

FARMER'S PARTICIPATION RATE IN DESA PEDULI GAMBUT PROGRAM

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Abstract Many factors destroy peat ecosystems, including land fires. The cause of the fire was motivated by economic aspects, namely land clearing for agricultural, plantation, and residential activities. Desa Peduli Gambut Program has main activities: strengthening local knowledge and village community preparedness in dealing with peat fire disasters and non-burning land management. The process requires the participation of farmers as an essential determining factor to ensure the success and sustainability of a program. This study analyzes farmer participation in the DPG program in Teluk Pekedai District. The descriptive quantitative method is supported by qualitative data using Sherry Arnstein's (1969) participation level analysis. The analysis results show that farmer participation in the DPG program in Teluk Pekedai District is at the therapy level. The low level of community participation in a program occurs because the level of government domination in deciding program plans is the cause of problems in program implementation. Farmer participation can increase by the role of the DPG chairperson, the role of the village facilitator, the village government and local government, and all elements of the community (community leaders).

Keywords: *Desa Peduli Gambut Program, Farmer Participation Rate, S. Arnstein Participation Rate*

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INTRODUCTION

Peatlands are spread almost all over the world, with an estimated 4,232,369 km² or about 2.84% of the world's land area (Xu et al., 2018). Peatland areas are found in Indonesia, reaching 14,905,575 ha on the islands of Kalimantan and Sumatra and the island of Irian. Sumatra has the largest peatland (43%), followed by Kalimantan (32%) and Irian (25%) (Warren et al., 2017). The existence of peatlands has a significant role in human life. These are production, water storage, biodiversity habitats, protection, and economic functions (Ritung & Sukarman, 2016). Ministry of Environment and Forestry in 2019 shows forest and peatland fires reached 1,649,258.00 hectares. The largest peatland fires occurred in West Kalimantan and South Sumatra. The cause of the fire was motivated by economic aspects, namely land

clearing for agricultural, plantation, and residential (Sawerah et al., 2016)(Puspitaloka et al., 2021).

Badan Restorasi Gambut was formed based on Presidential Regulation No. 1/2016, a Non-structural Institution responsible to the President. One of the programs aimed at rural communities, primarily farmers, is the Desa Peduli Gambut Program (DPG). The most crucial DPG program activities are strengthening local knowledge and village community preparedness in dealing with peat fire disasters and land management without burning. The DPG program also serves as a harmonizing framework for existing development programs in rural peatlands, particularly in and around peat restoration areas. Teluk Pekedai District is one of the target locations for the DPG program. Teluk Pekedai District is included in the Kubu Raya Regency, the area with the most

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prominent restoration target in West Kalimantan (West Kalimantan Province Annual Action Plan Document 2019).

According to Sturt in (Hafizianor & Mulkarim, 2020), participation is one of the social factors that can make village development programs successful. Participation is an essential determining factor for realizing a program's success and sustainability (Adawiyah & Ramadhan, 2020). Participation in the voluntary involvement of farmers and the changes determined by the farmer's personal will (Zainuddin et al., 2019). Several factors related to the level of participation include factors from the community, for example, from farmers' socio-economic characteristics. Such as gender, age, education level, income level, number of family dependents, farming experience, and access to land ownership (Mutolib, 2020) (Negasa et al., 2020) (Bekere & Megersa, 2021). The role of farmers is critical in implementing the DPG program because farmers are the implementers of various activities provided by the government (Sawerah et al., 2016).

Many government programs make farmers the main object of their implementation. Research on the level of farmer participation in a program has been carried out (Andry et al., 2019) (Yama et al., 2018); the results of the study show that the level of farmer participation is low, and some are high (Syifa et al., 2020) (Rusdiyana et al., 2020) (Hasna & Supyandi, 2021). However, research on the participation of farmers working on peatlands is limited. One of the studies on farmer participation in the BRG program showed that the program had no impact on people's lives (Lestari et al., 2021). Ideally, the BRG program grows and develops from the community and is carried out consciously by the community, and the results can be perceived by the whole community (Adawiyah & Ramadhan, 2020). Undoubtedly, very interesting to study because the characteristics of people who farm on peatlands and ordinary land are different (Salim, 2019).

Participation aims for the community to have the skills to explore needs, plan programs, and correct deficiencies in the program (Hapsari & Kinseng, 2018). Involve all components of society is one of the efforts to increase participation (Susetawan et al., 2018). Therefore, in the implementation and sustainability of the DPG program in Teluk Pekedai District, participation from various parties is needed, starting from farmers, the social environment (community leaders and the role of local government), and

village governments. This study analyzes farmer participation in the DPG program in Teluk Pekedai District.

