Jurnal Ilmu Kehutanan

https://jurnal.ugm.ac.id/v3/jik/
ISSN: 2477-3751 (online); 0126-4451 (print)

The Development Strategy for Flores Timur Forest Management Unit (FMU)-Protected

Strategi Pengembangan Kesatuan Pengelolaan Hutan Lindung (KPHL) Flores Timur

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RESEARCH ARTICLE

DOI: 10.22146/jik.v17i2.6089

MANUSCRIPT:
Submitted : 9 November 2022
Revised : 17 April 2023
Accepted : 5 June 2023

KEYWORD
FMU, Flores Timur, SWOT, community, strategy

ABSTRACT

The Flores Timur FMU establishment was part of the broader efforts to enhance forest governance, improve management practices, and resolve land tenure conflicts effectively within forest areas. However, the challenges commonly encountered included conflicts with communities and other sectors regarding land tenure, area planning, and policy implementation. This research aimed to identify strategic variables of internal and external factors to determine a development strategy for Flores Timur FMU-Protected using SWOT (strengths, weaknesses, opportunities, threats) analysis. The results showed that the primary strategy for managing Flores Timur FMU included law enforcement for forest protection, acceleration of rehabilitation efforts for forests and lands classified as critical, and calculation of forest economic values based on the benefits of environmental services. Moreover, increasing community participation in forest utilization through social forestry programs and employing a participatory approach to forest area boundaries would contribute to effective management.

KATA KUNCI
KPH, Flores Timur, SWOT, masyarakat, strategi

INTISARI

Pembentukan Kesatuan Pengelolaan Hutan Lindung (KPHL) Flores Timur merupakan salah satu upaya untuk memperbaiki tata kelola kehutanan, pengelolaan hutan, dan penyelesaian konflik penguasaan lahan di kawasan hutan secara efektif. Permasalahan yang sering dihadapi dalam pengelolaan KPHL Flores Timur adalah konflik dengan masyarakat dan sektor lain dalam penggunaan lahan, perencanaan kawasan dan implementasi kebijakan. Tujuan dari penelitian ini adalah untuk mengidentifikasi variabel strategis elemen internal dan eksternal yang berpengaruh dalam pengelolaan KPHL Flores Timur untuk merumuskan strategi pengembangan yang tepat. Penelitian ini menggunakan analisis SWOT (strength, weakness, opportunity, threat). Hasil analisis menunjukkan bahwa strategi utama yang dapat digunakan dalam pengelolaan KPHL Flores Timur antara lain adalah melakukan penegakan hukum dalam upaya perlindungan hutan, melakukan percepatan rehabilitasi hutan dan lahan yang tergolong kritis, menghitung nilai ekonomi hutan dari nilai manfaat jasa lingkungan, meningkatkan peran serta masyarakat dalam pemanfaatan hutan melalui program perhutanan sosial dan melakukan penataan batas kawasan hutan dengan secara partisipatif.

Introduction

Forest Management Unit (FMU) is a designated area for efficient and sustainable forest management (Minister of Forestry Regulation Number P.6/ Menhut-II/2010). Furthermore, FMU consists of two types, namely, Production and Protected. Based on 2014 statistics, the established Protected and Production FMU has reached 120 (Pusat Data dan Informasi KLHK 2015). The FMU establishment becomes one of the instruments to solve problems (Sribudiani and Yuliarsa 2014), improve forest governance (Ekawati 2014; Patabang et al. 2020), and promote sustainable forest management in Indonesia (Moyo et al. 2013). The government has also prioritized this development program to improve forest management (Hamzah 2014). Moreover, it is expected to establish a clear separation of forest management and administration (Patabang 2014). FMU development aims to create independent and innovative management units capable of making informed decisions and translating existing policy directives (Maryudi 2016).

FMUs often encounter various forest management problems, such as conflicts with other sectors in policy and area planning (Sylviani & Suryandari 2017), and land tenure (Harun & Dwiprabowo 2014). Moreover, conflicts with communities residing in and around the FMU area frequently occur due to the decreasing lands for agriculture and the increasing demands of living costs (Sylviani & Hakim 2014). Another problem is the high rate of deforestation caused by population pressure and the topographical conditions (Ahmad et al. 2016).

Flores Timur FMU-Protected was established to address these problems, particularly resolving land tenure conflicts with communities and other sectors in the forest area. It was established through the Indonesia Forestry Minister Number SK.972/Menhut II/2013 Decree and developed in 2014. As a forest manager at the site level, Flores Timur FMU-Protected plays an essential role in national forestry development. This strategic role has made its development a top priority on a national scale (Hamzah 2014). As part of its development, Flores Timur FMU-Protected needs to formulate a strategy by identifying the internal and external factors affecting forest management to guide and support sustainable forest management. This research aimed to formulate a development strategy for Flores Timur FMU-Protected, by identifying internal and external strategic variables that influence FMU management.

