

Social Safety Nets for Vulnerable and Low Income Group: A Case Study of Fishing Communities in Malaysia

Abdul Rahim Anuar

School of International Studies, Universiti Utara Malaysia, Sintok, Kedah

abd182@uum.edu.my

Ahmad Zubir Ibrahim

School of Government, Universiti Utara Malaysia, Sintok, Kedah

azubir@uum.edu.my

Roslina Kamaruddin

School of Economics, Banking and Finance, Universiti Utara Malaysia, Sintok, Kedah

roslina_k@uum.edu.my

Kalthum Hassan

School of Government, Universiti Utara Malaysia, Sintok, Kedah

kalthum@uum.edu.my

ABSTRACT

Social safety nets can preserve and sustain fishermen livelihoods. The mechanisms for implementing the social security nets model for fishermen should be based on their sustainable livelihood index that comprised of livelihood assets, vulnerable context faced by them and resilient strategies of fishermen when faced with economic shocks. These index and indicators were obtained from the findings of this study involving the use of questionnaires distributed to 400 fishermen in Kedah related to the sustainability of their livelihoods. In the context of livelihood asset index, these fishermen attained the highest index for physical assets (0.65), followed by social (0.54), human (0.50), natural (0.42), and the lowest being finance (0.26). This is in line with their economic status, where most of them having low-income and are poor. They are also trapped in a vicious poverty cycle. Additionally, these fishermen are vulnerable to the rising prices of basic necessities at present by recording the highest index level of vulnerability, 3.12, compared to other threats. This is consistent and in line with the thrifty strategy adopted in their spending, with the highest resilient strategy score (3.60) compared to other strategies. In addition to financial assistance in the form of subsidies, the mechanism for implementing a social safety net model for these fishermen needs to pay attention to changes in values and attitudes to improve the value of self-efficacy. This capacity

building will encourage them to increase productivity of their economic activity and thus attaining higher income and remove themselves from the poverty trap.

Key Words: Livelihood index, fishing community, poverty, Kedah

1 INTRODUCTION

The fishing community is a vulnerable and susceptible group when faced with unforeseen risks, such as the occurrence of economic recession, heavy monsoon rains, and natural disasters like the tsunami. This is because they are largely categorised in the low-income group, and at one extreme they are in the hardcore poor category. The effect of these vulnerabilities contributes directly to the impact on food security access for fishermen and their families, who are fully dependent on catching fish as their main source of food and income, and do not have enough livelihood assets. Lack of ownership of livelihood assets—human assets, physical assets, financial assets, natural assets, and social assets—among fishermen households will cause them to remain in the vicious trap of poverty. This situation is further exacerbated when there is an increase in operational costs of fishing and living costs increase due to rising prices of daily necessities. This situation will lead to fishermen to be trapped in a vicious cycle of poverty that can lead to negative social externalities in the fishing community. Hence, the objective of this study was to develop mechanisms for the implementation of the SSN model for the fishing community. This paper also measures the livelihood index, the vulnerability of fishermen, and resilient strategy among fishermen. These indices and indicators will be the guideline for the implementation of the SSN model, which is more inclusive and sustainable.

According to the World Bank (2018), the social safety nets (SSN) is a mechanism that helps the poor and vulnerable to address problems, crises, and surprises that they face, help in finding jobs, invest in health and education of children, and protect the aging population. The SSN can strengthen human resource development and promote productivity, reduce inequality, increase resilience, and eradicate the vicious cycles of inter-generation poverty, and ultimately further develop the country's economy. The SSN is also one of the agenda and goals in World Bank's sustainable development program to be achieved under the 2030 Agenda for Sustainable Development Goals for all its member countries, including Malaysia (United Nations 2018).

The Ministry of Agriculture and Agro-based Industry (MoA) and its agency, Fisheries Development Authority of Malaysia (LKIM), have provided various financial and non-financial assistance for the fishing communities. However, government aid mechanisms for existing groups need to be revised according to the current socio-economic situation to sustain fishermen's livelihoods, as most of them are still having low-income and trapped in the poverty cycle.

