

Analysis Community Perception in Implementation of Land Concervation in Sumber Brantas

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Abstract—Integrated watershed management is a collaboration of all components in the watershed, including community perceptions. The community is a component of the watershed that is directly related to land. The success and failure of forest management depends very much on the community around the forest. Perception is needed to assess the seriousness of farmers to succeed the land conservation program. Farmers who come into contact with the land, farmers, actors and subjects who feel the impact of the existence of the land. Sampling was done by simple random sampling technique with 96 respondents. Perceptions about the importance of land conservation foster attitudes and behaviour of farming communities in land conservation efforts. The results of this study indicate that farmers' perception of land conservation is moderate, namely 54.16%. This is a good capital for the achievement of land conservation according to the government's plan.

Keywords: *farmers' perceptions, land, conservation*

I. INTRODUCTION

Forest is one of the conservation areas that often experiences various polemics related to its management. Forest management is not only ecological but also includes cultural, social and economic aspects. Neglecting and not involving people who live around the forest area is a big mistake because in the future there will be land conflicts. The community plays a major role in the successful management of land conservation areas. Problems that often arise in forest areas are generally caused by ignorance and different perceptions between communities and land managers. The government, with its perceptions and efforts to preserve forests, given the enormous benefits of forests for ecosystems including human inhabitants of watersheds, often face challenges in managing forest areas by communities who have their own perceptions that forests are livelihoods for income, a place to depend on and meet his life needs[1][2]. The interaction between the community and the forest is very complex, so that policy makers face serious challenges in managing forests well.

A sustainable socio-ecological system requires integration between communities and policy makers meaning it needs multi-faceted and win-win solutions in

relation to forest management and forest peoples' livelihoods [3]. The community as an important factor in the success of forest conservation. The government must be able to be a liaison between the interests of stakeholders, policy makers must have made efforts to introduce programs related to land conservation in the community but it has still not been successful, and this may be due to the lack of management strategies or the lack of appropriate intensive to encourage community participation. Community and individual perceptions are considered key points in participation and in the success of land conservation.

Automated assumption generation

To find out community perceptions related to land conservation, of course needed supporting information from the community, including age, education, land ownership, farmer experience, social relations in the community, community knowledge, side income and community perceptions. For this reason, the research theme is Analysis of Community Perceptions in the Implementation of Land and Forest Conservation in Sumber Brantas River Basin.

II. METHOD

This research is a qualitative descriptive study with sampling using simple random sampling that is a random sample without regard to existing strata. The number of samples was 96 people. Determination of the sample from the population is done accidentally. This technique is used because researchers have difficulty finding respondents based on established criteria [4]. The criterion in question is the population with the main livelihood as farmers who work on annual agricultural land. The formula used is as follows:

$$n = (Z)^2 \frac{p \cdot q}{(SE)^2}$$

Information:

n :the size of the sample to be taken

Z: the magnitude of the standard deviation unit is 1.96 (the value of the statistics table in the area below standard

normal curve at 0.95% confidence) p and q: proportion of sub-samples namely: $q = 0.5$; 0.5

Receptable (sampling error), subjective in this study errors Sample error is determined at 10% based on energy, time, and cost.

Based on the formula, it is obtained as follows:

$$n = \frac{(1,96)^2 \cdot (0,5) \cdot (0,5)}{(0,10)^2} = \frac{3,84 \cdot 0,25}{0,0049} = 96$$

So the number of farmers used as respondents is 96 people.

III. RESULTS AND DISCUSSION

A. Characteristics of Peasant Communities

The characteristics of the farming community are based on the characteristics of the individual sample farmers who seek agricultural land on annual agricultural land. Data collected includes age, level of education, side jobs, side income, land ownership, experience of extreme events, social relations, farmers' knowledge of conservation. Each variable is described below based on information from 96 respondent farmers through a questionnaire.

1. The Age

Respondents was divided into young age (≤ 30), early adulthood (31-45), late adulthood (46-60), and old age (≥ 61). This division is based on the productive age and the age of interest in working in agriculture. The data shows that the highest percentage of respondents who are mostly involved in agriculture is late adult at 41.66%, followed by early adult at 27.08%. Young respondents were only 21.8% over the non productive age of 9.3%. In general, those who pursue agriculture are adults. Age data are presented in Table 1.

