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# The Implementation of the Indonesia-Germany Cooperation: A Case Study of the Community Economic Development Program in Mamasa Subdistrict Through *Forest Program IV*

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## ABSTRACT

This study aims to analyse the implementation of the *Forest Programme IV* (FP IV) as a form of Indonesia–Germany cooperation to support community empowerment and environmental management in the buffer zone of Gandang Dewata National Park (TNGD), Mamasa Subdistrict, Mamasa Regency, West Sulawesi Province. This program is part of community-based forest and land rehabilitation efforts in the Mamasa Watershed (DAS) area. The research focuses on the program's implementation in improving community livelihoods and the challenges encountered during its implementation. This study employs a qualitative case study design. Data were collected through in-depth interviews, field observations, and document analysis. The research analysis employs concepts of international cooperation and community development to understand the relationships among stakeholders and the community empowerment process in the program's implementation. The results indicate that Forest Program IV in Mamasa Subdistrict was implemented through the provision of business capital support, production tools, and assistance to Forest Farmer Groups (KTH). This program contributed to increasing community economic activities, particularly in agriculture, plantations, honey enterprises, handicrafts, and agroforestry. In addition to increasing community income, the program encouraged community involvement in forest management and environmental conservation within the TNGD buffer zone. However, the program's implementation still faces several challenges, including limited market access, limited community understanding of the program, mismatches between some activities and community needs, low community participation, and the impact of climate change on the sustainability of community enterprises.

## KEYWORDS

Forest programme IV, community development, Indonesia, Germany, Mamasa.

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## 1. Introduction

At the 2010 international climate change convention, countries agreed on a framework to address climate change through REDD+ (Reducing Emissions from Deforestation and Forest Degradation), a global, national, and subnational forest conservation and management program. This scheme emphasises the critical role of tropical rainforests in combating climate change. Therefore, practices such as forest conservation, increasing carbon stocks, and sustainable forest management are vital in addressing climate change (Dirjen Planologi Kementerian Kehutanan et al., 2011). One of the initiatives supporting the REDD+ scheme is the Forest Programme. This program operates within the Forest and Climate sector under the financial cooperation module (FORCLIME FC) to support efforts to reduce greenhouse gas emissions resulting from deforestation (Saputra & Fachri, 2017). Thus, the Forest Programme aims to implement conservation strategies and sustainable forest management (Mondolu et al., 2023).

In 2019, Indonesia and Germany signed a Financial Agreement and a Separate Agreement for the implementation of Forest Programme IV. This program covers the Mamasa Watershed and the Gandang Dewata Landscape in West Sulawesi and South Sulawesi. Forest Programme IV was established under the framework of bilateral cooperation between the Federal Republic of Germany and the Republic of Indonesia. This forestry-based program is supported by grant funding from Germany through KfW, the German government's development bank (KfW Entwicklungsbank, 2024). The program is expected to achieve emission-reduction targets while simultaneously improving the community's economic and social well-being. Forest Programme IV operates under the supervision of the Ministry of Environment and Forestry (Biro Perencanaan Kementerian Lingkungan Hidup dan Kehutanan, 2022).

Forest Programme IV is based on the need to improve forest development, biodiversity, agricultural land development, nature conservation, management of Gandang Dewata National Park, and community well-being within the Gandang Dewata National Park area. This is done to reduce deforestation caused by human activities in the forest, thereby improving conditions in the Mamasa watershed area (Kadir, 2024). This collaboration will last for 7 years and is designed to promote sustainable land use and agricultural development to improve watershed conditions and enhance community livelihoods.

The Mamasa watershed is a crucial primary watershed for the Bakarú Hydropower Plant. However, the Mamasa watershed is currently experiencing environmental degradation due to deforestation and unsustainable land management practices, leading to high sedimentation levels. A study by Rosmaeni et al. found that high sedimentation levels at the Bakarú Hydropower Plant in South Sulawesi are influenced by the conversion of forest land to agricultural land. This situation has led to a decline in the capacity and efficiency of the Bakarú Hydropower Plant (Rosmaeni et al., 2024). This is one of the factors driving Indonesia, through the Ministry of Environment and Forestry (KLHK), to collaborate with Germany via the Forest Programme IV (Sarrin, 2020). This program is expected to serve as a solution to reduce high sedimentation in the watershed area while also boosting local economic development.

Efforts to reduce sedimentation and ensure the sustainability of the Mamasa Watershed cannot be achieved solely through conservation approaches but also require the active involvement of communities living near forested areas. Therefore, Forest Programme IV focuses its initiatives on empowering communities in villages adjacent to the TNGD through the development of community-based economic activities. This program assumes that enhancing communities' economic capacity can reduce their reliance on activities that could damage forests. The villages selected as program implementation sites in Mamasa Subdistrict include Bubun Batu Village, Taupe Village, Mambulilling Village, Tondok Bakarú Village, Rambusaratu Village, and Lambanan Village.

Most residents in Mamasa Subdistrict rely on the agriculture, plantation, and forestry sectors as their primary sources of livelihood. Therefore, the implementation of Forest Programme IV is not only related to environmental conservation efforts but also concerns the social and economic dynamics of local communities. On the other hand, this program involves various actors, including the Indonesian and German governments, program implementing agencies, local governments, and village community groups. The involvement of many actors in an international collaboration poses its own challenges for program implementation at the local level. In this context, it is important to examine how the community responds to this program, the forms of assistance received, and the extent to which the program is able to address the needs of communities in the TNGD buffer zone. Based on this background, this study will examine the implementation of the Indonesia–Germany cooperation through Forest Programme IV in Mamasa District as well as the various challenges faced in its implementation.

## **2. Analytical Framework**

### **2.1. International Cooperation**

In the era of globalisation, relations between nations have become increasingly important because various global issues, including environmental concerns, cannot be resolved individually by a single country. Through international cooperation, nations can collaborate to advance shared interests in the economic, social, political, and environmental spheres. These dynamics are further influenced by the involvement of various actors in increasingly complex international relations as cross-border interactions intensify (Ramadhani, 2022). Therefore, international cooperation is a vital instrument for supporting development and resolving transnational issues.

According to Dougherty and Pfaltzgraff, as cited by Ramadhani, international cooperation is an interaction between two or more parties that is established voluntarily without coercion to achieve specific interests through the involvement of various actors in such a relation (Ramadhani, 2022). Meanwhile, K.J. Holsti explains that international cooperation is characterised by shared interests, objectives, and agreements among nations in resolving specific issues through mutually agreed-upon rules and mechanisms (Haryanto, 2020). Thus, international cooperation can be understood as collaboration among nations to achieve common goals, involving various institutions and actors.

In practice, international cooperation takes several forms, namely bilateral, multilateral, and regional. This study focuses on bilateral cooperation between Indonesia and Germany through the Forest Programme IV (FP IV). This program is a form of environmental cooperation between the Government of Indonesia and the Government of Germany, supported by funding from KfW Entwicklungsbank, the German government's development bank. FP IV was established to support forest rehabilitation, the management of the Mamasa Watershed (DAS), and the conservation of the Gandang Dewata National Park (TNGD) through a community-based landscape management approach.

