

Case Study Article

The Role of BUMDes in Preserving the Environment in Pematang Lingkung Village, Batang Merangin District, Kerinci Regency, Jambi Province

Arneli Puspita^{1*}, Zulkifli Alamsyah¹, Zamzami¹

¹Department of Environmental Sciences, Faculty of Postgraduate, Jambi University, Jl. Arif Rahman Hakim, Unja Telanai Campus, Jambi, Indonesia 36361

*Corresponding author, e-mail: arneli.puspita@gmail.com



Abstract

Environmental conservation determines the life of humans and other living things, but on the other hand, humans can also select the state of their environment. With the lack of public knowledge about preserving the environment, people unwittingly pollute the environment by littering on empty land that is not used. There is a buildup of waste that pollutes the air, water, and soil. The Pematang Lingkung Village Government takes steps through the BUMDes Program to prevent environmental pollution by utilizing vacant land that is not used as a tourist spot in the form of the Melik Sisik Park as an effort to preserve the environment. This study aimed to determine the condition of BUMDes and the role of BUMDes in environmental conservation. This type of research uses a quantitative approach with 80 respondents. Sampling technique with a questionnaire instrument was employed. Descriptive data analysis and Chi-Square test was conducted to analyze the results. A qualitative approach is used to understand the development and dynamics of BUMDes in the context of rural economic development, especially in rural community business processes. The industry's environmental management and monitoring implementation had not raised awareness of environmental conservation; community involvement and concern in ecological management and monitoring are still low. The results showed a relationship between the role of BUMDes and environmental conservation in Pematang Lingkung Village.

Keywords: BUMDes; community behavior; conservation; qualitative analysis

1. Introduction

Conservation of the environment determines the life of humans and other living things, but humans determine the state of their environment (Akdon, 2007). Preservation and management of the environment are the government's duty and authority and the community as residents in a region. Including the village level, the management and preservation of the environment is the duty of the village government and the community (Alex, 2012). Pematang Lingkung Village has land that has not

been utilized by the Village Government or the surrounding community. Some people carry out waste disposal activities without processing that waste builds up to pollute the environment.

According to Environmental Law No. 4/1982, which was enhanced by Environmental Law No. 23/1997, article 1 states that the meaning of the environment is the unity of space with all objects, power, conditions, and living things. Including humans and their behavior affects the life and welfare of humans and other living creatures. The Environmental Law No. 23/1997 concerning Environmental Management and provides severe penalties for environmental violators by the demands of the law. Preserving the living environment that can be used as a reference for environmental care in daily life are as follows: 1) Improving environmental health by intensifying efforts to clean sewers, bathrooms were washing and latrines, maintenance of drinking water wells. 2) Cleanliness of the area in the house, including windows that can enter sunlight, cleanliness of the kitchen. 3) provide trash cans that have been grouped into organic and inorganic waste bins. 4) Energy-saving efforts, such as saving electricity consumption and water use. 5) Utilize the gardens with valuable plants, plant seeds for reforestation, and keep houses as clean and beautiful as possible to be a healthy and pleasant environment for the family. 6) Waste management, reuse of organic waste, and recycling inorganic waste through a scavenger or something similar. 7) Develop biogas techniques with utilizing animal waste and kitchen waste as a source of energy for cooking. 8) Improve skills by utilizing available materials, leftover materials, or used materials, then repeatedly recycling various materials, such as arranging flowers (Andi, 2015).

The environmental conditions in Pematang Lingkung Village previously had no waste processing, and some people who littered that without realizing these activities had polluted the environment. If these activities continued, they would impact the environment such as economy, social, health, community safety (Neolaka, 2008). Under these conditions, the village government is trying to find a solution through the BUMDes program in a recreation area for Taman Sisik Melik. The community's land has not been utilized is converted into a tourist spot for local communities and Neighboring Village communities with no more littering activities. Organic and non-organic waste bins are provided organic (Bukhari, 2017). Currently, the BUMDes program is booming where every village is competing to create a BUMDes program to support village economic development. In contrast, Pematang Lingkung Village, through the BUMDes program, creates a recreation area in the form of the Melik Sisik Park on land that has not been utilized. In the village under these conditions, researchers are interested in researching environmental conditions and the BUMDes program. The environmental conditions of Pematang Lingkung Village before and after the BUMDes program changed in terms of the community's environment, economy, social, health, and security.

