



## **Analysis of policy implementation for peatland ecosystem degradation control on community land in the Ex-PLG Area of Central Kalimantan Province**

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**Abstract.** *In order to assist the community to have countermeasures actions for peatland ecosystem degradation control in their area, the Government has implemented the Peatland Self-supporting Villages (Desa Mandiri Peduli Gambut) program since 2016 in several provinces, including Central Kalimantan Province. This study aims to analyze the current policy for controlling degradation to the peatland ecosystem if it applied to community land, and analyze the implementation of the policy for controlling degradation to the peatland ecosystem through the implementation of the Peatland Self-supporting Villages in the ex PLG area of Central Kalimantan Province by assessing the sustainability and implementation strategy of the program. The result found that the peatland ecosystem destruction control policy that has been applied to the licensed land can be applied to community land as long as they have sufficient capacity. The implementation of the program is included in the "moderate sustainability" category with an index value of 65.76, while the main strategy for proper implementation is by conducting exposure meetings of the Community Work Plan (Rencana Kerja Masyarakat, RKM) document to the relevant agencies and collaborating through programs that are in accordance with their duties.*

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## **INTRODUCTION**

Indonesia's peatlands are the largest tropical peatlands in the world, covering about 50 percent of the world's total tropical peatlands (MoEF, 2012). The condition of peatland ecosystems in Indonesia generally has been degraded mainly due to human activities. Referring to the Decree of the Director-General of Pollution and Environmental Degradation Control Number: SK.40/PPKL/PKG/PKL.0/3/2018 of 2018 Concerning the Determination of the Status of Degradation to Peatland Ecosystems is mentioned that around 14.2 million Ha from the 19 million Ha of degraded peatland is unlicensed a land that does not have a business permit or commonly known as community land. The policy aimed to control the degradation peatland ecosystem on community land was published through Government Regulation Number 57 of 2016 concerning Amendments to Government Regulation Number 71 of 2014 concerning Protection and Management of Peatland

Ecosystems article 32 A paragraph (3) provides explicit direction that the restoration of ecosystem functions of the peatland and forest owned by the community or indigenous peoples is community or indigenous people responsibility.

However, these policies have not been effectively implemented, therefore to assist the community in efforts to overcome the degradation to the peatland ecosystem on community land, the formation of the Peatland Self-Supporting Villages program is implemented by the Government to provide advocacy and grants assistance to the community -in carrying out restoration activities on the degradation peatland ecosystem. The restoration is conducted by improving the hydrological system and managing peatlands appropriately to prevent degradation to the peatland ecosystem. Since 2016, the programs have been executed by the Ministry of Environment and Forestry (MoEF) in several provinces, including Central Kalimantan Province. Central Kalimantan has a peatland area of about 4.6 million Ha with more than 4.2 Ha is community land which are declared as degraded to the moderate, heavy, and very heavy degradation. The main degradation was caused by the implementation of One Million Hectare Peatland Development (Pengembangan Lahan Gambut, PLG) project in Central Kalimantan Province in 1995, which was aimed for self-sufficiency food security.

Suriadikarta (2009) reported that the PLG project was considered a failure and left various problems and negative impacts so that it reaped criticism and various polemics, especially in the context of climate change and environmental damage. The failure of PLG, among others, was caused by the lack of attention to technical, environmental, social, economic, and cultural aspects starting from the planning process to implementation so that the peat ecosystem was damaged and the micro water system network was no longer functioning properly. This study intends to analyze policies related to controlling degradation to the peatland ecosystem issued by the Government whether they can be implemented on community land, and to analyze the implementation of peatland degradation control policies on community land through the Peatland Self-supporting Villages program in the ex-PLG area of Central Kalimantan Province by assessing the sustainability of the program and analyzing the right strategy for its implementation.

## **METHOD**

### **Location and Time Research**

The research was conducted at 18 (eighteen) villages namely: Tanjung Sangalang, Penda Barania, Panamas, Lahei Mangkutup, Tumbang Muroi, Central Mantagai, Mantagai Hilir, Mantagai Hulu, Katimpun, Sei Ahas, Katunjung, Kalumpang, Mahajandau, Sungai Jaya, Babai, Tabatan, and Tampulang villages located in three regencies which are Pulang Pisau, Kapuas and South Barito regency, Central Kalimantan Province. The villages that became the location for the implementation of the Peatland Self-supporting Villages Program in 2020 were selected based on a spatial analysis of the village administration map with the status and priority of degradation to the peatland ecosystem based on the Decree of the Director General of PPKL Number: SK.40/PPKL/PKG/PKL.0/3/2018 status and priority. Field data collection for research was carried out in August 2020 to February 2021.

