



Full Length Research Article

Implications of Forest Policy Changes on Investment Program Strengthening Forest Management Unit in Central Sulawesi

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ABSTRACT

The forest investment program, supported by foreign funding, aims to promote the strengthening of Forest Management Units (FMUs) in implementing decentralized forest management in Indonesia. Ten FMUs have received funding from the forest investment program since 2017, one of which is FMU Dampelas Tinombo of Central Sulawesi. This program exited in 2022. During its implementation project, Indonesia's forestry policy is changing, as are the primary tasks and functions of FMUs. This study examined the implication of forest policy changes on the sustainability of the FMU strengthening investment program in FMU Dampelas Tinombo of Central Sulawesi Province. This study was conducted from July to September 2022. Data was collected through interviews and focused group discussions with FMU managers and stakeholders. This study showed that the forest investment program to strengthen the FMU in Central Sulawesi had been effectively implemented but had not significantly affected decentralized forest management practices. Changes in forestry policy brought about by the amendment of the Job Creation Law and its subsidiary regulations have significantly affected the program's performance and sustainability. The business development program promoting FMU independence must be discontinued because it contradicted the FMUS' constitutionally mandated primary responsibilities and duties. FMU should optimize the governance function in achieving community-based forest management, which includes forest planning, facilitation, and technical guidance.

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1. Introduction

In recent decades, forest management policies in Indonesia have changed (Nugroho and Syahrudin 2021; Pambudhi and Virgy 2022). Establishing Forest Management Unit (FMU) was the Indonesian government's priority policy in the forestry sector at the beginning of the 2010s (Wulandari et al. 2014). At that time, the government strongly supported the development and strengthening of the FMU. The Central Government National Planning (BAPPENAS/Badan Perencanaan Nasional) issued a statement indicating no FMU and budget for the forest sector (Sardjono and Inoue 2017). This implementation resulted in a positive outcome, as all forest areas in Indonesia have had forest management units. However, the current situation is much different.

This FMU development policy is mandated by 1999's Forestry Law No. 41 (Wulandari et al. 2014). However, FMU policy support declined as social forestry policies strengthened (Massiri

et al. 2020; Tajuddin et al. 2019). This policy dynamic is anticipated to impact forest management at the site level. FMU development and social forestry are not contradictory policy programs that mutually weaken one another (Tajuddin et al. 2019). These two policies should be incorporated at the site level into a decentralized forest management policy.

The program to strengthen FMUs is a national priority in Indonesia between 2010 and 2020. The government of the Republic of Indonesia is maximizing foreign finance assistance from the forest investment program to strengthen FMUs and encourage decentralized forest management. The Forest Investment Program (FIP) is a climate investment fund for developing countries to reduce deforestation and forest degradation. Strengthening the FMU in decentralized forest management is one of the strategies to reduce deforestation and forest degradation.

Through Forest Investment Program II, 10 FMUs in Indonesia have received funds to strengthen FMUs in decentralized forest management, including FMU Dampelas Tinombo of Central Sulawesi Province. This investment program has been running since 2017 and ends in 2022. Based on the program inspection workshop in 2017, FMU Dampelas Tinombo obtained funds from Forest Investment Program II on the consideration that FMU Dampelas Tinombo had readiness and support in implementing decentralized forest management. FMU Dampelas Tinombo is the first model FMU established in Central Sulawesi Province, and it has been in operation since 2011.

In implementing the FMU strengthening program, there has been a change in national forestry policy due to the issuance of Law Number 11 of 2020 concerning Job Creation and Government Regulation Number 23 of 2021 concerning forestry administration and its derivative regulations. This policy change includes changes in the duties and functions of FMUs. This policy change will have implications for the sustainability of the forest investment program in terms of strengthening FMUs in carrying out decentralized forest management practices. It is urgent to examine the implications of changes in forestry policies on program sustainability, including after the investment program funding ends.

Policy change is one of the central issues in the forestry sector. Policies are concerned with determining objectives or a set of alternatives to be selected based on certain principles (Keban 2008). Policies are the basis that provides direction for programs or activities to overcome problems faced or achieve goals (Nurrochmat et al. 2016). Policies also determine how to act based on certain principles to achieve goals or overcome problems (Dunn 2015; Krott 2005).

Forestry policy changes are influenced by several factors, including interests, narratives, and networks (Friedman et al. 2020; Wong et al. 2020). Foreign aid and donors also contribute to the dynamics of forest policy (Gnych et al. 2020; Laudari et al. 2020). In the forestry sector, domestic actors use foreign funding to fulfill administrative interests, which are then formalized in rules and policy at the constitutional level (Sahide et al. 2016).

Changes in forest policy impacted some actors who utilize and benefit from forests. Forest policy changes will likely affect stakeholders based on their situations, values, and interests. Policy changes are related to changes in roles, actors, and institutions (Schaffrin 2013; vonHedemann et al. 2020). Changes in regulations at the constitutional level will have implications for institutional existence at the site level (Ostrom 2005). The sustainability of programs initiated at the site level is highly dependent on structure policy at the constitutional level (Massiri et al. 2015).

The performance and sustainability of a program are determined by situation and structure (Schmid 2004). Structures are policies, rules, and programs designed to address problem situations. Policy and institutional capacity are the factors presumably determining a program's

sustainability. Initiating forestry programs at the local level is occasionally unsustainable due to constitutional policy constraints (Massiri et al. 2015). On the other hand, weak institutional capacity to continue programs that have been initiated also contributes to the existence of activity programs that are not sustainable (Uitto 2019). The FMU's institutional capacity is influenced by bureaucracy and support for local government policies (Massiri et al. 2020; Tajuddin et al. 2019). Understanding the impacts of policy changes on forest management units, particularly regarding institutional capacity and program sustainability, is of utmost importance. This study examined the impact of forestry policy changes on the sustainability of the forest investment program in strengthening FMU in Central Sulawesi.