This study was conducted to determine the relationship between the role of BUMDes with environmental preservation in Pematang Lingkung Village. The increase in BUMDes is currently booming with conditions like this. As in this study, many villages are using the BUMDes program for environmental conservation. The BUMDes program is the latest push in environmental conservation efforts.

2. Methods

The qualitative approach is considered capable of providing social phenomenon, which is the dynamics of BUMDes placed in the context of rural economic development, especially in developing rural community businesses (Damhuri, 2010). Time and place of research between January – March With a scope focused on BUMDes in environmental conservation in Pematang Lingkung Village, Batang Merangin District, Kerinci Regency, Jambi Province.

The data sampling technique collected data by interviewing respondents selected as samples using a list of questions or structured questionnaires. Collecting data 80 respondents in the form of 10

assessment indicators with a score of 1 to 5 then categorized as low and high. This research was done by combining or collaborating several research data collections, namely in-depth interviews, observation, and documentation. Quantitative research data generated during this research can be grouped into two categories. Data from written statements describe situations, events, people, interactions, and behaviors observed directly in the field, presented in field notes. When the author made observations, the data from the conversation were in direct quotations from the statements of respondents who were resource persons in this research regarding their experiences, attitudes, beliefs, and thoughts in interviews and during group discussions. Written data excerpts or all parts of documents relating to business actors and BUMDes issued by official bodies. Secondary data was collected from various literature and reporting sources related to BUMDes. Secondary data used includes village potential data, population, BUMDes Report, and BUMDes program.

In determining the sample, the researcher used probability sampling, which is a sampling technique that provides equal opportunities for each member of the population to become a sample. This technique includes sample random sampling, systematic sampling, proportional stratified random sampling, disproportionate stratified random sampling, and cluster sampling. The sample random sampling technique is the most used. The sample is taken at random, regardless of the level in the population. Test this validity using the SPSS program. This analysis correlates each item's score with the total score. The total score is the sum of all the things. Question items that are significantly associated with the total score.

The factors explored in the questionnaire are divided into several environmental conservation indicators. Environmental conservation is divided into 10 indicators: land clearing, waste processing, reforestation, throwing waste in the rubbish, sorting waste according to this type, saving on the use of tissue, planting with production plants, saving water, and planting according to contours. Meanwhile, the role of BUMDes is divided into 10 indicators, including knowledge of BUMDes, BUMDes management, waste management training, waste sorting training, job opportunities, no accumulation of waste, economic improvement, providing reforestation land, providing waste disposal.

The interview method was carried out. The respondents consisted of the Village Government, BUMDes Management, and the community with a total of 80 respondents in the form of 10 assessment indicators with a score of 1 to 5 then categorized as low and high. This research is done through the collaboration of several data collection. In-depth interviews are data collection techniques carried out by giving key informants a set of questions "oral" in detail and depth. Observation is a research data collection technique carried out through direct observation of phenomena during the research process, such as a person's behavior, circumstances, conditions, etc. The aim is to observe directly from community groups and several other observation objects closely related to the research objectives. The data collected with this documentation technique is by the standard research methodology about the research conducted.

Data analysis method data about informants' role of BUMDes in environmental conservation. The analytical model used by the researcher is the Miles and Huberman version. According to this version, data analysis consists of three activities simultaneously: data reduction, data presentation, and conclusion drawing or verification. Chi-Square Test Analysis using SPSS statistics with the variables tested are the relationship between the role of BUMDes and environmental preservation according to the Pematang Lingkung Village community. If the p-value < 0.05 , then H_0 is rejected, meaning that the two variables have a relationship. H_a is accepted if the p-value is $0, 0.5$, indicating no connection between the two variables.

The research hypothesis of BUMDes Taman Sisik Melik can change people's behavior in environmental conservation in Pematang Lingkung Village. Researchers explore the relationship between the role of BUMDes in environmental preservation in Pematang Lingkung Village, Batang Merangin District, Kerinci Regency with the initial conditions of the research area. Some people throw

waste carelessly without processing but without realizing it has polluted the surrounding environment. In this study, the community needs cooperation in changing behavior to prevent these activities.

The idea of variable measurement is to explain the differences or relationships between variables. Variables are concepts that have values that change or have variations in the value of circumstances, categories, and self-conditions. The idea is what needs to be observed or researched.

3. Result and Discussion

Administratively, Pematang Lingkung Village is included in the Batang Merangin District, which is a sub-district in Kerinci Regency, Jambi, Indonesia. This sub-district was established on June 12, 1996, based on Government Regulation No. 47/1996. The total population is 1109 people and the number of family heads are 305. The Pematang Lingkung Village has an area of approximately 20,000 Ha. The topography of Pematang Lingkung Village is generally seen as a highland area with tropical plantations. It affects the economic pattern of the local population. The residents of Pematang Lingkung Village are 100% muslim. Awareness of religious worship, especially Islam, is very well developed in spiritual life.

