

Poverty Elimination Concept at the Coastal Area of Surabaya Using Sustainable Livelihood Approach

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Poverty Elimination Concept at the Coastal Area of Surabaya Using Sustainable Livelihood Approach

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Abstract. Multidimensional poverty becomes a trademark of fisherman community including the community in Surabaya. The fishermen in Surabaya belong to a society with quite apprehensive welfare in all aspects covering economy, social, and environment. Therefore, this research aims to organize poverty reduction concept in coastal area of Surabaya based on sustainable livelihood which assesses poverty through 5 (five) livelihood assets i.e. human asset, natural asset, social asset, physical asset, and financial asset. This research is a qualitative research using rationalistic approach with explorative, descriptive, and perspective nature. Primary data collected using Participatory Poverty Assessment (PPA) and secondary data collected through agency and literature survey. Purposive sampling was employed in getting the sample. Then, the data were analyzed using content analysis, statistics descriptive analysis, and delphi analysis. The results show that sustainable livelihood level in coastal area of Surabaya indicates the human asset is 65% at the SLA level and the lowest is social asset which is 20%, and financial asset is the most affecting factors of poverty in coastal area of Surabaya since the expense for fuel cannot be compared to the fish caught. Community empowerment is the concept proposed to overcome the poverty problems in coastal area of Surabaya.

1. Introduction

A never-ending discussion about poverty is essentially inseparable from environmental management issues since poverty and environment are two crucial phenomena that should be discussed as one unit. The reality of social, economic, and ecological problems in coastal area and the poverty of fishermen community occurred in Surabaya as well. The fishery profile (Dinas Pertanian Kota Surabaya, 2012) described that most of fishermen in Surabaya belong to low-level welfare category. Besides that, coastal area of Surabaya has limited access to human resources which is reflected on the number of fishermen who only graduated from elementary school and even have no education background (around 45%)[1], and their partners are also elementary school graduates[2].

The fishermen's low quality of human resources in the coastal area of Surabaya leads to fishermen's low productivity in which the income is 29.30% below the average income in Surabaya with the expense over Rp. 1,200,000. In addition, the fishermen's houses are 34.80% semi-permanent

with 49% houses having incomplete assets due to the cost of usage and maintenance, for instance, fuel for boats and motorcycle, electricity for TV or radio, and credits for cellphone [2].



Figure 1. Coastal Area of Sukolilo, Bulak District, Surabaya

Various realities of poverty, vulnerability, and environment degradation require comprehensive concept in overcoming the coastal area condition of Surabaya. The concept needs to be developed is the one that accommodates the needs of coastal society in every aspects of life that can support welfare improvement and sustainable livelihood.

Sustainable Livelihood Approach is a method to improve the understanding of poor households. Unlike other methods, SLA is multidimensional, integrated and rational approach to reduce poverty [3]. This Sustainable Livelihood Approach attempts to fulfil the degree of social, economic, and ecological fulfilment fairly and balanced by combining activities and utilization assets existing in the system of life [4]. This research aims to know the sustainable livelihood level, factors affecting poverty and concept in overcoming it in the coastal area of Surabaya.

2. Literature Review

Sustainable livelihood is a way of thinking about goals, scopes, and priorities of human development. Meanwhile, livelihood itself covers the ability, asset (including social resources), and activities needed as a means of survival. A livelihood will turn into a sustainable livelihood when the people of a community can overcome a destructive problem, recover from the damage, sustain the condition, and even improve the ability and own asset in the present and future, by not relying on natural resources only[5].

Livelihood is defined as “the abilities, assets (including material and social resources), and activities as a means of survival” [6]. Livelihood concept is important in understanding about coping strategies because it is a part of--or even considered the same as--livelihood strategies. Livelihood concept is trying to define critical factors affecting vulnerability or the power to survive of an

individual or even families. This idea is involving people's assets in activities that set the proper standard of living to fulfill other goals, such as risk reduction, and factors that facilitate or inhibit people from getting access to assets and activities easily [7]. A livelihood covers income (including cash and materials), social institutions, gender relation, and ownership rights needed to support and guarantee a life [8].