The re-evaluation of financial and non-financial assistance was timely due to the expiration of the Third National Agriculture Policy (NAP3, 1998-2010). Until now no new NAP or Fourth NAP (NAP4) has yet to be implemented and transform the agricultural sector, including the fisheries sub-sector, to support the country in achieving a high-income economy status and to preserve the livelihood of farmers, including fishermen.

2 LITERATURE REVIEW

Siti Fatimah (2006) clarified the concept of sustainable livelihoods, not only focusing on material aspects such as income, but also included non-material dimensions, such as feelings of love, warmth, and compassion. According to Anna, Doris, and Norlaila (2011), life encompasses the element of ability, assets, and activities that human beings need to continue their livelihood.

Chambers and Conway (1991) defined the life sustainability as achievements relating to capabilities and social relationships for better life activities. If one is able to withstand any pressure that is being faced and able to adapt its owned assets over the long term, he or she is said to have achieved a sustainable life. Allison and Horemans (2006) stated that life sustainability is capabilities of individuals to manage five types of assets (or capital), namely human, physical, financial, natural resources, and social assets. The ownership and degree of dependence on these assets differs from one individual to another based on their ability and capability (Bebbington, 1999). Analysis of sustainable survival approaches is based on the belief that communities need livelihood assets to achieve positive well being in rural environment (Ellies 2000; Gazi & Tai 2013).

Human asset is a change of related individual skills and the ability to act in new ways (Coleman, 1988). However, Roberts and Yang (2003) further defined their definition in Su and Shang (2012), which they claimed that human assets are the skills, knowledge, human capacity of work, and good health. These assets will together enable people to implement various strategies to achieve their respective objectives life. Anna et al. (2011) stated that human assets cover aspects of education, employment, and public health. Mustaffa et al. (2014) added that human assets refer to the dimensions of demography, education, health, and employment. A study by Lawal et al. (2011) and Murphy et al. (2015) proved that humanitarian assets such as literacy, health, education, and experience in agriculture or basic knowledge of individuals, beliefs, and perceptions of climate change can contribute to the level of adaptive capacity in reducing the vulnerability of a community.

Physical assets contain two basic types of assets namely infrastructure and produced goods to support human life (Su & Shang, 2012). Jonathan (2000) stated in Su and Shang (2012) that infrastructure encompasses changing physical environments to help communities meet their basic needs and become more productive. Meanwhile, the produced goods are the physical goods used by an individual to produce other goods more productively. Among other examples of physical assets are transportation, shelter, access roads, markets, housing facilities, water resources, and hygiene and sanitation facilities that enable people to carry out their life strategies (Nesar, Allison, Troell, & Muir 2010).

Financial assets are the financial resources that individuals use to achieve their livelihood objectives. It has been widely accepted as an important component to form good livelihood, which is the cash availability that allows an individual to manage their livelihood (Department for International Development 1999). The main sources of financial assets are deposits and cash inflows such as pensions, or transfers from other parties and remittances, savings and insurance. The relationship between household and savings income is positively correlated with increased income, which will affect the increase in savings, thereby enhancing financial security for vulnerable groups (Anna et al., 2011). Financial securities will lead to the livelihood sustainability.

Natural assets is a term used to refer to stocks of natural resource derived from obtained resource and services, and useful for livelihood (Goldman 1990, cited Su & Shang 2012). As such, natural assets are shaped by variations in intangible natural resources such as atmosphere and bio-diversity, for these assets are distributed so that they can be directly used in the production of goods (Su & Shang 2012). This implies that natural assets that are not properly managed will lead to low production and income.

The term social assets often pose a polemic debate (Su & Shang 2012; Robison, Marcelo, & Jin 2011). In the context of the sustainable livelihood framework, it was concluded that this asset is used to give meaning to social resources, in which individuals manage to achieve their livelihood’s objectives. In short, social assets are measured through family relationships, relationships with the community, and self-involvement in social organisations and activities (Anna et al., 2011).

