

## **Analysis Of Village Potential In Flood-Prone Areas (Study Case in Bengkulu Tengah District)**

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### **ABSTRACT**

**Purpose** – This paper aims to analyze the potential for economic revival of the three villages

**Methodology/approach** – The research conducted in the villages of Susup, Rajak Besi, and Komerig, which were selected purposively. The research location was chosen purposively because it has the most severe economic damage in Central Bengkulu Regency. The first method is the Rapid Rural Appraisal (RRA) technique which requires extensive and informal speaking communication with rural people and observing the local conditions of the community. The second method is the seven-span method. The seven-span method is widely used to classify village potentials based on seven criteria to realize the sustainability of businesses established in rural areas and analyzed descriptively.

**Findings** – It was found that Susup and Komerig villages have great potential in the aspects of Economic, Social, and Natural Resource. However, it is very weak in aspects of Environment, Human Resources, Market and Technology. Unlike Rajak Besi Village, this village has the potential to be developed after the disaster because it has strengths in the aspects of Economic, Social, and Natural Resources, Human Resources, Market and Technology..

**Novelty/value** – The importance of village potential to develop regional strategies in the development of post-disaster village areas

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### **INTRODUCTION**

A flood is a natural disaster caused by geographical conditions, topography, and river channel geometry. High rainfall, damming from the sea/tidal on the mainriver, land subsidence and siltation due to sedimentation, and dynamic human activities have led to more widespread flooding in Indonesia (Amri, 2016). Due to global warming, there is a lack of flood control infrastructure, land subsidence, and sea-level rise. Floods are the most common natural disasters that hit Indonesia. The National Disaster Management Agency (BNPB) noted 487 flood events from January 1 to April 19, 2021. That number reached 42% of the 1,153 natural disasters in the country last year.

There was a big flood disaster in Bengkulu province which caused loss of life and loss of people's property. The increase in rainfall at the Tanjung Jaya Rain Post occurred on April 24, 2019 (72 mm/day) and April 26, 2019 (131 mm/day). Extreme rainfall was detected at the Baturaja Rain Post on April 24, 2019 (108 mm/day), and April 26, 2019 (324 mm/day). The water level of the upstream Bangkahulu River has increased since April 25, 2019 (4.5 m), April 26, 2019 (3.0 m), and April 27,

2019 (8.4 m). Meanwhile, the water level in the lower reaches of the Air Bangkahulu River has been increasing since April 25, 2019 (5.9 m), April 26, 2019 (4.4 m), and April 27, 2019 (8.5 m). According to Setiawan et al (2020), the level of flood susceptibility in Bengkulu is very high, especially in villages located along the Bengkulu River watershed, which should have priority policies in the management of settlements along the watershed.

Central Bengkulu Regency has the highest level of damage due to flooding. There are 232 villages categorized as hazard class and the percentage of villages/kelurahan prone to landslides is 59.23 percent. In Bengkulu Tengah Regency, the flood disaster which caused loss of life and property BNPB (2019) recorded 24 people died and 10 people were missing and 44 houses were damaged and 125 houses were submerged, 5 schools were damaged and 4 schools were submerged, and 5 roads were submerged. and 1 fishery facility was heavily damaged. Merigi Sakti District is the area that experienced the highest losses due to floods and landslides that have ever occurred, which reached Rp. 14,294,125,000,-. Meanwhile, the villages that experienced the worst floods and landslides were Susup Village, Rajak Besi Village and Komering Village.

Table 1: The level of economic losses due to the Flood disaster in Central Bengkulu Distric

Subdistrict	Economic Sector Loss Value (IDR)	%
Merigi Sakti	14.294.125.000	53,02%
Karang Tinggi	6.131.000.000	22,74%
Pagar Jati	2.319.500.000	8,60%
Bang Haji	1.493.000.000	5,54%
Pondok Kelapa	1.242.375.000	4,61%
Talang empat	668.000.000	2,48%
Pondok Kubang	342.500.000	1,27%
Merigi Kelindang	337.700.000	1,25%
Taba Penanjung	119.000.000	0,44%
Semidang Lagan	12.000.000	0,04%
Pematang Tiga	-	0%

Natural disasters cause casualties, environmental damage, property losses, and psychological impacts. Large-scale natural disasters can result in substantial economic losses (Herlambang, 2004). Holistic disaster management in dealing with every catastrophe needs to be carried out by the government and improved from time to time. Economic improvement in rural areas is an important thing to do. Post-disaster management in Indonesia has been regulated in the Regulation of the Head of the National Disaster Management Agency No. 11 of 2008 concerning Guidelines for Post-Disaster Rehabilitation and Reconstruction. The financing policy has also been regulated in the regulation. Disaster management funds come from the Local government budget.

