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Livelihood Assets Of Lantebung Mangrove Ecotourism Community

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AFILIATIONS

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Encountering economic challenges, particularly in Indonesian coastal areas, has been a common occurrence for us. Particularly, the settlements situated along the seaside in isolated or disadvantaged regions. The repercussions of these issues manifest as a modification or reduction in the calibre of the coastal ecosystem. To address these issues, one possible approach is to carry out a Livelihood analysis. This strategy employs and consolidates the capital or assets possessed by the community, as delineated in the pentagonal assets model. The resulting pentagon diagram will illustrate the assets that can be enhanced or optimised to provide a balanced life for individuals. The research methodology employed is a descriptive analysis of the data collected through field observations, interviews, focus group discussions (FGDs), and documentation studies. The assessment of livelihood assets involves the evaluation of five types of capitals: human capital, natural capital, physical capital, social capital, and financial capital. These capitals are then analysed using the pentagonal assets model. The variables possessed by the five assets were quantified and subsequently categorised into high, medium, and low classifications. The findings indicated that the Lantebung mangrove ecotourism community had a satisfactory level of availability of livelihood assets. The asymmetrical shape of the resulting Pentagonal Assets is due to the unequal and imbalanced access that farmers have to the five assets. Additionally, this is due to the community's significant ownership of assets. The minimum score is 1.00, while the maximum score is 3.00. The community's social capital and physical capital have a score of 2.44 and are considered to have a high asset status. The status of human capital is moderate, with a score of 1.89, while the situation of financial capital is also moderate, with a score of 1.86. The lowest position is in natural capital, scoring 1.64.

Keywords: Livelihood, Mangrove, Pentagonal assets, Financial capital.

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1. Introduction

The Ministry of Environment and Forestry produced the National Mangrove Map in 2021, which indicates that the total area of mangroves in Indonesia is 3,364,076 hectares. These mangroves are distributed throughout different areas (Directorate of Coastal Utilisation and Small Islands, 2021). The mangrove ecosystem consists of interconnected mangrove plants, fauna, and microbes. It thrives in areas along the coast or river estuaries, particularly in regions affected by sea tides. The environment is

safeguarded by a mud substrate, allowing for its easy growth. (Perpres, 2012).

South Sulawesi possesses a substantial mangrove habitat within its territory. The Lantebung mangrove habitat, spanning an area of 25 hectares, is situated in Bira Village, Tamalanrea District, Makassar City, South Sulawesi (Nurdin & Yukiko H, 2021). The BPPD (Regional Tourism Promotion Agency) of South Sulawesi province has officially classified the Lantebung mangrove region as a protected area for the conservation and preservation of the coastal ecosystem. Since 2010, the Lantebung mangrove shoreline has been adorned with the establishment of mangroves (Rini & Mukhlis, 2018). The residents of the Lantebung region rely on the maritime resources, environment, climate, and human resources in the area. They also make use of the presence of the mangrove forest as a means to attract tourists and generate additional money (Astuti D.F., 2022).

Mangroves have a significant impact on the economy of coastal areas. Nevertheless, a significant challenge faced by coastal communities pertains to the interplay of social, economic, and ecological issues, namely the correlation between poverty indicators and environmental management elements (Gai, A, 2020). Issues in the economic domain, particularly in coastal towns in Indonesia, have become commonplace occurrences that we frequently come across or hear about. Specifically, individuals employed as small-scale fisherman or fishing labourers, as well as coastal village communities situated in isolated or marginalised regions. The problem's impact manifests as a modification or deterioration in the coastal environment's quality, hence exacerbating the challenge of poverty alleviation (Anwar & Wahyuni, 2019).

To address these economic challenges, various approaches can be employed, one of which is implementing the notion of sustainable livelihoods. This notion offers the general public a comprehension of how the quality of life for an individual or household can be enhanced and maintained in a long-term and environmentally-friendly manner. This livelihood strategy is applicable to coastal communities. Roslina in Gai (2020) explains that the Livelihood Approach is selected due to its ability to address the diverse needs of a community, including social, economic, and ecological needs. This approach involves leveraging and integrating various forms of capital present in the area, such as human, physical, natural, social, and financial capital, to achieve a balanced and fair outcome.