2. Materials and Methods

2.1. Research Location

This research was conducted at FMU Dampelas Tinombo in Central Sulawesi Province, Indonesia. FMU Dampelas Tinombo is one of the FMU models of Central Sulawesi Province, which has obtained financial support from foreign funding for forestry investment in the form of institutional strengthening and promoting community-based forest management. The FMU model aims to improve the management of forest resources in the region and promote sustainable forest practices. The research location is represented in Fig. 1.

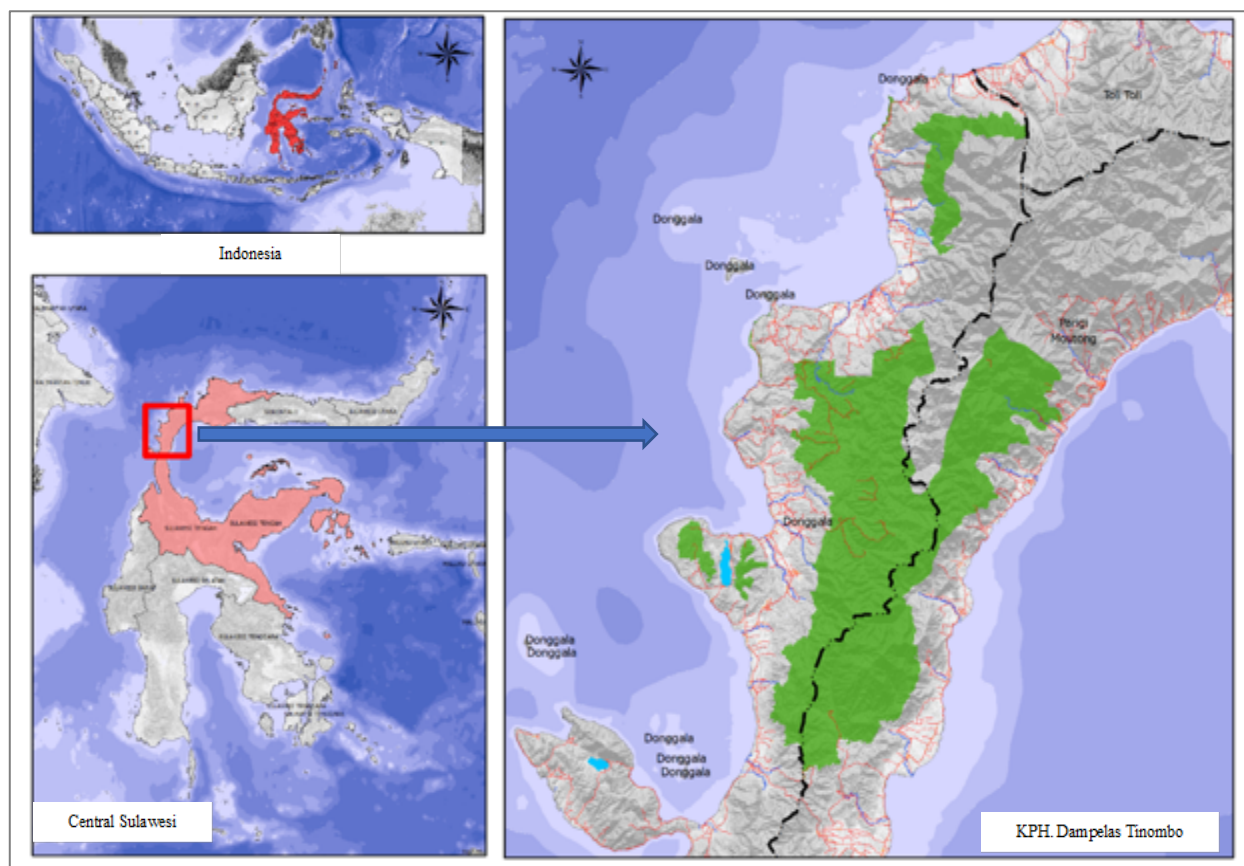


Fig. 1. Research location.

2.2. Framework

This research applied an evaluation and a normative methodology. This evaluation method was used to assess the effectiveness and impact of a forest investment program to strengthen FMU Dampelas Tinombo. This evaluation method was also used to examine the implications of forestry policy changes on the performance and sustainability of the forest investment program in strengthening FMU Dampelas Tinombo in carrying out decentralized forest management.

The framework applied to evaluate the performance and implication of forest policy change on the sustainability of forest investment programs was based on an institutional approach, presented in **Fig. 2**. The situation and structures determine the program performance (Schmid 2004) and sustainability in an institutional context (Massiri et al. 2015). The structure described the policies and rules, the project’s design, and the stakeholders’ roles. Meanwhile, the situation represented in this study reflects the problem situation and potential institutional capacity of FMU Dampelas Tinombo, including the characteristics of high information and enforcement cost forest management, human resource capacity, and funding capacity.