RESEARCH METHODS

The research was conducted in Teluk Pekedai District. There were four selected villages: Sungai Nipah Village, Madura Village, Teluk Pekedai Dua Village, and Sungai Deras Village. Determination of the place of research is done intentionally (*purposive*). Qualitative data support the descriptive quantitative method to see the relationship between variables and enrich the data.

Respondents in this study were 92 farmers who had participated in the DPG program in Teluk Pekedai District. This study uses primary data (observations, questionnaires, and interviews). They then used secondary data (articles, theses, and books relevant to this research). The participation rate analysis used eight levels of participation Sherry Arnstein (1969).

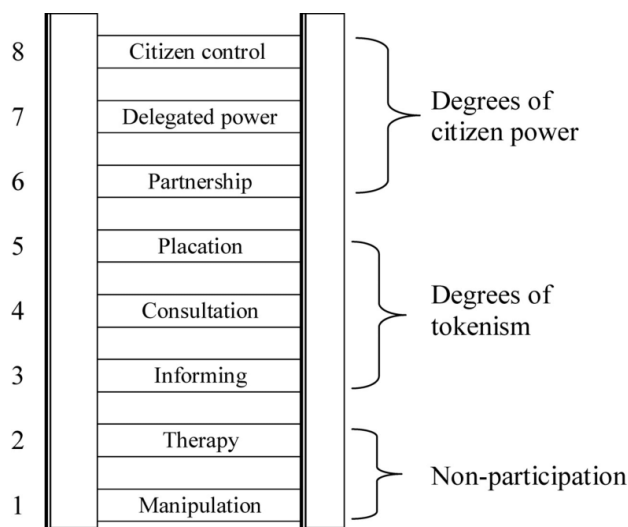


Figure 1. Arnstein's Eight Levels of Participation

The farmer participation level can analyze by the program's planning, implementation, and evaluation stages. This study used the scoring method to determine farmer participation levels (Reza & Noer, 2019). The final score of the farmer participation rate in each village is the result of the division between the total score (planning stage, implementation stage, and evaluation stage) with the number of respondents. The final score for the level of participation in Teluk Pekedai District is the result of dividing the total score (planning stage, implementation stage, and evaluation stage)

in the four villages with the total number of respondents.

RESULTS AND DISCUSSION

Respondent's Socio-Economic Characteristics

Socio-economic characteristics are characteristics or signs in a person that can influence that person to do or accept an innovation (Musyadar & Kusmiadi, 2017). The socio-economic characteristics of farmers affect the ability to understand existing problems and determine decision-making in solutions to related problems (Alhafidh & Sunaryo, 2015). Characteristics of respondents can be classified based on gender, age, last education, monthly income, farming experience, number of dependents, and land area. Then it is related to the level of farmer participation.

1. **Gender** There are more male respondents than females (Table 1). In other words, the outpouring of female workers is less than that of male workers (Damatun et al., 2017). Men in Teluk Pekedai District were active in participating in BRG activities. The participation rate of men in Teluk Pekedai District is higher than that of women. Men are at the therapy level while women are at the manipulation level. Men have a more dominant role than women at the therapy level of farmer participation.

Table 1. Distribution of farmers in Teluk Pekedai District by Gender

Characteristics of Respondents	Amount	Percent age (%)	Participation Rate
Man	56	60.87	Therapy
Woman	36	39.13	Manipulation
Amount	92	100.00	

2. Age

Farmers who are respondents in Teluk Pekedai District are of productive age (Table 2). This productive age allows farmers to take part in DPG activities. The highest level of farmer participation based on age is in the range of 30-39 years. This age range is at the informing level. Farmers in this age range include the group of young farmers with sufficient experience. At this level, farmers can absorb information related to the DPG program through various communication tools such as banners, pamphlets, and social media.

Table 2. Distribution of farmers in Teluk Pekedai District by Age

Characteristics of	Amount	Percent age (%)	Participation Rate
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Respondents			
Age (years):			
a. 20-29	12	13.04	Manipulation
b. 30-39	16	17.40	Informing
c. 40-49	34	36.96	Therapy
d. 50-59	15	16.30	Manipulation
e. 60-69	12	13.04	Manipulation
f. > 69	3	3.26	Manipulation
Amount	92	100.00	

3. Last Education

The level of education is the last education ever taken by the respondent. Last education affects the success of a program because the higher a person's education level, the easier and faster it is to accept innovation (Hidayat et al., 2015). The education level of respondents in the research area is low because their average education is only elementary school, so they include in the level of manipulation (Table 3). With a low level of education, farmers have no role in the sustainability of the DPG program. The level of high school education is at the level of informing. It means that farmers have insight and are interested in the DPG program.