Development approach of sustainable livelihood is contemporary that is trying to correct the modern development approach well-known as an unfriendly to the environment. Sustainable approach is trying to reach the degree of fulfillment that covers social, economic, and ecological aspects, fairly and balanced. Meanwhile, social welfare can be achieved through combination of activities and assets utilization of a livelihood [8].

There are five assets to develop system of a community reflecting conservatism and populism which represent sustainable livelihood approach. Those assets are human asset, natural asset, social asset, physical asset, and financial asset that have equal status [9]. Furthermore, local asset consists of five different assets, namely human asset (including abilities, knowledge, and manpower), natural asset (including environmental services), economic and financial assets (including cash, credit, and saving), social asset (including networking, social relation, and affiliation), and physical asset (infrastructure). An assessment of people's access to the mentioned assets is a first step to diagnose a livelihood [10]. The following is the assets and their indicators (Table 1).

Table 1. Assets of Sustainable Livelihoods Approach

Assets	
Natural asset	Natural asset from useful resources for a livelihood (for instance, soil, water, wild animal, biological diversity, and environmental resources).
Social asset	Network, group membership, trustful relationship, wide access to social institutions; based on the people who are interested in pursuing livelihood.
Human asset	Ability, knowledge, manpower, and good health to pursue the strategy of having different livelihood options.
Physical asset	Basic infrastructure (transportation, residence, water, energy, and communication), and tools production that can be used in the related livelihood.
Financial asset	The financial resources which are available to people (whether savings, supplies of credit, regular remittances or pensions), and also providing them with different livelihood

	options.
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Source: Bennett (2010), adapted from Scoones, 1998; in Carney, 1998, p. 7

Sustainable livelihood approach also clearly shows that different stages of analysis are needed to understand the importance of micro and macro connections of livelihood. Furthermore, the understanding can be applied to realize a sustainable livelihood of rural areas, either in individual stage or family stage [11].

3. Methodology

To analyze the level of sustainable livelihood in the coastal area of Surabaya, the descriptive statistic method was used. Descriptive statistic is a statistic used for data analysis by describing or delineating collected data without any means for generalizing the conclusion [12]. Meanwhile, to analyze the factors affecting poverty condition in the research area, content analysis was used. Content analysis summarizes the quantitative analysis of messages that depend on scientific method (including objectivity attention, intersubjectivity, a priori design, reliability, validity, generalizability, imitation, and hypothesis testing), and not restricted only for countable variable or in a context of when the messages are made or given [13]. Content analysis technique is used to analyze categories that consist of data reduction by using coded and thematic organisation tools [14]. The steps were: determination of code, coded data classification, and data prediction [15].

To determine the poverty concept of the research area based on sustainable livelihood approach, Delphi analysis was used. Delphi analysis technique used a systematic procedure to conclude a consensus of opinions from experts. This technique based on data collection and knowledge filtering of experts through questionnaire filling with opinions control as the feedback. This technique depends on subjective decision of a group that consists of professional expert in the related field [16].

4. Result and Discussion

a. Analysis of Sustainable Livelihood Level

The result shows that in the fisherman village of Surabaya's coastal area, there were imbalances on the livelihood asset achievement, or in other words, the household's access to the assets was very low. For more details, it can be seen on Table 2 and Figure 2.

Table 2 Sustainable Livelihood in The Coastal Area of Surabaya

N o	Asset	Sustainabl e Livelihood
1	Human asset	65

2	Social asset	20
3	Natural/ Environment asset	50
4	Infrastructure/Physical asset	60
5	Financial asset	30

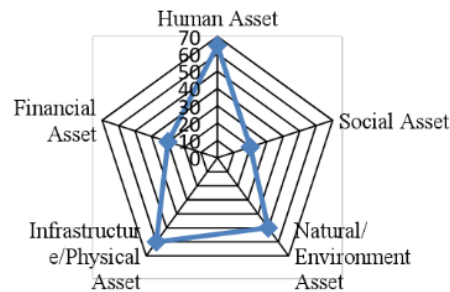


Figure 2. Level of *Sustainable Livelihood* in the fisherman village of Sukolilo, Surabaya