According to the Forest Programme IV Project Implementation Manual (PIM), this cooperation focuses not only on environmental rehabilitation but also on institutional strengthening and improving the livelihoods of communities in forest buffer zones. The Government of Indonesia, through the Ministry of Environment and Forestry (KLHK), acts as the program implementer, while the Government of Germany provides financial support and technical assistance through KfW. Program implementation subsequently involves various other actors, including the Regional Forest Management Agency (BPDAS), the Regional Natural Resources Conservation Agency (BBKSDA), Forest Management Units (KPH), local governments, village facilitators, and community groups at the local level. The involvement of these numerous

actors demonstrates that international cooperation does not occur solely at the national level but also encompasses complex implementation processes down to the community level.

Through Forest Programme IV, Indonesia–Germany cooperation can be understood as a form of bilateral collaboration in community-based environmental management. This program aims not only to reduce environmental degradation and sedimentation in the Mamasa Watershed but also to promote community empowerment through the development of agricultural enterprises, agroforestry, and local resource-based economic activities in the buffer zone of Gandang Dewata National Park.

## 2.2. Community Development

According to Poston, as cited by Tonny Nasdian and further cited by Arianti and Hamidah, community development is the process of building social relationships, both vertically and horizontally, within a society or community. Meanwhile, Christensen and Robinson view community development as a collective effort undertaken by a group of people to bring about changes in social, economic, environmental, and cultural conditions through collaboration within a specific community (Arianti et al., 2022). Thus, community development can be understood as a process of community empowerment through active community participation in creating social and economic changes in their environment.

The concept of community development in this study is used to understand how Forest Programme IV (FP IV) promotes community empowerment in the buffer zone of TNGD. Based on the Forest Programme IV Project Implementation Manual (PIM), this programme employs the Sustainable Landscape Approach (SLA), which positions environmental management and the improvement of community well-being as interrelated components. This approach is realised not only through direct assistance to communities but also through sustainable activities such as agroforestry development, the formation and mentoring of Forest Farmers' Groups (KTH), community capacity building, land rehabilitation, and the development of businesses based on local resources. Through this approach, communities are not merely positioned as aid recipients but as key actors in environmental management and economic development within forest buffer zones.

Community development (essentially aims to enhance community participation and capacity in the development process. Empowerment itself refers to efforts to enhance the capabilities of individuals and groups, particularly vulnerable groups, so they can access productive resources, increase their income, and participate in decision-making that affects their lives (Graha, 2009). In the context of this study, the concept of community development is used to assess the extent to which communities perceive the impacts of empowerment resulting from the implementation of Forest Programme IV, whether in the form of enhanced economic capacity, changes in community business activities, or community involvement in environmental management. Thus, this study examines the program's implementation not only from the institutional and operational perspectives but also from how the community, as the target group, interprets, experiences, and responds to the empowerment initiatives carried out through Forest Programme IV.

## 3. Research Method

This study employs a qualitative case study design to understand the implementation of the Indonesia–Germany cooperation program through the *Forest Programme IV* in Mamasa District and to analyse the various challenges that arose during its execution. The case study approach was chosen because the research focuses on the program's implementation within a specific

social context, involving various actors, institutional relations, and local community dynamics (Creswell & Poth, 2017; Gerring, 2006; Wolff, 2019; Yin, 2009).



**Figure 1.** Administrative Map of Mamasa Regency and Research Area Location  
Source: Mamasa Regency Government

The research was conducted from April to September 2025, with field data collection from May 16–28, 2025, in Mamasa District, Mamasa Regency, West Sulawesi Province. The research focused on villages participating in Forest Program IV located within the buffer zone of Gandang Dewata National Park, specifically Bubun Batu Village, Taupe Village, Mambulilling Village, Tondok Bakaru Village, Rambusaratu Village, and Lambanan Village. Locations were selected purposively based on the involvement of these villages in implementing community empowerment programs managed by the South Sulawesi Natural Resources Conservation Agency (BBKSDA Sul-Sel).

Data collection techniques included in-depth interviews, field observations, and document analysis. Semi-structured interviews were conducted to gain a deeper understanding of stakeholders' experiences, perceptions, forms of participation, and responses to the implementation of Forest Program IV. Field observations were conducted to observe community empowerment activities directly, forest farmer group activities, and social interactions that emerged during program implementation. Meanwhile, document analysis was conducted by examining program documents, institutional reports, government regulations, scientific articles, journals, and other relevant sources related to Forest Program IV and community-based forest area management.

Informants were selected using purposive sampling, specifically by choosing those deemed to possess knowledge, experience, and direct involvement in the program's implementation. This study involved 30 informants, comprising 4 individuals from the South Sulawesi Natural

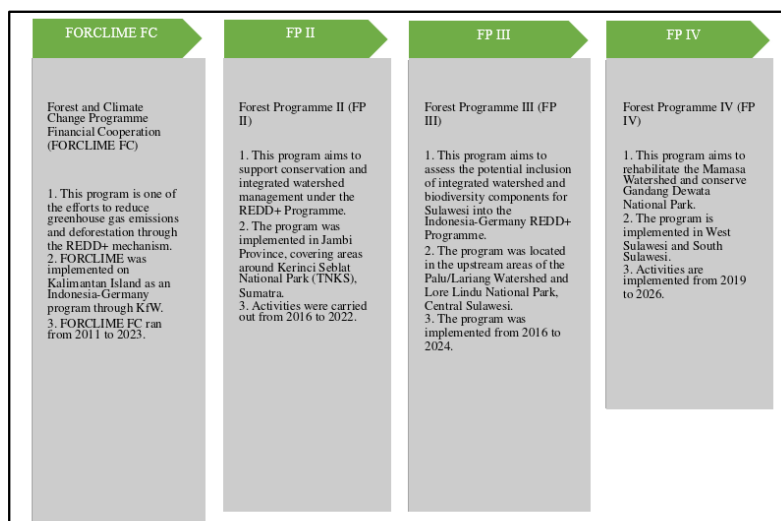
Resources Conservation Agency (BBKSDA), 1 subdistrict government official, 5 village government officials, 18 members of beneficiary community groups, and 2 academics involved in mentoring or research related to Forest Program IV. The data used in this research include both primary and secondary sources. Primary data were collected through interviews and field observations, while secondary data were obtained through literature reviews and documentation relevant to the research focus.

Data analysis was conducted using qualitative analysis techniques based on the interactive model, comprising data reduction, data display, and conclusion drawing. In the data reduction stage, the researcher selected, categorised, and simplified data from interviews and observations (Matthew B. Miles et al., 2014). Next, the data were presented in a descriptive narrative form to facilitate interpretation and the drawing of conclusions. The analysis process was also supported by NVivo, which assisted with coding, theme grouping, and mapping relationships among actors and the dynamics of program implementation at each research site (AlYahmady & Al Abri, 2013). The results of the data mapping were then triangulated to provide a comprehensive picture of the implementation of Forest Program IV as an international cooperation initiative based on community empowerment and sustainable forest area management.

## 4. Results and Discussions

### 4.1. IV Forest Programme IV as an International Cooperation Programme

*Forest Programme IV*, examined in this study, is a program similar to *Forest Programme II* and *Forest Programme III*, which were previously implemented. These three programs constitute the implementation of the Forests and Climate Change Programme (FORCLIME) (Saputra & Fachri, 2017, pp. 2010–2014). *Forest Programme IV* was implemented in various regions with differing program durations. Another notable aspect of this program is the involvement of multiple stakeholders. *Forest Programme IV* not only involves state actors, specifically the governments of Germany and Indonesia, but also non-state actors who play a role in achieving the programme's objectives.