The text discusses the assets that can be enhanced or optimised to achieve equilibrium in individuals' lives (DFID, 1999). Hence, it is imperative to conduct an examination of the livelihood assets of coastal communities, namely those engaged in ecotourism in the Lantebung Mangrove area, in order to ascertain the available capital, assess its current state, and determine appropriate actions to be taken. Ownership of capital will positively influence one's abilities and cognitive processes. and community engagement in developing and implementing effective strategies for managing, utilising, and prioritising existing resources to address community challenges in meeting their livelihood needs. The assets depicted in these materials demonstrate the ability of an individual or community to endure and persevere (DFID, 2001). The assets that contribute to a person's livelihood can be represented by a model known as pentagonal assets. The resultant pentagon diagram will visually depict the assets that can be augmented or optimised in order to achieve equilibrium in individuals' lives (DFID, 1999). Hence, it is imperative to conduct an examination of the livelihood assets of coastal communities, namely those engaged in ecotourism in the Lantebung Mangrove area, in order to determine the available capital, assess its current state, and devise appropriate strategies for its utilisation. The objective of this study is to examine the human capital, natural resource capital, social capital, financial capital, and physical capital of the Lantebung Mangrove Ecotourism community.

2. Method

1) Research Area

The study was conducted between May and July 2022 at the Lantebung Mangrove Ecotourism Area, located in Bira Village, Tamalanrea District, Makassar City, in the South Sulawesi Province. Concurrently, data analysis was conducted at the Policy and Entrepreneurship Laboratory, which is part of the Faculty of Forestry at Hasanuddin University. Figure 1 displays the map indicating the research location.

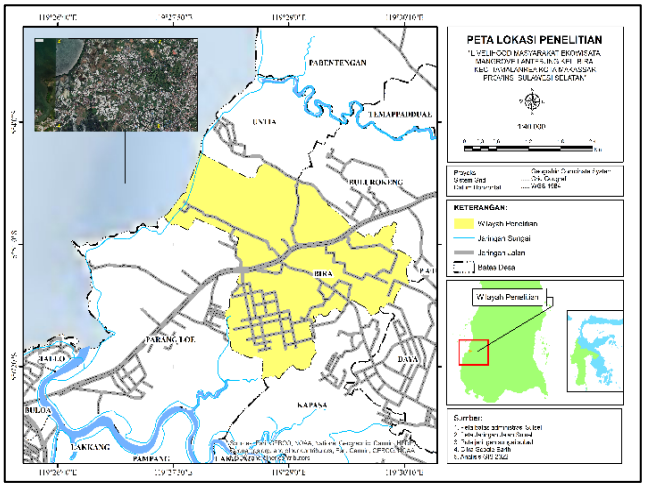


Figure 1. Map of research location

2) Data Collection

The research utilises primary data and secondary data as its sources of information. Primary data was collected firsthand in the field, while secondary data was taken from diverse sources such as textbooks or past study findings that align with the research objectives (Andari, 2011). The data collection methods employed in this research encompass observation, interviews, Focus Group Discussions, and documentation studies.

3) Data Analysis

A descriptive analysis was conducted to assess the livelihood of the Lantebung Mangrove Ecotourism community. This research was derived from primary data collected directly from the respondent community and tailored to suit the conditions in the field. The Pentagonal Assets model is utilised to analyse the community's livelihood assets. This model identifies five distinct characteristics of resources that the community possesses or can obtain to meet its individual survival requirements. The factors possessed by the five assets are assessed and subsequently categorised into high, medium, and low classifications. The classification of indicators and the corresponding measurement scale for each asset are presented in Table 1.

