

# OIL PALM AGROFORESTRY AS AN APPROACH TO INCORPORATE ECONOMIC AND ECOLOGICAL INTERESTS IN FOREST MANAGEMENT (Case Study of Harapan Rainforest, Jambi, Indonesia)

# **TABAH ARIF RAHMANI**



FOREST MANAGEMENT SCIENCE **GRADUATE SCHOOL IPB UNIVERSITY BOGOR** 2024







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Bogor, 18 September 2024



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## **SUMMARY**

TABAH ARIF RAHMANI. Oil Palm Agroforestry as an Approach to Incorporate Economic and Ecological Interests in Forest Management (Case Study of Harapan Rainforest, Jambi, Indonesia). Supervised by DODIK RIDHO NURROCHMAT, RIZALDI BOER, METI EKAYANI, and MI SUN PARK.

Conflicts of interest between the economy and ecology are found in many places in Indonesia. For example, the Indonesian government designated around 20,000 hectares of forestland in the Harapan Rainforest, Jambi Province, Sumatra, Indonesia, to restore lowland rainforest ecosystems, but the local communities are currently encroaching on the forest and converting it into oil palm plantations. Harapan Rainforest is a production forest managed by PT Restorasi Ekosistem Indonesia (PT REKI) with an ecosystem restoration scheme (PBPH).

Recently, a research consortium of IPB University, University of Göttingen Germany, University of Jambi, and University of Tadulako, named Collaborative Research Center 990 (CRC-990)/Ecological and Socioeconomic Functions of Tropical Lowland Rainforest Transformation Systems (EFForTS) has been initiated and established an oil palm agroforestry experimental plot in Jambi, Indonesia. These experiments' preliminary results indicate the possibility of integrating oil palms and trees in the same landscape with an enrichment planting approach. We learn about oil palm agroforestry from CRC-990's experimental plot. We hypothesize that oil palm agroforestry is more economical and ecologically friendly than oil palm monoculture. This study aims to fill the knowledge gap by identifying stakeholders involved in Harapan Rainforest management, analyzing the feasibility of oil palm agroforestry, and evaluating the gap between rules in law and rules in use regarding implementing oil palm agroforestry in the Harapan Rainforest.

This study found three key stakeholders directly participating in utilizing the Harapan Rainforest. In contrast, the other five stakeholders play indirect roles. Building common ground between key players, including PT REKI, the local community, and the toke/middleman, is important to implement the oil palm agroforestry to incorporate the different interests. It is also important to consolidate the management plan with The Forestry Service of Jambi Province and the Production Forest Management Center Reg-IV as a local government organization. CAPPA can assist the local community to ensure the successful implementation of oil palm agroforestry.

Next, this study evaluates oil palm agroforestry's feasibility in four dimensions: economic, ecological, social, and infrastructure. Regarding economic feasibility, oil palm agroforestry is feasible because the potential income from oil palm agroforestry is more significant than oil palm monoculture. Oil palm mixed with jengkol has the most critical potential income compared to other patterns. Oil palm agroforestry has more excellent carbon stock and sequestration than oil palm monoculture. The infrastructure for implementing oil palm agroforestry in the Harapan Rainforest, such as planting tools, management tools, harvesting tools, hauling tools, availability of seeds, road access, market access, and off-taker, is available in Harapan Rainforest. Thus, oil palm agroforestry is feasible in terms of infrastructure. However, the local community of Harapan Rainforest still does not

accept oil palm agroforestry. There are four factors influencing local community acceptance of oil palm agroforestry implementation in the Harapan Rainforest, including 1) local community perception of oil palm agroforestry; 2) access and market condition of TFP and NTFPs; 3) community preferences toward forests; and 4) MoU that is not implemented correctly.

Last, this study conducted a gap analysis to evaluate the gap between the rules in law and the rules in use regarding the implementation of social forestry in the Harapan Rainforest. The rule in law is Minister of Environment and Forestry Regulation Number 9 of 2021 about social forestry and the MoU between PT REKI and the local communities. The gap analysis was carried out through content framing the 5W+1H questions: Who, What, Where, Why, When, and How. This study found unsuitable aspects between rules in law and rules in use, including managed object (what) and forest management mechanism (how). The gap in the aspect of managed objects occurs because most local communities have an area of cultivated land in the Harapan Rainforest of more than 5 hectares, both in the form of rubber plantations and oil palm plantations, whereas the rules in law state that the maximum area for forestry partnership is 5 hectares. Local communities need such large amounts of cultivated land to meet their needs. The continued existence of rubber and oil palm plantations belonging to the local community in the Harapan Rainforest area cannot simply be removed and restored to the natural forest because these plantations are the only source of income for the community, which depends on the forest. Thus, this study argued that it is reasonable to implement land use amnesty for local communities that cultivate forest land of more than 5 hectares while still making efforts so that all farmer groups can sign the MoU with PT REKI.

Another unsuitable aspect is the forest management mechanism. About half of the farmer groups in the Harapan Rainforest still do not have an MoU with PT REKI for forestry partnerships. Not a few farmer groups that have not signed an MoU still expand their cultivated land. Some even propose that their cultivated land in the Harapan Rainforest be converted from forest area to other land use. Weak law enforcement in managing the Harapan Rainforest has resulted in non-MoU farmer groups having more freedom to expand their cultivation land. This resulted in social jealousy between the MoU and Non-MoU groups and reduced trust in the MoU group towards PT REKI, resulting in a reluctance to implement the agreed MoU. Therefore, PT REKI and the authorities can consider enforcing the law against farmer groups still expanding their cultivated land while immediately agreeing on an MoU with these non-MoU groups.

Furthermore, it is necessary to develop an oil palm agroforestry experimental plot within the Harapan Rainforest and clear guidelines regarding planting patterns (strips, tree islands), planting distances, and selection of intercrops for implementing oil palm agroforestry as a term of improvement (*jangka benah*). Oil palm agroforestry experimental plots in the Harapan Rainforest are important as a reference for local communities.

Keywords: conflict resolution, land use policy, socio-economic.



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# **TABAH ARIF RAHMANI**

Dissertation as one of the requirements for achieving Doctor in Forest Management Science Study Program

FOREST MANAGEMENT SCIENCE **GRADUATE SCHOOL IPB UNIVERSITY BOGOR** 2024



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## **PREFACE**

Praise and gratitude, the author prays to Allah subhanaahu wa ta'ala for all His gifts to complete this dissertation. The theme chosen in this research, which was carried out from November 2021 to December 2022, is agroforestry, entitled \*Oil Palm Agroforestry as an Approach to Incorporate Economic and Ecological interests in Forest Management (Case Study of Harapan Rainforest, Jambi, Indonesia)."

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This dissertation still needs to be perfect as a scientific work. Hopefully, this dissertation can be helpful for those who need it and for the advancement of science in the future.

Bogor, 18 September 2024



Tabah Arif Rahmani



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