**Figure 2.** Development of the *Forest Programme*

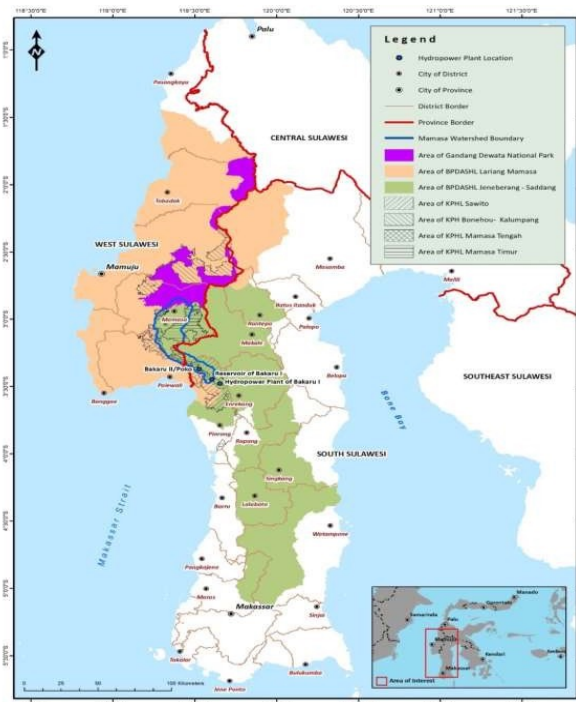
Source: Compiled from various sources

A cooperation agreement between Germany and Indonesia regarding the implementation of Forest Program IV was signed on April 23, 2019. The program will run for seven years, from 2019 to 2026. Forest Program IV focuses on two areas in Sulawesi: The Mamasa Watershed and

Gandang Dewata National Park, which spans West Sulawesi and South Sulawesi. The objective is to reduce erosion and excessive sedimentation in the Mamasa Sub-Watershed, as these issues disrupt operations at the Bakaru Hydropower Plant (PLTA) (KfW Entwicklungsbank, 2024; National Programme Management Unit Direktorat Rehabilitasi Hutan, 2026). The Bakaru PLTA plays a crucial role in meeting energy needs in the South Sulawesi and West Sulawesi regions. Meanwhile, 70% of the water used to power the Bakaru PLTA comes from the Mamasa Watershed (Kementerian Pekerjaan Umum dan Perumahan Rakyat, 2015). PLTA is generally categorised as an environmentally friendly renewable energy source because it uses water flow without producing greenhouse gas emissions during operation (Hariyanto, 2026).

Erosion and sedimentation in the Mamasa Sub-Watershed are caused by unsustainable agricultural practices, road construction and widening, and other land uses, both in state forests and on land managed by local governments (KfW Entwicklungsbank, 2024). Therefore, the Forest Programme IV was designed to manage forest and land areas sustainably by improving land-use planning and regulations, rehabilitating land and forests, conserving biodiversity, and enhancing community livelihoods (KfW Entwicklungsbank, 2024).

In the upper reaches of the Mamasa Sub-Watershed lies Gandang Dewata National Park, spanning 6,219.26 hectares, whose landscape encompasses five sub-watersheds: Mamasa, Karama, Kaluku, Mapili, and Saddang. This area is of high importance for biodiversity and cultural aspects; therefore, in addition to reducing sedimentation, the primary focus of Forest Programme IV is also on the development and management of Gandang Dewata National Park (TNGD).



**Figure 3.** Map of the Forest Programme IV Project Location

Source: Implementation Guidelines for the FOREST PROGRAMME IV

Forest Programme IV is a concrete implementation of the REDD+ scheme, a global effort to reduce deforestation rates caused by forest degradation, which has long been considered a contributor to climate change (Sainstekno, 2024). Based on this, Forest Programme IV focuses on the development and conservation of forest areas in Mamasa through efforts to reduce

deforestation, particularly in areas that play a vital role in the lives of surrounding communities, such as Gandang Dewata National Park. Thus, the primary objective of Forest Programme IV is to implement strategies to conserve and restore forests to reduce emissions driving climate change, while simultaneously improving the well-being of rural communities, particularly those living near forest areas (KfW Entwicklungsbank, 2024).

Forest Programme IV involves funding of 23.5 million euros from the German Federal Ministry for Economic Cooperation and Development through the development finance institution KfW. Some of the expected outcomes of this cooperation include strengthening collaboration among various stakeholders to improve the management of the Mamasa Watershed; enhancing forest management in selected forest management units within the project area to support watershed management; empowering communities in selected villages to support watershed management; and developing and managing Gandang Dewata National Park (KfW Entwicklungsbank, 2024).

Additionally, Forest Programme IV involves several entities under the Ministry of Environment and Forestry, which subsequently serve as the program's implementing units, or Project Implementation Units (PIUs). Some of these units include: the Jeneberang Saddang Watershed Management Office (BPDAS Jensad) in Makassar; the Karama Watershed Management Office (BPDAS Karama) in Mamuju; and the South Sulawesi Natural Resources Conservation Agency (BBKSDA Sul-Sel) in Makassar. The development and management of Gandang Dewata National Park, the focus of this study, are under the purview of BBKSDA Sul-Sel. Activities carried out include the construction of management facilities and infrastructure, institutional and human resource strengthening, patrols, boundary demarcation, ecosystem restoration, and forest monitoring.

Another aspect of Forest Programme IV is its support for community-led initiatives carried out by local communities, even if these activities do not take place within the boundaries of Gandang Dewata National Park. Residents can engage in these activities within their own villages, yet their initiatives are still supported by the implementing agency of Forest Programme IV to bolster local economies. The villages in the National Park area, empowered by the South Sulawesi BBKSDA under the Forest Programme IV in Mamasa District, are Bubun Batu, Taupe, Mambulilling, Tondok Bakar, Rambusaratu, and Lambanan. These villages serve as buffer zones for the National Park because they are located near it.

#### **4.2. IV Actors Involved in Forest Programme IV**

This study found that *Forest Programme IV* involves not only international actors but also national actors, ranging from the central government in Indonesia to local actors comprising government agencies and related organisations, as well as non-governmental organisations in Sulawesi, particularly in Mamasa.

##### **4.2.1. International Actors**

The Bundesministerium für wirtschaftliche Zusammenarbeit (BMZ) is the German Federal Ministry for Economic Cooperation and Development. One of Germany's development policies is to improve livelihoods in developing countries. Consequently, the BMZ collaborates with various stakeholders to achieve this objective, including organisations with interests in cooperation (The Donor Committee for Enterprise Development, 2026). Regarding *Forest Programme IV*, the BMZ serves as the provider or source of foreign grants to support forest management efforts in Sulawesi. Additionally, as part of the implementation mechanism for these grant funds, the programme is managed through the Kreditanstalt für Wiederaufbau (KfW).