### **Data Collection Method**

The data in this study consisted of primary and secondary data. Primary data were obtained from surveys, observations, questionnaires, and in-depth interviews with resource persons. Meanwhile, secondary data was obtained by conducting a study of policy literature related to peatland ecosystem degradation control and documents related to the Peatland Self-supporting Villages program in the ex-PLG Area, Central Kalimantan Province. The data required includes information related to the peatland ecosystem degradation control policies and data related to the implementation of the Peat Self-Supporting Villages Program in the ex-PLG Area of Central Kalimantan Province in 2020 which was carried out in 18 (eighteen) villages in three regencies in Central Kalimantan Province, as well as data related to the community in these villages.

**Data Analysis Method**

Analysis on peatland ecosystem degradation control on community land policies is carried out using qualitative descriptive analysis by conducting a literature study on related policies and then conducting in-depth interviews with resource persons from the Directorate for Peatland Degradation Control, Ministry of Environment and Forestry, and Community Facilitators (fasilitator masyarakat in bahasa) from the research village locations. Based on literature studies, these are questions for interviews with resource persons as follows:

1. Whether, the existing peatland ecosystem degradation control policy implemented on licensed land be applied for peatland ecosystem control activities on community land?
2. What are the main factors in the community elements that will determine the success of the policy implementation?
3. What are the main factors that will or can prevent the policy from being implemented?
4. Who are the actors involved and influential in the implementation of the policy to control the damage to the peatland ecosystem on community land?
5. What are the other interests of the parties involved in the implementation of the policy for controlling damage to the peatland ecosystem on community land?
6. What are the important things that are very urgent to be paid attention to and implemented in the implementation of policies to control peat ecosystem damage on community land?

Analysis of the implementation of peatland ecosystem degradation control policies through the implementation of the Peatland Self-supporting Villages in the ex-PLG Area of Central Kalimantan Province is carried out by analyzing the sustainability of the program. To determine the sustainability status of the implementation program index calculation using Multidimensional Scaling (MDS) method which modified the Rapid Appraisal for Fisheries (RAPFISH) by developed five dimensions called ecology, economic, social, institution and technical of implementation dimension. The sustainability index value is divided into four categories, as shown in Table 1. Goodness of fit in the MDS is reflected in the statistical parameters, namely the magnitude of the stress value and the value of the coefficient of determination ( $R^2$ ). Good MDS analysis is indicated by a stress value that is less than 25% while the  $R^2$  value is more than 80% or close to 100% (Kavanagh and Pitcher, 2004). To analyze the uncertainty factor Monte Carlo analysis was carried out, and in addition to looking at the sustainability status, the RAPFISH method can also be used to see the sensitive attributes that affect the sustainability index by using Lverage analysis.

Table 1 Sustainability index category

No	Index	Sustainability Status
1	0-25	Bad
2	>25-50	Not Enough
3	>50-75	Moderate
4	>75-100	Highly Sustainable

Source: Kavanah dan Pitcher, 2004

In analyzing the strategy for the implementation of the Peatland Self-supporting Villages Strengths, Weaknesses Opportunities and Threats (SWOT) method was used which was started by identifying the Internal Factor Analysis Summary (IFAS) and External Factor Summary (EFAS) as workflow doing by David (2008). The factors were identified by conducting a literature study and field survey.

## **RESULT AND ANALYSIS**

### **Analysis of Peatland Ecosystem Degradation Control on Community Land Policy**

The peatland ecosystem degradation control policy applied to licensed companies can be applied to community land as long as the community has sufficient capacity to carry out all the provisions that will later be in the policy, such as monitoring and reporting obligation. A qualified community needs to be "knowledgeable", "willing", and "capable". Knowledgeable about peatland ecosystems, what they are, how they are managed, and what appropriate actions can be taken for their preservation. Willing people in the community means they have the desire and enthusiasm necessary to maintain the peatland ecosystem on their land so that it remains in the good condition and capable due to economic independence, so they can meet their daily needs and also carry out activities to independently control the degradation of the peatland ecosystem (MoEF, 2020).