In order to assess the status of each indicator for each asset, the asset indicators are categorised using a scoring system ranging from 1 to 3, with the following intervals:

Low : 1,00 to 1,66
Medium : 1,67 to 2,33
High : 2,34 to 3,00

The process of assessing the indicators for each asset involves adding up the respondent response scores per indicator in one model (low: 1, medium: 2, and high: 3), dividing this total score by the number of respondents, and calculating the average score per indicator. We then add up the average score per indicator for each type of capital and divide it by the number of indicators. Then we will get the average score for each capital or asset as a whole, along with its status, based on the value obtained. We then input the obtained score for each asset into the asset pentagonal to ascertain the inter-asset relationship. Additionally, we add up and divide the scores of each respondent's five assets by the total number of assets to determine their average overall livelihood asset value. We identify and categorize each respondent's livelihood assets into high, medium, or low categories.

Table 1. Indicators and Measurement Scales for Human Capital, Physical Capital, Natural Capital, Social Capital, and Financial Capital of the Lantebung Mangrove Ecotourism Community.

Asset Type	No.	Indicator	Low	Currently	High
			1	2	3
Human Capital	1	Education	Didn't finish elementary school/finished elementary school	Completed junior high school/equivalent	Completed high school/equivalent
	2	Farming Business Experience	<10 years	10-20 years	>20 years
	3	Farming Business Skills	Do farming as usual	Receive counseling from related agencies	Have your own innovation
	4	Family Health	There is an infectious disease/hospitalization	There are regular illnesses (dizziness, mild influenza, fever)	Everyone's healthy
	5	Involvement of family members in farming	Head of Family	some family members	All family members (of working age)
Physical Capital	1	Physical Condition of the House	Not Permanent	Semi Permanent	Permanent
	2	Residential Status	Borrow	Rent	Private Property
	3	Home Raw Materials	Zinc	Wood	Rock
	4	Communication tool	Pinjam	Public Service	Private Property
	5	Road Access	Soil/Rocky	Paving	Asphalt
	6	Distance from House to Market	>10 km	10-1 km	<1 km
	7	Distance from house to health center	>10 km	10-1 km	<1 km
	8	Distance from house to district	>10 km	10-1 km	<1 km
	9	Public Access (places of worship, health, markets, education, banks/cooperatives, shops)	Nothing	There is one or several	It's all there
Natural Capital	1	Land Availability (area)	<1 Ha	1-10 Ha	>10 ha
	2	Land Ownership	Rent/Owned by someone else	State Owned	Privately owned (Buy)

Asset Type	No.	Indicator	Low	Currently	High
			1	2	3
	3	Land Conditions	Bad	Pretty Good	Very Good
	4	Forestry Party Visit on the land (Polhut, Extension Officer, etc.)	Never	Sometimes	Often
	5	Environmental conditions	High pollution and polluted environment	Pollution is low and the environment is starting to become polluted	There is no pollution and a healthy environment
	6	Ease of finding land, water and air organisms	Hard to find	Easy to Find	Very easy to find
	7	Condition of ditches and rubbish	Dirty, lots of rubbish and ditches not cleaned	Only one of them was cleaned	Garbage is cleaned and ditches are clean
	8	Farming Business Development	Only 1 main business	main business plus one other business	Lots of effort
	9	Water Availability	Limited	Enough	Overflow
Social Capital	1	Relations with Relatives	Tenuous	Sometimes related	Familiar
	2	Trust in local communities	Don't believe	Believe	Strongly believes
	3	Societal conflict	Often Occur	Sometimes	Never happen
	4	Security in the local environment	Not Safe	Fairly Safe	Very safe
	5	Participation in social groups/organizations	Do not participate	Registed only	Active member
	6	Participation in social group/organization activities	Never	Sometimes	Always come along
	7	Traditional activities carried out	There isn't any	Yes, 1-2 Times a Year	>2 times a year
	8	Participation in community activities	Never	Sometimes	Always come along
	9	Get help during a crisis	Never	Sometimes	Always get
	10	Ability to help others	Never	Sometimes helps	Always helpful
	11	Resources	Mass media	Group/Agency	Relatives and neigbors
Financial Capital	1	Source of income	No income	Only one income	More than one income
	2	Income per month	<1,5 Million	1,5-3 Million	>3 million
	3	Saving Amount	Don't have	≤ 5 miliion	>5 million
	4	Financing difficulities	> 3 times a year	1-3 times a year	never
	5	Availability of borrowing places (banks/cooperatives)	There isn't any	There are some	lots
	6	Loan Amount	>10 million	≤ 10 million	0
	7	Livestock ownership	Don't have	There is one type	There are ≥ 2 Types
	8	Vehicle ownership	Don't have	There are 1-2 vehicles	There are > 2 vehicles