Based on previous studies (Scoones 1998; Bebbington 1999; Solesbury 2003) that were cited in Mustaffa et al. 2012), it can be concluded that the increased level of vulnerability is by being exposed to economic activity and can have a significant impact on the livelihood of rural communities, as well as future generations. It cannot be denied that controlling the livelihood assets can assist toward achieving wellbeing of life. However, uncontrolled external factors should not be considered lightly. These livelihood assets are likely to be vulnerable to threats such as seasons, surprises, and stresses, such as natural disasters or infectious diseases (Morse et al 2009; Anna et al 2011). Therefore, it can be said that the vulnerability context is very important to be identified, thus providing a resilient community with various livelihood strategies.

a) Table 1 Vulnerability Context

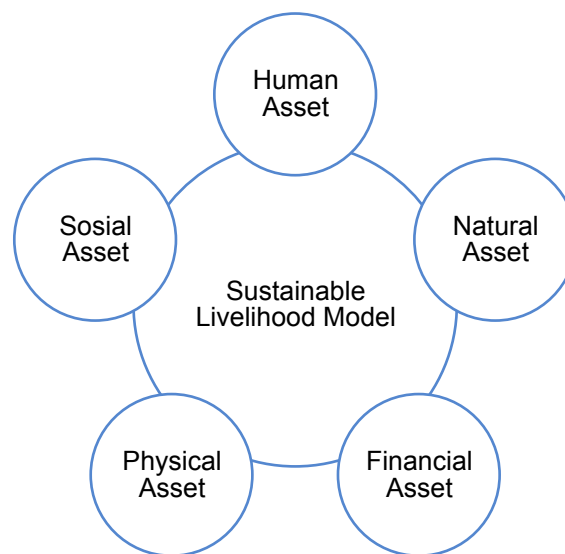
Trends:	Shocks:	Seasonality of:
<ul style="list-style-type: none"> • Population trends • Resource trends • National/international economic trends • Trends in governance (including politics) • Technological trends 	<ul style="list-style-type: none"> • Human health shocks • Natural shocks • Economic shocks • Conflicts • Crops/livestock health shocks 	<ul style="list-style-type: none"> • Prices • Production • Health • Employment opportunities

Source: DFID (1999)

Adaptive capacity, as defined by the International Strategy for Disaster Reduction in Birkmann (2006), is a combination of all existing strengths and resources owned by a community or organisation that can reduce the level of risk or effects of disasters. Another definition discussed by Yusuf (1994) described that a adaptive strategy is a way for individuals or households to manage their livelihood. In addition, adaptive strategies can be used systematically over a period of time each year or special strategies can also be used during critical times (Karim & Nelson 1998). Adaptive strategies, however, can be affected by differences in community, trust and social networking systems, cultural values, skills, gender, occupational types. and personal motivation (Yusuf 1994).

Adaptive strategies are usually implemented through two approaches: livelihood diversification strategy (Yusuf 1994; Karim & Nelson 1998) and household livelihood security frameworks (Lindenbergh 2002). Livelihood diversification strategy is the tendency of households to diversify their sources of income in order to sustain their livelihood. These include the migration process, profitable work based on commission or basic salary, self employed in the agricultural sector, and informal activities in the city.

Household livelihood security is the ability of a community or household to maintain and increase their income, assets, and social wellbeing from year to year for sustainable livelihood. Thus, this approach emphasises the availability of food supplies and access to food. This approach arises from the issue of increasingly critical food crises around the world.



b) Figure 1 Sustainable Livelihood Model

Source: Su & Shang (2012)