There are two main factors in the successful implementation of the policy of peatland degradation control on community land first is the sociological factor which means that there is no rejection in social and cultural community for the government intervention on their activities in efforts to preserve the peatland ecosystem. This is important because there are a community that is not very open and accepts the presence of outsiders in their environment. The second factor is the Government's commitment to empowering the community in taking action on peatland degradation ecosystem control which the stimulants must come from the government through their consistent commitment to establishing the community that "knowledgeable", "willing," and "capable". Currently, the Government's commitment is manifested in the form of grants that are given to the community groups in peatland locations as a stimulant to them to be able to create community independence, especially in the economic aspect. However, it is very unfortunate that the Government's commitment is still limited to the target that is only determined by the number of locations that have been intervened, not by the number of locations where the community has succeeded in being independent and civil in managing the peatland ecosystem. This aspect is mostly related to the budget allocation used for the intervention which is given in the form of a grant. Due to the fact that the target is determined by the number of locations targeted by of Ministry of National Development Planning (BAPPENAS), therefore to meet the target achievement of the intervened location in the following year, the program moved to another location and left the previous sites without further guidance and supervision due to the current year's budget allocation can only be used for activities at the intervened location in the same year.

The current and future gaps that still exists is the capacity of the community, which is considered not to be able to optimally manage the peat ecosystem independently due to several things, including scientifically the substance related to the peat ecosystem is heavy and difficult to understand by the community, the terms and terminology used are still not easy to be understood. Another important obstacle is that information that explains in detail the science of peat ecosystems is not easy to obtain and access because community peatlands are usually located in hard-to-reach locations with poor internet network facilities. Moreover, if it is seen from the level of education of the people who occupy peatlands which are still relatively low, for example, based on interview with Mr. Pramudi Rangkat, Head of TK-PPEG Sungai Jaya Village, the community in Sungai Jaya Village which has a population of 1 632 people, from this number, around 1 124 people or around 68.8 percent only finished elementary school education, and only 17 (seventeen) people received undergraduate education. In addition, the people who live on peatlands are mostly transmigrants who have occupied the land since the 1980s, the socio-cultural differences of the transmigrants in the destination area create new problems (Nova, 2016), then the transmigrants who were brought to Central Kalimantan did not understand well the behavior of the ecosystem, local culture, and agricultural cultivation technology on peatlands (Suriadikarta, 2009).

The parties that play a role in the policy of controlling damage to the Peat Ecosystem include:

1. MoEF as a policymaker and given a mandate and target by the Government to carry out efforts to control damage to peat ecosystems with a target number of locations and a certain area;

2. Local Government, namely the Provincial Government through the Provincial Environment Service, the Regency Government through the Regency Environmental Service, and the Village Government acts as an arm of the Central Government in supervising the implementation of policies. The most important role of the Regional Government in this program is to ensure that the plans prepared by the community in an effort to restore the peat ecosystem on their land can be scheduled in the Village Development Plan Deliberation to then be integrated into the Village Development Plan and its budget in the Expenditure Budget Plan and Village Income;
3. the University who assists and provides technical assistance to community groups in implementing policy implementation;
4. Private companies located in community areas as a partner in carrying out their activities through the implementation of their Corporate Social Responsibility (CSR) activities; and
5. Community groups through Working Team for Peatland Ecosystem Protection and Management (*Tim Kerja Perlindungan dan Pengelolaan Ekosistem Gambut*, TKPPEG) as policy implementers.

Regarding the other interests of the parties involved in the implementation of the policy for controlling damage to the peatland ecosystem on community land, it is stated that certain unlikely parties have other interests in the implementation of the policy for the peatland ecosystem degradation control. However, this thing is not impossible if it is explored further. For example, is in case emission reduction calculation based on the efforts made through the restoration of the peat ecosystem. With the carbon market, this emission reduction claim can be made bilaterally between countries, but it can also be done business to business from company to company, or it could be through a Non-Governmental Organization (NGO) that liaises with the community and grants. Common people who have no understanding regarding carbon emission things will feel happy and accept it well without knowing that there is carbon theft. This happens because Indonesia is very wide and diverse, so the "entrance" can be from many ways while the Ministry of Environment and Forestry does not have strong and absolute control in preventing this from happening. For example, control over NGOs, previously the Ministry of State Secretariat was tasked with listing official NGOs in Indonesia, but now that function is no longer their responsibility as stated by Director of Peatland Degradation Control, MoEF, Mrs. SPM Budi Susanti. In addition, based on an interview with Mr. Didi Santoso, a facilitator of the Peat Self-Supporting Villages Program from Panamas village, Kapuas Regency, the implementation of the peatland ecosystem degradation control policy is an opportunity for the Head Village to get involved and gain the sympathy of the residents so that the next Head Village election he can be re-elected.