3. Result and Discussion

1) Livelihood Asset

Livelihood assets encompass various components, including human capital, physical capital, natural resources, social capital, and financial capital. Assets or capital refer to the resources possessed by an individual or society that enable them to sustain their livelihood. Livelihood assets encompass all possessions held by an individual or society, regardless of whether they are privately or publicly owned. The magnitude of the variety of an asset and the equilibrium among these assets significantly determine the robustness of a society. Within the context of livelihoods, it is essential to optimise five

types of resources, namely natural capital, human capital, financial capital, social capital, and physical capital. This optimisation allows for the evaluation of the effects on livelihoods, ultimately benefiting households by enabling them to utilise these natural resources to meet their needs (Chinangwa et al., 2016).

a) Human Capital

There are five indicators of human capital analyzed in this research, namely education, farming experience, farming skills, family health and involvement of family members in farming. These indicators will describe the skills and qualities of individual people in society. The detailed scores for each human capital indicator can be seen in table 2.

Table 2. Availability of Human Capital in the Lantebung Mangrove Ecotourism Community.

No	Human Capital Indicators	Score	Status
1	Education	1,60	Low
2	Farming Business Experience	2,00	Currently
3	Farming Business Skills	2,13	Currently
4	Family Health	2,23	Currently
5	Involvement of family members in farming	1,50	Low
Total		**9,46**	
Average		**1,89**	Currently

Source: Primary data processed, 2022

Based on the research results contained in Table 2, it shows that the education indicator for the Lantebung mangrove ecotourism community is low (1.60). This is due to the majority of the population only having completed elementary school. The community's farming experience indicator falls into the medium status (2.00), primarily due to the average respondent's age of 25–40 years, which equates to only 10–20 years of farming experience. Sulistiyanto (2013) asserts that the community's low education level contributes to their limited knowledge and challenges in embracing innovations. Consequently, the community pays less attention to counseling from relevant agencies, leading to a lack of experience.

Farming skills are in the medium category (2.13), which shows that the community already has skills in farming. Additionally, based on the results of the interviews, the community has received counseling. However, they report that the effectiveness of some of the techniques they have been taught has been subpar, leading them to continue using traditional methods or relying on their existing experiences. The lack of information provided will make people ignore the natural resources they use to meet their living needs. As a result, people tend to overlook the importance of preserving the environment they depend on for their livelihood (Chilongo, 2014).

The family health indicator is in moderate status (2.23), indicating that on average, community family members only suffer from illnesses that are not serious. This is important because a healthy family will have a positive impact on thinking and working. Apart from that, the average person is still within the productive age limit or in the young category, so they tend to only be mildly ill.

The final indicator measures the involvement of family members in farming. From the research results, this indicator has a low status. This could be because the average respondent's family members are still children or have not yet reached working age or family members during their study period. Based on these indicators, the average human capital of the mangrove ecotourism community is of medium status (1.89). This shows that the mangrove ecotourism community has excellent human capital.

b) Physical Capital

Physical capital is the facilities and infrastructure that support communities in carrying out livelihood strategies and achieving their livelihood goals. Physical capital can be used as an asset to facilitate increased service provision for low-income communities to meet their needs. The detailed scores for each physical capital indicator can be seen in Table 3.

Based on the research results contained in Table 3, it shows that the physical condition of the house and the community's house ownership status are high (3.00), which means that the community's house is a permanent building and also belongs to each individual. Meanwhile, the raw material for houses also has a high status, but the value obtained is not yet optimal (2.53), which means that the majority of respondents' houses are made of stone or walls and some are made of wood. If it is related to income, the majority of houses made from wood are owned by respondents with relatively low incomes.

