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Livelihood Assets and Households Vulnerability toward Food Commodity Price: An Evidence from Post-Disaster Community in Banda Aceh

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ABSTRACT

The recovery process following the 2004 mega-disaster and the Covid-19 pandemic have significant implications for the dynamics of change and community resilience in Banda Aceh. A resilient community is characterized by the ability to adapt to various threat risks, including volatile market conditions. Therefore, this study aimed to investigate livelihood assets in Banda Aceh and the influence on households vulnerability to fluctuation in the market price of food commodity. To achieve this objective, the study used a questionnaire survey method with 560 household heads as the unit of analysis spread across 28 villages in Banda Aceh. Furthermore, data were analyzed using a descriptive method to calculate livelihood assets and vulnerability index, along with multiple linear regression to analyze the effect of livelihood capital on vulnerability. The results showed that the condition of human and financial capital was still weak compared to social and physical capital. Households also had a high level of vulnerability to fluctuation in food prices. Statistically, human, financial, and social capital had a significant effect on households vulnerability. This study showed the importance of fostering both human and financial capital at the households level to improve quality of life and economic resilience. There were also needs for initiatives to improve social networks as a means of adapting to unexpected events.

INTRODUCTION

The 2004 mega-disaster that occurred in the coastal areas of Aceh Province has devastated the lives of people in Banda Aceh. This disaster has specifically damaged physical and

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economic infrastructure and affected the dynamics of community social life. Therefore, the reconstruction regime has provided a foundation to *build back better* the dynamic and changing joints of the community life. The community is thereby expected to experience structural and cultural transformation, especially regarding the environmental landscape, housing, livelihood and income, solidarity and social capital, as well as preparedness and reduction risk disaster (Swesti, 2019).

Almost two decades of experience with mega-disasters, and the resulting changes in physical, economic, and social infrastructure development, clearly illustrate the logical consequences of the interventions carried out. The Covid-19 pandemic in the early 2020s tested the readiness and resilience of community to face threat significantly affecting people's lives. These changes are logical and unavoidable consequences of development events and processes (Greenfiled, 2018). Such conditions also have implications for the threat landscape of livelihood capital and households vulnerability, raising questions about how vulnerable situations arise in the post-disaster recovery development process, despite the numerous past disasters (Muttalib and Mashur, 2019).

Volatile market conditions for staple food commodities also pose threat to vulnerability of households to live decent life free of poverty. This situation is often described as the ability to survive amidst the threat of economic stability risks and the availability and affordability of proper food access. Since Banda Aceh is not an agricultural commodity production city, it significantly depends on the surrounding area. According to a report from the Aceh Agriculture and Plantation Service, Banda Aceh City sources food commodities like shallots and chilies from distant areas like Aceh Besar, Pidie and Takengon. Consequently, the extended distribution travel time leads to higher costs(Panjaitan *et al.*, 2020).

Food commodity is very important to maintain human survival, and contributes to economic, social, as well as political aspects. In economic context, commodities like shallots, red chilies, and cayenne peppers often experience price changes (Pradana, 2019). According to statistical data, the price movements of the three strategic food commodities in Banda Aceh fluctuated monthly in 2022, with significant increase recorded in June, during major celebrations. For instance, chilies price increased by IDR 40,000 per kilogram compared to the previous month, and shallot increased by IDR 20,000 per kilogram. The food commodity with the most significant contribution to inflation was rice and chicken eggs, contributing 0.210% and 0.07%, respectively. Although chilies peppers and onions did not contribute to inflation, according to Ambarita et al. (2024), the increase in the price of cayenne peppers can significantly impact households and affect consumption patterns, budget allocation, as well as the economic welfare of the community. These

changes are influenced by increased demand during festive periods although Banda Aceh does not supply agricultural commodity.

Generally, the price of shallots, red chilies, and cayenne peppers showed continuous fluctuation, with a significant increase in price reported in July. According to Septiadi *et al*. (2020), chili peppers are considered one of the agricultural commodities with highly fluctuating prices, significantly influencing inflation. In addition, red chilies and cayenne peppers are market favorites often used in daily life, resulting in high demand (Yuliati and Hutajulu, 2021). The sustained demand for these commodities can lead to consistent fluctuation, negatively impacting lower-middle class households (Pradana, 2019).

