

Developing Potentials in Exploring Sustainable Livelihood Capitals to Support Community Life Towards Sheep Farming Center in Ngawonggo Village, Tajinan, Malang Regency

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Abstract:

Sustainable livelihood places the community at the center of planning. The planning process is affected by social conditions, political environment, existing human problems, financial situation, and natural resources. This study was conducted in Ngawonggo Village, Tajinan District, Malang Regency, from November to December 2020. This study was carried out qualitatively and quantitatively to obtain an overview of the community's livelihood factors and potential livelihood capitals of the community. Qualitative data collection was intended to enrich the findings. The results of the qualitative data were in the form of written words from the respondents and behaviors that needed to be observed. The data collection was with the help of selected key informants using the snowball sampling method. The key informants involved were 5 people, consisted of: the head of the Islamic boarding school, the informal head of the sheep breeder and the livestock group consisting of 3 breeders. The results showed that the level of sustainable livelihood in the asset pentagon in the community of Ngawonggo Village provided a big effect and potential opportunities that can develop and improve the welfare of the community through a sustainable relationship to natural, physical, financial, human, and social resources. The highest power of access to resources was on the natural resource capital of 3.27 and the lowest was on the social capital of 1.57

Keywords —Sustainable Livelihood, Asset Pentagon, Sheep FarmingBusiness.

I. INTRODUCTION

The development of rural areas is a strategy for equitable development to reduce the disparity between urban and rural development. There is a very close relationship between agricultural development and rural development. Rural

development cannot succeed well if it ignores agricultural development, and on the other side, agricultural development is also difficult to separate from rural areas because, among the determining factors for its success, are farmers and land in rural areas. One of the strategies for developing rural

areas is to develop the potential or superior commodities of the region Wigati and Achmad [15].

According to Winarso [14], about 80% of the sheep farming system in Indonesia is still managed by small farmers that develop in rural areas. The sheep farming business on a small scale can assist the economy of rural farmers by utilizing the natural resources available around them. Sheep are livestock that is able to adapt to their environment well and are able to eat forages with low nutritional value, are resistant to particular diseases and parasites, are prolific (give birth to more than one breed), have relatively fast attainment of sexual maturity, and can mate at any time according to Jarmuji [11]. In Ngawonggo Village, Tajinan, Malang Regency, there is a boarding school that can be an initiator of a development towards a sheep center. Thus, the reason for choosing this area was because it can become a development towards a sheep center, which, in 2018, in Ngawonggo Village, Tajinan, livestock education was provided on the management of sheep farming, feed processing, such as examples of making silage, and animal health facilities. In 2020, efforts to establish a sheep center are now starting to be carried out because of the desire of the community who has a high motivation to raise sheep, a livestock group has started to run, and green land for adequate animal feed has been prepared.

One of the problems encountered by Indonesia is poverty. The factor that causes poverty in this country is the exploitation of resources that only supply raw materials for export to developed countries. The worse part, when the goods are finished, Indonesia becomes one of the biggest consumers. It can be solved through potential development efforts in exploring sustainable livelihood capitals as a whole in overcoming the most urgent obstacles faced by the community. This approach focuses on understanding how individuals and households use certain socio-economic capitals to seek further opportunities, reduce risk, reduce vulnerability, maintain or improve their livelihoods.

Sustainable livelihood places the community at the center of planning. The planning process is

affected by social conditions, political environment, existing human problems, financial situation, and natural resources Wigati and Achmad [15]. The sustainable livelihood approach assumes that the development approach will be more effective if it is based on: 1) a systematic understanding of poverty and its causes; 2) A broader cross-sectoral perspective of development opportunities and how the relationship is to community aspirations and priorities; 3) Placement of the community (aspirations and priorities) as the center for the formulation of analyses and objectives. The constituent components in sustainable livelihood are the asset pentagon consisting of five capitals, including the human capital, physical capital, financial capital, natural capital, and social capital.