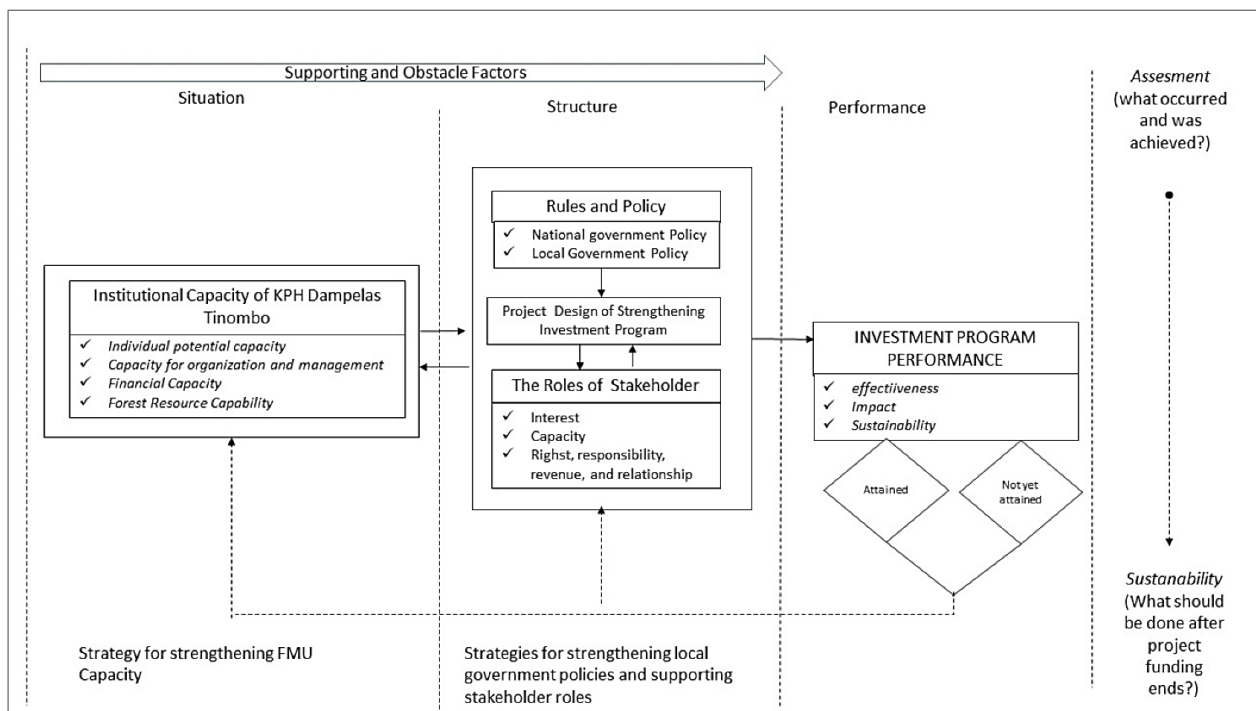


Fig. 2. The conceptual framework for evaluating and formulating the FMU strengthening investment program sustainability, adapted from the SSP framework (Schmid 2004).

The normative approach was applied to arrange the strategies in responding to policies for the sustainability of the forest investment program related to strengthening the role of the FMU in Central Sulawesi Province. This normative approach, also known as a perspective approach, provides stakeholders with a general principle for problem-solving (Bibri 2020). The normative approach was intended to aid stakeholders or decision-makers in problem-solving. This approach assists the policymakers in determining or selecting one of several options for dealing with or overcoming problems. The stakeholder approach was used in the sustainability program formulation. This stakeholder perspective is also used to arrange the roles of the stakeholders by determining who does what to ensure the long-term viability of community-based sustainable

forest management programs and the strengthening of FMUs. The procedure for formulating an exit strategy and establishing an action plan is presented in **Fig. 3**.

2.3. Data Collection

The data collection was conducted between July to September of 2022. The data collection technique was interview and focused group discussions (FGD). The FGD technique combined with technical interviews is highly effective in exploring information and data and revealing its meaning (Bungin 2015). The interview was held with FMU Dampelas Tinombo Management, which included the Head of the FMU, two section heads, and the person in charge of the program. In addition, interviews were conducted with staff of the supporting units of FIP II on FMU Dampelas Tinombo and the Head of the Forestry Service to clarify the policies and regulations that support and impede the dynamics of FMU in Central Sulawesi Province. The FGD activities took place in two steps. The first step of the FGD aims to validate the findings regarding the performance and constraints of the FIP program at FMU Dampelas Tinombo. Ten participants from FMU Dampelas Tinombo’s management and supporting unit staff took part in the first steps of the FGD. The second FGD activity was to develop a strategy for the sustainability of the forest investment program related to strengthening the role of the FMU in Central Sulawesi Province. At the second FGD, there were 40 participants, including four participants representing the head of division of the Forest Service of Central Sulawesi, four participants from FMU Dampelas Tinombo, 11 participants representatives from FMUs in Central Sulawesi Province, one participant from the Center for Sustainable Forest Management, one participant from the Center for Regional Consolidation and Environmental Management, one Participant Central Sulawesi Provincial Food Office, one Participant from Central Sulawesi Provincial Empowerment and Village Service, four participant representatives from NGOs, two participant representatives from academics, and one participant from the Sustainable Forest Management Agency and 10 participants from Forest Farmers Groups.