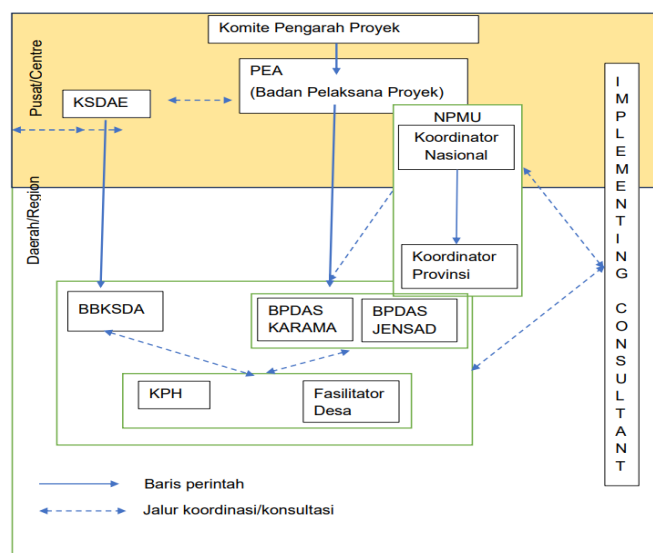
KfW is a German government-owned development bank. For Forest Programme IV, KfW provides a grant totalling EUR 23.5 million (KfW Entwicklungsbank, 2022). KfW is considered an

international actor due to its significant role, particularly as the institution that channels grant funds to the program implementers of Forest Programme IV. KfW also plays a role in organising and deciding on various activities in each program implementation, establishing relevant regulations and guidelines for financial management, revising and updating the PIM (Project Implementation Manual), and addressing other administrative matters (Germany Trade & Invest, 2022). It is also directly involved in key decision-making processes regarding the planning, implementation, and management of the program alongside the PEA, NPMU, and PIU (Teguh, 2021).

In addition to KfW, GFA Consulting Group, a German consulting firm, also plays a role in Forest Programme IV, serving as an Implementing Consultant (IC). This role is central to the program's implementation, as the firm is tasked with providing advice and support to the Project Executive Agency (PEA), the Program Implementation Unit (PIU), and the Forest Management Units (KPH) across all program implementation activities (KataFaktaID, 2021).

#### 4.2.2. National Actors

Unlike international actors, who primarily play a role in program funding and regulation, national actors in *Forest Programme IV* are more involved in the technical aspects of program implementation by providing policy guidance, planning, coordinating, implementing, monitoring, evaluating, and managing administrative and financial matters to ensure the successful implementation of *Forest Programme IV* in Mamasa. One of the national actors in question is the Ministry of Environment and Forestry (KLHK). It bears overall responsibility for the implementation activities of *Forest Programme IV*. The KLHK also serves as the overarching body for parties directly involved in the program's implementation activities. The following is an overview of the key parties involved in implementing *Forest Programme IV*.



**Figure 4.** Forest Programme IV Structure

Source: Forest Programme IV Project Implementation Manual, 2024 edition

Forest Programme IV is managed by a steering committee. This committee consists of senior officials from KLHK, the Ministry of Finance, Bappenas, PT PLN Nusantara Power, and the local governments of South Sulawesi and West Sulawesi. The committee's responsibilities include formulating policies, overseeing operations, providing guidance, and making program

recommendations. The primary program implementer (PEA) is the Directorate of Forest Rehabilitation, which is tasked with planning and executing the program, appointing national and provincial coordinators, and engaging experts.

Additionally, an Implementation Consultant (IC) from GFA Consulting Group is collaborating with Kemitraan (a non-governmental organisation focused on climate resilience). The IC is responsible for ensuring program quality, monitoring transparency, and managing finances. There is also the National Program Management Unit (NPMU), which serves as the coordination and management channel for the program at the national and provincial levels. The NPMU assists with on-the-ground implementation, ensuring the smooth administration and financial management of foreign grants. The Ministry of Finance and Bappenas also play key roles, particularly in signing financial agreements and national development planning. Specifically for the management of Gandang Dewata National Park, the Directorate of Conservation Area Management also serves as a program steering body.

#### **4.2.3. Local Actors**

Local actors play a role in implementing the Forest Program IV. One such local actor is the Programme Implementation Unit (PIU). It is responsible for coordinating the implementation of activities. In Forest Programme IV, the PIU includes the Jeneberang Saddang River Basin Management Agency (BPDAS Jeneberang Saddang) in Makassar, South Sulawesi; the Karama River Basin Management Agency (BPDAS Karama) in Mamuju, West Sulawesi; and the South Sulawesi Natural Resources Conservation Agency (BBKSDA Sul-Sel) in Makassar. However, this study specifically highlights the role of BBKSDA Sul-Sel, particularly in developing and managing the TNGD.

Another key actor at the local level is the Forest Management Unit (KPH). They are tasked with ensuring that forest management efforts are carried out in collaboration with communities or community groups and support activities that promote forest conservation. In this context, the KPH is responsible for coordinating and facilitating communities in the sustainable management of forests (Kementerian Kehutanan, 2025). In the Forest Program IV activities, several KPHs participated, including the East Mamasa KPH, Central Mamasa KPH, Sawitto KPH, and Bonehau Kalumpang KPH (Teguh, 2021). These local actors are responsible for ensuring that forest management in the Forest Program IV implementation area remains well-maintained. Additionally, these KPHs play a role in protecting forest areas and watersheds and ensuring that forest rehabilitation management proceeds effectively.

Another local actor is the Village Facilitator. The Forest Program IV implementation sites have Village Facilitators who support the implementation of activities. These Village Facilitators operate under the coordination of Regional Facilitators, whose scope of work is regional in scale. Therefore, Regional Facilitators serve as the coordinating body for activity implementation within specific work areas. Additionally, technical staff support the implementation of activities at the PEA, PIU, and KPH levels.

Local actors whose roles are no less important include local governments and local community groups. In Forest Programme IV, the government is directly involved in these activities, particularly the Provincial Forestry Offices of West Sulawesi and South Sulawesi, district governments, sub-district governments, and village governments. On the other hand, community groups also serve as key actors in the sustainability of this program, including both program beneficiaries and indigenous communities that participated in these activities.

Finally, Forest Programme IV also involves academic institutions and non-governmental organisations (NGOs), marked by research collaborations and various critical analyses regarding the steps that need to be taken. Collaboration with these two groups is considered crucial,

particularly because they can provide academic research while also serving as partners in understanding community social dynamics. The institutions and non-governmental organisations (NGOs) involved include the University of West Sulawesi and Hasanuddin University as academic partners. The NGOs include FFI (Fauna & Flora International), TLKM (Community Forestry Service Team), Klik Hijau, and others.

*“There are three functional types of forests: protected forests, production forests, and conservation forests. Therefore, academics are needed to explain these aspects, and that is one of the roles of our involvement”* (Akademisi Fakultas Pertanian dan Kehutanan, Universitas Sulawesi Barat, personal communication, 2025).

#### 4.3. Implementation of Forest Programme IV in Mamasa Subdistrict

The implementation of *Forest Programme IV* in Mamasa Subdistrict, specifically in villages near the Gandang Dewata National Park area, is managed by the South Sulawesi Natural Resources Conservation Agency. The implementation of the program in villages near the Gandang Dewata National Park (TNGD) area, specifically in Mamasa District, is also part of efforts to develop the Bakarlu Hydropower Plant. The goal is to increase electricity generation by addressing water shortages in affected areas, including Mamasa District (Direktorat Rehabilitasi Hutan, 2022).

The implementation of activities in Mamasa Subdistrict involves collaboration among stakeholders, including the local community, the government, program implementation units, national and international actors, and other institutions. In the initial phase of program implementation in Mamasa Subdistrict, a mapping of village potentials is conducted to determine whether the proposed empowerment activities align with the needs of the communities in the target villages. This is crucial for the sustainable management of community-led initiatives that support the local economy. Following the village potential mapping, the management and service teams of *Forest Programme IV* coordinate with village governments to propose names for inclusion in groups eligible for assistance. Only a portion of the community becomes members or recipients of assistance, specifically those who join the groups known as Forest Farmers’ Groups (KTH). Community members who join these groups are considered representatives within a village and are empowered through the Indonesia-Germany cooperation program, which is expected to be sustainable in the future. Therefore, group members do not include family members from the same household. This ensures that community representation within a village or group comprises members from multiple families.