Another indicator assessed is communication tools. From the research results, the respondent's communication equipment has a high status (3.00), which means that all people have communication devices at home, especially cellphones. This is because cellphones have now become a necessity along with technological developments, whether used for communication with relatives, education, or as a medium for searching for information. Each community also has at least one television in their home. Meanwhile, community road access is already high (2.47), which means that community mobility is in the form of asphalt roads that vehicles can pass easily. This is because the area has become an ecotourism area, so road access is very important to support the development of ecotourism.

The indicator for the distance from the house to public facilities such as markets, health centres, and sub-districts has a medium status (2.00). The distance from house to market is 5 km, the distance from house to health centre is 2 km, and the distance from house to sub-district is 7 km. This shows that people's mobility to public facilities is relatively easy, so there are people who work as traders and motorcycle taxi drivers. This distance will, of course, affect the cost, energy, and time for people to mobilize. The final indicator of physical capital observed is public access to places of worship, health, markets, education, banks, cooperatives, and

shops. Market distance, for example, has a big influence on people's income in villages. The closer the distance to the market, the less income earned will be reduced for transportation expenses, additional labour, and so on (Chilongo, 2014). From the research results, public access has a moderate status (2.00) because only partial access is available. Access to institutions such as banks, cooperatives, and markets is not available in the research locations. Based on several indicators, the physical capital of the Lantebung mangrove ecotourism community has a high status (2.44), so it can be said that the physical capital of the community is good.

Table 3. Availability of Physical Capital for the Lantebung Mangrove Ecotourism Community.

No.	Physical Capital Indicator	Score	Status
1	Physical Condition of the House	3,00	high
2	Residential Status	3,00	high
3	Home Raw Materials	2,53	high
4	Communication tool	3,00	high
5	Road Access	2,47	high
6	Distance from house to market	2,00	Currently
7	Distance from house to health center	2,00	Currently
8	Distance from house to district	2,00	Currently
9	Public Access (places of worship, health, markets, education, banks/cooperatives, shops)	2,00	Currently
	Total	22,00	
	Average	2,44	high

Source: Primary data processed, 2022

c) Natural Capital

Natural resources available for community livelihoods are included in natural capital, both those used publicly and those owned individually. To gain access to a better livelihood, natural capital can be a solution. Natural capital is very important for people's livelihoods because, essentially, a person cannot survive without the help of nature, whether in the fields of agriculture, fisheries, forestry, or other fields. Good and sustainable management of natural capital will prevent people living in the area from falling into poverty (Mawa et al., 2021). The detailed scores for each natural capital indicator can be seen in Table 4.

The results of the research show that the land availability and land ownership of the Lantebung mangrove ecotourism community have low status. This is because of the total of 30 respondents, only 2 or 6.67% of respondents own land in the form of mangroves (3 ha) and rice fields (0.5 ha). The lack of land owned by the community is due to the fact that their area is considered a coastal area, so the majority of people carry out their activities at sea, so their land is minimal. Meanwhile, the condition of the respondents' existing land has a moderate status (2.00), meaning that the condition of the land they own is good or the nutrients are sufficient. Apart from that, visits from forestry officials, whether forest police or extension officers, are also relatively low, meaning that the government pays little attention to community land.

Table 4. Availability of Natural Capital in the Lantebung Mangrove Ecotourism Community.

No.	Natural Capital Indicators	Skor	Status
1	Land Availability (area)	1,33	Low
2	Land ownership	1,50	Low
3	Land condition	2,00	Currently
4	Forestry Party Visit on the land (Polhut, Extension Officer, etc.)	1,50	Low
5	Enviromental conditions	2,20	Currently
6	Ease of finding land, water and air organisms	2,37	High
7	Condition of ditches and rubbish	1,87	Currently
8	Farming Business Development	1,00	Low
9	Water Avaibility	1,00	Low
	Total	**14,77**	
	Rata-Rata per Indikator	**1,64**	Low

Source: Primary data processed, 2022

The environmental condition indicator maintains a moderate status, indicating that the area remains unpolluted, despite occasional reports of factory smoke, which can occasionally lead to elevated pollution levels. The area's environmental conditions remain relatively good due to the presence of numerous mangrove ecosystems. The condition of the ditches and the trash itself is also in a moderate state, indicating that people are still aware of the importance of properly disposing of waste and maintaining clean ditches. In this area, the ease of encountering organisms on land, water, or air is relatively high.