This study aimed to determine the potential in developing livestock business through the five capitals consisting of human capital, physical capital, financial capital, natural capital, and social capital. Sheep farming centers can support community life through empowerment and creating a sheep farming center. Business development towards a sheep breeding center at the Angkring Fathul Ulum Islamic Boarding School in Ngawonggo Village, Tajinan District, Malang Regency.

II. LITERATUR REVIEW

A. Sheep Farming Business Development

Sheep are small ruminants that have economic functions (as a contributor to the family's economy, such as savings, additions, and to meet sudden financial needs) and fulfilling the needs of animal protein. As living things in general, disease attack is a threat, disease infectious factors are a serious obstacle for breeders. Animals infected with the disease will show certain symptoms, which can be seen from the animal's physical appearance. Slow and inaccurate handling can harm the condition of livestock, while early handling can prevent infection of other livestock in one herd. Up to now, there are still many sheep breeders who do not

understand the importance of the role of adequate minerals in food rations in sheep. Mastery of basic livestock knowledge and skills for breeders is required in the livestock productivity improvement program Nurcahyono [12].

B. Definition of Sustainable Livelihood

Sustainable livelihood is a way of thinking about the purposes, scope, and priorities for development to increase capacity in poverty alleviation. Sustainable livelihood places humans as priority research objects and determines research objectives. The sustainable livelihood approach is also based on concerns about the effectiveness of development activity, identifying whether there are problems that occur in the developed project against various aspects of the resource Ashley [1].

C. Asset Pentagon

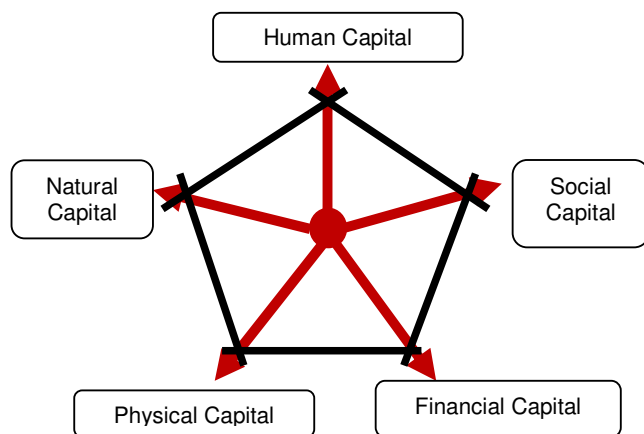


Fig 1. Asset Pentagon

The sustainable livelihood approach is primarily concerned with the strengths of the community. This approach is established on the belief that the community needs a number of capitals to achieve positive livelihood results. Only one type of capital is not enough to achieve these many and varied livelihood outcomes. Several capitals that support

the sustainable livelihoods of the community are human capital, physical capital, financial capital, natural capital, and social capital. If the five capitals contribute properly, they can achieve the goals as expected, according to Saragih [13]. Thereby, they have to find ways to obtain and combine the various capitals they certainly have in innovative ways to survive. The strength of a person or community is determined by the size, diversity, and balance between capitals. The data analysis method examined the impact of human capital, social capital, natural capital, physical capital, and financial capital from a project. The following are some of the components of capital, including:

D. Human Capital

Human capitals reflect the collective ability of a company to produce the best solutions based on the knowledge of the people in the company. Human capitals include skills, ability for labor, and good health which together enable people to pursue different lives and reach their livelihood goals. At the household level, it varies based on the household size, skill level, potential leadership, health status, and capacity to adapt Romer in Andiani [2].

E. Social Capital

In the context of the sustainable livelihood framework, social capital is defined as social resources that people use in pursuing their livelihood goals. This theory is developed through: (1) networks and connectedness, whether vertical or horizontal which increase their trust and ability to cooperate and expand their access to wider institutions, such as political or civic boards, (2) more formal group membership that often requires mutually agreed compliance or commonly accepted rules, norms, and sanctions, as well as a reciprocal relationship between trust and exchange that

facilitates cooperation, decrease transaction costs, and can provide the basis for an informal safety net for the poor Pierre in Fathy [9].