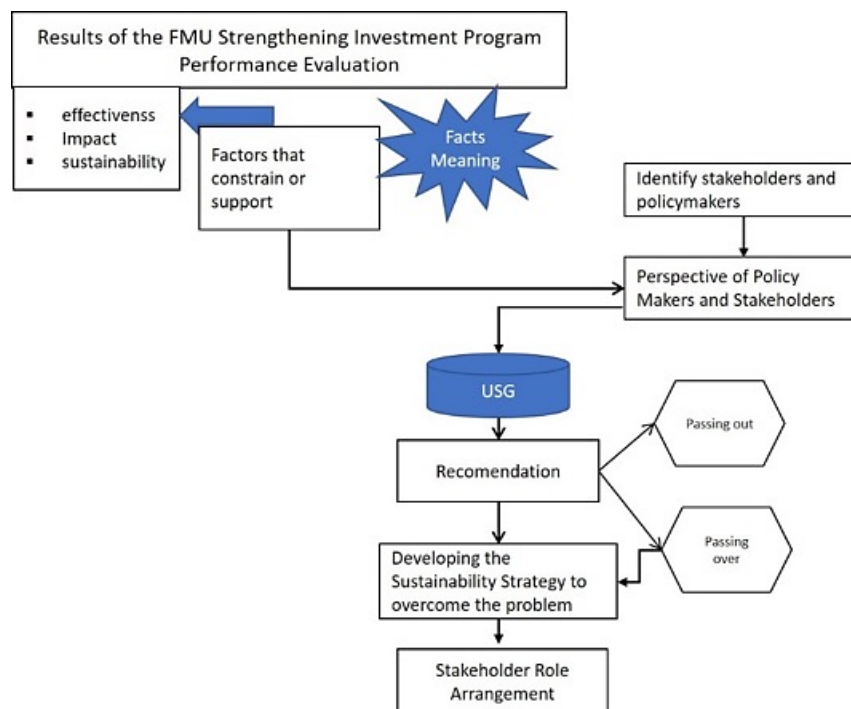


Fig. 3. Stages of the program sustainability formulation process.

2.4. Data Analysis

This study used a descriptive-qualitative data analysis method (Lambert and Lambert 2012) to find and analyze the relationship between the problem situation, forestry structures and policies, and the role of stakeholders in the performance and sustainability of the FMU Strengthening Investment Program. In addition, this research used USG (Urgency, Seriousness, Growth) analysis in formulating the sustainability of the investment program through a scoring approach for each criterion, namely 1 = low, 2 = moderate, and 3 = high. The program priority level was determined by three criteria: $\geq 3-5$ = not priority, $\geq 5-7$ = less priority, and $\geq 7-9$ = priority.

3. Results and Discussion

3.1. Situation

The situation describes the characteristics of the resources and the problem situation in the FMU. Based on the FMU Dampelas Tinombo Need Assessment Report (2017) and FMU Dampelas Tinombo Base Line Study Report (2018), the institutional capacity of FMU Dampelas Tinombo was relatively low. Meanwhile, the capacity of human resources to carry out forest management has yet to be more optimal. The total number of FMU Dampelas Tinombo staff is 30 personnel, with a distribution of educational levels, namely 15 senior high school personnel, one 3-year diploma personnel, 13 Bachelor's degree, and one master's degree. With a limited number of managers, the staff manages two forest area management units: Management Unit III of 134,431.48 ha and Management Unit IV of 112,664 ha.

Low institutional capacity in decentralized forest management is a problem faced by most FMUs in Indonesia (Budiningsih et al. 2022; Massiri et al. 2020; Santoso et al. 2019). This problem situation requires the strengthening of the institutional structure of FMUs. Establishing institutions is required to allow individuals to manage forests independently (Ramadhan et al. 2022). Strengthening the institutional structure of FMUs at the site level depends on government policy support (Tajuddin et al. 2019).

3.2. Structure of Forest Investment Program in Strengthening the FMU in Central Sulawesi

Promoting Sustainable Community Based Natural Resources Management and Institutional Development, the forestry investment program, is funded by World Bank and DANIDA (Danish International Development Agency) grants through the Forest Investment Program II (FIP II). This project is intended to support and strengthen the Indonesian government's efforts to decentralize forest management at the sub-national level through the operationalization of Forest Management Units (FMU). This project aims to strengthen FMU institutions and promote decentralized forest management at the site level. The forest investment program through strengthening FMUs at the site level is a strategy for preventing deforestation and forest degradation. This strategy is in line with the ultimate goal of the FIP II project, which is to mitigate climate change by reducing deforestation and forest degradation (Lederer and Hhne 2021).

The forest investment program to strengthen the FMU Dampelas Tinombo of Central Sulawesi includes three program components: a) institutional strengthening, policy development, and regulatory support; b) a capacity-building program for FMU operationalization in sustainable forest management and community empowerment; and c) a knowledge resource center program. The first component was a program to strengthen provincial institutions and policies. The main

goals of the program were to 1) strengthen decentralized forest management legislation, policies, and institutional capacity; 2) increase local governments’ sense of ownership and commitment to FMUs; and 3) obtain policy support from local governments for FMUs in carrying out forest management, as well as clarify roles and FMU organizational functions. The second program component was a capacity-building program on the site and in the local community. The main goals of the FMU capacity strengthening program for the operationalization of forest management were increasing FMU capacity in forest management and improving forest management practices to achieve community-based sustainable forest management. The third program component was the Knowledge Resources Center’s development program. The primary goal of this project was to establish a knowledge center and information system to provide data and information services related to forest management practices. **Table 1** shows the FMU strengthening investment program implemented at the FMU Dampelas Tinombo.

Table 1. Project design for FMU strengthening investment program in FMU Dampelas Tinombo

Components Project	Program
Institutional strengthening, policy support, and Standard Operational Procedure (SOP)	<ul style="list-style-type: none"> - Promoting the development of regional public service bodies in FMUs - Assisting in the development of regional regulations and governor regulations to support the legality of FMU operationalization - Preparation of guidelines and Standard Operational Procedures (SOP)
Strengthening capacity for FMU operations in sustainable forest management and community empowerment	<ul style="list-style-type: none"> - Compilation of participatory forest management plan documents - Preparation of business development plans - Community-based forest protection enhancement support - Capacity building in communication and product dissemination - Participatory mapping - Development of agroforestry plant demonstration plots - Training in carbon inventory and estimation
Knowledge resource center development	<ul style="list-style-type: none"> - Provision of room in the office and equipment for the knowledge resource center - Capacity building in database management and information sources

The forest investment program at FMU Dampelas Tinombo applied a measurable and systematic performance-based management approach, starting from the planning, organizing, implementing, monitoring, and evaluation stages. A needs assessment study is used to prepare the program planning process, which is then discussed and determined by a multi-stakeholder consultative committee.