Table 1. Number of Respondents by Age

No.	Age group	amount	%
1	≤ 30	21	21,8
2	31 – 45	26	27,08
3	46 – 60	40	41,66
4	≥ 61	9	9,3
		96	100

Source: 2018 data processing

2. Education

The level of education is the length of time taken to complete formal education. Formal education plays a role in shaping one's character and virtue. Differences in the level of formal education can distinguish in intellectual maturity. The attitude towards disaster is assumed to be different for each level of education. Data obtained showed that respondents who had never attended school were 1.5%, dropouts before the end of the learning period at the elementary level were 1%, junior high school 1.5%, and high school 0.5%. Those who graduated from elementary school were 55.5%, junior 30% and high school 10%. In general in the study area the majority of respondents had primary to secondary education.

3. Side job

Side jobs are economic activities that bring in relatively continuous income every month outside of agricultural cultivation work. The type of side jobs in the form of cattle, goats, rabbits are the type of side jobs that most respondents do. The data obtained shows that there were respondents who did not have side jobs at 10.8%, part-time entrepreneurs 14.3%, casual laborers 47.9%, and the use of economic assets and 27%. In general, the description is obtained that the majority of respondents work side jobs as casual laborers.

4. Side income

The income is the acquisition which is valued in the form of rupiah, sourced from work compensation, services from the assets owned, as well as the acquisition in the form of remittances from relatives, with the value of the rupiah relatively the same per month. Side income relates to the security of side jobs, although there are respondents who do not have side jobs but earn side income. The attitude towards disaster is assumed to be different for the presence of side income or between the difference in side income. Data obtained shows the existence of respondents with a side income <Rp. 100,000 amounted to 33.13%, income of Rp. 100,000 - Rp. 600,000 42%, and income > Rp 600,000 24.26%. Side income is presented in Table 2.

Table 2. Side income

No.	Age group	amount	%
1	<100.000,-	32	33,13
2	100.000,- - 600.000,-	48	42,60
3	>600.000,-	17	24,26
		96	100

Source: 2018 data processing

5. Land Tenure

Land tenure done by farmers will affect the close relationship of ownership. It is assumed that the land owned by the family or the family will be considered more than the land that is rented or not. Data obtained shows that 66% of the land held for cultivation is owned by the family, 17% of the land held for cultivation is lease, 8.8% of the land held for cultivation is owned by Perhutani, and 6.87% of the land held for cultivation is owned by the family village treasury. Land tenure is presented in Table 3.

Table 3. Respondents Based on Land Tenure

No.	Land Tenure	amount	%
1	Family owned	66	66,86
2	Rent	17	17,75
3	Owned by Perhutani	9	8,8
4	Village treasury	4	6.87
		96	100

Source: 2018 data processing

6. Value of arable land

The narrowness of agricultural land undertaken by respondents results in low agricultural yields obtained in one year period. As many as 61.7% of respondents stated that the value of agricultural products in one year \leq Rp.

5.000,000, 24% between> Rp. 5,000,000 - Rp. 10,000,000, 10.2% between> Rp.10,000,000 - Rp.15,000,000, 2.6% between> Rp.15,000,000 - Rp.20,000,000, and 1.5%> Rp. 20,000,000. The value of land based on agricultural output is the profit gained from agricultural business during one year period in rupiah units. Land value data based on agricultural output is presented in Table 5.6. Table 5.6 is used as the basis for community income analysis. The description of the table is as much as 61.7% of respondents stated that the value of agricultural products in one year ≤ Rp. 5.0000,000, 24% between> Rp. 5,000,000 - Rp. 10,000,000, 10.2% between> Rp.10,000,000 - Rp.15,000,000, 2.6% between> Rp.15,000,000 - Rp.20,000,000, and 1.5%> Rp. 20,000,000.

Table 4. Land Value Based on Agricultural Products

No	Value land (Rp/th)	amount	%
1	≤ 5.0000.000	59	61,7
2	>5.000.000– 10.000.000	23	24
3	>10.000.000 – 15.000.000	10	10,2
4	>15.000.000 – 20.000.000	3	2,6
5	> 20.000.000	1	1,5
		96	100

Source: 2018 data processing

The land value data can be used as main income information for respondent farmers with gross income. Data shows the value of land in a year ranges between Rp. 900,000 to Rp. 21,630,000. If the value of this land is averaged as a monthly income for the respondent farmers, the income per month ranges from Rp. 75,000 to Rp. 1,802,500. It can be said that the majority of respondents namely 61.7% earn between Rp. 75,000 to Rp. 416,667. Of course the income is relatively small to meet the needs of family life even in rural communities. The narrowness of agricultural land undertaken by respondents is the cause of the low agricultural yields obtained in a one-year period.