Vulnerability refers to how susceptible a society is to pressures and crises caused by certain factors such as climate change (Aldi *et al.,* 2021). Liborang, (2020) further defined it as a state of crisis in individuals due to fluctuations in the price of basic necessities, potentially affecting the family economy. Vulnerability occurs when there are threats due to changes in the system, environment, or other factors that reduce human well-being. Price changes in shallots, red chilies, and cayenne peppers can make households vulnerable or destabilize the cost of living, leading to poverty. This can also impact households' efforts to achieve good sustainable livelihood. In urban areas, sustainable livelihood involves equitable access to resources, economic opportunities, social networks, and healthy environment. The objective is to improve access to quality education, coaching, and fulfilment of adequate nutrition and health.

Livelihood strategies are essential in addressing challenges or threats with the aim of achieving a positive level of sustainability in life (Kehinde *et al*., 2021). These strategies are based on a series of actions chosen or undertaken by households with the intention of improving welfare or achieving a better standard of living (Virgin, R and Siregar, 2022). Livelihood strategies are influenced by various assets, namely natural, physical, human, financial, and social capital (Fathy, 2019). Vulnerability studies are generally associated with climate change or natural disasters as sources of exposure that affect livelihood. Since investigations on non-climate factors as source of exposure are still minimal, the novelty of the current study lay in its focus on threat factor. The objective was to identify livelihood capital and the influence on households vulnerability due to changes in food commodity price in Banda Aceh. The scope of the study included perceptions and experiences, as well as assessment of households conditions based on disaster experiences and the risk of threats to livelihood.

METHODS

This study used a survey method, with households who lived in Banda Aceh for more than six months serving as the unit of analysis. In

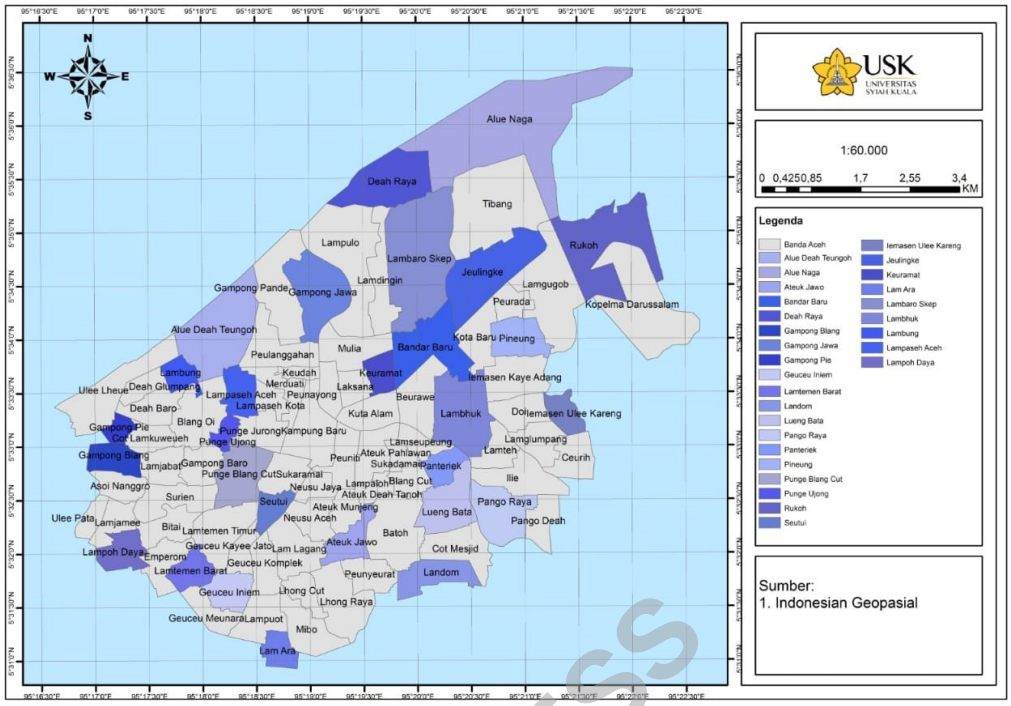

Figure 1. Study Area
Source: Indonesian Geospasial (processed) (2023)

addition, a descriptive method was used in capturing the realities and phenomena of the study focus.

The study locations were determined using equal interval method based on the village identity number (*gampong*). To represent the population, 30% of the villages were selected, resulting in 28 villages out of a total of 91 in Banda Aceh. The samples were determined by quota sampling, with a minimum number of 20 households per villages, resulting in a total of 560 (Sugiyono, 2015). Furthermore, data were collected through a questionnaire survey using the accidental method. Both descriptive and correlational data analysis methods were used. Descriptive analysis aims to provide a description of the phenomenon under study directly. It also examines the variables in a problem individually, without comparing one to another. Forms of descriptive analysis include grouping components and processing raw data for analysis. The collected data underwent three stages for analysis, namely reduction, presentation, and verification.