3.3. Performance of the FMU Strengthening Investment Program

3.3.1. Performance of program strengthening institutions, policies, and regulations that support decentralized forest management

The forest investment program for strengthening institutions, policies, and regulations aims to create conditions and capacities that allow for implementing forest management practices appropriate for local conditions through the smallest forest management unit managed by the FMU. This program is a form of forest management decentralization. This study reveals that institutional strengthening programs, policies, and regulations had little impact on FMU Dampelas

Tinombo's support for decentralized forest management. The FMU institutional strengthening program performance is presented in **Table 2**.

Table 2. Performance of FMU institutional strengthening program, policy, and regulation supporting decentralized forest management

Program	Performance	
	Effectiveness	Impact
Promoting the development of regional public service bodies in FMUs	The program's indicator targets were not accomplished	No effect
Assisting in the development of regional regulations and governor regulations to support the legality of FMU operationalization	The program's indicator targets were accomplished	There was an effect, but it can not be sustained
Preparation of guidelines and Standard Operational Procedures (SOP)	The program's indicator target has not been accomplished yet	Has not been affected yet

The preparation program document for implementing the Regional Public Service Agency's financial management pattern at FMU Dampelas Tinombo was completed in 2019. It produced administrative requirement documents ready to be submitted to the Governor of Central Sulawesi Province. Administrative requirements documents prepared include FMU governance patterns, minimum service standards, business strategy plans, documents for proposals for regional public service agencies, and statements of readiness to be audited internally. Changes to forestry laws, especially Government Regulation Number 23 of 2021, which emphasizes the role of FMUs as facilitators of forest management, made it impossible to keep this program going.

FMUs were initially intended to be organizations that provide public services and production units, so they required a suitable funding mechanism to support their duties and functions (Wulandari et al. 2014). FMUs can be fully funded by the state (state government services), based on market mechanisms that depend on private sector investment (market government), or a mix of the two through participatory government, flexibility, and strengthening social networks (participatory government, flexible government, social network).

The primary duties and functions of FMUs are regulated in Government Regulation Number 23 of 2021, emphasizing that FMUs are organizations that carry out public service duties, not production units in forest management. As a result, the FMU lacks the authority to manage revenues from forest management businesses. It also proves that the government controls the funding structure that allows FMUs to work.

The policy strengthening program through FIP II resulted in Central Sulawesi Provincial Regulation Number 8 of 2019 concerning forest management in forest management units, Governor Regulation Number 44 of 2019 concerning procedures for cooperation in forest utilization in forest management units, Governor Regulation Number 45 of 2019 concerning procedures for distributing and depositing the results of forest utilization cooperation and forestry partnerships in the forest management units, and Governor Regulation Number 46 of 2019 concerning procedures for distributing and depositing the results of forest utilization cooperation and forestry partnerships in the forest management units. The issuance of this regional regulation has increased the FMU's cooperation in forest management and the contribution of regional revenues to the forestry sector. On the other hand, policy changes at the constitutional level have

implications for implementing regional regulations and the Governor of Central Sulawesi Province’s regulations supporting the operationalization of FMUs. The ongoing cooperation program had to end because the role and responsibilities of the FMU in forest management were changed by Government Regulation Number 23 of 2021 on Forestry Management.

The FMU’s main tasks and functions, as regulated in Government Regulation Number 23 of 2021, emphasize administrative and governing functions rather than the task of managing forests to earn income or achieve independence. The FMU’s main tasks and functions are 1) plan preparation, 2) plan coordination, 3) facilitation and technical guidance, and 4) monitoring and evaluation. Rather than the FMU, forest management activities are carried out by community groups through social forestry schemes and by forest utilization permit holders.

FMU Dampelas Tinombo, a public organization providing forest management services, has also developed standard operating procedures for conflict resolution. However, this program is assumed not to have affected the FMU’s conflict resolution performance. A policy’s implementation will be successful if it is outlined in SOPs and understood by employees (Sarif et al. 2022). The SOP documents that FMU Dampelas Tinombo organized have not been publicly available or implemented.

3.3.2. *Performance of the capacity strengthening program for FMU operationalization in sustainable forest management and community empowerment*

The forest investment program has effectively strengthened the operationalizing of FMUs in sustainable forest management and community empowerment. Several programs have impacted FMUs’ capacity in community-based forest management practices, which is necessary for community-based sustainable forest management. The performance of the FMU Dampelas Tinombo operationalization strengthening program in sustainable forest management and community empowerment is described in **Table 3**.

Table 3. Effectiveness and impact of the FMU Dampelas Tinombo strengthening program activities on sustainable forest management and community empowerment

Program	Performance	
	Effectiveness	Impact
Revised forest management plans	The program’s indicator targets were accomplished	Has not been affected yet
Business development	The program’s indicator targets were accomplished	There was an effect, but it cannot be sustained
Programs in improving community-based forest protection activities	The program’s indicator targets were accomplished	Affected
Increasing FMU capacity in communication and product dissemination	The program’s indicator targets were accomplished	Affected
Participatory mapping program	The program’s indicator targets were accomplished	Affected
Development of agroforestry plant demonstration plots	The program’s indicator targets were accomplished	Affected
Training in carbon inventory and estimation	The program’s indicator targets were accomplished	Has not been affected yet

The business development program for FMU Dampelas Tinombo, supported by FIP II, influenced the FMU's operationalization. However, the initiated business plan can no longer be implemented due to the issuance of Government Regulation Number 23 of 2021, which confirms that the FMU provides public services in forest management rather than a production unit. The business plan prepared by FMU Dampelas Tinombo focuses on developing palm sugar and rubber cultivation. This business activity has generated income for the FMU through collaboration with the community. Community organizations handled this business, and FMU Dampelas Tinombo's role is facilitating marketing and providing technical guidance.