**Table 1. TNGD Buffer Forest Farmer Groups in Mamasa Subdistrict**

No	Name of Forest Farmers’ Group (KTH)	Village Name	Subdistrict
1	KTH Bubun Batu	Bubun Batu	Mamasa
2	KTH Batu Ma’illong	Taupe	Mamasa
3	KTH Mesa Penawa	Mambulilling	Mamasa
4	KTH Botani Gandang Dewata	Tondok Bakarlu	Mamasa
5	KTH Rambusaratu	Rambusaratu	Mamasa
6	KTH Pitu Ulunna Salu	Lambanan	Mamasa

Source: Compiled from various sources

After the KTHs were formed, they submitted proposals requesting assistance in line with their group's business plans. The proposals were submitted to the South Sulawesi BBKSDA for review and then forwarded to the responsible parties for activity approval. If approved, the funds were then disbursed to the relevant groups. Assistance disbursement through the South Sulawesi BBKSDA is conducted in two phases. The first phase provides 50 million, and the second phase provides 150 million. The funds are transferred directly to KTH's bank account without going through the village facilitator or the program fund management office. Each group member uses the funds to purchase the tools needed to carry out their business activities.

*“Previously, there were two budget disbursements: the first was 50 million, and the next was 150 million. The assistance is sent directly to the group's account.”* (Pelaksana Forest Programme IV, personal communication, 2025)

Village facilitators are responsible for monitoring the budget or assistance received by the KTH, as well as overseeing group purchases based on the results of group deliberations before the budget is disbursed. Additionally, village facilitators are tasked with monitoring the equipment, conducting inspections, and providing educational guidance to the beneficiary groups receiving the assistance. This guidance ensures that business activities carried out within a group run smoothly and have a positive impact on the local economy.

**Table 2. Assistance and Community Business Activities**

No	Forest Farmers' Group	Business	Equipment Assistance
1	KTH Bubun Batu	Vegetable Farming and Pig Farming	Pig feed grinder, 5 tractors, 1 turtle pond, 6 grass sensors, 50 spray tanks, and 50 packs of vegetable seeds
2	KTH Batu Ma'illong	Honey business, Men and women's skills,	65 bee colonies, 33 three-tiered breeding hives, 2 gratters
2	KTH Batu Ma'illong	Honey business, Men and women's skills,	Beads 150 packs, Palawa, 3 rolls of bag lining fabric, 160 boxes of sewing thread, 100 packs of rope, weaving tools, and other equipment (Women's Rope Business)
2	KTH Batu Ma'illong	Honey business, Men and women's skills,	1 drill, 2 grinders, 1 betel nut drill, 3 Frovil tools, and other tools and equipment (Men's Handicraft Business)
3	KTH Mesa Penawa	Coffee and Rice Business	Coffee processing equipment, grinder, roasting machine, dry and wet hullers, warehouse construction, agricultural equipment including a spray tank with a weed cutter, and 2 display cases.
4	KTH Botani Gandang Dewata	Orchid and Tourism Business	Orchid business equipment, including flower pots, construction of a forest farmers' group building, and other tools.
5	KTH Rambusaratu	Coffee and Rice Business	Assistance with coffee seedling production and agricultural

			equipment, including tractors, grass sensors, and display cases for coffee sales. As well as other equipment used to support the group's development in coffee and agricultural businesses
6	KTH Pitu Ulunna Salu	Honey and Tree Planting Business	Suction equipment, grass sensors, mini sensors, electric hoists, somel and boor, honey sales equipment in the form of bottles, and seedling supplies. Along with other equipment used for honey production and other businesses.

Source: Compiled from various sources

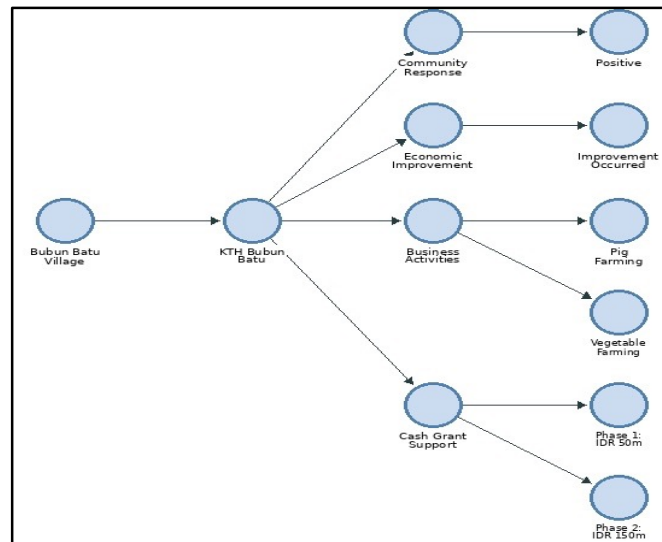
Regarding the monitoring of Forest Program IV activities in Mamasa District, these efforts are carried out by various parties at different intervals. Daily monitoring (Monday–Friday) is conducted by FASDES, while the South Sulawesi Natural Resources Conservation Agency (BBKSDA Sul-Sel) conducts monitoring every three or six months. Additionally, the Program Implementation Consultant (IC), in collaboration with KfW, conducts annual monitoring to ensure that the assistance and equipment received align with community needs. Monitoring is also carried out by an audit team from the State Audit Agency (A. Karaeng, personal communication, 2025).

Several stakeholders assess that Forest Programme IV has been quite successful, as it has reduced community activities within the forest, including hunting. Furthermore, the community has experienced economic improvement following the implementation of Forest Programme IV, particularly through KTH activities. For instance, a KTH member in Taupe Village has been able to fund his child's education through college using proceeds from rope craftwork. This illustrates that the programme not only impacts forest conservation but also provides economic and social benefits to the community.

*"One of the achievements we consider quite positive is the reduction in community involvement in the forest and the reduction in hunting in the forest. And from this project, after we conducted observations in the community, we found that there has been a real economic improvement since the program was introduced through group activities. For example, one of the KTH members in Taupe village is able to support her children through rope weaving, which helps them pay for their schooling, and some have even graduated."* (A. Karaeng, personal communication, 2025).

However, community responses to this program show a diverse trend. Many people view the program positively, but there are also quite a few who have given negative feedback regarding Forest Programme IV. To provide a comprehensive explanation, we mapped out the reality of Forest Programme IV implementation in several beneficiary villages.

### 4.3.1. Bubun Batu Village



**Figure 5.** Project Map in NVivo Program in Bubun Batu Village (KTH Bubun Batu)

Source: Compiled independently using the NVivo application

The program implementation in Bubun Batu Village demonstrates the village government's role as a coordination channel between the community and program implementers, as well as its facilitation of the formation of the Forest Farmers' Group (KTH Bubun Batu) as the recipient of Forest Programme IV assistance. The Village Government is also responsible for issuing a Decision Letter (SK) once the KTH has been established and designated as the assistance recipient. This assistance is provided in the form of cash grants, disbursed in stages as previously explained. The provision of assistance aims to support the community's productive economic activities, such as the development of vegetable garden businesses and pig farming, as part of efforts to improve the community's economy and strengthen an economy based on local potential. Additionally, the participation of KTH Bubun Batu members shows a varied trend, with residents living within the village who are actively involved and benefiting from this program. Therefore, to achieve optimal results, the community must actively participate in every activity. This is closely tied to the community development approach, which emphasises the community as the primary actor in all activities, thereby ensuring the program's sustainability.