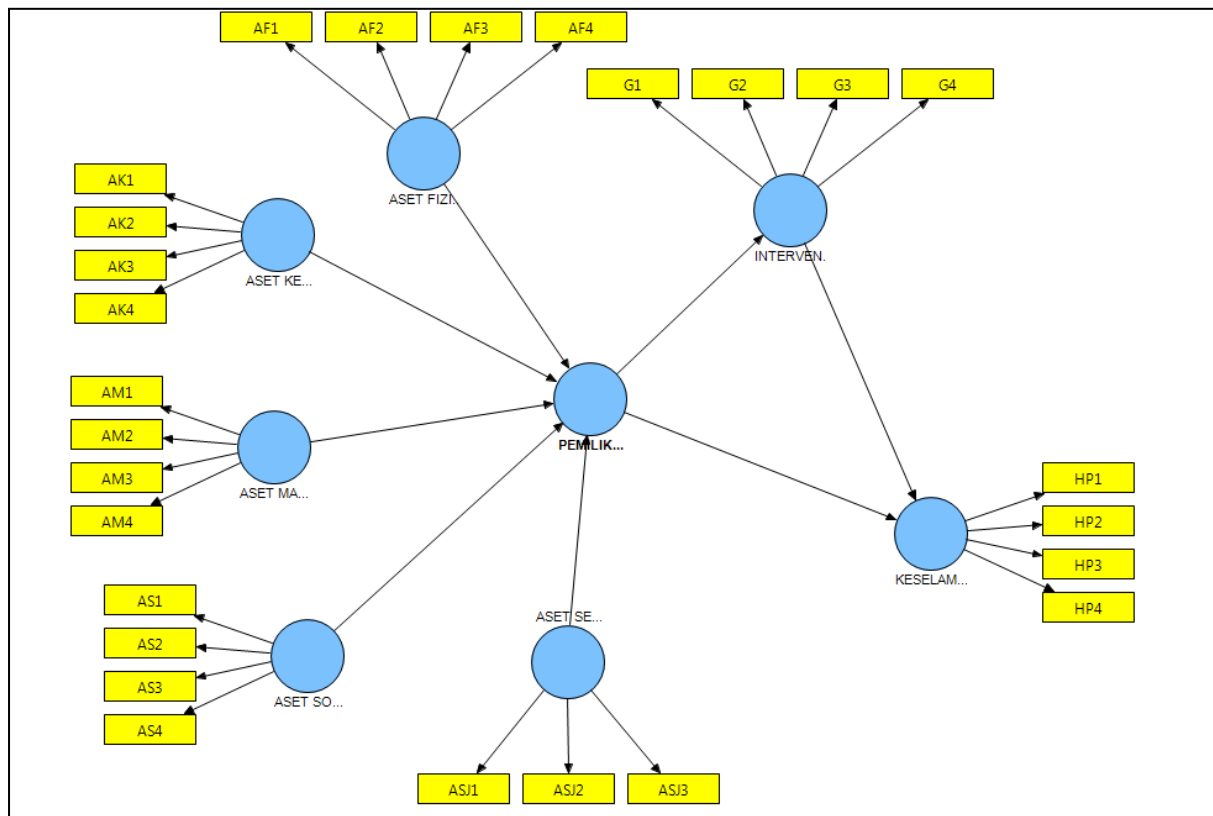
c) Table 2 Definition of Asset in Sustainable Livelihood Model

Livelihood Assets	Element
Human	Education, skill, job experience, health
Social	Family and community relationship, cooperation, trust
Natural resources	Land, water, bio-diversity, forest resources
Physical	Transport, infrastructure, technology, business premises, utility
Financial	Reserve, credit, saving and investment

Source: Omar (2013)

3 METHODOLOGY

This study is quantitative in nature. Data was collected using a structured questionnaire. The cross-sectional method is applied to the sample by using stratified random sample which the data is collected to obtain information. According to the statistics of Fisheries Department of Malaysia (2014) explains there are about 5,830 fishermen in Kedah (excluded Langkawi) and 2,117 fishermen in Perlis. From the statistic, 400 fishermen were randomly selected in this study as respondents with four main areas namely Kuala Perlis (101 households), Kuala Kedah (100 households), Yan (100 households) and Tanjung Dawai (99 households). Partial least square-structural equation model (PLS-SEM) analysis was applied to measure the livelihood asset ownership and its relationship with government aid to the fishing community. Figure 2 illustrates the research model based on the PLS-SEM analysis framework.