The important thing that is very urgent to be paid attention to and implemented in the implementation of policies to control the damage to the peat ecosystem on community land is related to hydrological function management in peatland ecosystems or proper water management on peatlands where this is the key to maintaining a health peatland ecosystem. Many farmers use local wisdom in water management on peatlands by utilizing the tidal movement of water for irrigation and drainage of the land by making inlets that point perpendicularly from the riverbanks towards the interior. These channels are known as "handil".

The handil system is usually carried out in mutual cooperation by about 7 to 10 people according to a relatively small scale of development, while for a larger development scale or the term macro water management, it is known as the *anjir/canal* system, which is a large/primary channel that connects two big rivers. Generally, handil was made along the anchorage, so that river water could be utilized by plants more freely according to the needs of the plant. In addition, the term saka is also known, which is a tertiary channel to channel water which is usually taken from handil, this channel is smaller than handil and is usually owned by one family (BPPPKP, 2014). However, the real condition that is currently happening in the field is that there are still many people who clear peatland for plantations by making drainages in an inappropriate way, namely by cutting contours with the aim of making peatlands easy to be drained and can be quickly used. This practice was done by farmers in Sungai Jaya village who made ditches and canals for cultivation and plantation needs. The farmers in this village usually take advantage of certain conditions. For example when the river is high, they do damming so that they can be used during the dry season.

According to various studies, water management on peatlands must consider several specific characteristics of peatland, including the very high ability of peat to absorb water (hydrophilic) which can turn into hydrophobic (repel water) when the peat is experiencing extreme drought. According to Sabiham (2000), the decreased ability of peat to absorb water is related to the decreased availability of hydrophilic compounds in peat material, namely carboxylate and OH-phenolic. These two organic components are in the peat liquid phase so that when the peat is dry due to the excessive drainage process, the hydrophilic nature of the peat soil becomes non-functional. The principle of water management on peatlands must also take into account its impact on the rate of peat decomposition (Hooijer *et al.*, 2006), which describes a linear relationship between the water level in the drainage canal and the peat emission rate as the impact of increasing the rate of peat decomposition.

**Sustainability Analysis of the Implementation of the Peat Self-Supporting Villages Program in the ex-PLG Area of Central Kalimantan Province**

The sustainability status of the Peat Self-Supporting Villages Program in the ex-PLG area of Central Kalimantan Province in 2020 in this study showed "moderately sustainable" results with an index value of 68.54. This status is indicated by the value of the sustainability index on each dimension which can be seen in Table 2.

Table 2 Sustainability Index of Peat Self-Supporting Villages Program

Sustainability Dimension	Index (MDS)	Sustainability Status	Parameter			
			Stress (%)	R <sup>2</sup> (%)	Monte Carlo	Difference of MDS and Monte Carlo
Ecological	48.77	Not Enough	17	91	49.17	0.40
Economic	73.15	Moderate	17	94	75.63	2.48
Social	77.71	Highly Sustainable	17	94	80.57	3.13
Institution	79.44	Highly Sustainable	17	96	82.46	3.02
Technique of Implementation	51.28	Moderate	19	93	54.24	2.96

The results of the MDS analysis in this study showed that all the attributes studied in each dimension had a stress value of 17% to 19% and an R<sup>2</sup> value of 91% to 96%. These two parameters indicate that all of the attributes used in the sustainability analysis of the Peat Self-Supporting Villages Program in the ex-PLG Area of Central Kalimantan Province in 2020 are valid enough to explain the five dimensions.