In order to repair the economic damage caused by the flood disaster, it is necessary to analyze the potential of the village for recommendations for developing village conditions. Meanwhile, the villages that experienced the worst floods and landslides were Susup, Rajak Besi and Komering Village. This study aims to analyze the potential for economic revival of the three villages.

## METHOD

The research conducted in the villages of Susup, Rajak Besi, and Komering, which were selected purposively. The research location was chosen purposively because it has the most severe economic damage in Central Bengkulu Regency. The first method is the Rapid Rural Appraisal (RRA) technique which requires extensive and informal speaking communication with rural people and observing the local conditions of the community. In addition, RRA is used to obtain information in a fast, cost-effective, accurate and in-depth manner as a basis for development planning and action. The second method is the seven-span method. The seven-span method is widely used to classify village potentials based on seven criteria to realize the sustainability of businesses established in rural areas and analyzed descriptively.

## RESULT AND DISCUSSION

### *Natural Resources*

Natural resources are one of the blessings created by God for a village with its diversity. Natural resources become a very important potential for village progress. Natural resources can be used in various ways that cover the line of human life. Its utilization can also provide additional economic benefits and income for the villagers. Villages have a very important role in determining where the management of their resources will go (Gultom et al., 2020).

Based on the results of the study, it was found that Susup Village has the potential for Rice fields, Ginger Land, Crops. Before the disaster in Susup Village, the community used natural resources for farming, coffee gardening, growing food crops, raising livestock and having tilapia fish breeding. However, the floods that hit in 2019 yesterday caused many fields and gardens to be damaged and fish ponds that were not productive. After the flood and landslide disaster, this village was hit by cases of the corona virus so that a new potential emerged, namely ginger plants. This plant is a new potential for Susup Village, because the demand for ginger is increasing, many people are turning to planting ginger. Ginger processed drink to increase antibodies during the covid pandemic. Not much different from Komering Village and Rajak Besi Village, agricultural commodities that become potential villages are Rice field and Crops.

Other potential natural resources, namely Plantation Land, Rajak Besi has the potential for Plantation Land, namely oil palm plantations. Rajak Besi is one of the villages that is able to produce oil palm with enormous potential. However, Susup and Komering villages do not have oil palm potential. Unlike Susup Village, the agroforestry system is used to grow coffee. So that many people use forest land to cultivate coffee. Growing coffee with an agroforestry system is a very good thing. One of the efforts to overcome the need for agricultural land while maintaining forest and environmental functions is through the application of an agroforestry system. With the application of agroforestry, it is hoped that it can become a medium to improve the welfare of farmers while addressing global problems, such as environmental degradation, poverty, and global warming (Nursetiawan et al., 2019).

Table 2: Natural Resources Potentio

7's Bentang Natural Resources	Name of Village	Potentio
Agricultural land	Susup	Rice field, Ginger Land, Crops

	Komering	Rice field, Crops field
	Rajak Besi	Rice field, Crops field
	Susup	-
Plantation Land	Komering	-
	Rajak Besi	Coconut oil
	Susup	Edge/Around Forest Area
Forestry Land	Komering	Outside Forest Area
	Rajak Besi	Outside Forest Area
	Susup	Irrigation Channel
Irrigation	Komering	-
	Rajak Besi	-
	Susup	-
Livestock	Komering	-
	Rajak Besi	-

### Social

Social activities are things that always happen in rural areas. The importance of this social potential can be the fulfillment of important values in society. The general form of social processes is social interaction (which can also be called a social process) because social interaction is the main condition for the occurrence of social activities. Socio-cultural and socio-economic conditions that need to be identified include the following conditions: what values are dominantly embraced by the community that are able to move the community; what social forces are capable of bringing about changes so that people can change from within themselves; what is the character and characteristics of the community, especially in responding to social interventions; such as what is the pattern of communication information that occurs in the community, both in the dissemination of information and in the learning framework (Moerad et al., 2016).

Other forms of social processes are only special forms of social interaction. Social rural communities include social relations between citizens, social institutions, public figures, and village management. In general, the three villages have a Headman, tribal chief, and religious leader in the village. And village management is regulated by the local government.