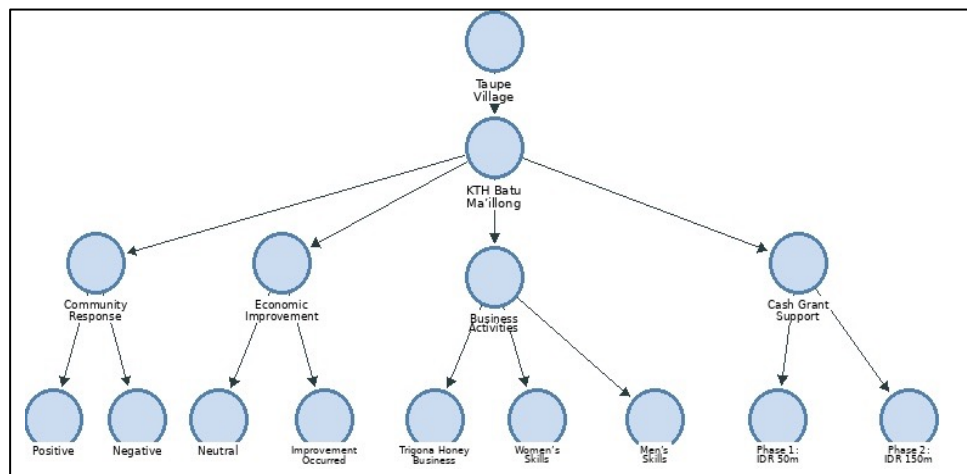
*"The involvement of our group members in this program isn't 100% active, but it varies greatly because we usually have different commitments—some are farmers, and others even leave the area to earn a living." (Alber, personal communication, 2025).*

In Bubun Batu Village, we found that assistance provided under the Forest Programme IV scheme has positively impacted the livelihoods of many residents. Indeed, some residents have built their own homes using proceeds from their businesses. Many community members feel greatly assisted by the business activity programs implemented. Interestingly, the community in this village is strongly committed to the program's sustainability. Some community members are committed to continuing the program independently after the assistance program ends. This aligns with the community development approach emphasised by those who state that program sustainability is achieved when stakeholders, including the community, provide support. Therefore, the implementation of the business activities program for economic improvement,

specifically in Bubun Batu Village (KTH Bubun Batu), has a strong foundation for future sustainability, enabling it to operate independently.

*“With this assistance, there has been economic improvement; I built a house using the proceeds from my pig farming business. The support provided specifically for pig feed has been very helpful, I think, because it allows me to save time on my work, sir”* (Edwar, personal communication, 2025).

#### 4.3.2. Taupe Village



**Figure 6.** NVivo Project Map of the FP IV Program in Taupe Village (KTH Batu Ma'illong)

Source: Processed independently using the NVivo application

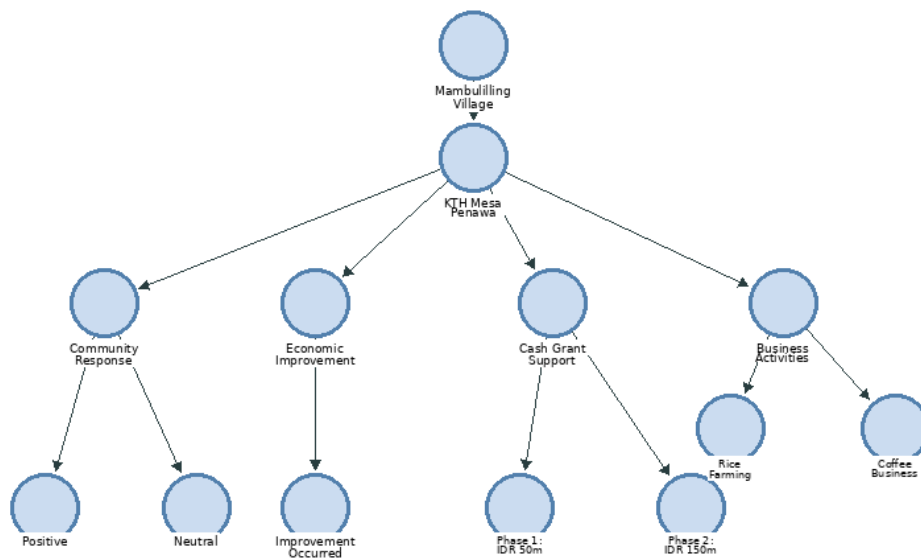
The figure above was analysed using NVivo, a qualitative data analysis software, based on the author's interview research. The results indicate that the implementation of the *Forest Programme IV* in Taupe Village involves the KTH Batu Ma'illong. This group received assistance with business development activities, including Trigona honey production and the development of men's and women's vocational skills. These business activities have contributed to improving the local economy in Taupe Village.

In Taupe Village, the implementation of Forest Programme IV, particularly the initiatives led by the KTH Batu Ma'illong, received mixed reactions from the community. Furthermore, not all residents in the village actively participated in the business activities. This was partly because only a portion of the community joined the KTH, and even among those who did, not all possessed relevant skills. Consequently, those lacking the necessary knowledge or skills tended to adopt a passive stance. On the other hand, some community members report an economic improvement resulting from the program's implementation. However, we found that those who have experienced the economic impact of this program already possess the necessary skills and are actively engaged in honey-related business activities to ensure the program's sustainability.

*“The community response here is mixed; there are pros and cons among the members of the Batu Ma'illong KTH, and it's only those who possess the skills and are active who are involved. But those who lack skills and don't know how to work just remain passive”* (D. Demmarua, personal communication, 2025).

However, we observe that there remains potential for the program's sustainability in Taupe Village, as opportunities to strengthen the skills of those who already possess them remain significant enough to develop, thereby enhancing the community's economy. Second, in the honey business sector, there is significant development potential that can benefit the community. Thus, a community development approach emphasises that, to achieve program success, strong support from various stakeholders is essential, particularly through comprehensive training to build capacity and drive community economic growth.

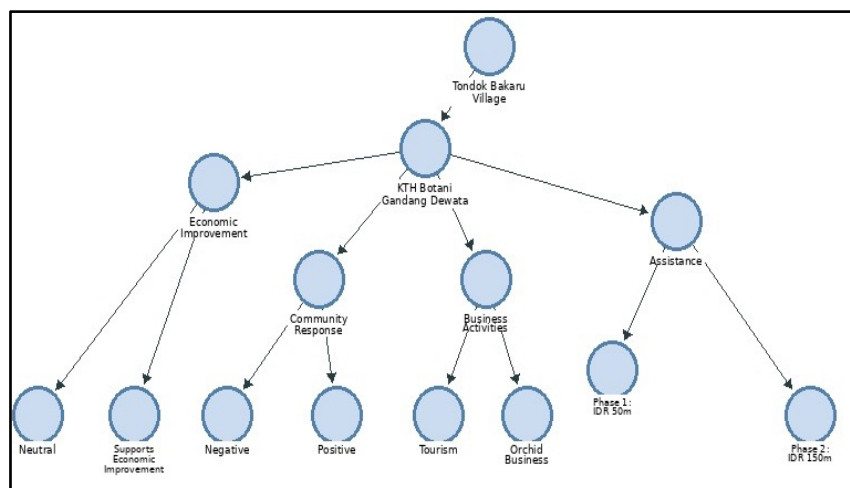
#### 4.3.3. Mambulilling Village



**Figure 7.** NVivo Project Map of the FP IV Program in Mambulilling Village (KTH Mesa Penawa)  
Source: Compiled independently using the NVivo application

In the village of Mambulilling, the Community Forest Management Group (KTH) that received assistance under the Forest Program IV scheme is KTH Mesa Penawa. Like other KTHs, they also received cash assistance in two instalments. This assistance was used to conduct business activities that supported the community's economy. In the initial phase, the business managed by the community members of KTH Mesa Penawa was a coffee business. However, as the program progressed, the business did not operate at full capacity due to insufficient community engagement. Many community members switched to rice farming because it was considered to better support the local economy in the village (Nopri, personal communication, 2025).