1. Livelihood Capital Analysis

Livelihood capital was analyzed using the scoring method, which assigns values to various assets, including physical, human, social and financial capital. Subsequently, this assessment was grouped into three categories, namely low (score 1), medium (score 2), and high (score 3) (Sarapang *et al*., 2019). In measuring the utilization of livelihood capital, the average value of the total capital score were classified using certain

standards. The score range is calculated as follows:

$$\text{Variable Score} = \frac{\text{Number of questions x scale score}}{\text{Number of questions}}$$

$$\text{Scale score} = \frac{\text{Maximum score - scale score}}{\text{Number of questions}} - 0.01$$

$$\text{Maximum score} = \frac{13 \text{ x } 3}{13} = 3$$

$$\text{Maximum score} = \frac{13 \text{ x } 1}{13} = 1$$

$$\text{Range} = \frac{3 - 1}{3} - 0.01 = 0.66$$

Based on the range presented, the levels of livelihood capital are categorized as follows:

Table 1. Livelihood Capital Categories

Score	Category
1.00 – 1.66	Low
1.67 – 2.33	Medium
2.34 – 3.00	High

Source: Data processed (2023)

2. Vulnerability Level Analysis

Vulnerability analysis was conducted using a qualitative descriptive method that applied the LVI-IPCC calculation method. The Livelihood Vulnerability Index (LVI) calculation method categorized three aspects of vulnerability, such as exposure, sensitivity, and adaptive capacity. Phuong *et al.* (2023) specifically utilized this method to evaluate the vulnerability of livelihood under various hazard scenarios. The following are the stages of measurement using the LVI.

a. Sub-component standardization / index measurement

$$\text{index} = \frac{\text{Sd - Smin}}{\text{Smax - Smin}}$$

Where:

Index =standardization value/ subcomponent index

Sd =sub component value

Smin = the minimum value of the respondent's answer

Smax = the maximum value of the respondent's answer

b.Measurement of Principal Component Values (M_d)

$$M_d = \frac{\Sigma_{i=1}^{n} \text{index sd}_i}{n}$$

Where:

M_d = Principal component value

Index sd = Sub-component index

n = number of sub components

c.LVI Value Calculation

$$LVI_d = \frac{\Sigma_{1=1}^{7} W_{Mi} M_b}{\Sigma_{i=1}^{7} = W_{Mi}}$$

Where:

LVI_b = component index value (*exposure, sensitivity, adaptive capacity*)

M_b = sub component value

Wmi = number of subcomponents

d.LVI-IPCC measurements

$$LVI - IPCC_d = (E_d - A_d) * S_d$$

Where:

E_d = exposure value

A_d = adaptive capacity value

S_d = sensitivity value

The results are analyzed as follows: values closer to 1 means higher vulnerability, necessitating vulnerability reduction measures, while values closer to -1 means low vulnerability to changes in food prices. According to Wardica (2018), the LVI-IPCC scale was used with three levels of vulnerability, namely not vulnerable (-1 to -0.4), moderately vulnerable (-0.41 to 0.3), and highly vulnerable (0.31 to 1).

3. Analysis of the Effect of Livelihoo Capital on the Level Vulnerability

Correlational analysis was conducted to examine the effect of livelihood capital on households vulnerability using multiple linear regression analysis method. This calculation uses one dependent variable (vulnerability index) influenced by several independent variables (physical, human, social, and financial capital). The formula for the multiple linear regression equation is as follows:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e_i$$

Description:

Y = household vulnerability index

b_0 = constant

b_1, b_2, b_3, b_4, b_5 = coefficient

X_1 = physical capital

X_2 = human capital

X_3 = social capital

X_4 = financial capital

e_i = error

RESULTS AND DISCUSSION

Characteristics of Households in Banda Aceh

Household head characteristics are attributes that identify and distinguish one respondent from another. These include variables, such as gender, age, education level, number of family members, type of employment, and total income. Table 2 presents detailed information on the characteristics of respondents.