The revised document program for forest management plans, which FIP II supported, has been implemented effectively. However, it has not yet significantly affected forest management's operationalization. Forest planning in forest management units is essential for promoting sustainable forest management practices. There was already a Long-Term Forest Management Plan document at FMU Dampelas Tinombo, but it needs to be reviewed and revised. The forest management plan of FMU Dampelas Tinombo was revised in response to changes in the community's socioeconomic dynamics and policy dynamics. In community-based forest management, social factors must be considered (Savari et al. 2020). Several FMU planning blocks, particularly the community empowerment block, do not correspond to the block designation. Changes in regulations or policies necessitate revisions and adaptation to the forest management plan (Basnyat et al. 2018). With the issuance of this government regulation, the FMU's role has shifted, necessitating adaptation and changes in forest planning.

FMU operationalization programs that significantly impacted forest management practice and community empowerment included a community-based forest protection improvement program, capacity building in communication and product dissemination, participatory mapping, and the development of demonstration plots of agroforestry plants. These four programs align with the devolution policy of forest management through social forestry schemes and the enhancement of FMUs' roles in community facilitation and empowerment.

The community-based forest protection program has increased community knowledge and skills in controlling forest and land fires in the FMU Dampelas Tinombo area. Meanwhile, capacity-building activities in communication and product dissemination increased the knowledge and skills of farmer groups through digital marketing, resulting in increased sales of farmer group products through digital marketing channels. Meanwhile, participatory mapping activities increased community knowledge about map reading in communities around the forest. Community groups in the participatory mapping team have contributed to implementing the FMU program in social forestry and conflict resolution programs. The program for developing demonstration plots for agroforestry plants has impacted community support for FMU Dampelas Tinombo, increasing the role of the community in forest management so that conflict resolution strategies can be achieved.

Forest management programs at the local level are inextricably linked to national and international forestry policy narratives. Forestry policy narratives widely discussed today are policies to reduce carbon emissions in the forestry sector or Forest and Other Land Use Net Sink (Folu Net Sink) policies. Responding to this policy, FMU Dampelas Tinombo included carbon inventory and accounting training activities at the end of the FIP II project. This activity was programmed to prepare FMU Dampelas Tinombo personnel to implement the Forest Land Use Net Sink (FoluNet Sink) Carbon Program. This program has been implemented effectively but has yet to impact forest management practices significantly.

3.3.3. Performance of the knowledge resource center development program

The main objective of developing knowledge center management in FMUs is to provide a platform for exchanging data information and learning about forest management practices and community empowerment that other FMUs or stakeholders can access. Sharing data information and learning is expected to support the capacity building of FMUs, communities, and stakeholders in community-based management and utilization of forest resources.

FIP funded two investment programs at FMU Dampelas Tinombo: a) preparation of office room and equipment for a knowledge resource center , and b) capacity building for database management and sources of information and communication techniques in product marketing. The program’s performance from knowledge center management development is described in **Table 4**. According to this study’s findings, the knowledge center management development program at FMU Dampelas Tinombo has been implemented but has yet to be operational.

Table 4. Performance of program from knowledge center management development

Programs	Performance	
	Effectiveness	Impact
Preparation of office rooms and equipment for the knowledge resource center	The program’s indicator targets have not been accomplished yet	Has not been affected yet
Increasing the capacity of managing databases and sources of information and communication techniques in product marketing	The program’s indicator targets have not been accomplished yet	Has not been affected yet

Target indicators of program achievement that have not been fulfilled optimally include the following: (1) the knowledge resource center is up and running, (2) the forestry information system is operational, (3) users can gain access to digital knowledge products, (4) knowledge sub-portal users linked to the knowledge portal, and (5) FMU employees applying skills from training activities.

The FMU’s knowledge and information center management serves a strategic purpose in supporting the FMU’s primary duties and functions as a government organization providing forest management services. The knowledge and information center function in FMUs can be optimized in providing services: (1) providing stakeholders with information data about potential forest resources in FMUs, (2) providing information services about forest governance and forest management plans that FMUs will develop, (3) providing information services on the development of social forestry management in the FMU area, and (4) providing online marketing services.

3.4. The Implication of Forestry Policy Change on the Sustainability of Forest Investment Program

The dynamics of change in national forestry policy are the dominant factor determining the performance of implementing the FMU strengthening investment program in decentralized forest management. Changes to the national policy with the issuance of Regulation No. 11 of 2020 concerning the Job Creation Law and its subsidiary regulations, especially Government Regulation Number 23 of 2021 concerning forestry administration, have affected the performance of the FMU Dampelas Tinombo strengthening program, particularly concerning

strengthening FMUs in implementing the financial management pattern of regional public service bodies and business development in FMUs. With the release of Government Regulation Number 23 of 2021 about forestry administration, the program for developing the financial management pattern for regional public service bodies in FMUs and implementing regional regulations and regulations of the Governor of Central Sulawesi Province about cooperation in forest utilization was canceled.