Research Methods

Research Location

This research was conducted from November 2021 to March 2022 in the Flores Timur FMU-Protected area of East Nusa Tenggara Province with samples from three sub-districts. The selection of the three sub-districts, namely Wulanggitang, Solor Timur, Ille Mandiri, and Titehena, was due to their protection and production functions, as presented in Figure 1.

Data Collection and Analysis Methods

The data collected in this research consisted of primary and secondary data obtained through field surveys and searches of supporting documents, respectively. The primary data collection employed in-depth interviews with 40 respondents: communities around the FMU area, FMU managers, the NTT Provincial Forestry Service, and academics. The selection of the respondents followed a purposive sampling method with the criteria being individuals directly related to FMU management, members of the communities, as well as government officials and academics. This research used SWOT (strength, weakness, opportunity, threat) analysis. It involved internal (strengths and weaknesses) and external (opportunities and threats) factors matrix analysis, which were then assigned weights (Supriono et al. 2013). The importance of each factor was weighted based on a scale value of 0 - 1 and a rating of 1 - 4 (Yeny 2022). Weight values were determined using the AHP (analytical hierarchy process) method (Oreski 2012). This process involved pairwise comparisons for the factor obtained in each SWOT component based on its level of importance. The scale values for comparison were based on the guideline developed by Saaty (1993) as follows: value 1 (Criteria/alternatives A and B are equally important); value 3 (A is slightly more important than B); value 5 (A is clearly more

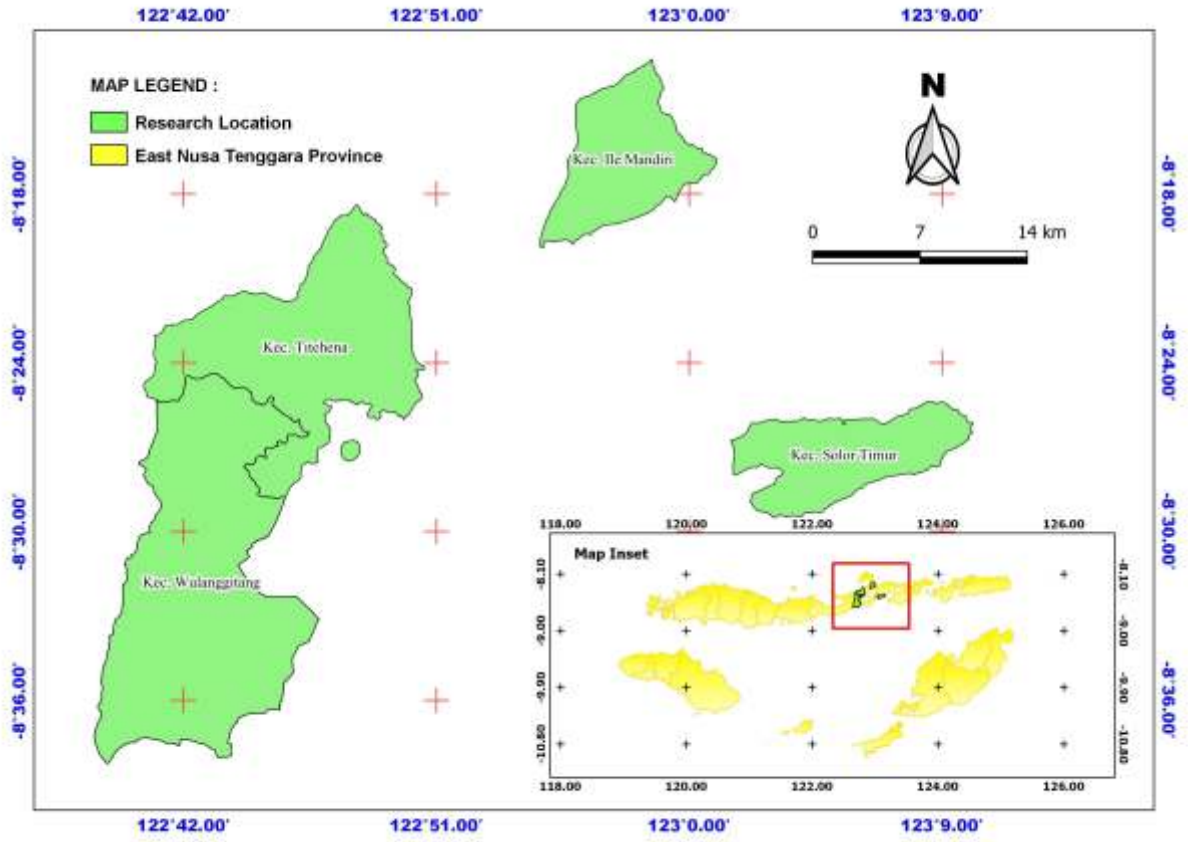

Figure 1. Research location

important than B); value 7 (A is very clearly more important than B); value 9 (A is absolutely more important than B). However, the value between two adjacent factors could be used when in doubt.