Table 3. Distribution of farmers in Teluk Pekedai District Based on Last Education

Characteristics of Respondents	Amount	Percent age (%)	Participation Rate
Age (years):			
a. 20-29	12	13.04	Manipulation
b. 30-39	16	17.40	Informing
c. 40-49	34	36.96	Therapy
d. 50-59	15	16.30	Manipulation
e. 60-69	12	13.04	Manipulation
f. > 69	3	3.26	Manipulation
Amount	92	100.00	

4. Income Level

The respondent farmers' income levels are mainly 1-2 million and include in the therapy level (Table 4). Based on the income range, 15 respondent farmers have more than 4 million incomes and include in the informing level. At the informing level, respondent farmers can cultivate agricultural land well.

Table 4. Distribution of farmers in Teluk Pekedai District by Income Level

Characteristics of Respondents	Amount	Percentage (%)	Participation Rate
Monthly Income (Rp):			

a. < 1 M	7	7.60	Therapy
b. 1 M-2 M	50	54.36	Therapy
c. 2 M-3 M	13	14.14	Therapy
d. 3 M-4 M	7	7.60	Therapy
e. > 4 M	15	16.30	Informing
Amount	92	100.00	

5. Farmer's Experiences

Most respondent farmers are in the range of 0-19 years included in the therapy level, the range of 20-39 years is included in the therapy level, and the range of 40-59 years included in the manipulation level (Table 5). Differences in farming length for farmers show in the cultivation techniques of different farmers. Most farmers who enter the manipulation level rely on instinct and adopt the experience passed down from generation to generation from the family. Farmers who follow the BRG program can introduce organic farming by relying on plants or litter around their environment at the therapy level. The goal is that farmers do not have to spend money to buy fertilizers and pesticides.

Table 5. Distribution of farmers in Teluk Pekedai District based on the length of farming

Characteristics of Respondents	Amount	Percentage (%)	Participation Rate
Length of farming (years):			
a. 0-19	43	46.74	Therapy
b. 20-39	32	34.78	Therapy
c. 40-59	17	18.48	Manipulation
Amount	92	100.00	

6. Number of Families

The most significant number of farmer family members is between 4-and five people and included in the therapy level (Table 6). Many farming family members will reduce their income per capita because the increase in family members will cause expenses to increase (Kurniati & Vaulina, 2020). Apart from being a production factor at the therapy level, the DPG program invites family members to socialize and implement the programs. In the process, family members are only used as representatives to attend the program socialization process.

Table 6. Distribution of farmers in Teluk Pekedai District Based on Number of Families

Characteristics of Respondents	Amount	Percentage (%)	TP
Number of Family:			
a. 0-1	3	3.26	Informing
b. 2-3	37	40.22	Therapy
c. 4-5	44	47.83	Therapy
d. > 5	8	8.69	Therapy
Amount	92	100.00	

7. Land Area

Farmers in Teluk Pekedai District cultivate their farms on land ranging from 0.5 -to 1 ha into the therapy level (Table 7). The ownership rights to the respondent farmers' farmland are private property. For the lowest level, manipulation is on farmers with land area < 0.5 ha. Manipulation causes farmers to be powerless and not have the power to be involved in every process of DPG program activities.

Table 7. Distribution of farmers in Teluk Pekedai District by Land Area

Characteristics of Respondents	Amount	Percentage (%)	TP
Land Area (ha):			
a. < 0.5			
b. 0.5-1	2	2.17	Manipulation
c. 1-2	57	61.96	Therapy
d. 2-3	22	23.92	Manipulation
e. > 3	5	5.43	Informing
	6	6.52	Therapy
Amount	92	100.00	

Participation Rate in the DPG Program

To measure farmers' level of participation or involvement in the BRG program in Teluk Pekedai District was carried out by looking at the involvement in the program planning, implementation, and evaluation process (Table 8). The participation of farmers in the planning stage shows from their attendance in program socialization, discussions on problem mapping, discussions on plant cultivation on peatlands, discussions on action planning, and the intensity of farmers to ask questions and submit ideas. The implementation stage can be seen from the farmer involvement in contributing ideas, material contributions, energy contributions, and expertise contributions.

