]. Pest control may be made biologically, physically-mechanically, and with chemical substances. In

practice, both the control and prevention measures can be made using one or several methods (combination). When a combination of methods is used, it is called integrated pest management [29].

e. Infrastructure

Infrastructure development in forest areas is related to regional spatial planning policies and forest management operations. Forest in a regional perspective is actually part of the territory of a province or district/city so that the regional spatial planning policy will have broad implications on the existence of the forest area. The infrastructures in research site are far from proper, where some access roads to the village are in damaged and terrible state, thus make it difficult for the community to travel for their activities.

4. Conclusion

Based on the research results that have been described, it can be concluded that there are fundamental changes in the characteristics of forest areas, among others in cultivation patterns, age and growth of plants, land clearing and access to the area, management organization, forest ecology and productivity. Meanwhile, the socio-economic development of the community is still an issue. In social aspects, there is science and technology transformation and changes in perceptions and behavior. In addition, there is also business and economic investment, as well as regional problems which include legality and access to natural resource, commitment of stakeholders at site level, forest area boundaries, pest control strategies and infrastructure.

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