In addition, the assessment includes other indicators such as farming business development and water availability, both of which have a low status (1.00). The low level of agricultural business development is due to the fact that the majority of people do not own land. People who own land only use the land for mangroves, and some also use the land for rice, so there is no business development. People who use land for rice also do not own the land privately, so it can be an obstacle to developing farming businesses. Even though the area is a coastal area, water availability is low due to limited clean water for daily needs. Several indicators classify the mangrove ecotourism community's natural capital as low (1.64), indicating a poor state of natural capital.

d) Social Capital

The relationship between individuals and society can be seen in the social capital they possess. All norms, behaviours, networks, and cultures that an individual has are included as social capital. This capital is very important in helping the community strengthen relationships. The good relationship that each individual has with each other will give rise to benefits in every activity carried out (Tadesse et al., 2017). The detailed scores for each social capital indicator can be seen in Table 5.

Table 5. Availability of Social Capital in the Lantebung Mangrove Ecotourism Community.

No.	Social Capital Indicator	Score	Status
1	Relations with society	3,00	high
2	Trust in local communities	2,07	Currentl y
3	Societal conflict	3,00	high
4	Security in the local enviromental	2,97	high
5	Participation in social groups/organizations	3,00	high
6	Participation in social group/organization activities	2,79	high
7	Traditional activities carried out	2,00	Currentl y
8	Participation in community activities	1,73	Currentl y
9	Get help during a crisis	1,97	Currentl y
10	Ability to help others	2,07	Currentl y
11	Resources	2,21	Currentl y
	Total	**26,79**	
	Rata-Rata	**2,44**	high

Source: Primary data processed, 2022

The research results in Table 5 show that the Lantebung mangrove ecotourism community is well connected or familiar with other communities or relatives, as well as community conflicts that have never occurred, which means communication between them is still very good. This correlates with the medium-status individuals' trust indicator (2.07), indicating their continued mutual trust, and also aligns with the security of high-status individuals (2.97), indicating the establishment of positive relationships and community trust. If there is a positive relationship between local communities and stakeholders, such as forestry parties, they can manage the area sustainably based on good relationships and trust (Mawa et al., 2021).

Indicators of participation in high-status social groups or organisations. This is related to community participation in group activities that are also of high status. The groups that people join are diverse, and each has positions such as chairman, treasurer, member, or section member. People tend to actively join these groups, as evidenced by their participation in various activities carried out, ranging from counselling, training, planting, etc., each of which has its own activity schedule. Community participation in this group is used as a forum for self-development and the development of knowledge. In addition, the traditional and community activities have a moderate level of participation, indicating that most individuals engage in them only infrequently. The types of activities that are usually participated in are religious activities such as birthdays, August 17 competitions, cultural days, religious competitions, mutual cooperation, etc. Community participation can strengthen ties so that relations between members of the community improve.

Other indicators analysed are indicators of receiving assistance during a crisis and the ability to help other people with moderate status. This implies that community solidarity remains intact, leading to occasional mutual assistance. Community information sources have a medium status (2.21), indicating that people place more trust in their neighbors or relatives than in sometimes inaccurate information from the mass media. Based on several indicators, the social capital of the Lantebung mangrove ecotourism community is in the high category (2.44), which means that the social capital of the community is good. High social capital will increase human capital substantially, which means that if a person's social capital is good, they will also build their human capital (Agustin, 2017).

e) Financial Capital

Financial capital achieves the goal of a person's livelihood. Economic assets are often also referred to as financial capital. Social capital refers to the ownership that individuals hold in order to generate income. In Saleh's research (2014), people's access to financial capital varies greatly; this is influenced by how people's needs and opportunities use it. The detailed scores for each financial capital indicator can be seen in Table 6.