The characteristics of respondents were explained based on several variables, namely gender, age, level education, number of family members, type of work, and total income. The majority of respondents (89.46%) were males and heads of households. These individuals were categorized in the productive age due to the ability to work effectively. The most common occupations were business/trading (28.21%) and retail/ services (22.14%) such as selling in traditional markets or simple service business. Therefore, around 73.93% of households with low income of IDR 5,000,000 per month was expected to fulfil the needs of an average family of five members. There were also families with high incomes from professions such as contractors, lecturers, and entrepreneurs. In terms of education level, almost half of the respondents (48.39%) studied up to senior high school for more than nine years.

Table 2. Characteristics of respondents

Category	Frequency (n=560)	Percentage (%)
Type Sex		
Man	501	89.46
Female	59	10.54
Age		
15 – 65 years (productive)	523	93.39
>65 years (non- productive)	37	6.61
Level of education		
Junior high school or below	126	22.50
High School	271	48.39
Diploma/ Bachelor's Degree	163	29.11
Amount member family		
< 5 people	293	52.32
5 – 6 people	210	37.50
> 6 people	57	10.18
Type Work		
Profession (doctor, teacher)	48	8.57
Trade / business	158	28,21
Retail/ Services	124	22.14
Manufacturing	3	0.54
Construction	42	7.50
Civil servant staff	78	13.93
Farmer	2	0.36
Fisherman	34	6.07
More	39	6.96
Not Working	32	5.71
Income		
IDR 1,000,000 – IDR 5,000,000	414	73.93
IDR 6,000,000 – IDR 10,000,000	121	21.61
> IDR 10,000,000	25	4.46

Source: Primary data processed (2023)

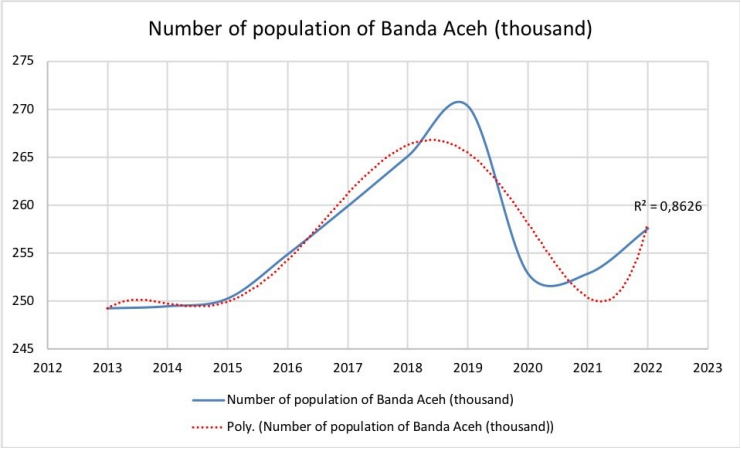

Figure 2. Population growth of Banda Aceh
Source: BPS (Data processed, 2023)

Overview of Community Life in Banda Aceh

Banda Aceh is the capital of Aceh Province and is one of the important centers of development in the region. The city has a history, especially as one of the cities heavily affected by 2004 tsunam. Therefore, this study aimed to investigate the living conditions of Banda Aceh residents, focusing on population growth, changes in food commodity prices, and household expenditure.

The figure 2 shows that population of Banda Aceh increased significantly from 2013 to 2019, followed by a drastic decrease of 17.42 thousand people in 2020. The decline occurred because during Covid-19 pandemic, many companies reduced the number of their employees, necessitating workers moving to others places. In addition, the decline could be attributed to the result of Covid-19 pandemic, which 2023).

The figure 3 shows annual fluctuation in the prices of shallots, red chilies, and cayenne peppers, which tended to increase in 2022 compared to the previous year. Reporting from *Serambinews*, this increase was caused by the reduced supply of onions from Pidie, Takengon, and West Java. Furthermore, limited availability and increasing population caused price to increase significantly as demand exceeded supply. These increases were a focus of national economic development efforts, as they could negatively impact the purchasing power of low-income households or trigger inflation.