Table 3: Social Potention

7's Bentang	Name of Village	Potention
Social		
Public figure	Susup	Headman, tribal chief, religious leader
	Komering	Headman, tribal chief, religious leader
	Rajak Besi	Headman, tribal chief, religious leader
Village Management	Susup	Local goverment
	Komering	Local goverment
	Rajak Besi	Local goverment

### Economic

A competitive village is an important issue and a concern of all elements of society. In order to realize an independent and competitive village, it is necessary to study and map the economic potential of the village as a local resource (Wibowo & Alfariy, 2020). The improvement of the community's economy is a very important point to be developed. The economic potential of the village in Susup Village, Komering Village, Rajak Besi Village has similarities in the livelihoods of the people, namely Agriculture, Indonesian Overseas Worker, and Car/ Motorcycle Repair. However, Rajak Besi Village has a higher number of workers because it is supported by better urban access compared to the other two villages.

The potential of Susup Village is Coffee and Red ginger because the majority were planted by the community during the covid 19 period. Meanwhile, Komering Village has coffee, rice, and corn as the main commodities cultivated by the village community. Not much different from Rajak Besi Village which has the potential for rice, and corn, but the potential for oil palm plantations is very large in the area. The potential for agricultural and plantation cultivation leads to increased access to financing for rural communities. However, there is no easy access to financing, namely Sharia Financial Services Cooperative not available, Pawnshops not available, Automated Teller Machines (ATM) not available. This is also correlated with the ability to access markets in Susup and Komering Villages, while Rajak Besi Village has easy market access due to its close distance.

Table 4: Economic Potention

7's Bentang	Name of Village	Potention
Economic		
Livelihood	Susup	Agriculture, Indonesian Overseas Worker (2 person),
	Komering	Agriculture, Indonesian Overseas Worker (1 person), Car/ Motorcycle Repair
	Rajak Besi	Agriculture, Indonesian Overseas Worker (6 person), ), Car/ Motorcycle Repair
Featured Commodities	Susup	Coffee, Red ginger
	Komering	Coffee, rice, corn
	Rajak Besi	Oil Palm, rice, corn
Purchasing power	Susup	Sharia Financial Services Cooperative not available, Pawnshops not available, Automated Teller Machines (ATM) not vailable
	Komering	Sharia Financial Services Cooperative not available, Pawnshops not available, Automated Teller Machines (ATM) not vailable
	Rajak Besi	Sharia Financial Services Cooperative available, Pawnshops available, Automated Teller Machines (ATM) not vailable

Acces to Market	Susup	difficult
	Komering	difficult
	Rajak Besi	Ease

### Technology

One of the factors that cause digital divide between urban areas and rural areas is the uneven distribution of infrastructure and the availability of Human Resources (HR) that affect the use of Technology in village level. As a result of facing various problems related to development and infrastructure limitations, then the use and the use of Technology is not a top priority for the village government. Of course it will work in harmony if these things can be resolved thus making work more simple and organizational performance becomes more efficient and effective (Simanjuntak, 2013). Based on the results of the study, it was found that Susup and Komering Villages had a very weak Network Connection which resulted in delays in technology development. In addition, the Ability to Adopt Technology is considered very weak and the Village Information System is not available. In contrast to Rajak Besi Village, which has a good Network Connection and the Ability to Adopt Technology of the middle class. So that technological innovation is easy to enter.

Table 5: Technology Potention

7's Bentang Technology	Name of Village	Potention
Network Connection	Susup	Poor
	Komering	Poor
	Rajak Besi	middle
Ability to Adopt Technology	Susup	Poor
	Komering	Poor
	Rajak Besi	middle
Village Information System	Susup	None
	Komering	None
	Rajak Besi	None

### Market

Regional markets usually operate every day, while village markets usually operate based on market cycles. The market cycle at the village market usually rotates within one week from Monday to Sunday, so that every day there is one market that sells. The village market is currently being intensified by the government so that the village community's economy too develop. This is because with the advancement of village markets, rural communities can market their products their agricultural products to the market, besides that they can increase their income by working in the market too. So that the existence of the village market can contribute and useful for both the village government and the village community (Debora et al., 2014). The importance of markets for the economy of rural communities can be measured by several factors. These factors include Distance from market to village, Type of Market, Types of Products sold in the market, Market development capability, Micro Credit Program, and Joint Business Group.

Susup village has a long distance from the market and the village market is only once a week on Tuesday. The market type is Market in Permanent Building not available with the products being sold,

namely: Horticulture, crops, dairy products, chlotes. Komering village market sells Food & Beverage Store (2 stores), Shop/ Grocery Store (2 stores), Grocery Shop/Kiosk that Sell Basic Food Stuffs (2 stores). Meanwhile, the Micro Credit Program is not available because people prefer to use personal money without borrowing money. Komering Village has a long distance from the market and the village market is only once a week on Tuesday. The market types are Market in Permanent Building not available, No Shopping Complex and Market with products sold namely: Horticulture, crops, dairy products, chlotes. Komering village market sells Food & Beverage Store (2 Stores), Shop/ Grocery Store (8 stores), Grocery Shop/Kiosk that Sell Basic Food Stuffs (8 stores). Meanwhile, the Micro Credit Program is available because people still need financing to support their families.