The BUMDes Pematang Lingkung Village was initiated initially by Anton Sahroni, the Head of Pematang Lingkung Village, in 2018 by forming the BUMDes Jaya Bersama management. In 2019 the collaboration between BUMDes management and the community assisted professionals in land clearing and planning gardens. The cooperation discussed making ponds, parking areas, platforms, planting flowers, and other places followed by early 2020. When Taman Sisik Melik began to be opened and visited by local people, there were still few visitors due to the spread of the Covid-19. Still, the management continues to improve the completeness and beauty of the park, supported by the addition of infrastructure. In 2021, there will be an increase in visitors compared to the previous year from Neighboring Villages because the rides in the park and photo spots in the parking area have been added from the last year (BUMDes Report, 2020).

Respondents are all individuals and collectively who will be questioned from elements of the Village Government, BUMDes Management, and the Community. For a researcher, the process of collecting data from respondents through questionnaires or direct interviews. The ability of the respondents to influence the answers or information provided, especially if the question concerns the reputation of the region or statements that are sensitive, the following are the respondents taken in this study starting from the respondent's age, gender, education, occupation, and income. The previous condition is that Pematang Lingkung Village has approximately 2 H of land, which the Village Government and the community do not utilize. Under these conditions, some people throw waste on vacant land without processing. This activity is continuously carried out, resulting in the accumulation of waste on the ground without realizing it has polluted the environment. Over time, the people who own houses around the location are getting restless because unpleasant smells are starting to smell along with the wind. Furthermore, the Pematang Lingkung Village Government plans to create a BUMDes program in a Melik Sisik Park recreation area located on the vacant land that is not utilized.

The cleanliness condition of the Village Government through the BUMDes program has created a recreation area in the form of the Melik Sisik Park in a location that was previously a place for waste accumulation. Still, the land has changed with cooperation between the Village Government, BUMDes Management, and the community in cleaning up all waste accumulation by prohibiting throwing waste at that location and then building a fence along with the area for the preparation of the park.

Health conditions after there is no more waste accumulation. Some disease vectors such as flies, rats, insects are rarely seen to reduce the level of disease-causing, which is feared to decrease slightly, such as typhoid diarrhea and others. Security conditions can provide comfort for the people of Pematang Lingkung Village and security for children playing. The crowded conditions of the people of

Pematang Lingkung Village started through the road with clean conditions. The neighboring village community visited them because the location had become part of a recreation area in the form of Melik Sisik Park. The socio-economic and cultural conditions of the Pematang Lingkung Village community have improved from before. There are no more disputes between communities in the accumulation of waste, and health conditions are starting to improve until the community is more productive in their daily activities. The presence of the Sisik Melik Park provides business opportunities for the community in the parking area, both for culinary businesses, souvenirs, and other businesses. The presence of the Sisik Melik Park impacts the community's economy, both those who own businesses and provide opportunities for the surrounding community to operate the Sisik Melik Park.

Table 1. Distribution of respondents by category assessment of BUMDes

No	No Assessment Category	Number of Respondents
1	Height	51
2	Low	29
3	Quantity	80

Based on the respondent's assessment of the role of BUMDes with 10 indicators of respondents' assessment in determining high and low using a score of 1-5 out of 80 respondents in the respondent's assessment of the role of BUMDes. The result shows that the high rating category was 51 people, and the low rating category was 29 people from the average score of the respondents. The results of the respondents' assessment of Environmental Conservation based on the indicators used in the Chi-Square analysis, the researchers researched by distributing questionnaires and interviews to obtain information for the completeness of the data obtained from Village Government, BUMDes Management, and the community with a total of 80 respondents with the distribution of respondents based on assessment of environmental conservation. Previous researchers confirmed about the influence of BUMDes on the community used questionnaires, and the community or visitors studied to see the success of a program by referring to the facilities aspect of the BUMDes program in Ponggok village (Hennidar, 2017).