Results and Discussion

This research used SWOT analysis to analyze the forest management in the Flores Timur FMU-Protected area. This analysis produced strategic variables of internal and external factors influencing FMU development. It was carried out based on the results of interviews and in-depth discussions with stakeholders who participated as respondents.

Internal Factor Analysis

Internal factors were considered contributions from within the Flores Timur FMU-Protected management. The research grouped internal factors into strengths and weaknesses, as presented in Tables 1 and 2.

The internal factor analysis results showed that the main strengths in the development of Flores Timur FMU-Protected were the high potential of the forest area and environmental services, with a score of 1.404, as well as the availability of financial support from the government and external parties with a score of 1.084. According to Indrasari et al. (2015), the development of forest products could be carried out with the government's support and by increasing the creativity of managers in processing, marketing, and management. Furthermore, Iqbal and Septina (2018) argued that utilizing Non-Timber Forest Products (NTFP) as a source of income could be more efficient than timber forest products.

On the other hand, the main weakness of Flores Timur FMU-Protected development was the limited quality and quantity of human forestry resources (score 1.512). According to Noviyanti et al. (2016), FMUs could improve human resources quality through training designed for the required skills in the

Table 1. Strengths of Flores Timur FMU-Protected

No.	Strength	Weight	Rating	Score
1.	The existence of Forestry Institutions as administrators in forest management	0.123	4	0.492
2.	FMU has a sufficient size of forest area	0.042	3	0.126
3.	FMU has an area with fairly high potential	0.351	4	1.404
4.	Laws and regulations that support FMU development	0.213	4	0.852
5.	Available government funding to support forestry development	0.271	4	1.084

Source: Results of data analysis, 2022

Table 2 Weaknesses of Flores Timur FMU-Protected

No.	Weakness	Weight	Rating	Score
1.	Limited quality and quantity of forestry resources in the forestry sector at Flores Timur FMU	0.378	4	1.512
2.	Forest area boundary demarcation has not yet been completed	0.067	4	0.268
3.	Limited application of science and technology in forest management	0.031	3	0.093
4.	Weak law enforcement and control in forest area protection	0.303	3	0.909
5.	Limited supporting facilities and infrastructure in forest management	0.167	4	0.668
6.	The required database for forest management is not yet available	0.054	3	0.162

Source: Results of data analysis, 2022

Table 3. Opportunities of Flores Timur FMU-Protected

No.	Opportunity	Weight	Rating	Score
1.	High demand for forest products	0.061	4	0.244
2.	Lofty government supports in the form of policies and financial assistance	0.044	4	0.176
3.	Available investment opportunities to participate in the forest products processing	0.348	3	1.044
4.	Available laborers from the community	0.115	3	0.345
5.	Available opportunities to cooperate with the community	0.264	3	0.792
6.	Available support from stakeholders, such as universities and NGOs	0.168	3	0.504

Source: Results of data analysis, 2022

Table 4. Threats of Flores Timur FMU-Protected

No.	Threat	Weight	Rating	Score
1.	Illegal logging and forest encroachment	0.082	4	0.328
2.	Critical lands in the forest area	0.037	3	0.111
3.	A substantial number of poor people surrounding the forest area	0.271	3	0.813
4.	Frequent forest fire events induced by land clearing for new plantations establishment	0.020	3	0.060
5.	Land claims by the community in the FMU area	0.382	4	1.528
6.	Limited knowledge level of communities living surrounding the forest area	0.208	3	0.624

Source: Results of data analysis, 2022

field. FMU, as a business unit in forest management, requires human resources with competencies in entrepreneurship and forest product utilization (Fazriyas et al. 2018). The Indonesia Environment and Forestry Minister No. 8/2021 concerning Forest Management and Preparation of Forest Management Plans and Forest Utilization in Protected and Production Forests regulated the detailed management guidelines for FMUs as business units.

External Factors

External factors were considered influences that stemmed from outside the management of Flores Timur FMU-Protected. This research grouped external factors into opportunity and threat, as presented in Tables 3 and 4.