Fishermen of Sukolilo, in fact, have not been able to reach the level of sustainable livelihood. Most of them can only optimize each asset one at a time. Figure 2 showed that: (1) human asset reached 65%, (2) social asset reached only 20%, (3) natural/environment asset reached 50%, (4) infrastructure/physical asset reached 60%, and (5) financial asset reached 30%. Based on the analysis, human asset reached the highest level in sustainable livelihood approach, and the lowest achieved by social asset. Nevertheless, this condition needs serious concern.

b. Analysis of affecting factors of poverty condition based on Sustainable Livelihood Approach

A. Structured interview to the fisherman community of Sukolilo about the factors affecting poverty

Based on structured interview, the researcher obtained several information about factors affecting poverty condition of fisherman community in the coastal area of Surabaya. The interview structure was organized based on the literature study of related variables which has been done before. The interview questions being asked to obtain characteristics of the community were:

Table 3. Characteristic Aspect in the Structured Interview

N o	Asset	Indicator
1	Human	Frequency of Patients with Severe Disease
		Education Level
		Skills

		Work Ability
2	Social	Membership of Organization
		Level of trust among residents and within organization
		Networking of society to increase efficiency
3	Natural / Environmental	Environmental Health
		Water Production
		Land Ownership
		Fisheries Production
4	Physical	Amount and type of seafood production
		Accessibility
		House Condition
		Clean Water Availability
		Vehicle Ownership
		Sanitation Condition
		Drainage Condition
5	Financial	Income per Day
		Expenses
		Amount and type of saving
		Debt

B. Content Analysis on Identifying the Factors

Content analysis process was adapted from Martadwiprani (2013) with following steps:

1. Finding the code

Based on the interview transcripts, several codes were made that showed congruency between the collected data and the research variables. Coding process was adjusted with the theme and indicators of research since the content analysis was employed to identify the factors affecting poverty condition of the coastal area of Surabaya. The code used can be seen on Figure 3.

TRANSCRIPT 2
 (BY) Bu Yuliana: Fisherwoman
 (PK) Pak Karno: Fisherman
 (R) Researcher

T2

R : Is the boat you used here yours?
 BY : Yes, it is mine, boat and fuel aid is there but not all fishermen get it, only some of us. → **T2.12**

R : Oh, I see.
 BY : Yes, those who got the aid are in those houses.

R : Yes, ma'am. In your opinion, have the road access here supported family's mobility?
 BY : Yes, the main road over there has just been repaired, that was once narrow, → **T2.13**

R : Where is your house, ma'am?
 BY : Over there, the green one.

R : Oh, that one. In your opinion, is the house's condition good?
 BY : Yes, it is quite decent for my family. → **T2.14**

Figure 3. Quotation of code finding in interview transcript

1. Data Classification based on Code

Several new variables were found in the field data collection process, one of those is the government's involvement in providing physical aid in the form of boats and fuel for all fishermen yet the distribution is uneven. Those variables serve as input and support for data that indicate factors affecting poverty. The indicator coding in interview transcript can be seen in table 4.

Table 4. The Coding of Indicator and Interview Transcript

Variable 1	Human	Source Text	Remarks
Indicator	Frequency of patients with severe disease	T1.2 , T2.1, T3.3, T4.1, T5.1	Confirmed
	Education Levels	T1.3 , T2.3, T3.4, T4.2, T5.2	Confirmed
	Skills	T1.4 , T2.3, T3.5, T4.3, T5.3	Confirmed
	Work ability	T1.5 , T2.4, T3.6, T4.4, T5.4	Confirmed
Variable 2	Social	Source Text	Remarks
Indicator	Followed organization	T1.6 , T2.5, T3.7, T4.5, T5.5	Confirmed
	Trust level between community	T1.7 , T2.6, T3.8, T4.6, T5.6	Confirmed

