

Progressive Farming Strategy As A Sustainable Livelihood Strategy For Marginal Land Farmers In Coastal Land Fields

(Case Study in Gupit IV Hamlet, Karangsewu Village, Galur Sub District ,
Kulonprogo District)

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Abstract—There are coastal sand fields in Kulonprogo District, Special Province of Yogyakarta. They are naturally marginal lands. In the last 30 years, farmers have been farming on coastal sand fields by growing vegetables and fruits. The aims of the research were to find out the threats and sustainable livelihood strategy of marginal land farmers in coastal land fields that is found out from a Case Study in Gupit IV Hamlet, Karangsewu Village, Galur Sub District, Kulonprogo District. This research is qualitative research which used spatial approach. Methods of data collection were literature studies, observations, surveys and in-depth interviews. The livelihood threats of coastal fields are low soil fertility, climate, plant diseases, price fluctuations, and policy changes. To overcome the threats, the farmers use progressive farming strategy as a sustainable livelihood strategy. This strategy consists of the use agriculture technology, the establishment of spatial farming, management of crops marketing and regeneration of farmers.

Keywords— *coastal sand field, livelihood strategy, progressive farming, vulnerability*

I. INTRODUCTION

The coastal farming at Kulonprogo Regency, Special Province of Yogyakarta is located on the marginal land. It is marginalized by the physical and non-physical factors. Farmers in Kulonprogo Regency have been 30 years farming in the coastal sandy land. They are able to cope with some threats disturbing the sustainability of farming. Farmers do a lot of efforts to maintain sustainable agriculture activities.

The phenomenon at the southern coast of Kulonprogo Regency, especially related to the livelihood strategy of coastal land field farming community is interesting to study. This study is a case study at Gupit IV Hamlet, Karangsewu Village, Galur District. The aims of the research were to find out the threats for agriculture activity and the local theory about sustainable livelihood strategy for marginal land farmers in coastal land fields from case study area.

II. LITERATURE REVIEW

Studies on sustainable livelihoods can be traced through the scientific work of Chambers [1], Davis [2], DFID [3], Ellis [4], Owusu [5] and Scoones [6]. Chambers provides an understanding of livelihood as follows; A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living [1]. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future while not undermining the natural resource base.

The theory has always been the earliest reference in the study of sustainable livelihoods. Sustainable livelihoods are when it can cope and recover from stress and shock and maintain or improve capabilities and assets both now and in the future while not destroying natural resources. The important things here are the capabilities, assets, activities, pressures and shocks and the sustainability of natural resources. The notion of Chambers continues to be developed by the next experts. The works produced by some experts related to vulnerability include Clark [8], Sage [13], Ford [10], Bacon [7], Cochard [9], Shahbaz, [15], Sunarti [16], Sallu [14], Fraser [11], Idrus [12]. Stress and shocks are the threat for farmers to continue their livelihood.

Clark [8] conducted a study on vulnerabilities related to climate change. Sage [13] conducted a study on the livelihood vulnerability in Somalia, due to "predatory" development policies and natural resource depletion, as well as extreme climates. Ford [10] conducted a study to assess vulnerability in the Canadian Arctic community due to the threat of climate change. The study was conducted by accommodating participatory research and secondary data. Bacon [7] conducted a study to assess vulnerability in small-scale coffee farming communities in Nicaragua. Cochard [9] conducted a study to assess the vulnerability of coastal ecosystems following the tsunami disaster in Aceh and Thailand.

In Indonesia, early studies on vulnerability by Sunarti [16] examine vulnerability indicators in farmer and fisherman families for disaster risk reduction analysis in the agricultural sector. There are 3 (three) threats in this study, namely the threat of tidal waves, floods and droughts. The research found 9 (nine) indicators of social economic vulnerability: 1) number and population density, 2) poverty level, 3) economic investment, 4) the role of agricultural sector in *PDRB* (Gross Domestic Regional Product), 5) unemployment rate, 6) duration of school year, 7) life expectancy, 8) access to information and 9) social institutions.

Studies on marginal land have been widely discussed by experts. Jiang [17] explained that marginal

land is not suitable for food crop production. The study aims to collect the marginal land in China to promote plant for bioenergy. Another study in the United States explains that the marginal land is very low in suitability for food crops due to soil, climate and vulner to erosion [18]. Marginal land researches in Yogyakarta show some facts, among which are, there is a very low productivity, its material more than 80% consists of sand, the availability of water is small and nutrients are very low [17]. This study was carried out on coastal sandy land in Bantul Regency.