Table 8. Total Participation Rate in Teluk Pekedai District

Participation Rate	Sungai Nipah	Madura	Teluk Pekedai		
			Dua	Sungai Deras	Whole
Planning Stage	174	86	90	58	408
Implementation Stage	388	168	212	120	888
Evaluation Stage	198	80	100	58	436
Total Score	760	334	402	236	1,732
Final Score (Total Score/n)	26.21	15.90	19.14	11.24	18.82

1. Participation Rate in Sungai Nipah Village

Based on (Table 8) the highest participation in Sungai Nipah Village is at the program implementation stage. The activeness of farmers at this stage shows from the success of making mini demonstration plots, making organic fertilizers and pesticides, making canal blocking (only as a pilot material), and is active in participating in activities that add soft skills such as seminars. The support of farmers in Sungai Nipah Village is quite good. The village government welcomes the DPG program because it knows the benefits each farmer will get to increase their knowledge and skills for farming and maintaining the peatland ecosystem. Then the lowest participation is at the planning stage. The farmer's lack of information caused the lowest participation at the beginning of the program introduction process.

The level of participation of farmers in Sungai Nipah Village got a final score of 26.21. This score is in the third class interval. So it is included in the level of informing. Interpretation level of informing can be as follows: (1) Process of providing information by the government to the public about the DPG program form information regarding the program introduction, the distribution of rights and responsibilities, and the objectives of the role of this program. (2) By providing this information, the government will invite the opinion that this activity positively impacts the behavior of farmers who previously burned land before planting without burning. (3) The information provided by the government is only one way, and there is no feedback from the community. This situation occurs because of the need for more public awareness in providing ideas or input to the program. (4) The communication tools used are in the form of posters and pamphlets.

2. Participation Rate in Madura Village

Based on (Table 8) the highest participation in Madura Village is at the program implementation stage. Although the highest participation is in the implementation process, farmers in this village still

need to be more active in participating in DPG program activities. The manufacture of mini demonstration plots and natural fertilizers and pesticides did successfully. However, the farmers who carry out the implementation are only representatives from each farmer group in this village. Most farmers are not interested because most farmers work in oil palm plantation companies. Then the lowest participation is at the evaluation stage. The lowest participation is because the planning and implementation stages of the program are relatively low. The evaluation process does by interested parties such as village facilitators and village DPG heads.

The level of farmer participation in Madura Village got a final score of 15.90. This score is in the second interval class. So that it includes the therapy level, the level of therapy can explain as follows: (1) There is almost no role for farmers in the BRG program. Farmers consider a sick person who needs therapy for healing. (2) Program based on a large peatland fire that has caused much harm to the community, both social and economic aspects. The goal is to educate and treat the participating communities. (3) In the end, this program is only for the benefit of the government. The power holder gives reasons for the proposal by pretending to involve the community. Although involved in activities, the goal is more to change the community's mindset than to get input from the community.

3. Participation Rate in Teluk Pekedai Dua Village

Based on (Table 8) the highest participation in Teluk Pekedai Dua Village is at the program implementation stage. Similar to Madura Village, the activity of farmers at the implementation stage in this village is not shown. The most dominant program implementation is carried out by the chairman of the DPG and its members. The successful activity carried out was the creation of a

mini demonstration plot. Then the lowest participation is at the planning stage. It is because farmers only receive programs from the government. The government has determined the form of activity. Most farmers in this village are not interested in the existence of the DPG program. The level of farmer participation in Teluk Pekedai Dua Village got a final score of 19.14. Similar to the participation rate in Madura Village, this score is in the second class interval, which includes the therapy level.

4. Participation Rate in Sungai Deras Village

Based on (Table 8) the highest participation in Madura Village is at the program implementation stage. At this stage, the participation of farmers is meager due to several factors. These factors include the lack of support from the local village government for the BRG program, both morally and materially. Then the lack of socialization is carried out so that farmers are reluctant to participate in helping DPG activities. It is known that the very active role in the implementation of the program is the chairman of the DPG himself, assisted by his brother. One of the activities, such as constructing canal locks in the Sungai Deras, was assisted by a palm oil company whose peatland area is close to the village. Then the lowest participation is at the planning and evaluation stage. This low level is because farmers do not have the power to participate in program planning.

The level of participation of farmers in Sungai Deras Village got a final score of 11.24. This score is in the first-class interval. So it is included in the level of manipulation. The level of manipulation can be interpreted as follows: (1) There is no role from the farming community in the BRG program, and (2) The farming community has no knowledge about the program. (3) The farming community does not have the power to regulate this program. This powerlessness causes farmers to be manipulated and exploited by interested parties. The voice of the farming community is only used when approving to see that there is support from the farmers. Nevertheless, this agreement is used to approve the implementation of a program. (4) If participation is only at this stage, then it is unlikely that society will change towards a better situation. It is evidenced by the absence of changes felt by the farming community since this program was introduced.