	and organization		
	Community bonding networks improving community efficiency	T1.8 , T2.7, T3.9, T4.7, T5.7	Confirmed
Variable 3	Natural/Environment	Source Text	Remarks
Indicator	Environmental health	T1.9 , T2.8, T3.10, T4.8, T5.8	Confirmed
	Water production	T1.10 , T2.9, T3.11, T4.9, T5.9	Confirmed
	Land ownership	T1.11 , T2.10, T3.12, T4.10, T5.10	Confirmed
	Production and fisheries products	T1.12 , T2.11, T3.13, T4.11, T5.11	Confirmed
Variable 4	Physical	Source Text	Remarks
Indicator	Number and types of marine production equipment	T1.13 , T2.12, T3.14, T4.12, T5.12	Confirmed
	Government involvement	T1.14 , T2.13, T3.15	New
	Accessibility	T1.15 , T2.14, T3.16, T4.13, T5.13	Confirmed
	House condition	T1.16 , T2.15, T3.17, T4.14, T5.14	Confirmed
	Clean water availability	T1.17 , T2.16, T3.18, T4.15, T5.15	Confirmed
	Vehicle owned	T1.18, T2.17, T3.19, T4.16, T5.16	Confirmed
	Sanitation condition	T1.19 , T2.18, T3.20, T4.17, T5.17	Confirmed
	Drainage condition	T1.20 , T2.19, T3.21, T4.18, T5.18	Confirmed
Variable 5	Financial	Source Text	Remarks
Indicator	Daily income	T1.21 , T2.20, T3.22, T4.19, T5.29	Confirmed
	Expenses	T1.22 , T2.21, T3.23, T4.20, T5.20	Confirmed

	Numbers and types of savings owned	T1.23 , T2.22, T3.24, T4.21, T5.21	Confirmed
	Loans	T1.24 , T23.1, T3.25, T4.22, T5.22	Confirmed

*)Code: "Tx.y"

Tx = interview transcript order in the appendices

y = sentence/text quote order in the transcript

Confirmed = indicates characteristics suitability between variable and field data

New = indicates new variable based on the findings of the field

2. Data Prediction

The results of identification process indicates that factors affecting poverty in coastal area of Surabaya are as follows:

a. Financial Asset

- Expenses for boat's fuel are not comparable to the catches delivered to collectors.
- Many expenses must be spent on household needs such as daily meals, children's school needs, and medication so that there is no saving done by the fishermen household in coastal area of Surabaya.

b. Human Asset

- The fishermen's low level of education, especially those who went out to the sea are mostly Elementary and Junior High graduates.

c. Social Asset

- The low awareness and knowledge of the importance of intensive and comprehensive community involvement in improving community bonding network that leads to fishermen community efficiency improvement.
- The low level of community involvement in the existing fishermen community organization.

d. Natural or Environmental Asset

- Prominent fishery products in the Fisherman Village are shrimp, sea cucumber, mackerel, tuna, bamboo clam, in which each catch resulting 4 kg mackerel, 6 kg tuna, 3 kg sea cucumber, and 2 kg bamboo clam. The stipulation and marketing were done through collectors and distributed to the customers directly. Besides that, appropriate technology for fish drying, boat manuals, fumigation and burning, cultivation of milkfish and tilapia which are still exist. Environmental sanitation that has been improved, drainage or river, average dependents in a family is three people, average income each time going to the sea around IDR 100,000 to 160,000. Other businesses such as selling groceries, stall, food vendors, shell craftsmen, and *ojek* (motorcycle driver). Fish processing done are salting, fumigation,

cracker making, and shrimp paste making. Not going to the sea for two days is usually done in Sukolilo. Fishermen community in this village is *Maju Makmur* where the fishermen can borrow capital. The existing social activity is *pengajian*

e. Physical Asset

- Until now, fishermen in Sukolilo are still using traditional fishing gear such as *waring* or black nets and wooden boats under 5 GT. The fishermen's catch in Sukolilo before the construction of a new bridge in the UPTD tourism area *Taman Hiburan Pantai Kenjeran Surabaya* is very abundant. The fishermen who work as tourism fishermen can also take passengers from the beach. The bridge construction in the UPTD tourism area *Taman Hiburan Pantai Kenjeran Surabaya* makes most of the people in Sukolilo experience profit loss since they catch less and cannot go to the beach anymore. The regulation given by the management of UPTD tourism area *Taman Hiburan Pantai Kenjeran Surabaya* to the surrounding community is only a selling location in the tourism area. Meanwhile, the tourism fishermen did not get any regulation. The catch of fishermen in Sukolilo was sold to the collectors since the fish market in Bulak is already closed. Considering the minimum catch and profit, assistance from the DKP including fishing gear and boat machine can help the fishermen in Sukolilo.