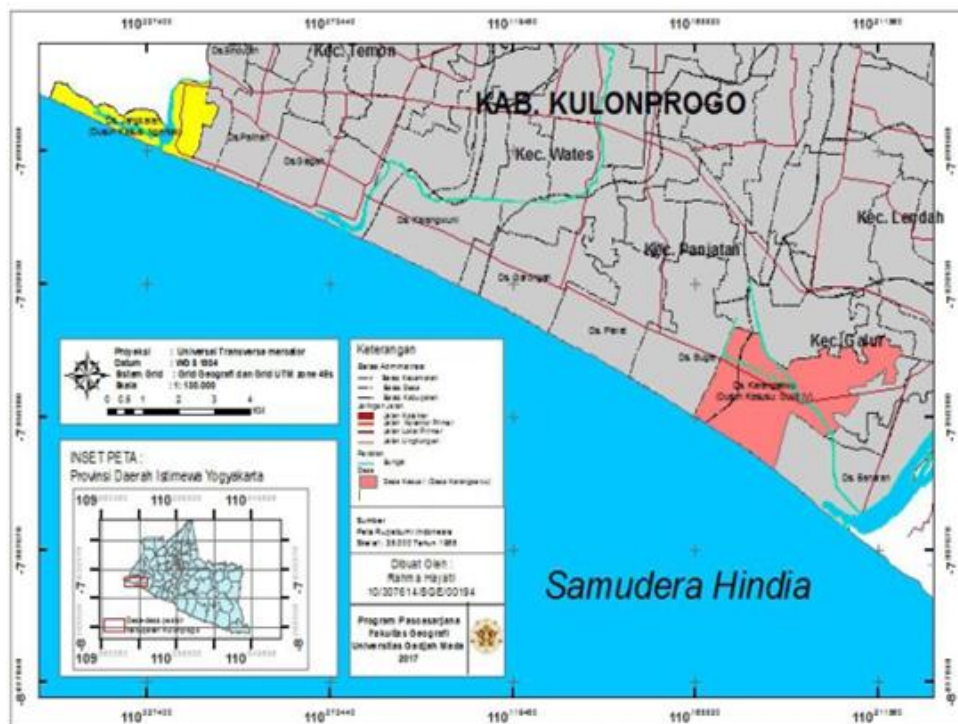


Figure 1. The Map of Hamlet Cases

III. METHOD

This research is a qualitative research using spatial approach. The research strategy used is case study with multi cases study design. The first case is the agricultural activity of the coastal land in the area of land planned for iron sand mining. The second case is the agricultural activity of the coastal land in the area of land planned for new area of airport building.

The selected research area is Kulonprogo Regency, because the agricultural activity of coastal sandy field in Kulonprogo Regency has a long history. The case study area selected was Gupit IV hamlet, Karangsewu Village, District of Galur. The reason for choosing the location is that it has a long history of agricultural coastal sandy field that lies on the beach ridge and sand dunes complex landform. In this location there is a specific livelihood

threat, that is, a change of land use policy from dry land farming to iron sand mining area.

The type of data in this study can be divided into two, namely primary data and secondary data. Primary data were obtained in verbal form or spoken words or speech and behavior of informants related to vulnerability of livelihoods in the community of coastal farming. The collected primary data were related to livelihood assets, the vulnerability context and the structures and processes in the livelihood of coastal farming community. Secondary data consist of documents, photographs and objects that can be used as a complementary for the primary data.

IV. RESULT AND DISCUSSION

The results of the study found that there are five threats of coastal land field farmers in Karangsewu village. They are low soil fertility, climate, plant diseases, price fluctuations, and policy changes.

Livelihood strategy in Karangsewu Village is a local theory from the area of case study. The theory was built with the arrangement from sub-themes – themes – concepts and theory. From this study, four concepts were found: sandy land for live, the modern agriculture, discussion and obedience, and regeneration of farmer. From these concepts, the local theory of livelihood strategy had been constructed. The local theory is "progressive farming strategy". This study showed progressivity in terms of land processing, technology of irrigation, fertilization, marketing and regeneration of farmer.

Farmers in the case study area have done mechanization on land processing. They do not only use traditional agricultural tools but also some modern agricultural tools; hand tractor, big tractor, backhoe and bulldozer. These modern tools have been used in the last twenty years. Farmers use the modern tools by owning, renting and using common property.

Farmers in the case study area have used irrigation technology progressively to overcome the problem of water in the sandy coast land. They use electric pump modified with plastic pipes and drip method. They also modified energy from electric to gas.

The low nutrient in sandy land is a serious threat for farmers. Farmers have used progressive strategy by combining the natural and fabricant fertilizer. Farmers always consult with expert from fertilizer fabrics. Farmers also collect the waste of pastoral from themselves and from others.

Marketing for agriculture product from the case study area is unique. They use market auction system for chili marketing. The prices agreed on the auction market become the base price for the day in the entire village. Farmers have high bargaining power.

Farmers in the case study area are not dominated by old farmers. The young farmers dominate agricultural activities. They are able to apply high technology for agriculture. The use of high technology is attractive to young generation. This phenomenon showed that agriculture activity can be continued by the young farmer. In the case study area, a regeneration in farmer system is real.

Farmers in the case study area manage their land with spatial farming. They divide the land into two parts. First part is for the specified type and time for planting. The other part is for mix type and time for planting. This is a strategy to minimize and localize the effect of pest and plant disease. It can be said as a spatial strategy.

V. CONCLUSION

The livelihood threats of coastal fields are low soil fertility, climate, plant diseases, price fluctuations, and policy changes. To overcome the threats, the farmers use progressive farming strategy as a sustainable livelihood strategy. This strategy consists of the use agriculture technology, the establishment of spatial farming, management of crops marketing and regeneration of farmers.

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