#### 4.3.4. Tondok Bakaru Village



**Figure 8.** NVivo Project Map of the FP IV Program in Tondok Bakaru Village (KTH Botani Gandang Dewata)

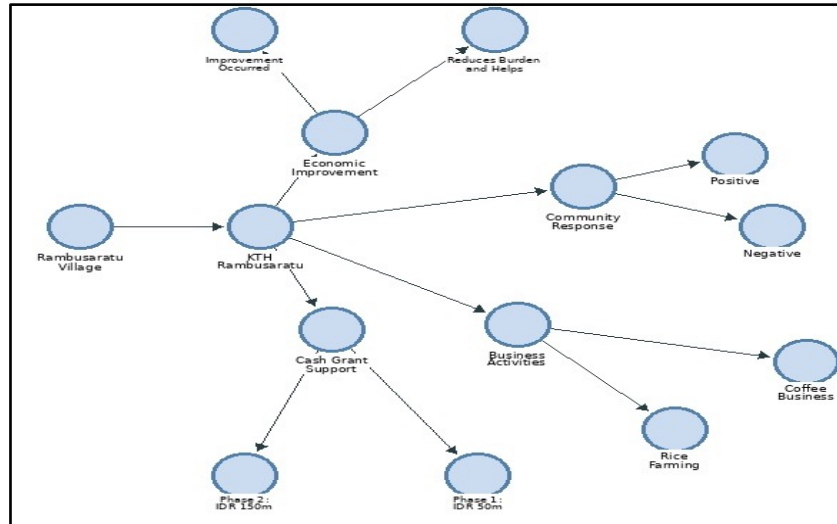
Source: Compiled independently using the NVivo application

Tondok Bakaru Village is one of the buffer zone villages of Gandang Dewata National Park. This makes it a key location for activities under Forest Programme IV, managed by the South Sulawesi Natural Resources Conservation Agency (BBKSDA). In Tondok Bakaru Village, there is the KTH Botani Gandang Dewata, which has become a key actor in the implementation of Forest Programme IV. With support from Germany under the Forest Programme IV scheme, they have developed an orchid business in Tondok Bakaru Village. The KTH Botani Gandang Dewata program also involves the village government as a partner of the South Sulawesi BBKSDA and as a facilitator within the community for the South Sulawesi BBKSDA.

*“Our group was formed because of shared interests among the members; many in this group grow orchids and are involved in tourism. The KTH Botani Gandang Dewata group was established to support the members and the group’s business ventures; it had already been formed before the official group was established, so Botani Gandang Dewata is associated with plants and tourism. Group members’ participation is active but not 100% active, as each member has different commitments” (Andarias, personal communication, 2025).*

This study found that community participation in KTH activities is active, though not entirely so. Another interesting finding is that some community members stated that Forest Programme IV actually restricts local communities’ activities around the forest area (M. D. Dessaratu, personal communication, 2025). Meanwhile, some community members responded positively due to the economic support provided by Forest Programme IV. To address these issues, the village government, together with stakeholders, conducts training sessions for the community.

### 4.3.5. Rambusaratu Village



**Figure 9.** NVivo Project Map for *Forest Programme IV* in Rambusaratu Village (KTH Rambusaratu)  
Source: Processed independently using the NVivo application

Based on the NVivo analysis, KTH Rambusaratu emerged as the primary actor in implementing the FP IV Program in Rambusaratu Village. The program received financial assistance disbursed in two phases: Rp50 million in the first and Rp150 million in the second. These funds were utilised to develop various business activities, particularly coffee and rice farming. The program's implementation resulted in improved community economic conditions and helped alleviate their needs. Nevertheless, community responses to the program ranged from positive to negative. In its implementation, the village government was also involved and served as a facilitator, assisting the program implementer (BBKSDA Sul-Sel) in ensuring the success of Forest Program IV activities. They also facilitated all community programs, thereby enabling group members or KTHs to receive assistance.

*“We received assistance in the form of coffee farming equipment and two-phase cash grants: the first phase was 50 million rupiah, and the second phase was 150 million rupiah. We used this assistance for group development, and the 50 million rupiah from the first phase was used to propagate coffee seedlings. Then, in the second phase, we used the funds for group capacity building, so we purchased a tractor, distributed grass sensors to each hamlet for management, and bought display cases for coffee sales” (J. Madika, personal communication, 2025).*

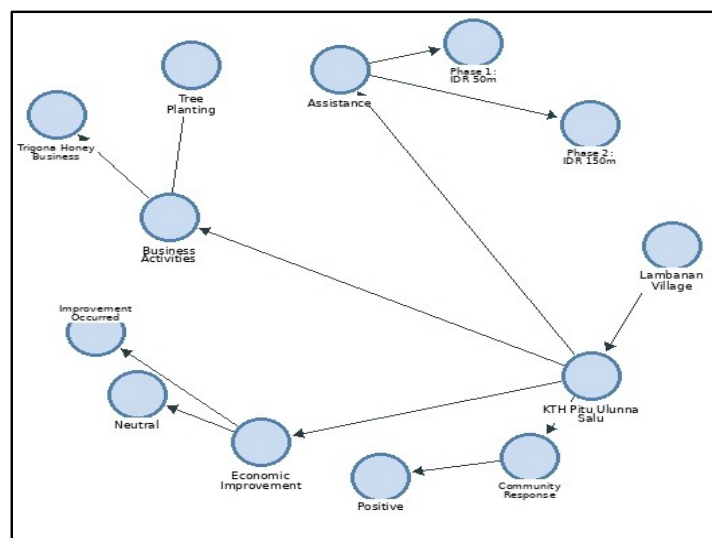
The business activities carried out by KTH Rambusaratu include coffee farming and rice farming. However, over time, coffee farming activities declined due to climate change, reducing the coffee business's output.

*“So, at the start of this program, we proposed a coffee business, but as the activities progressed, we faced challenges that became factors affecting the success of the coffee business—namely, unpredictable weather. So, we consulted with the village facilitator to shift the focus to rice farming specifically” (J. Madika, personal communication, 2025).*

The community has warmly welcomed Forest Programme IV because the assistance they received has increased group members' harvest yields, as the agricultural tools provided have lightened the workload and shortened the time required for tasks. Furthermore, the tools they received are not only used by KTH members but are also available to all hamlet residents. Additionally, in supporting the implementation of activities, group members consistently demonstrate unity when carrying out business operations. Through a community development approach, community participation is evident in their responses and engagement during activities; thus, the unity fostered will ensure the program's sustainability.