In contrast to Rajak Besai Village, which has closer market access than the village. The market types are Market in Permanent Building not available, No Shopping Complex and Market with products sold namely: Horticulture, crops, dairy products, chlotes, electronics. The Rajak Besi village market consists of Restaurant/Food Stall (7 restaurants), Shop/ Grocery Store (4 stores), Grocery Shop/Kiosk that Sell Basic Food Stuffs (4 stores). Meanwhile, the Micro Credit Program is available because people still need financing to support their families with growing needs.

Table 6: Market Potention

7's Bentang	Name of Village	Potention
Market		
Distance from market to village	Susup	Far
	Komering	Far
	Rajak Besi	near
Type of Market	Susup	Market in Permanent Building not available
	Komering	Market in Permanent Building not available, No Shopping Complex and Market
	Rajak Besi	Market in Permanent Building
Types of Products sold in the market	Susup	Horticulture, crops, dairy product, chlotes
	Komering	Horticulture, crops, dairy product, chlotes
	Rajak Besi	Horticulture, crops, dairy product, chlotes, electronics
Market development capability	Susup	Food & Beverage Store (2 Store), Shop/ Grocery Store (8 store), Grocery Shop/Kios that Sell Basic Food Stuffs (8 store)
	Komering	Food & Beverage Store (2 Store), Shop/ Grocery Store (2 store), Grocery Shop/Kios that Sell Basic Food Stuffs (2 store)
	Rajak Besi	Restaurant/Food Stall (7 Restaurant), Shop/ Grocery Store (4 store), Grocery Shop/Kios that Sell Basic Food Stuffs (4 store)
Micro Credit Program	Susup	Micro Credit Program not available

	Komering	Micro Credit Program available
	Rajak Besi	Micro Credit Program available

### Human Resources

Human resources (HR) in Susup and Komering villages are still not good. This greatly affects the level of participation or the level of community welfare, because their education is inadequate (Wakerkwa, 2016). Human resource development is aimed at realizing developmental people who are virtuous, tough, intelligent and skilled, independent and have a sense of solidarity, work hard, productive, creative, and innovative, disciplined and oriented towards the future to create a better life in the village. It can be said that developing or advanced human resources will be able to contribute to community development (Lesmana et al., 2021). The availability of educational facilities is very important for the Susup and Komering villages. Until now at There are 1 elementary school, it is difficult to reach the nearest educational facility. While Desa Rajak Besi is easy to reach the nearest educational facility in the villages around.

Table 7: Human Resources Potention

7's Bentang	Name of Village	Potention
Human Resouces		
HR Education	Susup	There are 1 elementary school, it is difficult to reach the nearest educational facility
	Komering	There is no school, it is difficult to reach the nearest educational facility
	Rajak Besi	No school, easy to reach the nearest educational facility in the villages around
Total Population	Susup	Males: 315, Female: 274
	Komering	Males: 323, Female: 321
	Rajak Besi	Males: 236, Female: 241

### Enviroment

The ability of the community to protect the environment is still considered very low in the village. This is indicated by Environmental Conservation is not available, Habitual of Burning The Plant/Land Tenure, and Not Availability of C-Class Mining Field. Although there are 3 available of local environmental units By village/sub-districts By governmental classification in each village, environmental damage conditions still occur.

Table 7: Enviroment Potention

7's Bentang	Name of Village	Potention
Enviroment		
Ability to Protect the Environment	Susup	Environmental Conservation is not available, Habitual of Burning The Plant/Land Tenure, Not Availability of C-Class Mining Field,
	Komering	Environmental Conservation is not available, Habitual of Burning The Plant/Land Tenure, Not Availability of



		C-Class Mining Field,
	Rajak Besi	Environmental Conservation is not available, Habitual of Burning The Plant/Land Tenure, Not Availability of C-Class Mining Field,
Available of local environmental unit By village/sub-districts By governmental classification	Susup	3
	Komering	3
	Rajak Besi	3

## CONCLUSION

Based on the research results, Susup and Komering villages have great potential in the aspects of Economic, Social, and Natural Resource. However, it is very weak in aspects of Environment, Human Resources, Market and Technology. Unlike Rajak Besi Village, this village has the potential to be developed after the disaster because it has strengths in the aspects of Economic, Social, and Natural Resources, Human Resources, Market and Technology.

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