F. Natural Capital

Natural capital is the term used to describe the stock of natural resources useful for livelihoods derived. Examples of resource capital are land, forest, marine, water, air quality, erosion protection, water assimilation, protection against storms, and the degree of biodiversity, as well as the rate of change. This makes it clear that natural capital is very important for activities that are directly related to natural resources (fisheries, agriculture, mineral extraction, and others).

G. Physical Capital

This capital is only seen from the physical aspect, which means that the capital of a company is anything that can be seen, touched, and used to support the company's operations. The definition of capital which is only physically oriented then develops, in which capital is not only interpreted as a tangible (physical) thing that is owned by the company, but it further is related to the value and also the ability to utilize everything owned by the capital goods, as stated by Gusnardi [10]. Physical capital consists of infrastructure and producers of raw materials needed to support livelihoods. The infrastructure consists of changes in the physical environment which helps to fulfill basic human needs and make people more productive.

H. Financial Capital

Financial capital represents the financial resources people use to achieve their livelihood goals. There are two main sources in the analysis of

this financial aspect, consisting of the availability of cash and the continuous exchange of money, in the form of savings or deposits, pension funds, business profits, and wages or salaries. Financial capital plays a role in creating value in the company. With the emergence of the information and globalization, companies can no longer produce a sustainable competitive advantage by simply applying new technology to physical capital appropriately or simply by implementing capital and liability management properly. The ability of a company to mobilize and exploit its intangible capitals is much more decisive than investing and managing its tangible capitals Ekowati [8].

III. METHODOLOGY

The study was conducted at the Angkring Fathul Ulum Islamic Boarding School in Ngawonggo Village, Tajinan District, Malang Regency, from November to December 2020. This study was carried out qualitatively and quantitatively to obtain an overview of the community's livelihood factors and potential livelihood capitals of the community. The livelihood capitals include natural capital, physical capital, human capital, financial capital, and social capital. The qualitative data collection was intended to enrich the findings. The results of the qualitative data were in the form of written or spoken words from the respondents and the behaviors that need to be observed. The data collection was with the help of selected key informants using the snowball sampling method. The key informants involved were 5 people, consisted of: the head of the Islamic boarding school, the informal head of the sheep breeder and the livestock group consisting of 3 breeders.

IV.RESULT AND DISCUSSION

Livelihood capitals in Ngawonggo Village vary depending on the capital owned by the community, including human capital, natural capital, social capital, financial capital, and physical capital. The interrelationships between the various components of livelihood resources are described in the form of an asset pentagon. The shape of the pentagon and line connecting each other with the center point in the middle of the pentagon surface illustrates the variation in the level of ownership and access of the community to resources. In the Likert scale rule according to Sugiyono in Fitriyah [4], the best value is 4 with the highest classification, based on the rules of the Likert scale method is to find out the highest value on the Likert scale, the highest value times the number of respondents, which means the highest number of points. The lowest score that is obtained from the lowest point is 1 with the (lowest) classification. Therefore, the range for the scale percentage is obtained from 100 divided by the highest value 4 (four) = 25 (twenty-five), so that the range for the percentage is:

1. The lowest: 0 – 25%
2. Moderate: 26 – 50%
3. Fair/Neutral: 51 – 75%
4. The highest: 76 – 100%

$$Int = \frac{X_n - X_i}{K}$$

Where: Int is the size of the interval; X_n is the maximum value; X_i is the minimum value and K is the number of categories according to Anton [5]. The results of the study in Figure 2 show that the livelihood capital that had the highest value was the natural capital (3.27), then physical capital (2.17), financial capital (2.13), human capital (1.67), and the lowest value was on social capital (1.57). The following is the pentagon image of the capitals along with indicators in livelihood capitals:

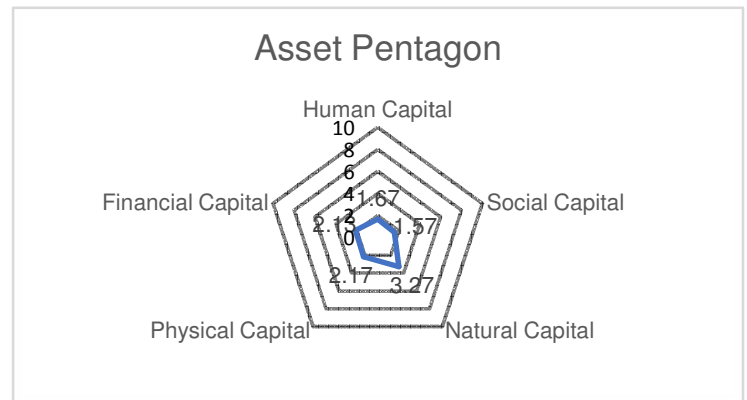


Fig 2. The Asset Pentagon of the Ngawonggo Village

Source: Processed research data [2021]

A. Human Capital

The livelihood approach has a major concern for humans as an important subject. Human capital shows an individual's ability to obtain better access to their living conditions. In this study, the assessment of human capital includes levels of education, health, and workforce. The quality of humans needs to be continuously improved so that the processing of capital is effective and can be preserved in its sustainability. The results obtained in the assessment of human capital (1.67) are in the fourth level of the five livelihood capitals in the asset pentagon. One of the carrying capacity in human capital is through education, in which human values can increase learning capacity and productivity in the development of sheep farming. Human resources can be seen from the level of education and livelihoods of the population. The total population of Ngawonggo Village is 4201 people, including 2,114 men and 2,087 women who are members of 1,283 households. The education levels of the residents of Ngawonggo Village are as follows:

No	Graduation Status of the Community	Number
1	Illiteracy Aged 10 years and above	16
2	Not completed elementary school	713
3	Completed elementary school	1229
4	Completed Junior High School	953
5	Completed Senior High School	297
Total		3224

Tab 1. Level of education

Source: Ngawonggo Village Office Documents, 2019

Based on the observation in Table 1., the highest level of education is elementary school graduates, while the lowest is Senior High School graduates. Most of the farming communities do not have special skills so they only focus on agricultural activities. There are some people who have other skills, such as trading because the income from agriculture is not sufficient to meet their daily needs. Furthermore, Azizah et al.[6] stated that children and teenagers who dropped out of school who did not continue formal schooling became students at Islamic boarding schools or chose to work in the informal sector. The high number of people with low levels of education creates new problems, such as unemployment and urbanization. Those looking for work in the cities usually find work as seasonal laborers. They return to the village as unemployed workers again if they do not find work.

If there are developments in health, education, and workforce skills, the efficiency of the workforce will increase. The more the number of productive family members who assist the farmers and breeders, the less rental labor costs. These costs can be allocated for other purposes. The labor that is from the family of farmers and breeders is a family contribution to agricultural production as a whole and is never valued in money.

The role of family members of farmers and breeders is as the main capital in managing the business together Endang [8]. The value of health services for each consumer or community does not depend on the individual consumer but is affected by the surrounding community.

B. Natural Capital

Ngawonggo Village is an area of Tajinan District, Malang Regency, with an area of 375,628 hectares. It is plains with an average elevation of 700 - 800 m above sea level. Natural capital is a capital that describes the control of natural resources, such as land, plants, and water as production capital. Natural capital in this study can be seen from the use of natural resources of land, water, and air. Humans have natural capital that can be used to obtain access to better livelihoods. Natural capital is from nature and is used to meet their needs DFID [3]. Natural capital is also considered very crucial because humans cannot subsist on environmental services and food derived from nature. Besides, the mainsprings that can be used as clean water sources and water sources for agriculture in Ngawonggo Village include the following:

- 1) SumberGambreng Spring located in Southern Sidomakmur Hamlet
- 2) Urung-urung Spring located in Southern Sidomakmur Hamlet
- 3) SumberBuntung Spring located in Northern Sidomakmur Hamlet
- 4) Cuban Spring located in Irodipo Hamlet
- 5) MbahIrodipo Spring located in Irodipo Hamlet