d) Figure 2 Research Framework

Notes for research model:

- AF1 Owned vehicle
- AF2 Road to the city
- AF3 Water supply
- AF4 Electricity supply
- AK1 Additional job
- AK2 Received subsidy
- AK3 Total savings (RM/month)
- AK4 Financial assistance from governmental agencies/children (RM/month)
- AM1 Level of health of Head of Household (HoH)
- AM2 Level of knowledge related to work HoH
- AM3 Highest education level achieved by HoH
- AM4 Skills attained by HoH
- AS1 Association membership by HoH
- AS2 Involvement of HoH in community activities

- AS3 Involvement of HoH in non-governmental activities
- AS4 Close relationship of HoH in the community
- ASJ1 Food sources from natural resources
- ASJ2 Not dealing with climate change
- ASJ3 Not dealing with pollution problems
- G1 Health facilities
- G2 Education facilities
- G3 Communication network
- G4 Basic facilities
- HP1 Getting good and sufficient food
- HP2 Sufficient supply of food in the market
- HP3 Being able to get nutritious food
- HP4 No problems with insufficient food

The sustainable livelihood index was developed for the purpose of identifying potential homes that can be freed from the poverty trap. In determining this index, livelihood assets, livelihood strategies, livelihood production, institutional interventions, and vulnerability are the parameters that will determine the society well-being. For the construction of sustainable livelihood index, this study adapted the model used by Hans et al. (2009), Madhuri et al. (2014), and Roslina and Shamzaeffa (2014).

$$Index_{sd} = \frac{S_d - S_{min}}{S_{max} - S_{min}}$$

Notes:

S_d is the original sub-component for d block.

S_{min} and S_{max} are the minimum and maximum values, respectively, for each sub-component that was determined through the seven indicators specified in the study. The percentage of households was set to 0 at minimum and 1 at maximum level.

The level of vulnerability context was measured using the mean scores (average scores) that was obtained from the questions answered by the respondents. This mean score was based on the Likert scale from 1 (very low vulnerability) to 5 (very high vulnerability). The elements related to the vulnerability contexts include price, source of income, food access, and natural disaster. More specifically, the questions that were asked to respondents are:

- Rising prices of basic necessities (such as food) affect my life.
- Increase in fuel prices (petrol) reduces my yield.
- Increase in agricultural input prices affects production output.

- Unpredictable income results in inadequate food.
- Interrupted food supply caused by lack of income.
- Natural disasters (rainstorm, drought, and flood) affect my livelihood.

Similar to the vulnerability context, the level of adaptive strategy was measured using the mean scores that were obtained from the questions answered by the respondents. These mean scores were based on a Likert scale from 1 (very rarely applied) to 5 (very frequently applied). The variables related to adaptive strategy were expenditure on food and non-food items, as well as capability of diversified their economic activities. Specifically, the questions asked to the respondents about the frequency of the type of adaptive strategy that they applied are on food items, non-food items and diversifying economic activities.

4 FINDINGS AND DISCUSSION

Figure 3 shows the livelihood index values for five types of livelihood indices. Financial asset was recorded with the lowest index, which was 0.26, while the highest was the physical asset, with 0.62. The financial index was the lowest because of the low-income status of the fishermen. Meanwhile for the physical index, the score was high due to the infrastructure facilities which by and large were provided by the government. These fishermen are the users of the infrastructure that is considered as public goods that has been provided by the government.

For the other indices, social asset was recorded at 0.54, followed by the human asset at 0.50, and natural asset, with 0.42. Such scores achieved for social and human indices are mainly because they involve the elements of knowledge and values that cover the traits of education, skills, and experience, as well as the family and community relationships. These values can be considered to be embedded in the fishermen's livelihood. Meanwhile, natural asset is influenced by the existing natural resources available within the surrounding environment of the fishermen. Consequently, limited access to natural resources can cause the natural index to be low.