The policy directs programs and principles to achieve certain conditions (Dunn 2015; Nurrochmat et al. 2016). The policy is a rule of action but can also constrain local initiatives. The design of institutional strengthening programs at the site level and rules at the collective level must align with constitutional policies. It was also implied (Massiri et al. 2015) about initiating conservation programs with external funding, which cannot be sustainable because they have structural and regulatory constraints. The failure to design institutions is because the rules of arrangement at the operational and collective levels do not correspond to the rules at the constitutional level (Ostrom 2005).

Regional regulations and the Governor of Central Sulawesi Province's regulations on forest utilization and cooperation mechanisms in utilization are collective rules. This rule specifies who may use the resource, who may benefit from it, and who will benefit. This collective regulation emphasizes that FMU is a forest management organization that can earn money by partnering with permit holders. However, due to policy changes at the constitutional level, this collective rule is not sustainable.

The forest investment program can initially support increasing FMU Dampelas Tinombo's income through forest utilization cooperation, as regulated in Central Sulawesi Province Governor Regulation 44 of 2019. As regulated in this regulation, the income FMUs can obtain from forest utilization cooperation was 5–30%. FMU Dampelas Tinombo has developed partnerships with companies in rattan harvesting business and partnerships with farmer groups in the development of palm sugar and rubber plantations. The palm sugar processing business and rubber plantation business have received production facilities and infrastructure supported by FIP. Total revenue from the rubber plant development business reached IDR 100,000,000 per year with a minimum production capacity of 20 tons per year. Total revenue from the palm sugar business reached IDR 320,000,000 per year with a minimum production capacity of 18 tons per year. In addition, the partnership utilizing FMU Dampelas Tinomo rattan reached 1,530 tons annually. The income earned by FMU Dampelas Tinombo was IDR 7,800,000 per year, and regional income was IDR 15,762,000 per year. FMU Dampelas Tinombo has prepared a business plan to develop this business. As a result of changes in forestry policy, FMU is no longer authorized to operate partnerships and is not permitted to generate income.

The existing FMU, a local government organization that handles forest management issues, is no longer one that carries out forest management practices. Because of this policy change, local governments could no longer benefit from forest utilization. It has implications for declining local government support for FMUs. In contrast, one of the primary targets of the forest investment program is to increase local government support for the forest management unit.

Based on the implications of this change in forestry policy, the local government needs to formulate policies to strengthen FMUs at the collective level by involving stakeholders. The stakeholder perspective is essential to take into account in forming and formulating a policy (Bellucci et al. 2019). Key stakeholders influence forest utilization policy decisions (Tandio et al. 2023). Stakeholders are people or organizations interested in and influencing a program's success

(Pirozzi 2019). The formulation of program sustainability based on stakeholder perspectives should adhere to constitutional rules (Hardy and Koontz 2009).

The policy direction for strengthening FMU institutions is based on Government Regulation Number 23 of 2021 as an organization undertaking facilitation and coordination functions to support forest management implementation. Wulandari et al. (2014) revealed that the role of FMUs in forest management is to fill gaps in forest governance at the site level, such as resolving forest use conflicts, controlling forest management permits, forest planning, and monitoring.

FMUs have an essential role in supporting the decentralization of forest management through devolved community-based forest management. A community-based forest management policy does not mean eliminating or weakening the role of the management unit. However, the role of the management unit should be optimized in carrying out the functions of facilitation, technical guidance, and increasing community capacity (Massiri et al. 2020). The formulation of sustainable institutional strengthening and policy support for FMU Dampelas Tinombo is presented in **Table 5**.

The sustainability of the capacity-building program for operationalizing FMU Dampelas Tinombo in community-based forest management should be passed over, except for the FMU business development program, which is no longer in line with the FMU's authority. The roles and functions of the FMU in forest management include forest planning, coordination, facilitation, investment development, and technical guidance service for farmer groups. **Table 6** describes the strategy for sustainability of the forest investment program, which was in line with Government Regulation Number 23 of 2021.

The forest investment program has implications for boosting FMU Dampelas Tinombo's role in community group facilitation and technical guidance. These programs require a sustainability strategy that includes improved communication and coordination with key stakeholders regarding community empowerment activities and technical instruction for community groups. Stakeholders who have an essential role in supporting the sustainability of the community empowerment program in forest areas in the FMU Dampelas Tinombo area are the Empowerment and Village Services of Central Sulawesi, NGOs, academics, the Central Sulawesi Provincial Food Service, and the Forestry Service. Community empowerment strategies require structuring the roles of stakeholders (Sitikarn 2021). NGOs and academics have strengths in extension activities and strengthening the capacity of social forestry groups. Meanwhile, the community and village empowerment services, the Food Service, the Forestry Service, and FMU have interests and strengths in the program and funding of community empowerment activities.

The forest investment program has also had implications for increasing the role of FMU Dampelas Tinombo in developing investment, industry, and product marketing through capacity-building programs in communication and product dissemination, as well as knowledge resource center development programs. Developing a knowledge and information center has strategic opportunities in investment development through preparing data and information on potential forest resources and marketing forest product products from community groups. The development of knowledge and information centers at FMUs has a strategic opportunity to support the effectiveness of FMU services in investment development and product marketing. In this way, the strategy for sustainability of the investment program of the knowledge and information center should be directed at optimizing functions that support the effectiveness of FMU services in supporting the development of investment, industry, and marketing in the working area of the FMU.