7. Experiences of extreme events

The experience of an extreme event greatly influences one's attitude towards the event. Someone who has his own experience and results in pain and loss of property, is assumed to have a high perception compared to those who only see the events and effects of erosion, especially those who only see indirectly through the media. The data obtained shows that only 29.58% experienced the incident themselves, 27.81% saw the event directly, and 42.60% saw the disaster event indirectly. The data shows that the experience itself affected by the disaster is relatively large, meaning that the incidence of disasters in the study area is felt to be high. Experience data for extreme events is presented in Table 4.

Table 4. Experiences of extreme events

No.	Experience	amount	%
1	Mass media	32	29,58
2	See for yourself	29	27,81
3	Experience yourself	54	42,60
		96	100

Source: 2018 data processing

8. Social Capital

Social capital in this study is a form of interaction and communication of individuals with communities around their homes in the context of mutual interests and other individuals who are affirmed at the level of social relations. The perception of land conservation is assumed to be different for differences in social relations. The data shows that there are no respondents who have low social relations, 16.3% have moderate social relationships, and 83.7% have high social relationships. The data is presented in Table 5

Table 5. Social Relations

No.	Social Relations	Score	amount	%
1	low relationship	1 - 4	0	0
2	moderate relationship	5 - 8	24	16,3
3	high relationship	9 - 12	72	83,7
			96	100

Source: 2018 data processing

9. Farmer's Knowledge of conservationland

Farmers' knowledge of land and forest conservation is a positive and negative impact in building a perception. The perception of conservation is assumed to be different based on the level of knowledge. The data obtained shows that 13.52% of the farmers community is low-knowledge, 46.87% of knowledge is rather low, 21.87% of knowledge is rather high, and 17.70% of knowledge is high. Data on the level of knowledge is presented in Table 6.

Table 6. Knowledge of Causes and Conservation

No.	Knowledge Group	Score	amount	%
1	Low knowledge	6-12	13	13,52
2	Knowledge is rather low	13-19	45	46,87
3	Knowledge is rather high	20-25	21	21,87
4	High knowledge	26-32	17	17,70
			96	100

Source: 2018 data processing

10. Farmers' Perceptions of land conservation

The level of farmers' perceptions of forest conservation is listed in Table 7. based on the results of the analysis, it is based on perceptions about forest conservation that are profitable now and in the future, agreeing to carry out activities according to conservation, changing the direction of mounds, intercropping, using traditional tools, reducing pesticides, and using organic fertilizer. A total of 7 questions were asked to obtain the highest possible score of 28 and the lowest 7 to measure the level of knowledge of farmers. Data obtained showed that 19.79% had low perception, 54.16% had moderate perception, and 26.04% had high perception. The data is presented in Table 7.

Table 7. Perceptions of Conservation

No.	Perceptions	Score	amount	%
1	Low Conservation Perception	7 - 14	19	19,79
2	Medium conservation perception	15 - 21	52	54,16
3	High conservation perception	22 - 28	25	26,04
			96	100

Source: 2018 data processing

B. Discussion

The age of respondents in this study was 46 - 60 years into old adulthood that is equal to 41.66% and early adulthood (31-45 years) amounted to 27.08%. At that age the dominance of moderate attitude and act wisely. Especially in receiving new information, they are quite careful. These conditions affect the slow absorption of new information. The education level of elementary school respondents is 55.5% and junior high is 30.1%. Formal education plays a role in growing intellect as a frame of reference in thinking rationally. The low level of formal education results in low understanding and interpretation.