In an economic context, a change in the prices of food could increase standard of living, significantly affecting the level of community welfare. This welfare could reflect in the income received by the community. However, the Central Bureau of Statistics (BPS) used an approach based on expenditure data as

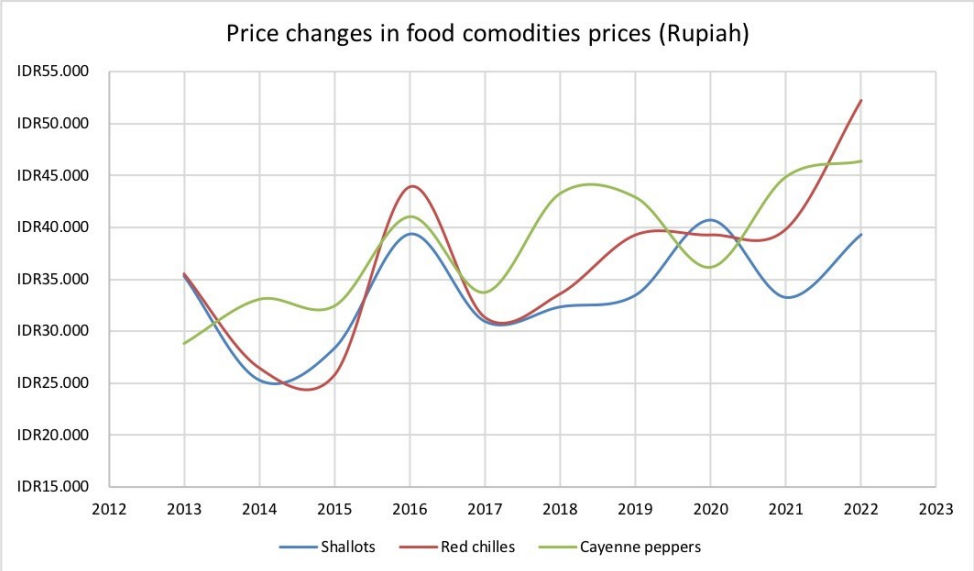

Figure 3. Price changes in food commodity prices
Source : BPS (data processed, 2023)

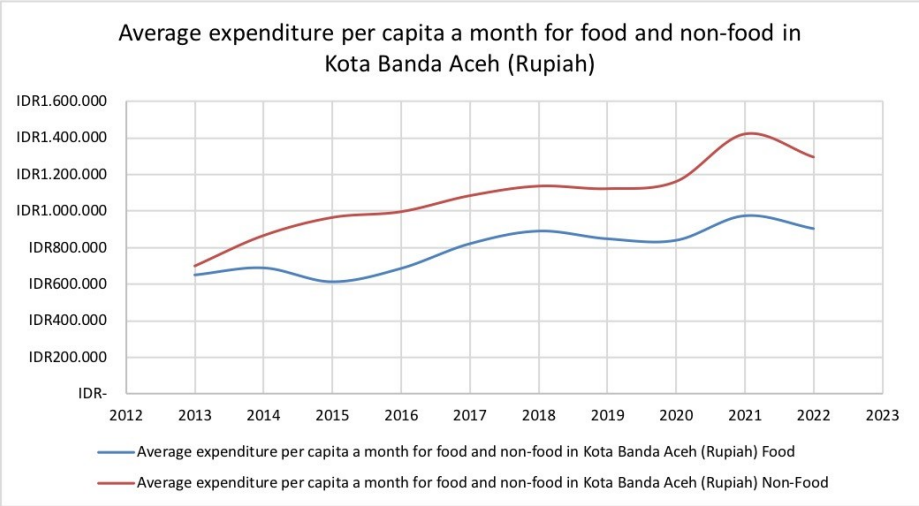

Figure 4. Household expenditure
Source: BPS (data processed, 2023)

people's expenditure was still considered the most effective for measuring income. The following are expenditure data for Banda Aceh from 2013 to 2022.

One indicator of family welfare is by measuring the amount of expenditure. Therefore, families with better welfare had a lower percentage of food expenditure than non-food expenditure. This showed the average community in Banda Aceh were in good welfare level. However, the changes in expenditure on both aspects confirmed an increase in fluctuation. An increase in living costs could also make households more vulnerable to price changes, especially those with low income. According to World Bank (2016), an increase in the cost of living, without a corresponding rise in income, burdens households, could lead to difficulties in meeting daily needs. Consequently, household often resorts to saving money and adjusting diet to cope with increasing food price. This disparity between the cost of living and income might result in widen inequality, placing most household in a challenging economic situation.

Assessment of Household Livelihood Assets in Banda Aceh

Livelihood assets or capital refer to the various resources owned by household to achieve sustainable livelihood and fulfil basic needs. In this study, the analyzed livelihood assets included physical, human, social, and financial capital. Table 3 shows the scoring results of five livelihood assets used for improving households' quality of life.