Table 2. Distribution of respondents based on assessment of environmental preservation

No	No Assessment Category	Number of Respondents
1	Height	49
2	Low	31
3	Quantity 80	80

The respondent's assessment of environmental conservation with 10 indicators of the respondent's assessment in determining high and low using a score of 1-5 out of 80 respondents. The results show that the increased rating category was 49 people, and the low rating category was 31 people from the average score of the respondents (Processed research data in 2021). Previous researchers on environmental preservation of tourist attractions where success is measured by strengthening, discipline, and security with the local government and managers in planning and observing where the human resources incorporated in this planning significantly affect the success of a program (Andi, 2015). The relationship between the role of BUMDes and environmental preservation through the existence of Taman Sisik Melik using Chi-Square statistical test analysis to determine the relationship between the role of BUMDes variables and environmental conservation variables the results of data processing carried out by the researchers are as stated in Table 3.

Table 3. Cross-tabulation of respondents' assessment of the role of BUMDes and environmental preservation

		Environmental Preservation		Total
		Low	High	
Role of BUMDes	Low	20	9	29
	High	11	40	51
Total		31	49	80

Researchers distributed questionnaires and interviews to respondents to complete data sourced from the village government, community, and BUMDes management. Based on the respondent's assessment of the role of BUMDes and environmental conservation, each of the 10 indicators of the respondent's assessment in determining high and low uses a score of 1-5 from 80 respondents. The processed data found that the respondents' assessment of the standard role of BUMDes would make 89.5% low environmental conservation, and vice versa, high BUMDes' position would make 85.7% high environmental conservation. Previous research on the study of preserving the environment is very significant. Its success is a factor of community behaviour in environmental management, starting from processing household waste by sorting organic and non-organic waste. Vice versa, a polluted environment can also be seen from the participation of the community's behaviour (Reno, 2009).

Table 4. Analysis of chi-square tests

	Value	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	17.498 ^a	1	0.000	
Continuity Correction ^b	15.558	1	0.000	
Likelihood Ratio	17.713	1	0.000	
Fisher's Exact Test			0.000	0.000
Linear-by-Linear Association	17.280	1	0.000	
N of Valid Cases	80			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.24.

b. Computed only for a 2x2 table

Data processing is carried out after carrying out the Chi-Square test using the SPSS statistical test from 80 respondents who are elements of the Village Government, BUMDes Management, and Pematang Lingkung Village Community. Based on data processing, a p-value of 0.000 is obtained. Concluded that the role of BUMDes and environmental conservation has a significant relationship between the role of BUMDes and environmental preservation in Pematang Lingkung Village (Processed research data in 2021).

Meanwhile, Yusuf (2016) said that the condition of BUMDes in the Jepara Regency has been running by establishing BUMDes and improving the village economy. Hennidar (2017) also stated that the capacity of Tirta Mandiri BUMDes based on elements of human resources do not have sufficient expertise and skills. The ability of BUMDes to provide tourism infrastructure has not been adequate, while the technological and financial capacity has been enough. He also argues that participatory planning is should be done and carried weightier to increase the participation both in quality and

quantity. By looking at the objectives, the research approach used in this study resulted in a qualitative descriptive analysis tool with data collection techniques using interviews, documentation, and observation. In obtaining the validity of the data, inspection techniques used four criteria: the degree of credibility, transferability, dependability, and confirmability. The results obtained are that the community plays a significant role in every planning process to overcome problems that arise in the community. Hence, community involvement in planning activities is essential and determines the quality of participation (Ismoyo, 2015). The condition of BUMDes in Jepara Regency has been running by establishing BUMDes and can help improve the village economy (Agung, 2016). Previous researchers on the success of BUMDes as an increase in the community's economy with the strength of community cooperation, the Village Government and BUMDes administrators use indicators of success with planning, organization, implementation, and evaluation in a series of inseparable units (Ribawanto, 2013).

4. Conclusions

According to the results of questionnaires and in-depth interviews conducted by researchers, the Taman Sisik Melik before and after experienced changes for the better in terms of health conditions, cleanliness, security, crowds, and even social and economic conditions. The role of BUMDes in environmental preservation through the existence of the Taman Sisik Melik in Pematang Lingkung Village in terms of respondent assessment based on indicators that the village government has carried out. There is a significant relationship between the role of BUMDes and environmental conservation in Pematang Lingkung Village based on respondents' perception.