Generally, farmer participation in the DPG program in Teluk Pekedai Dua District is on the second ladder, namely therapy. With a total score

of 1,732 and a final score of 19.30. The low level of community participation in a program occurs because the level of government domination in deciding program plans is the cause of problems in program implementation. The community feels that they do not have the program, so the community has no sense of responsibility to make the program successful (Nanda et al., 2019).

In general, the planning stage for farmer participation is at the manipulation level. Manipulation is the lowest level of participation. At this level, the farmer does not have the power to organize a program. In the DPG program, farmers are only given programs regulated and determined by the government. The role of farmers in program planning will support the program's success, and the implementation process will follow what farmers want (Hasna & Supyandi, 2021). The DPG head of each village is crucial in inviting farmers to participate in every DPG program socialization activity. So that efforts can be made to overcome the low involvement of farmers in the planning process by increasing the role of the DPG head of each village. In line with the research conducted by Rusdiyana *et al.* (2020), the role of a group leader is very much needed in increasing the active role of farmers to provide input and share experiences.

At the implementation stage, farmer participation is at the manipulation level. The participation of farmers is meager due to several factors. These factors include the lack of support from the local village government. Then the lack of socialization was carried out. The implementation of the DPG program is more dominantly carried out by village facilitators and the DPG head of each village, so the involvement of farmers is very low.

At the evaluation stage, the level of farmer participation is at the manipulation level. Almost all farmers said they did not monitor the implementation of the DPG program and participated in providing criticism/suggestions on its implementation. Program evaluation is essential; the aim is to consider it before deciding on the policy owner. The benefit is that there is the right decision on the program that has been implemented. The role of farmers is vital in the evaluation stage because, in essence, the farmers are the main actors in implementing the program so that farmers in the field better understand any shortcomings or advantages of the program.

The DPG program in the four villages has only been running for about three years. In such a short time, a new perspective and mindset are needed for farmers in Teluk Pekedai District to be willing to

participate in every development program. The involvement of various community elements, starting from farmers, the leadership of the DPG head in each village, and support from the social environment (community leaders, the role of farmer groups, and the role of local government). Farmers need the assistance process at every stage of the activity. In Teluk Pekedai District, the assistance of farmers by village facilitators is very minimal. Only Sungai Nipah Village is categorized as good because it has a higher participation rate than other villages. In line with the research conducted by Putra *et al.* (2020), the more routine the intensity of assistance, the interest of farmers in a program will gradually increase.

Leadership is the activity of the DPG chairperson to lead and direct its members to participate in the program. It is assumed that the more active the DPG chairperson, the higher the level of member participation will be. Next is the support from the social environment, which is thought to affect the level of farmer participation. Each has a different role. Community leaders act as enforcers of societal values and norms; they can become community representatives in solving problems. The role of farmer groups is also essential for farmers to interact and communicate. The government's role in assisting the program's sustainability in Teluk Pekedai District has been carried out, but this assistance is inappropriate and ultimately cannot be used. An example is the assistance of a grass chopper which is only provided, but there is no training on how to use it, so the tool is not used correctly. The implementation of a good government role will undoubtedly impact increasing community participation.

CONCLUSION

Based on the results and discussions that have been described regarding the level of participation in the DPG program in Teluk Pekedai District, the following conclusions can be drawn:

1. The participation rate in Sungai Nipah Village is higher than in other villages (Madura Village, Teluk Pekedai Dua Village, and Sungai Deras Village). Several factors cause this, including the high role of the DPG chairperson and village facilitator.
2. Sungai Nipah Village includes in the informing level, Madura Village and Teluk Pekedai Dua Village are included in the therapy level, and Sungai Deras Village is included in the manipulation level.
3. In general, farmer participation in the DPG program in Teluk Pekedai District is at the therapy level.
4. Increasing farmer participation in this can be done by increasing the role of the DPG chairperson, the village facilitator, the village government and local government, and all elements of the community (community leaders).
5. In organizing a program, the government must involve the community in every activity. For example, the planning because at this stage is the initial stage for the community to open their horizons and thoughts about the importance of the program.
6. For the head of the DPG, each village is expected to take a more personal approach to farmers to feel that their presence in the DPG program is significant to achieving the goals.

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