Physical capital in the form of facilities and infrastructure had an average value of 2.68, falling in the high category. This showed physical capital was managed and utilized effectively. Furthermore, the result showed market access contributed the most, where almost all households had easy access to markets. This facilitated

Table 3. Average livelihood assets parameters of households in Banda Aceh City

Livelihood Assets	Indicator	Score Average	Category
Physical capital	Water ownership	2.60	High
	Electricity ownership	2.56	High
	Market access	2.97	High
	Access to public transportation	2.57	High
	Average value	**2.68**	**High**
Human Capital	Education	2.07	Medium
	Skills	1.33	Low
	Number of members working	1.51	Low
	Average value	**1.64**	**Low**
Social capital	Trust based on head of household perception	2.68	High
	Regular social gathering participation	2.64	High
	Village activity participation	2.51	High
	Average value	**2.61**	**High**
Financial capital	Income	1.30	Low
	Assets (savings, jewelry, land)	1.82	Medium
	Health insurance	2.95	High
	Average value	**2.02**	**Medium**

Source: Processed primary data (2023)

fulfiling daily needs, especially the purchase of staples. Conversely, electricity ownership had the lowest contribution, where most households still used electricity with a maximum current of 4 Amp. Nevertheless, this indicator still fell in the high category, contributing significantly to improving the quality of life. In summary, all physical capital indicators were very good in supporting households life.

Human capital refers to the quality and skills of households acquired through education, training, experience and knowledge (Masri and Prasodjo, 2021). In this study, human capital was viewed from the level of education, skilled labor (technical and practical), and numbers of family members working. The result showed this indicator had an average value of 1.64, falling in the low category. Therefore, human capital had not been able to become the foundation for supporting daily lives. Education had the most significant contribution with an average value of 2.07, where almost all households heads had studied for 12 years. Meanwhile, the indicator with the lowest contribution was skills with an average value of 1.33, where

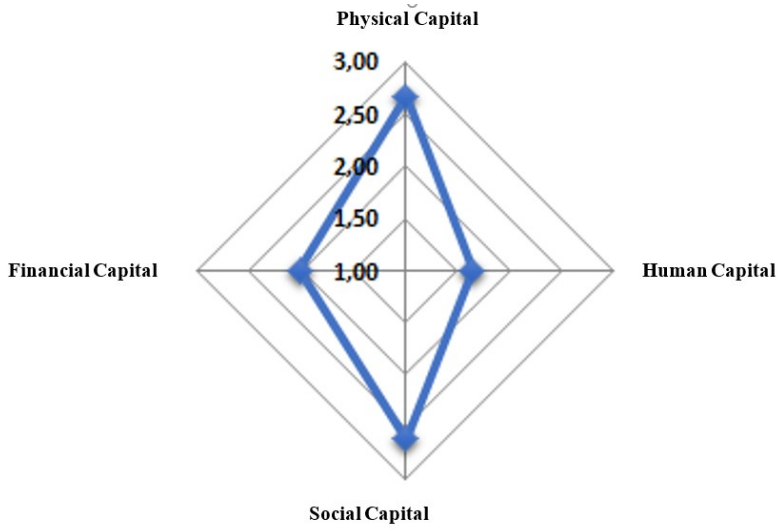

Figure 5. Radar diagram of households living capital of Banda Aceh
Source: Primary data (2023)

the majority did not have skills for obtaining additional income.

Social capital refers to the social and community ties where households heads are involved, specifically obtaining support in contributing to daily lives (Azzahra and Dharmawan, 2015). In this study, social capital contributed significantly to daily lives, and fell in the high category with an average value of 2.61. Moreover, households' trust in the local community had the most contribution, with an average value of 2.68. Social capital transcends values as an important investment in long-term assets (Noviarti and Reniwati, 2019). Participation in community activities such as regular social gathering and village activities was essential in addressing financial difficulties or other challenges like provision of loans, food, or work (Salim and Widyawati, 2021).

Financial capital refers to the resources owned by households and used to purchase goods for consumption (Azzahra and Dharmawan, 2015). In this study, financial capital fell in moderate category with an average value of 2.02, confirming its effective management and usage in daily lives. Furthermore, health insurance had the most significant contribution, where almost all households had health insurance in the form of BPJS or private insurance. Health insurance is very important from a financial perspective for households as it helps reduce health costs used for hospitalization and outpatient care (Umaroh, 2023). Meanwhile, income had the lowest contribution, where the majority of households still had income in the lowest range (IDR 1,000,000 – IDR 5,000,000). The average income was around IDR 2,000,000 per month, while the poverty line in 2022 was IDR 737,016. Since this income figure was far above the poverty line, the households in Banda Aceh were not classified as poor. However, the average income was still far below the Regional Minimum Wage (UMR) of

Banda Aceh, at IDR 3,540,555. This was in line with Virgin *et al.,* (2022), where the financial capital of the people of Malang City was low due to minimal income.