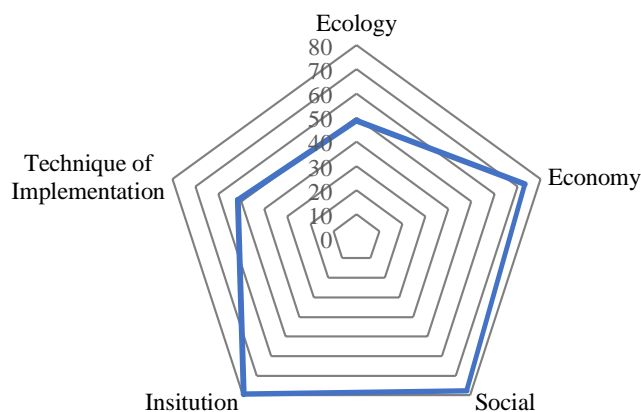


Figure 1 Kite diagram for sustainability index of Peat Self-Supporting Villages Program

The sustainability index values of the five dimensions above can be visualized in the form of a kite diagram in Figure 1. It is shown that the economic, social, and institutional dimensions have a higher value than the ecological dimensions and implementation techniques. The Peatland Self-Supporting Villages Program in the ex-PLG Area of Kalimantan Province has a positive impact, especially in terms of economy for residents in the location since the activity provides opportunities for them to develop businesses that provide additional income for improve the standard of living the community. The success of the program was also determined by the response or interest of the community as the implementor. Community interest in a program is highly dependent on the presence or absence of economic benefits that can be obtained in the form of income.

Their participation in the program is usually because there is a need for land use that will provide opportunities to earn income (Herawati *et al.*, 2010). Based on the field observation economy activity conducted by the community, for example, the cultivation of catfish and papuyu fish in Panamas Village has succeeded in harvesting and selling 1 ton of catfish and papuyu at a price of Rp 18 000,-/kg after three months of cultivation. After deducting the cost of seeds and feed the profit can be an amount of Rp 11 500 000, which was distributed to five heads of families (KK). Another example is the cultivation of free-range chickens in the same Village, which harvested 600 free-range chickens after a three-month cultivation process with a profit of Rp 10 800 000,- which is divided into four KK. Looking at the social dimension, community involvement and participation are very important aspect on the sustainability of program it is because active community involvement in the whole process of program is a tool or medium for growing cohesiveness between communities, the community and the Government also foster a growing sense of ownership and responsibility in the programs that carried out (Handayani, 2006).

The activity was also able to run well because as the main driver, which is a formal institution called the Team Work for Peatland Ecosystem Protection and Management (*Tim Kerja Perlindungan dan Pengelolaan Ekosistem Gambut*, TKPPEG) was formed which was supported by both local residents and village government. Village government is seen as an extension of the central government in development, so it is hoped that village government officials can become a motor in the successful implementation of the program to establish an Independent Village Care for Peat. The Village Head and also including his apparatus have an important role in the life of rural communities because they are given the right of autonomy to improve the welfare of the community. Village government officials also have a function as facilitators to provide all the needs that exist in the village in order to improve the quality of the community institutionally and society in general by fostering, nurturing, and providing opportunities for village communities to develop their potentials by not forgetting to preserve socio-cultural values (Wahyudi, 2019).

Monte Carlo analysis showed the difference in the value of less than 5%, this indicates that the system under study has a high level of confidence, the method is good enough to be used in evaluating the sustainability of the program because there is no significant difference between MDS and MDS (Adriman *et al.*, 2012). Sensitive attributes are attributes that act as obstacles or supporters of the sustainability of the program, and if these attributes are omitted, it will affect the sustainability status. This shows that it is important to carry out maintenance and repair of sensitive attributes so that the sustainability value can be maintained or increased. Sensitive attributes can be determined from the Root Mean Square (RMS) value which is greater than the median Root Mean Square attribute (Supono, 2009). Based on the results of the MDS analysis obtained 15 (fifteen) more sensitive attributes, which can be seen in Table 3.

Table 3 shows that ecology and economy dimension give sensitive attributes with higher RMS. It is telling that as previously explained how the economic aspect plays an important role in the program. The ecology dimension becomes the main dimension with the highest sensitive attribute, this is because the main objective of implementing this program is to return to the preservation of the peat ecosystem. Attributes in ecology dimension are important factors in the realization of a maintained peat condition as stated in Government Regulation Number 71 of 2014 Regarding Protection and Management of Peatland Ecosystems such as doing maintain peat soil moisture and groundwater table surface (*Tinggi Muka Air Tanah*, TMAT) below the level

of 0.4 meters above ground level to prevent peatland forest fire so that it is urgently needed of TMAT monitoring and from of all the efforts has been made the sustainable use of peatlands is a non-negotiable necessity so that people can continue to live from the use of peatlands with maintaining peatlands in always in healthy condition.