The opportunity analysis showed that potential investment in timber and non-timber forest products became the foremost opportunity for managers in developing the FMU by inviting investors to develop plantation forests and engage in product processing industries (score 1.044). Strengthening the investment mechanism became essential to ensure the sustainability of cooperation with investors in FMU (Husen et al. 2018). On the other hand, the main threat faced in FMU management was tenurial issues, particularly land claims by the community over the FMU area (Score 1.528). Differences in the interception and perceptions between stakeholders on rights to forest and land resources served as a source of land tenure conflict (Safitri et al. 2011). These conflicts might occur between the community, private parties, individuals, or government agencies due to unclear legal or rights associated with the tenurial system.

Additionally, conflicts may arise due to unclear forest area boundaries that have yet to be mutually agreed upon by the government and the community. FMU development must consider the local and specific conditions of communities around the area to resolve land tenure conflicts(S. Sylviani and Hakim 2014).

Community-based forest management programs could serve as a means to resolve conflicts between communities and FMU managers (Arifandy & Sihaloho 2016), reduce degradation and deforestation, and increase community income (Girolami et al. 2023). Furthermore, forest management programs could contribute around 26% to the community's monthly income (Widiyanto 2019) and increase their awareness of sustainable forest management (Piabuo et al. 2018). Social forestry became a prominent government program to involve communities in forest management, improve community welfare, promote sustainable forest management, and reduce environmental conflicts (Erbaugh 2019). Moreover, FMU could transform existing conflicts into partnerships as part of land-related conflict resolution mechanisms by considering the ease of doing business, legal certainty, sustainability (Harun & Dwiprabowo 2014), and ensuring the community's access to land and forest resources (Herawati et al. 2019). Law enforcement played a crucial role in overcoming irregularities in implementing sustainable forest management (Handoko and Yamantoko 2015).

Synthesis of Internal and External Factors

The synthesis analyzed internal and external factors to formulate FMU development strategies (Table 5) determined by the score values of internal and external factors (Figure 2).

The SWOT synthesis results shown in Figure 2 indicated that the Flores Timur FMU-Protected development position was in quadrant II, meaning that the priority of FMU development strategies should leverage strengths to address external threats. This strategy could include activities such as conducting law enforcement as part of forest protection efforts, accelerating critical forests and lands rehabilitation, calculating the forest economic values from environmental services, strengthening community participation in forest management through social forestry programs, and conducting participatory forest area boundaries demarcation with communities.

Law enforcement became crucial in addressing threats, including illegal logging, forest encroach-

Table 5. Development strategy of Flores Timur FMU-Protected

	Opportunity	**Threat**
Strength	**SO strategy**: 1. Improving the utilization of forest potentials, such as non-timber forest products and environmental services 2. Developing community-based forest management 3. Increasing carbon storage through forest rehabilitation and restoration	**ST strategy:** 1. Conducting law enforcement as part of forest protection efforts 2. Accelerating critical forests and lands rehabilitation 3. Calculating the forest economic values from environmental services 4. Strengthening community participation in forest management through social forestry programs 5. Conducting participatory forest area boundaries demarcation with communities
Weakness	**WO strategy:** 1. Developing a collaborative management model between the FMU and the community, such as agroforestry 2. Improving the quality and quantity of human resources in FMU 3. Promoting the application of science and technology in FMU management 4. Promoting research-based FMU development 5. Cooperating with parties in building a database	**WT strategy:** 1. Transferring technologies of sustainable forest management 2. Developing a collaborative management model between FMU and the community 3. Developing small-scale forestry businesses, particularly for non-timber forest products 4. Improving the quality and quantity of human resources for FMU managers 5. Conducting participatory forest area boundaries demarcation with the community