Vulnerability Level Analysis

The objective of livelihood vulnerability identification is to understand the extent which households are vulnerable to changes in food prices. This vulnerability determination process utilizes the LVI -IPCC calculation. The calculation categorizes the main component into exposure, sensitivity, and adaptive capacity variables. The value of each contributing factor is presented in table 4.

Based on the analysis data, the index value of exposure to food price changes was 0.78. The value fell in the high category, confirming households' tendency to experience difficulties in achieving a better level of living. In addition, this had an impact on the level of vulnerability and affected households' welfare and financial condition. The majority of households tended to reduce food purchases, especially shallots, red chilies, and and cayenne peppers, during price increase. In line with Hamidah, et al. (2020), the demand for chili and onion commodities was significantly influenced by price factors. Therefore, an increase could trigger a high level of households vulnerability.

The sensitivity value in this study was 0.47, falling within the medium category. Therefore, food availability and health insurance in Banda Aceh were quite sensitive to price changes in shallots, red chilies, and cayenne peppers. Price changes could affect food availability in the market and consumption habits. Households that frequently consume the commodities are highly sensitive to price increase. In addition, households without health insurance could be vulnerable to price increases, as this might further strain expenditures.

Table 4. Livelihood Vulnerability Index (LVI) of households in Banda Aceh

Variable	Key components	Sub Component	Sub Component Index	Principal Component index	Variable Index
Exposure	Threat events	-Percentage of households' perception of increasing food prices	0.91	0.78	**0.78**
		-Percentage of households that reduce purchase when food prices increases	0.64		
Sensitivity	Food	-Percentage of household heads who frequently consume shallots, red chilies, and cayenne peppers	0.84	0.91	**0.47**
		-Percentage of household heads' perception of	0.99		

Continued table….

Variable	Key components	Sub Component	Sub Component Index	Principal Component index	Variable Index
		food availability for households			
	Health	-Percentage of households without health insurance	0.02	0.02	
Adaptive Capacity	Household demographics	-Percentage of productive age family heads	0.93	0.78	**0.53**
		-Percentage of male family heads	0.89		
		-Percentage of family members < 5 people	0.52		
	Knowledge and Abilities	-Percentage of family heads who graduated from senior high school	0.78	0.54	
		-Percentage of family heads who have Skills	0.30		
	Strategy Livelihood	-Percentage of family heads who work	0.94	0.43	
		-Percentage of family heads with income > 5 million	0.26		
		-Average percentage of family members working > 2 people	0.09		
	Network social	-Percentage of family heads who receive government assistance	0.35	0.35	
LVI – IPCC values					**0.117**

Source: Primary data (2023)

The adaptive capacity refers to the ability to reduce vulnerability due to changes in food price. Banda Aceh households specifically had a moderate level of adaptive capacity, with a value 0.53, confirming the ability to maintain lives in the event of a threat. However, the magnitude of this adaptation index value was not higher than the actual value of exposure, negatively impacting the ability of households to optimally address vulnerability. Therefore, it was necessary for households to increase livelihood capital, such as skills, asset ownership, and social programs, to obtain sufficient support in facing threats.

The final calculation using the LVI – IPCC method obtained a vulnerability value of 0.117, falling within the medium range (-0.41 to

0.30), confirming the relative vulnerability of households. This condition could be attributed to the value of adaptive capacity smaller than the value of exposure (Tasri, Karimi and Muslim, 2021).

The Effect of Livelihood Capital on the Level of Vulnerability

Livelihood capital, which includes assets and resources owned by households, plays a very significant role in determining the level of vulnerability. The hypothesis was tested as follows.

a. Test Coefficient of Determination (R^2)

The coefficient of Determination (R^2) test basically assessed which model could accommodate variations in the dependent variables, with the value ranging from 0 to 1. The results are presented as follows.

The value of coefficient determination (R^2) was 0.128. This showed 12.8% of the variation in the independent variables, namely physical, human, social, and financial capital, could explain variable dependent. Meanwhile, the remaining 87.2% was explained by other factors outside the study model. The results also showed there were still other independent variables that could explain the dependent variable effectively.