Table 5. Formulation strategy for sustainability institutional and policy strengthening investment programs based on stakeholder perspectives in Central Sulawesi Province

Programs	Issues	Sustainability Parameters			PL	Recommendation for Sustainability
		U	S	G		
Preparation of Legality Support for FMU Operationalization	Regional regulations and Governor Regulations cannot be implemented due to changes in the FMU's duties and responsibilities mandated by government regulation 23/2021	2	2	3	7	Passing out; However, it is necessary to strengthen FMU policy support at the regional level as forest governance, which performs the functions of planning, coordinating, and facilitating community-based forest management implementation
Preparation of Guidelines and Standard Operational Procedures (SOP)	Documents and standard operating procedures have not been implemented	3	3	3	9	Passing over: The program should continue to be implemented in accordance with the FMU's primary responsibilities
Revision of the long-term forest management plan document	The forest management plan document cannot be implemented due to a change in the FMU's role as stipulated by Government Regulation Number 23/2021	3	3	3	9	Passing over: Revise the long-term forest management plan document again based on the applicable regulations
Programs in improving community-based forest protection activities	Forest protection equipment was not managed to be used optimally	3	3	2	8	Passing over; optimizing equipment use and community participation in forest protection activities
Increasing FMU capacity in communication and product dissemination	There was no HR arrangement in place for FMU staff members who are specifically assigned to assist community groups in facilitating community groups, particularly in terms of product marketing	2	2	3	7	Passing over: Continue with applying the knowledge to the development of online-based product marketing
Participatory mapping program	Need to continue the participatory mapping team's work program to support the implementation of conflict resolution and social forestry programs at FMU Damelas Tinombo	3	2	2	7	Passing over: Strengthening participatory mapping teams in tenure conflict resolution and social forestry programs
Development of agroforestry plant demonstration plots	Development of Agroforestry Plant Demonstration Plots needs assistance in product and business development	2	2	2	6	Passing over: Management is delegated to community groups with assistance from the FMU
Training in carbon inventory and estimation	Carbon inventory and accounting knowledge have not been applied	3	3	3	9	Passing over: The program needs to be continued to support the FOLU Net Sink policy
Development of Knowledge Resources Center	Knowledge and instruments of KRC management have not been applied to improve the role of FMUs in knowledge services and product marketing	3	3	3	9	Passing over: FMU Dampelas Tinombo should optimize knowledge, infrastructure, and facilities for knowledge and information center services

Notes: PL = priority level, classification: $\geq 3-5$ = not priority, $\geq 5-7$ = less priority, $\geq 7-9$ = priority.

Table 6. Strategy for sustainability

The role and function of FMU	Existing conditions and contributions of the FIP II program's assistance	Issues	Strategy for sustainability
Forest planning	Documents for the revision of the long-term forest management plan have been compiled but not yet implemented Training on carbon inventory and estimation has been accomplished	The role of the FMU, as outlined in government regulation number 23/2021, has been altered, necessitating a review and revision of the forest planning document FMU Dampelas Tinombo lacks information on potential carbon storage, uptake, and emissions despite having knowledge and expertise in carbon calculations	Adaptation of forest planning documents following the relevant regulation Provision of data and information regarding the potential of forest resources, in particular, the potential for carbon storage and emissions in the forest area of FMU Dampelas Tinombo
Coordination	The multi-stakeholder coordination process takes place in a consultative committee forum	Arrangement of stakeholders in supporting community-based sustainable forest management	Optimizing and enhancing the role of multiple stakeholders in the realization of community-based forest management
Facilitation and technical assistant	Community-based forest protection facilitation has been implemented A participatory mapping team with knowledge and skills in participatory mapping has been formed. A conflict management strategy and SOP for conflict resolution have been developed Developed agroforestry plant demonstration plots as a form of community empowerment	The scope of the FMU management area is extensive, so the support for forest protection equipment was not evenly distributed The participatory mapping team lacks a working program Due to the limited number of FMU personnel at the site level who undertake conflict resolution, the SOP has not yet been implemented The number of agroforestry plant demonstration plots was only developed in two locations, so it was not sufficient and evenly distributed	Enhancing communication and boosting community support for forest protection efforts, particularly in areas vulnerable to forest destruction Assisting in the development of work programs for participatory mapping teams in support of conflict resolution strategies Coordination strategy with the stakeholders for the resolution of tenure conflicts Development of agroforestry in several priority areas as a model for land management and conflict resolution, particularly in conflict areas
Roles in investment development, industry, and market development	FMU capacity building has been carried out in communication and product dissemination Development of Knowledge Resources Center	Knowledge and skills have been implemented, but the role of FMUs in developing product marketing for farmer groups should be expanded Knowledge Resources Center management was not yet operational	Strengthening the contribution of assistants and extension workers to the business development and marketing of farmer group products Optimizing the utilization of facilities and infrastructure, as well as supporting the organization of FMUs so that the management of knowledge centers operates effectively and efficiently

4. Conclusions

The forest investment program to strengthen the forest management unit has not yet significantly impacted the decentralized forest management practices on FMU Dampelas Tinombo of Central Sulawesi Province. Forestry policy changes affected the performance and sustainability of the forest investment program. Changes in the function and main tasks of FMUs have caused several investment programs to strengthen FMUs at the local level to be unsustainable, particularly programs aimed at creating an independent FMU. The policy direction for strengthening FMUs with the issuance of Government Regulation Number 23 of 2021 is to create effective FMUs supporting sustainable forest management. FMU is no longer an organization that carries out forest management practices at the site level but rather an organization that carries out a governance function in forest management. This policy change has weakened the provincial government of Central Sulawesi's support for FMUs. It has implications for the low capacity of FMU to perform its functions. In response to these policy changes, the sustainability of the forest investment program should be designed to strengthen community-based forest management through stakeholder collaboration and by boosting the role of FMUs as facilitators.

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