Table 3 Sensitive attribute of DMPG Program

Dimension	Sensitive Attribute	RMS
Ecology	1. Sustainable use of peatlands	10.63
	2. Maintain peat soil moisture and (ground water table surface, TMAT) below the level of 0.4 meters above ground level	8.53
	3. TMAT Monitoring	8.01
Economy	4. Business activities that improve the economy	8.93
	5. Community action plan as a business activity based on the preservation of peatland ecosystem	4.24
	6. Business that provide products that can be marketed	3.99
Social	7. Involvement of village government officials	6.52
	8. Community involvement	8.01
	9. Support from village government officials	3.27
Institutional	10. Institutional continued through other programs in the village	5.65
	11. The chairman, management, and members of the institution are elected based on the agreement of the villagers	5.50
	12. There is disagreement on the results of the deliberation decision	4.48
Implementation technique	13. Conducted technical training related to the implementation of RKM	5.90
	14. Provided assistance during and after program implementation	2.18
	15. Grant assistance from the central/regional Government	4.74

**Strategy for Peatland Ecosystem Degradation Policy Implementation through Peatland Self Supporting Villages Program**

Reviewing the attributes from the sustainable analysis and based on an interview with the resource person as well as study literature it was identified nine strengths (S) factors and six weaknesses factors (W) as a result for internal factor analysis as shown in Table 4, while for external factor there were identified four Opportunities (O) and four threats (T) as shown in Table 5. The main component for the strength factors is the program distributing a grand given by the Government to the community that can be utilized as capital to carry out ecosystem-based business activities (MoEF, 2020). Lack of public knowledge regarding peatland ecosystem and difficult access to reach location found as weaknesses that really essential and affecting the smooth implementation of activities. The biggest opportunity from the implementation of this program is that the development of community work plan documents (RKM) can be a tool to collaborate with private companies around the location through Corporate Social Responsibilities (CSR) activities.

The implementation of CSR is realized for: human resource development in the form of training and technical assistance; community empowerment in the economic field through providing initial capital assistance, managerial and soft skills training; improving community welfare by providing facilities and infrastructure related to community needs; environmental conservation by carrying out pro-environmental activities; and providing immediate assistance to communities affected by natural disasters (Prajarto and Radityo, 2012).

In regards to threats, we can see in Table 5 that some communities reject program implementation, and citizens' disagreement in making deliberation is identified. Disagreements in decision-making in community deliberations are a natural thing. However, the community institutions whose formation was not initiated by the community are often will hinder the smoothness of activities, and an internal obstacle will also happen to



make the institution less sustainable. This situation will make the existence of the institution is barely solve problems that exist in society, as community institutions should prioritize the community participatory (Sulili and Mengge, 2013).

Table 4 Internal factor analysis

Symbol	Strengths	Rating	Weight	Score
S1	Peatland ecosystem based economic activity	4	0.0451	0.1805
S2	Government grants	3	0.0451	0.1354
S3	Community action plans ( <i>Rencana Kerja Masyarakat</i> , RKM) action with no burning land clearing	2	0.0855	0.1710
S4	TK-PPEG establishment	4	0.0499	0.1995
S5	Support and involvement of village government	3	0.0736	0.2209
S6	Support and involvement of village community	4	0.0546	0.2185
S7	Community facilitators	3	0.0523	0.1568
S8	Assistance from educational institutions/university	3	0.0641	0.1924
S9	Technical training related to RKM	2	0.0831	0.1663
total score				1.6413
Weaknesses				
W1	No peatland hydrological management	3	0.0855	0.2565
W2	TMAT monitoring is not carried out	4	0.0855	0.3420
W3	Difficult access to reach locations	3	0.0808	0.2423
W4	Supervision is only carried out during program implementation	3	0.0736	0.2209
W5	There is no local policy regarding the preservation of peatland ecosystem	4	0.0641	0.2565
W6	Lack of public knowledge regarding peatland ecosystem	3	0.0570	0.1710
total score				1.4893
IFAS total score = 3.1306				