A coefficient determination value greater than 1 means several other independent variables can explain the dependent variable. While a low value does not mean the model is invalid, the independent variables can be weak in explaining the dependent variable. According to Sugiyono (2015), there are three categories of coefficient determination values, namely strong, moderate, and weak, with 0.25 signifying weak category.

Table 5. Results of the coefficient determination (R^2 test)

Model Summary [b]				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.357 [a]	.128	.121	.14930

a. Predictors: (Constant), Financial Capital, Social Capital, Human Capital, Physical Capital

b. Dependent Variable: Vulnerability Index

Source: Primary Data Analysis (2023)

Table 6. Simultaneous test results (F test)

ANOVA [b]					
Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
Regression	1,809	4	,452	20,288	,000 [a]
Residual	12,371	555	,022		
Total	14,180	559			

a. Predictors: (Constant), Financial Capital, Social Capital, Human Capital, Physical Capital

b. Dependent Variable: Level of Vulnerability

Source: Primary Data Analysis (2023)

Table 7. Partial test results (t test)

Coefficients [a]					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	,244	,074		3,304	,001
Physical Capital	,022	.026	,037	,848	,397
Human Capital	-.060	.017	-.152	-3,471	,001
Social Capital	,051	.017	,119	2,969	,003
Financial Capital	-.107	.018	-.275	-5,884	,000

a. Dependent Variable: Level of Vulnerability

Source: Primary Data (2023)

b. Simultaneous Test (F Test)

The effect of independent variables (physical, human, social, and financial capital) could be simultaneously tested using F test, as presented in Table 6.

Based on the regression results, the significance value was 0.000, with a 95% confidence level, or a significance level of 5% (α=0.05). These results showed the significance value of 0.000 < 0.05, confirming the rejection of H_0 and acceptance of H_1. Therefore, all independent variables simultaneously had a significant effect on the level of household vulnerability.

c. Partial Test (t Test)

Basically, the partial test was used to determine whether each independent variables had an influence on the dependent variable, as presented in Table 7.

Based on the regression estimation results, there were three capitals affecting the level of vulnerability, such as human, social, and financial capital. The regression equation is as follows:

$$\mathbf{Y = 0.244 + 0.022X_1 - 0.060X_2 + 0.051X_3 - 0.107X_4}$$

The results showed that human and financial capital had a negative effect. Households with robust financial capital, including income and assets, were better equipped to navigate unforeseen economic changes. Conversely, a deficiency in financial capital could increase vulnerability to economic risks and financial difficulties (Oktalina, Awang and Hartono, 2016). Therefore, the higher the human and financial capital of households, the lower the level of vulnerability. With good human capital such as education and skilled labor, family members could find solutions, get jobs, and manage finances. This could facilitate households' resilience in facing unexpected economic changes. In line with Cao et al. (2016), higher education levels emerged as a more robust livelihood strategy for mitigating risks. Meanwhile, social capital had a positive effect, where social capital increased with level of vulnerability.

One indicator that shows high

social capital can lead to higher levels of vulnerability was regular social gathering participation. This is not a reliable solution for ensuring the availability of funds to cope with financial shocks, as participants cannot determine when or how much money would be received. The uncertainty can complicate financial planning and affect the ability to meet daily needs (Santoso, 2020). In addition, households involved in community organization activities showed higher levels of per capita expenditure compared to those not involved in such organizations (Nasution *et al.*, 2014).

CONCLUSION AND SUGGESTION

In conclusion, this study showed the recovery regime and development progress had significant implications for households resilience in Banda Aceh City. Disaster experiences showed households capabilities in managing livelihood assets. Furthermore, this study assessed the vulnerability of livelihood assets to changes in food commodity price. The results showed that the management and utilization of livelihood assets were at a moderate level and contributed to improving the quality of livelihood. However, among the four livelihood assets, human and financial capital remained weaker compared to social and physical capital. In particular, households vulnerability to food commodity price was relatively high. A comparison of exposure and adaptive capacity showed the community was still unable to effectively cope with the negative impacts of price changes in shallots, red chilies, and cayenne peppers. Statistical analysis showed that individually, human, social, and financial capital had a significant effect on the level of households vulnerability, while physical capital had no significant effect. However, simultaneously, all capital significantly affected the level of vulnerability. Therefore, future studies were recommended to prioritize improving human and financial capital in Banda Aceh City households. In addition, initiatives should focus on improving community adaptive capacity, particularly in response to price fluctuations in essential commodities like shallots, red chilies, and cayenne peppers. Strengthening the management and utilization of human and financial capital was also key to reducing vulnerability.

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