The community's source of income is of medium status (2.00); this is because the community only has one type of income. Individuals in the community rely solely on their primary source of income to cover their living expenses. This has a significant impact on the monthly income of individuals with lower socioeconomic status (1.46), as they rely on this primary source of income for their living expenses. The average community income is only around 500 thousand to 1 million. The only people who earn income are people who earn their living as labourers, private employees, and civil servants who earn an income of $3 million or more. This is influenced by the education level of the community, the majority of which only reach elementary school, and some do not even go to elementary school. This will, of course, affect individual abilities and the ease of finding work. Each community's income distinguishes one household's income from another (Chilongo, 2014).

Table 6. Availability of Financial Capital for the Lantebung Mangrove Ecotourism Community.

No	Financial Capital Indicator	Score	Status
1	Source of income	2,00	Currently
2	Income per month	1,46	Low
3	Saving amount	1,29	Low
4	Financing difficulities	2,40	High
5	Availability of borrowing places (banks/cooperatives)	2,00	Currently
6	Loan Amount	2,63	High
7	Livestock ownership	1,15	Low
8	Vehicle ownership	1,97	Currently
	Total	**14,90**	
	Rata-Rata	**1,86**	Currently

Source: Primary data processed, 2022

The savings indicator stands at a low status of 1.29, primarily due to the low income of the majority of individuals, which further complicates the process of saving. The money from the income earned is used to meet daily needs. Some high-income respondents have savings of up to 10 million rupiah. This also causes the status of community financing difficulties to be classified as high (2.40). Each individual's financial difficulties can include difficulties with education, health, and political financing. This financing difficulty is related to the high loan amount status (2.63) where the respondent's loan amount reached $50 million. The availability of places to borrow can be said to be easy. Several places to access loans are at banks and cooperatives. People do not borrow money from relatives.

Apart from that, the community livestock ownership indicator has a low status (1.15) because the majority of people do not own livestock; only three respondents out of a total of 30 respondents have livestock in the form of chickens or geese. The community's lack of livestock ownership can be attributed to its coastal location, particularly in the fisheries sector. The final indicator, motor vehicle ownership, has a medium status of 1.97, indicating that the majority of people own one vehicle. The existence of this asset is very important because it makes it easier for people to carry out activities, especially people who use these vehicles to work to fulfil their daily needs. Based on these several indicators, the financial capital of the Lantebung mangrove ecotourism community has medium status (1.86), which means that the financial capital owned by the community is sufficient. By creating jobs, providing access to land that the community can manage, and providing direction in the management process, improving the management of existing resources will increase welfare and alleviate poverty for surrounding communities (Setiahadi et al., 2020).

2) Pentagonal Assets

The asset pentagon describes the relationship of the five capitals, namely human capital, physical capital, natural capital, social capital and financial capital to access to owned assets (Saleh, 2014). The livelihood assets owned by an individual must be easily accessible to support the sustainability of his or her livelihood. Each individual has different pentagonal assets. The amount of assets owned by an individual can change if the assets owned also change. These changes can increase or decrease from the previous asset. These changes can be caused by the individual himself or because of changes in the structure and processes of society/the environment. Overall, the state of Livelihood Assets of the Lantebung mangrove ecotourism community can be seen in table 7.

Table 7.Condition of Livelihood Assets of the Lantebung mangrove ecotourism community

No.	*Livelihood Assets*	Mark	Status
1	Social Capital	2,44	High
2	Human Capital	1,89	Currntly
3	Phisycal Capital	2,44	High
4	Natural Capital	1,64	Low
5	Financial Capital	1,86	Currntly

Source: Primary data processed, 2022

The state of Livelihood Assets of the Lantebung mangrove ecotourism community can be visualized in the form of a Pentagonal Assets image in figure 2 reveals that the pentagonal shape lacks symmetry due to uneven or unbalanced farmers' access to the five assets. There is a high ratio of assets owned by the community. The shape of the five assets, which deviates significantly from the pentagon shape, illustrates this. The condition of community livelihood assets based on Table 7 shows various categories. The highest assets are located in social capital and physical capital, while the lowest assets are located in natural capital, while human and financial capital are in medium status.