The water sources in Ngawonggo Village are indeed in a supportive condition. The water sources are available with protected wells, direct water sources, and the regional drinking water company (PDAM) which is managed by the village. Most of the respondents perceived there was no problem with water, this was due to activities to clean rivers and waterways to keep the water clean from rubbish or other things that could damage the irrigation system. Natural capital is included in the highest assessment of the five-capital pentagon

with results of (3.27) due to the supportive and adequate natural conditions in Ngawonggo Village. The high value on the land index is in accordance with the conditions in the field. The natural capital is from household control over land, water, and air that support household life in survival. The relationship between natural capital owned and livelihood strategies are directly proportional, meaning that with the higher household ownership of land and natural capital, the household livelihood strategy will be further away from just survival.

Utilization of natural resources through soil conditions is seen from the level of plant fertility in the surrounding land. Most of the dry land soils have low soil fertility and organic matter content. To support the production of food, which is a basic necessity on an annual basis, it faces many obstacles. Without enrichment of organic matter which has complete nutrient content, soil fertility and productivity are difficult to increase. This is strengthened by Azizah et al.[6] that livestock farming and manure utilization are very important in crop production as fertilizer. Livestock is a source of energy that provides animal power while manure improves soil structure and fertility and water retention. Both uses are environmentally friendly, increasing the energy and nutrient cycle.

C. Financial Capital

Financial Capital is capital that describes finance consisting of savings, access to credit, pawning, and other sources of financing. Financial capital is financial resources that can be used and utilized by the community in achieving their livelihood goals, which include reserves or supplies, either owned by themselves or financial institutions, and in the form of the regular flow of funds DFID [3] The results of this study show that the value of the financial component (2.13) is included in the third category of the five asset pentagon results. This occurs for some reasons which illustrate the financial condition that exists in most households in Ngawonggo Village. Several farmers and local communities were not willing to borrow credit or pawn

as assistance when experiencing financial difficulties. As farmers, they thought that credit in a bank or cooperative would make it more difficult for them. The difficulty referred to as breeders is the application requirements given by cooperatives or banks which were many and complex. The farmers preferred to use savings as an effort to develop their own businesses. Thus, most of the farmers in Ngawonggo Village did not access credit sources and preferred to sell their assets or valuables. In fact, by selling assets or valuables owned by breeders, they will get losses. There is an example of an effort made by selling land owned by the farmer that will lose the amount of income due to the reduced land owned and the greater the level of risk received.

There were not too many sources of income owned by farmers in Ngawonggo Village. Most of the main occupations of the community in Ngawonggo Village were farmers and breeders as community side businesses. However, when seen from the perspective of the household in one house, there are occupations other than farmers, but are generated from other parties including the wife and children. Farmers who do not have side occupations have a high level of risk. Azizah et al. [6] argued that most of the population worked as farmers and had livestock as a side income. The livestock that was raised included beef cattle, goats, and rabbits. About 30% of the population of productive age did not have permanent jobs. This is because if there is something undesirable, such as crop failure or low rice selling price, it will cause farmers to have low income and even lose their income. Thus, it would be better if they have a side business as a source of income. A double income strategy needs to be carried out by a farmer in overcoming poverty through appropriate action and in accordance with the environment, social, and economy in which they live to create opportunities and take advantage of their business risks.

D. Social Capital

Social Capital is a business that is carried out by making a living through networks and social linkages that enable social resources by utilizing kinship with

neighbors, social networks outside the village, and norms. Social resources are useful and used by the community to achieve their livelihood goals. Social resources are generally intangible and are not easy to measure, but have benefits for the community DFID [3]. The results obtained from this study are a score of (1.57) which is included as the lowest category of the five-capital pentagon. The order based on the highest assessment was the natural capital, physical capital, financial capital, human capital, and the lowest was the social capital. The situation in the field is that the role of the community is very important in contributing to meeting the needs of developing a livestock business. Farmers in Ngawonggo Village provided assistance to each other when neighbors are sick. This can be higher accompanied by a level of kinship, because it is true that the average interaction of people in rural areas is high. Community activities, such as cleaning the village and community service can also build kinship in the community. Between the households also establish organizations, such as farmer groups, livestock groups, youth organizations, and many other routine community activities with the aim of increasing solidarity and harmony between residents. The more organizations that are followed, the bigger the social network they have. Access to obtain information from outside is easier than not following the organization in which we organize and open all relationships widely. This is because there will be meetings in the organization that can be a place for discussion of breeders and other communities. The breeders had long been involved in the business of raising sheep as well as information in terms of making feed formulations and the importance of knowing the constraints and treatment of livestock conditions. The low value generated in social capital due to the constraints faced by rural communities requires concrete evidence in an effort to develop livestock, especially sheep. The support and enthusiasm of the livestock groups that have been built can also provide an example to the community regarding efforts to develop sheep farming centers.