Table 5 External factor analysis

Symbol	Opportunities	Rating	Weight	Score
O1	The institution continued to other activities in the local village	3	0.1626	0.4878
O2	Cooperation with the private sector	2	0.1057	0.2114
O3	Business activities that can be marketed and provide profits	4	0.1220	0.4878
O4	Community economic improvement	4	0.0894	0.3577
Threats				
T1	Institutional membership selection	2	0.1626	0.3252
T2	Rejection of some communities towards program implementation	2	0.1301	0.2602
T3	Citizens' disagreements in making deliberation decisions	3	0.1382	0.4146
T4	Natural conditions	4	0.0894	0.3577
total score				1.5447
total score				1.3577

Based on the results of the analysis and weights calculation of the internal factor (IFE) the values of "strengths" and "weaknesses" are not much different, as shown in Table 4. This is a challenge for the researcher to find the strategies that can optimize the strengths to cover existing weaknesses. Likewise, with external factors (EFE) the value of the "opportunities" and "threat" factors shown in Table 5 where the values are not much different, so it is necessary to formulate a strategy that can take advantage of existing opportunities to overcome the threats.

The result of IFE and EFE matrices for the Peatland Self Supporting Village Program in the Ex- PLG Area on Central Kalimantan Province is scored in quadrant IV (strong-moderate), which is Growth and Build as shown in Figure 2. The implementation strategy that can be carried out is the growth and development of program implementation strategies by intensifying the following activities and then integrating the activities in various aspects to optimize the efforts.

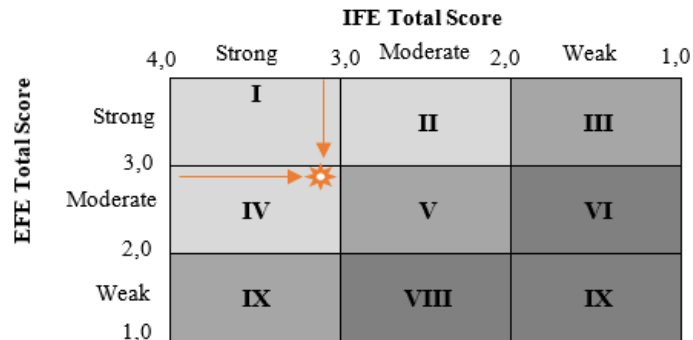


Figure 2 Strategic position of the Peatland Self-supporting Villages Program

The following are strategic options can be carried out based on their priorities are:

1. Conducting an expose meeting for presenting community plans documents that have been prepared by the by inviting relevant agencies such as the local provincial and regency environmental services, local agriculture department, local plantation department, local universities, private companies, etc.
2. Develop local policies related to the conservation of peat ecosystems carried out by village officials together with the community which is integrated from the experiences of implementing the Peatland Self-Supporting Villages program and also collaborating with universities and related stakeholders.
3. Continue to establish good cooperation with the University in providing assistance and supervision to the community in implementing the ongoing RKM.
4. Making cooperation with private companies through their Corporate Social Responsibility (CSR) programs to provide socialization and training to the community in providing understanding related to peatland ecosystem, water management in peatlands, then conducting integration monitoring of TMAT.
5. Conducted discussions with the Ministry of National Planning and Development (BAPPENAS) to discuss the target for the establishment of a DMPG which is usually based on the number of villages intervened in one year to be directed to change its target into a number of villages that have successfully independent or civil category in preserving the peatland ecosystem.
6. Invite relevant agencies such as the Agriculture Office, Plantation Office, Livestock Office, etc. to become resource persons in providing technical training to the community whose teaching materials are adapted from the main tasks and functions of these offices, for example, forest plant nursery training, free-range chicken cultivation training, etc.

## CONCLUSION

The conclusion of this research are: 1) the peatland ecosystem degradation control policy applied to a licensed company can and may be applied to community land as long as the community has sufficient capacity to carry out all the provisions that will later be contained in the policy such as monitoring and reporting, 2) the

level of sustainability of the implementation of the policy for controlling damage to the peatland ecosystem on community land through the implementation of the Peat-self Supporting Village in the ex-PLG lands in Central Kalimantan Province shows moderately sustainable with an index value of 68.54 percent. Analysis of the implementation strategy of the Peatland Self-Support Villages Program in the Ex-PLG Area of Central Kalimantan Province is growth and build. The prioritized strategy that can be conducted is to collaborate with relevant agencies and private companies to realize the Community Work Plan (RKM) activities prepared by the community with technical assistance and grant funds from these institutions according to their duties.

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