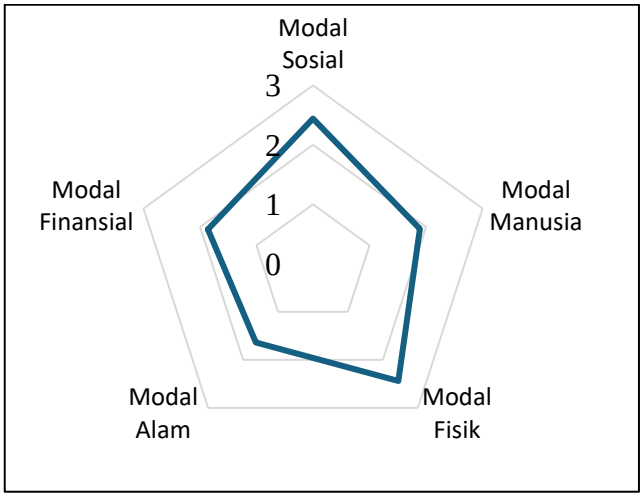


Figure 2. Pentagonal Assets of the Lantebung Mangrove Ecotourism Community.

These five assets are interconnected with each other. When the five assets are in good condition, they will support community activities and carry out their lives (Agustin, 2017). Good social capital will provide support for individuals in increasing their income, which will influence their financial capital. Indirectly, social capital also influences physical capital; if social capital is high, then the community's social network will also be high, so the ability to increase physical capital, such as suggestions or infrastructure that does not yet exist, will emerge. According to Agustin (2017), a high level of tolerance in society can realise opportunities to share public assets such as physical capital (places of worship), natural resources (natural capital), or labour (human capital).

Human capital and financial capital in this study are of medium status. This is influenced by the education level of the community, the majority of whom are in elementary school, and some have not even completed elementary school. The majority of the community also has low incomes, as a result of which the community's financial capital is not very strong. Agustin's (2017) research aligns with the notion that strong human capital enhances asset management and aids in securing decent employment, thereby bolstering financial capital. Efforts that can be made to increase human capital include continuing to improve skills that will support increasing financial capital.

In addition, the community's low level of natural capital stems from the majority of individuals lacking land for use, and the scarcity of clean water in the region. We can boost this natural capital by maintaining the preservation of nature and enhancing farming activities for those who possess land.

4. Conclusion

The availability of livelihood assets (livelihood) for the Lantebung Mangrove Ecotourism community is quite good. The resulting form of Pentagonal Assets is not symmetrical because farmers' access to the five assets is not the same or balanced, and also because there is a high level of inequality in the assets owned by the community. The minimum score is 1.00, and the highest score is 3.00. The community's social and physical capital have achieved a score of 2.44, indicating a high asset status. This is due to good relations and high solidarity between the community, as well as the accessibility and availability of facilities and infrastructure in the area that are in good condition. Human capital with a score of 1.89 and financial capital with a score of 1.86 are of medium status. The low level of human capital and financial capital is influenced by the level of education in the community, the majority of which are in elementary school, and some have not even completed elementary school. The majority of the community also has low incomes, as a result of which the community's financial capital is not very strong. Meanwhile, the lowest position is in natural capital with a score of 1.64, which is due to the community's limited land availability, which of course also has an impact on the development of farming businesses, which is also low. Apart from that, this is because the availability of clean water for the community in the Lantebung Mangrove Ecotourism Area is still limited. However, this research remains limited in its ability to identify community assets by focusing on these five capitals. We still require additional research to delve deeper into the connections between each capital, as well as to examine livelihood strategies aimed at boosting community income or ensuring food security in the Lantebung Mangrove Ecotourism region.

5. Author Contributions

The first and second authors contributed to the writing and conceptual design; the third and fourth authors assisted in data analysis and tabulation; and the fifth and sixth authors contributed to the writing and conceptual design.

6. Completing Interests

The authors declare that there is no conflict of interest in doing this research.

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