Source: Data analysis results, 2022

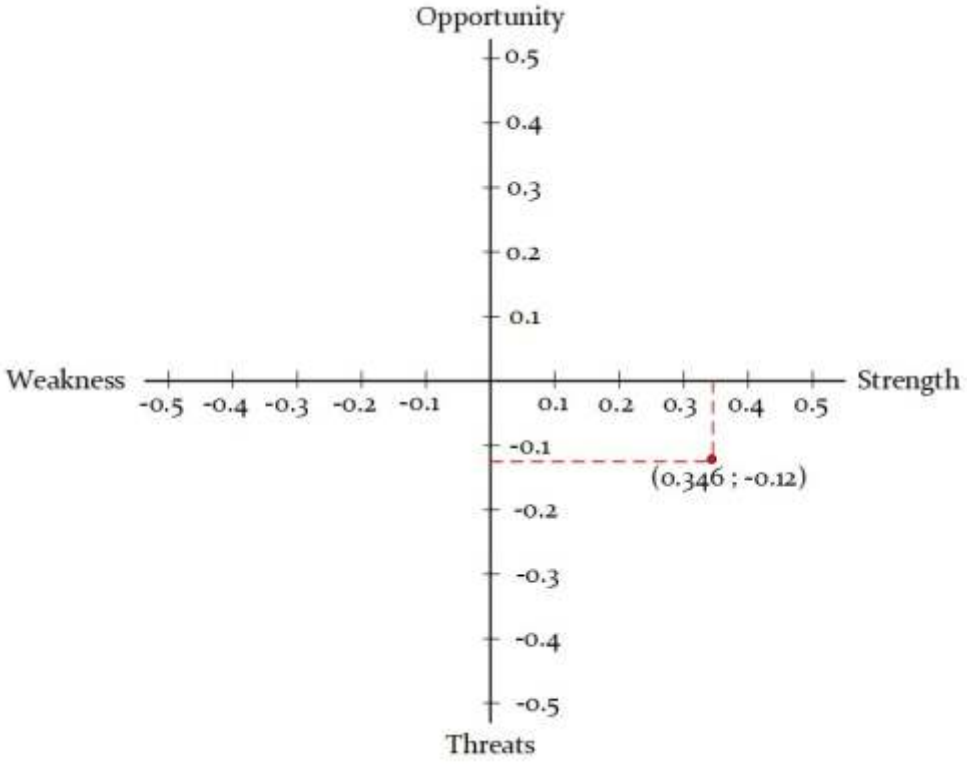

Figure 2. Cartesian diagram of internal and external factors

ment, fires, and tenurial issues. However, the punishment imposed for forest encroachment was relatively light and failed to deter offenders (Ali et al. 2018). Furthermore, law enforcement could tackle irregularities in implementing sustainable forest management (Handoko and Yamantoko 2015). Accelerating land and forest rehabilitation became a substantial strategy as the FMU has many areas classified as critical. The research results also highlighted the high potential of forest resources and environmental services in the FMU area. However, this potential benefit remained to be discovered, indicating the need to calculate the economic value as one of the required strategies to develop the Flores Timur FMU-Protected area.

The Regulation of the Indonesia Environment and Forestry Minister No. 09/2021 mandated the Social Forestry program to facilitate active community involvement in forest management, including forest boundary demarcation. The regulation outlined various forms of social forestry activities, including Village, Community Plantation, Community (HKm), Customary, Public Forests, and Forestry Partnerships. The Indonesian Government Regulation No. 23/2021 on Forestry Implementation further regulated land utilization within the social forestry program. The government permitted the communities to access forest management within the Social Forestry program. Agroforestry and silvopastoral could become forms of collaborative management between FMU and communities (Sylviani & Hakim 2014). The species selection for agroforestry should consider the ability to withstand various climatic conditions (rainy and dry seasons), serve as a source of food and wood, possess a relatively high economic value, and be readily marketable (Yenny & Suharti 2020). The agroforestry adoption could control farmers' behavior in enhancing the role of forest management institutions (Apriandana et al. 2021).

The HKm program must establish and strengthen institutions and provide technical assistance, particularly in early implementation (Nandini 2013). Siregar et al. (2019) suggested that assistance in marketing, product transformation, design, and production improvements could support the HKm program. Product diversification and off-farm interventions by cultivating local crops could increase farmers' income (Yuniati et al. 2019). Community

involvement promotes the sustainable use of forests and contributes to the forest area's security (Kadir 2014).

Conclusion

In conclusion, identifying external and internal factors could determine the primary strategies for developing Flores Timur FMU-Protected. The strategies included law enforcement, specifically regarding land tenure, such as area encroachment, and increasing the role of surrounding communities in forest management. Other crucial activities with great potential included accelerating critical forests and lands rehabilitation, calculating the forest economic values from environmental services, strengthening community participation in forest management through social forestry programs, and conducting participatory forest area boundaries demarcation with communities. In its early development, Flores Timur FMU-Protected should prioritize community involvement in forest management through the HKm program using agroforestry and silvopastoral to enhance soil and water conservation. The Flores Timur FMU-Protected should ensure sustainable yields and resources in its programs, such as non-timber forest products and environmental services utilizations.

Acknowledgment

The authors are grateful to the East Nusa Tenggara Provincial Forestry Service, BPKH East Nusa Tenggara Region. The authors are also grateful to stakeholders from Nusa Cendana University, Politani Kupang, and the community for the assistance provided during data collection in this research.

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