c. ***The Analysis of Poverty Reduction Strategy Concept in Surabaya Coastal Area based on Sustainable Livelihood Approach***

From the results of several stages (iteration) through delphi analysis, several factors agreed by all respondents were found. These factors, will be recommendation as the Concept of Poverty Reduction Strategy in the Surabaya Coastal Area based on Sustainable Livelihood Approach.

Systematically, the result of merging some fishermen tourist area development that is adjusted in handling factors affecting poverty condition in Coastal Area of Surabaya based on research variables, it can be concluded as follows:

a. Modal Fisik

- Utilization of local resources by optimizing local fish processing kiosks.
- Regular infrastructure maintenance (built roads) and existing facilities to support village development.
- Improvement of fisherman village through infrastructure and facilities provision for coastal village or fisherman village.

b. Financial Asset

- Strengthening local or professional institutions in managing the opportunity for society's savings and loans business with or without village improvement program.

- Establishing cooperation with various parties to support the fisherman village development in the form of capital investment, promotion, and technology.

c. Human Asset

- Providing appropriate incentive for society to be more interested in participating intensively by programs or routine activities.
- Improving society's skills in managing the catch and fish processing by providing training that suits the needs of fishermen community development, either formal or informal in order to formulate policy related to fishermen community development.
- Improvement of human resources and development of education quality in fishermen communities through other community with higher education and broad-minded members.
- Empowerment of coastal women in handicraft production and marketing management of the products (development of processed shrimp, sea cucumber, mackerel, tuna, and *lorjuk*/bamboo clam).

d. Social Asset

- Improving trust between citizens in terms of familial ties in the location.
- Providing easy access to information for community members; (2) being power sharing media within the community; (3) developing solidarity; (4) enabling the mobilization of community resources; (5) enabling mutual attainment; and (6) establishing community togetherness and community behavior. In this case, within the fishermen community in Sukolilo.

e. Natural or Environmental Asset

- Counseling to the fishermen community in terms of condition and weather while fishing that should be considered by every fisherman.
- Providing knowledge for the fishermen community regarding location or where the fish are located or gathered at a particular time and season.

5. Conclusion

The fishermen community in coastal area of Sukolilo, Surabaya, in fact, has not been able to achieve sustainable livelihood. Most of them are only able to optimally access every asset of sustainable livelihood. From the asset pentagon chart, it can be seen that: (1) human asset on SLA is 65%, (2) social asset on SLA is 20%, (3) natural/environmental asset on SLA is 50%, (4) infrastructure asset on SLA is 60%, and (5) financial asset on SLA is 30%.

From the identification process, it is found that the factors influencing poverty in coastal area of Surabaya are as follows:

- Expenses for boat's fuel are not comparable to the catches delivered to collectors.
- The fishermen's low level of education, especially those who went out to the sea are mostly Elementary and Junior High graduates.

- The low awareness and knowledge of the importance of intensive and comprehensive community involvement in improving community bonding network that leads to fishermen community efficiency improvement.
- The low level of community involvement in the existing fishermen community organization.

The Concept of Poverty Reduction Strategy in Coastal Area of Surabaya based on Sustainable Livelihood Approach is an empowerment concept by involving society and stakeholder by:

- Utilization of local resources by optimizing local fish processing kiosks.
- Strengthening local or professional institutions in managing the opportunity for society's savings and loans business with or without village improvement program.
- Establishing cooperation with various parties to support the fisherman village development in the form of asset investment, promotion, and technology.
- Improvement of human resources and development of education quality in fishermen communities through other community with higher education and broad-minded members.
- Empowerment of coastal women in handicraft production and marketing management of the products (development of processed shrimp, sea cucumber, tuna, and *lorjuk*).

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