Village officials there provided good service to every citizen who needed assistance. The system provided by the Village Head of Ngawonggo that made the residents had trust in the village apparatus was openness regarding funds owned by the village to residents when there was a meeting. Besides, if the village receives subsidized assistance, such as agricultural machinery, fertilizers, the village will immediately deliver them to the residents and distribute them to farmers and breeders fairly and equally. The attitude shown by the village head or service to the community in accordance with what has been expected can provide a sense of trust to the village head. This is in accordance with the opinion of Aprilianti [2] that the community leaders can foster trust in a community led by a leadership style that is in accordance with the wishes of the community. They have to comply with the rules and regulations of the principles (norms) that have been made and obeyed by the community.

E. Physical Capital

Physical Capital is basic infrastructure and other facilities built to support the community's livelihood processes. The infrastructure referred to includes the development of a physical environment that assists the community in carrying out their life duties more productively. Infrastructure is generally public facilities that are used free of charge DFID [3]. Physical capital includes facilities and infrastructure as well as sheep commodities. Capital that is only physically oriented then develops, where capital is not only interpreted as a tangible (physical) thing that is owned by the company, but is further related to the value and also the ability to utilize everything owned by the capital goods. Related facilities and infrastructure include road access, transportation, and livestock land (forage and sheepfolds). The results of the study on physical capital showed (2.17) which was in the second rank category after natural capital. Support for facilities and infrastructure was also manifested in the role of water resources, electricity, as well as housing and settlement as an integral part of community life. The development of a professional sheep farm by considering the scale of

business or ownership can be used as the economic base of the community in rural areas. One of the efforts in developing a sheep center livestock business is by inviting livestock groups and the community to work together in developing a sheep-farming pattern by paying attention to the existing facilities and infrastructure and providing feed with the surrounding forage land and understanding and studying the health level of the livestock. Good communication must always be carried out in an effort to develop a livestock business towards a sheep center in Ngawonggo Village. Evaluation should be done through meetings held by livestock groups and parties involved in sheep development efforts in terms of poor maintenance, feeding, and seeing the health condition of livestock. The physical capital was categorized as good because the access to facilities and infrastructure was smooth and the development of livestock being maintained in terms of feeding either using feed from fresh forage or from making fermented feed that was already operating.

V. CONCLUSION

The level of sustainable livelihood in the asset pentagon in the community of Ngawonggo Village provided a big effect and potential opportunities that can develop and improve the welfare of the community through a sustainable relationship to natural, physical, financial, human, and social resources. The highest power of access to resources was on the natural resource capital of 3.27 and the lowest was on the social capital of 1.57.

These theories and concepts underlie the objectives of examining population capitals in relation to livelihood strategies. The Asset Pentagon emphasizes the importance of understanding the various livelihood conditions of households and the types of capital that support them. The five capitals show that the components of livelihood capitals have various relationships and interrelationships with each other. These capitals are the main capitals for the population in their life as a source of livelihood for the population because the availability of these capitals greatly supports various livelihood strategies.

VI. SUGGESTION

Skills training is required for the community because a low level of education will shape the mindset of breeders and the community about their inability to carry out other jobs as a side job that should be able to improve their standard of living.

There needs to be an improvement in livelihood capitals. If the capitals owned by farmers and the community are increasingly limited, the strategy selected will lead to a survival strategy.

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