References

- Akdon. 2007. Strategic management for educational management. Bandung : Alfabeta.
- Alex. 2012. Fundamentals of Environmental Law. Jakarta: Sinar Graphic.
- Andi. 2015. The relationship between environmental knowledge and environmental ethics with attitudes and behaviors to preserve the environment. Jakarta: Pancasila University.
- Amos Neolaka. 2008 Environmental awareness. Jakarta: Rineka Cipta. 25.
- Bukhari. 2017. The relationship between environmental knowledge and environmental care attitude. Yogyakarta: Universitas Veteran Yogyakarta.
- Chambers. 1995. Village development starts from the back. Jakarta ; LP3ES. Christian.
- Damhuri. 2010, the system of environmental protection and management in Indonesia, the way of the sky jewel. Jakarta
- Daniel. 2009. Environmental ethics. Jakarta: Kompas Book Publisher.
- Dinda. 2018. Implementation of the Tunas Jaya BUMDes program in Gunung Rejo Village, Way Ratai District, Pesawaran Regency.
- Edy, Yusuf, 2016. Independent village development through BUMDes management. Focusindo Mandiri, Law on Environmental Protection and Management.
- Gilbert. 1996. Management of landfill sources. Jakarta: University of Indonesia.
- G.R Tery. 1986. Principles of Management: Bandung, 163
- Hartiningsih, 2015. Temporary waste disposal. Jakarta: University of Indonesia.
- Hennidar. 2017. The capacity of BUMDes in managing the tourism potential of Ponggok Village, Polanharjo District, Klaten Regency.
- Hermawati. 2014. Environmental governance law. Yogyakarta: Gadjah Mada University Press. Live, Bandung, 2013
- Heni, Ryan, Budhi, 2016. Environmental disclosure. Yogyakarta: Universitas Gajah Mada.
- Husayn. 1993. Environmental ecology and development. Jakarta: Erlangga Publisher.
- Ismoyo. 2015. Increasing community participation in household waste management. Malang: State University of Malang, Central Java.

- Kopitof., 1986. The influence of the social environment. Medan: University of North Sumatra.
- Report of the BUMDes Melik Park in Pematang Lingkung Village in 2019. Report of the BUMDes for the Melik Garden in Pematang Lingkung Village in 2020.
- Manulang. 2002. Fundamentals of management yogyakarta. Yogyakarta: Gajah Mada University Press
- Notoadmojo. 2003. The relationship between environmental knowledge and interest with environmental conservation attitudes in state high schools, Badar sub-district, Southeast Aceh district. Postgraduate Thesis. Medan: Medan State University.
- Parag Diwan. 1999. Management functions. Jakarta: Pancasila University.
- Regulation of the Minister of Villages, Development of Disadvantaged Regions, and Transmigration of the Republic of Indonesia Number 4 of 2015
- PERMEN Number 13 of 2011 concerning Compensation for Environmental Pollution
- Profile of Pematang Lingkung Village, Batang Merangin District, Kerinci Regency, Jambi Province. Pulp and Paper Industry for Palm Oil. Medan : e-USU Repository, University of North Sumatra.
- Prihatiningtias. 2009. Effectiveness of managing village-owned enterprises (BUMDesa) based on people's economy in Warungbambu village, East Karawang sub-district, Karawang district. Journal of Politico Indonesiana, 1(2), 31-42. Student Library.
- Reno, 2009. Social waste at the community level: Universitas Gajah Mada.
- R. Bintarto. 2013. The conflict between the village consultative body and the village head (case study of Cangkring village, Tegowanu sub-district, Grobogan district.
- Ribawanto. 2013. The existence of village-owned enterprises (BUMDes) as strengthening the village economy. journal of public administration 01 (06) 1068-1076.
- Sudjarwo. 2014. Management of liquid waste in the leather tanning industry.
- Sudarsono. 1985. Waste and waste management : Surabaya, Airlangga.
- Setyono. 2011. Environmental impact control. Surabaya: Airlangga Publisher.
- Sudrajat. 2002. Environmental law and development ecology (second edition).
- Sillahi. 1994. Environmental science. Bandung: Institute Technology Bandung Publisher. 133 p.
- Sumarwoto. 2004. Environmental impact control. Surabaya: Airlangga Publisher.
- Supardi. 2003. Environmental chemistry. Boston: Willard Grant Press.
- Sutardjo. 2013. The existence of village-owned enterprises (BUMDes) as strengthening the village economy. journal of public administration 01 (06) 1068-1076.
- Sutardjo. 2013. Economic independence of the village through institutional village enterprises (BUMDes). IOSR Journal of Economics and Finance (IOSR- JEF), 3(2), 21-30.
- Toobanoglous. 2003. Environmental impact on waste disposal activities. Bandung: Institute Technology Bandung.
- Trisnawati. 2008. Empowerment of rural communities. Medan: Universitas Sumatera Utara
- Law Number 32 of 2009 concerning Environmental Protection and Management