#### 4.3.6. Lambanan Village

Lambanan Village is one of the villages receiving assistance from the Indonesia-Germany cooperation program through Forest Program IV, managed by the South Sulawesi BBKSDA. The implementation of this program aims to support the village community's economy, specifically the group members who receive assistance. In Lambanan Village, there is a beneficiary group from the program managed by the South Sulawesi BBKSDA named the KTH Pitu Ulunna Salu group. This group serves as the village's representative to receive the assistance. In addition to the group leader and members who are directly involved in supporting this program, the village government is also part of the coordination channel between the village community and the program managers, namely the village facilitators and the South Sulawesi BBKSDA.



**Figure 10.** NVivo Project Map for the FP IV Program in Lambanan Village (KTH Pitu Ulunna Salu)  
Source: Compiled independently using the NVivo application

KTH Pitu Ulunna Salu serves as the primary implementer of Forest Programme IV in Lambanan Village. KTH Pitu Ulunna Salu received program assistance disbursed in two phases, similar to other KTHs. This assistance was utilised to support various business activities, particularly trigona honey production and tree planting in Lambanan Village. The program's presence has improved the community's economy, as evidenced by informants' reports of increased income and a sense of well-being. On the other hand, some informants offered a neutral assessment of the program's economic impact. However, overall, the community responded positively to the program's implementation, as it is seen as capable of supporting economic activities and natural resource management in Lambanan Village.

*“The processing of Trigona honey and the boundary marking activities—which involve planting several types of trees beneficial to the community—aim to help residents distinguish between protected forest areas and other land use zones. The impact on the community is significant. Economically, it supports the villagers within the village” (Pemerintah Desa Lambanan, personal communication, 2025).*

Some community members believe that, since the program began, their income has remained modest because they are elderly and have limited ability to manage their businesses. In addition, community members have experienced economic improvement, particularly those who are diligent in running their businesses, especially in the honey sector, which is seen as a potential driver of economic growth. However, while the community group was highly enthusiastic at the outset, participation in group activities has begun to decline over time.

**4.4. Challenges in implementing Forest Programme IV in Mamasa Subdistrict**

CHALLENGES		
Limited Market Access	Low Community Participation	Programme-Needs Mismatch
Climate Change	Limited Community Understanding of Programme Benefits	

**Figure 11.** Hierarchy Chart in NVivo Challenges in Implementing FP IV in Mamasa Subdistrict  
 Source: Processed independently using the NVivo application

One of the challenges faced by the KTH during the implementation of Forest Programme IV was limited access to markets. Most community members complained about this issue, as they need markets to sell their business products. Market availability is crucial for maximising business activities. Therefore, a key consideration is ensuring market availability that the community can utilise as a distribution channel for their business products. Thus, when the market is fully utilised, the community will also be motivated to pursue businesses that support their economy.

*“Markets need to be maximised because even if there are many products, if no one buys them, it’s all for nothing. I produced two jerrycans of honey in December, but there were no buyers, so the honey just went to waste” (KTH penerima bantuan di Kecamatan Mamasa, personal communication, 2025).*

The second challenge is the community’s limited understanding of the program’s benefits. During the implementation of Forest Programme IV in Mamasa Subdistrict, there were differing views and interpretations among the community regarding the program’s execution. Some community members believe that the presence of Forest Program IV will undermine their livelihoods because they are restricted from carrying out activities in forest areas. Consequently,

this poses a challenge for stakeholders to educate the community that forest activities must be reduced.

*“There are always people who feel that the land where my garden used to be belongs to their ancestors, so it is sometimes difficult to explain to them that we are not allowed to carry out activities within the forest conservation area.”*(Pemerintah Kecamatan Mamasa, personal communication, 2025).

Next is the low level of community participation in programs implemented by the KTH. In this regard, there remains a segment of the community that is less active in managing the initiatives carried out by the KTH. This is influenced by the fact that many group members or community members have other commitments, making it difficult for them to spare time to participate in KTH activities. This is because many residents in the program’s target villages work as farmers or employees or seek employment outside the region. Consequently, this has become a barrier to the implementation of programs on the ground.

Another challenge is the mismatch between program activities and the local community's needs. Although a village potential assessment was conducted at the start of implementation to identify community needs, some community members feel that the programs implemented by BBKSDA South Sulawesi remain irrelevant to the village's actual needs. This mismatch has led to misunderstandings between some village heads and BBKSDA South Sulawesi.

*“It would be best for the South Sulawesi BBKSDA to go directly to the field to see what the community’s actual needs are, because it is possible that they view the previously provided programs as already functioning as intended, whereas the community itself actually hopes to receive assistance that is truly visible to them”* (Pemerintah Desa di Kecamatan Mamasa, personal communication, 2025).

The final challenge is climate change. This was one of the factors hindering the achievement of initial planning activities, as unpredictable weather conditions led to the failure of some community business initiatives, particularly in the coffee sector.

*“So, at the start of this program, we proposed a coffee business, but as the activities progressed, we encountered obstacles that became factors affecting the success of this coffee business—namely, unpredictable weather. Therefore, we consulted with the village facilitator to shift the focus to agricultural activities, specifically rice cultivation”* (pengurus kelompok tani hutan di Kecamatan Mamasa, personal communication, 2025).

## 5. Conclusion

Forest Programme IV is an implementation of the REDD+ scheme, a global effort to reduce emissions from deforestation and forest degradation, adapted to the specific context of the Mamasa Watershed and Gandang Dewata National Park. The process of internalising the global REDD+ agenda at the local level is reflected in how REDD+ is transformed into technical interventions aligned with the local community’s socio-ecological conditions. This means that international relations do not end with agreements alone but are implemented through on-the-ground technical interventions. In this internalisation process, the involvement of non-state actors is a key factor, as seen in Forest Programme IV.

Forest Programme IV operates through a complex multi-stakeholder engagement process that involves international, national, and local actors. The program is designed to reduce

deforestation and sedimentation in the Mamasa Watershed while improving community well-being through economic empowerment based on local potential, such as honey production, coffee, orchids, pig farming, and handicrafts. Program implementation demonstrates that a community development approach that positions communities as the primary agents has yielded positive economic impacts for some residents. This success indicates that global agendas can be productively internalised when adapted to local livelihoods.

However, the implementation of Forest Programme IV in Mamasa District also faces various challenges, including limited market access, low participation by KTH members, a mismatch between the programme and the community's actual needs, and climate change. On the other hand, some community members still react negatively to the program's presence because they feel restricted in accessing forest areas that have long been their source of livelihood. This situation highlights a gap between global conservation goals and local communities' perceptions and interests. In this context, while formal bilateral cooperation approaches have successfully channelled aid and technical assistance, the program's success at the local level depends heavily on the program's alignment with the community's socio-economic context and the capacity of stakeholders.

Forest Programme IV has made a tangible contribution to forest conservation and sediment reduction in the Mamasa Watershed, yet achievements in improving community economic conditions remain partial and uneven across all recipient villages. The program's future sustainability is largely determined by the community's commitment to continuing efforts independently after the program ends, as well as the government's and facilitators' ability to facilitate market access, provide sustainable skills training, and bridge the gap in understanding between the community and forest conservation objectives. Overall, this study illustrates that the internalisation of the global REDD+ agenda at the local level is not a linear process but an ongoing negotiation among international interests, national policies, and local socio-economic realities. This study recommends strengthening village facilitators' roles in technical and marketing support, improving two-way communication between the BBKSDA and village communities, and conducting periodic evaluations of the program's alignment with evolving local needs. For future researchers, this study opens the door to further examining the role of non-state actors, such as NGOs and academics, in supporting the success of community-empowerment-based forest management cooperation programs.

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