Variable knowledge of land and forest conservation, low knowledge respondents were 68.9%. However, in addition to formal education factors, experience factors with land degradation events and disasters also play a role in the lack of knowledge about the causes of conservation. 29.58% of respondents knew that land degradation indirectly through the media, while 27.81% of respondents had seen land degradation directly but did not experience it themselves. Experience is very important in building one's attitude. Very low experience of respondents to the event of degradation makes respondents behave less so concerned about degradation. However, in addition to formal education factors, experience factors with extreme events also play a role in the lack of knowledge about the causes and conservation of land. 55.1% of respondents knew that degradation indirectly through the media, while 41.3% of respondents had experienced it themselves. Experience is very important in building one's attitude. Very low experience makes respondents not so concerned about the importance of land conservation.

Although education, knowledge, and experience tend to be low, the perception of 73% of respondents has a moderate perception of conservation. It is possible to have a moderate perception of conservation because all respondents know about the degradation event even though their knowledge is mostly obtained through mass media and have also seen the event of the disaster even though it did not suffer losses. Meanwhile 83.7% of respondents have high social relations. This is still quite reasonable because community life in rural areas still has strong social ties.

For the side job variable as much as 89.2% of respondents have a side job, while for the amount of side income, as much as 42.60% have a side income of > Rp. 100,000 - Rp. 600,000. The existence of work and side income results in a low orientation to be fully active on agricultural land. The low orientation on agricultural land will tend to be exploitative or less concerned about

agricultural land so that it does not pay attention to aspects of land conservation.

In the age variable of respondents the level of formal education, knowledge, and experience tends to be low, this has an impact on low perception. But on the contrary the perception variable and high respondent social relations will also increase community capacity. Social relationships are forms of social communication in the form of information from one person to another person. Good social relations will enrich information which will ultimately affect one's attitude.

The results showed that the level of education, age and knowledge influence the perception of land and forest conservation. while the experience of extreme events in the form of a disaster does not affect farmers' perceptions of land conservation. The results of this study are more or less similar to the research of [5][6] which states that education and knowledge are factors that play a role in the attitudes and actions of farmers in carrying out land conservation actions.

These results indicate that individuals with formal education and high knowledge at a young age to adulthood, will have different perceptions about the importance of land conservation compared to individuals with formal education and low knowledge who are aged. The success of formal education includes increasing knowledge and stimulating individuals and communities to continue to increase their knowledge. Knowledge outside of formal education will also be easily understood by those who are highly educated and are young to adult. Conversely those who are poorly educated and old will find it increasingly difficult to understand new knowledge.

The higher the level of formal education, the more able the person is to interpret the importance of land conservation. This can be understood because formal education has the main goal as forming the character and virtue in which knowledge, knowledge, and skills are part of it. Formal education is a process of inculcating life skills that includes thinking or knowing skills, acting skills, life skills, lifelong learning skills, and life skills together. In the formulation is not just cognitive skills, but at the same time affective and psychomotor. The education system through a structured school with a clear orientation in order to open one's horizons to be more open with a variety of information, is an important factor in the development of human perception and behavior, because perceptions and behaviors that exist in human individuals do not arise by themselves, but as a result of stimulus received by humans. Most of human perceptions and behavior are behaviors that are formed, obtained, and studied through the learning process [7]. The learning process through formal education can build sensitivity and stimulate perception. This is more or less in agreement with [8][9] which state that people's perceptions depend on their sensitivity in receiving stimuli. Likewise, the research of [10][11] which states that a person's perception is influenced by the many sources of information from various parties.

Conditions in the study area show that most formal educated people are still very low. Of the 96 farmer respondents, those who graduated from elementary school were 55.5%, graduated from junior high school 30%, and graduated from high school 10%. Likewise with knowledge

about conservation the percentage of respondents on this variable was 13.52% with a rather low to low knowledge and 46.87% with a high to high knowledge. While the young age to adulthood (age \leq 45 years) amounted to 21.87% and the age of adulthood to old age (\geq 46 years) amounted to 17.70%. In general it can be said that the majority of respondents in the study area are adults to old with low levels of education and knowledge. This condition resulted in a high perception of disaster of 26.4%, moderate 54.16%, and a low 19.79%, so it can be said that the perception of the community in the study area of the importance of land and forest conservation is moderate.

IV. CONCLUSIONS AND SUGGESTIONS

Perception about the importance of land conservation will foster attitudes and behavior of farming communities in land conservation efforts. The results of this study indicate that farmers' perception of land conservation is moderate, namely 54.16%. This is a good capital for the achievement of land conservation according to the government's plan.

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