The financial, physical, and natural indices can give an indication to the government to re-evaluate the financial and non-financial assistance policies that it can provide to the fishing community. Human and social indices can be linked through the formation of self-efficacy and capacity building programmes provided by the government for the fishermen. These types of programmes can make the fishermen become more independent and capable in enhancing their productivity and income. This, in the long term, can remove the subsidy mentality amongst the fishermen.

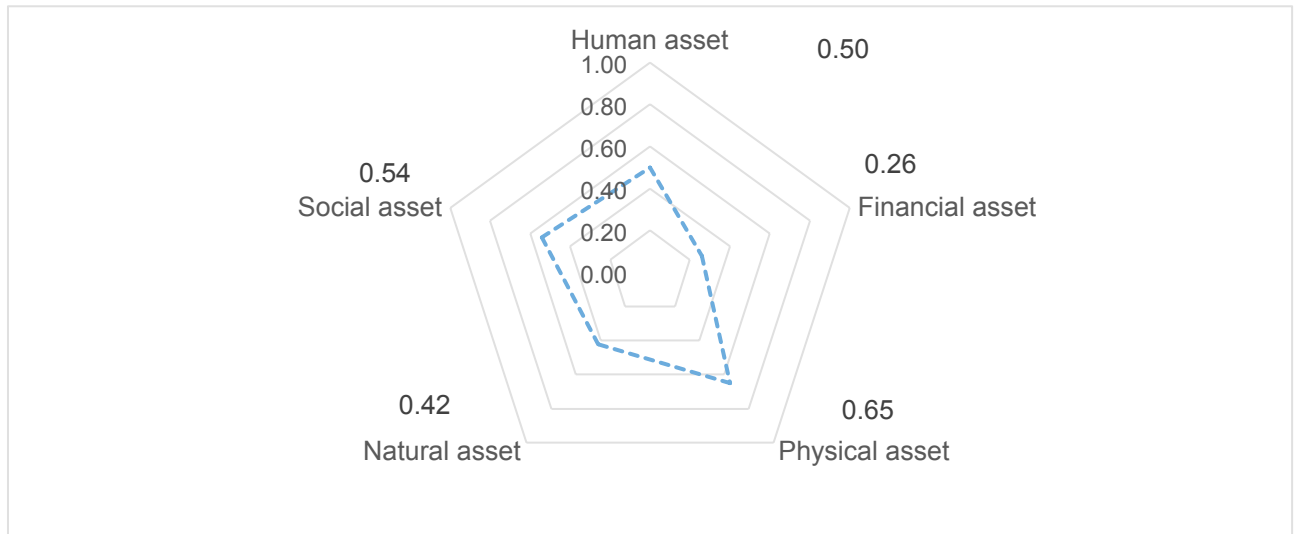


Figure 3 Livelihood Index

The main concern with the livelihood of these fishermen lies in the financial resource. This is because they are the poor and low-income group as well as trapped in the vicious poverty cycle. This directly exposes them to the vulnerability context in the event of an economic shock in their environment. This would drive them to apply adaptive strategies in order to maintain status quo in their lives. The type of vulnerability that is very distressing among the fishermen is the increase in living costs due to the inflation. The expenditure on basic necessity (food and drink) by the poor and low income groups accounts for almost 50% of the total household expenditure (Department of Statistics Malaysia, 2016).

Figure 4 shows the mean score for the vulnerability context according to the type of vulnerability. Vulnerability to increase in price of basic necessities recorded the highest mean, 3.12, followed by the fuel price (petrol) that reduces production (3.05), and price increase of agricultural input that threatens the production output (2.84). The mean score for vulnerability related to the production input price is lower compared to goods price. This is because the fishermen get subsidy assistance from the government.

The vulnerability of inadequate and uncertain income as well as natural disasters recorded an average score of less than 3.0, as compared to the price vulnerability. This clarifies that fishermen have a low level of concern regarding the vulnerabilities of inadequate and uncertain income sources as compared to inflation. This concern is actually offset by the financial assistance given by the government to these fishermen (refer to Table 3).



e) **Figure 4 Mean Score of Vulnerability Context**

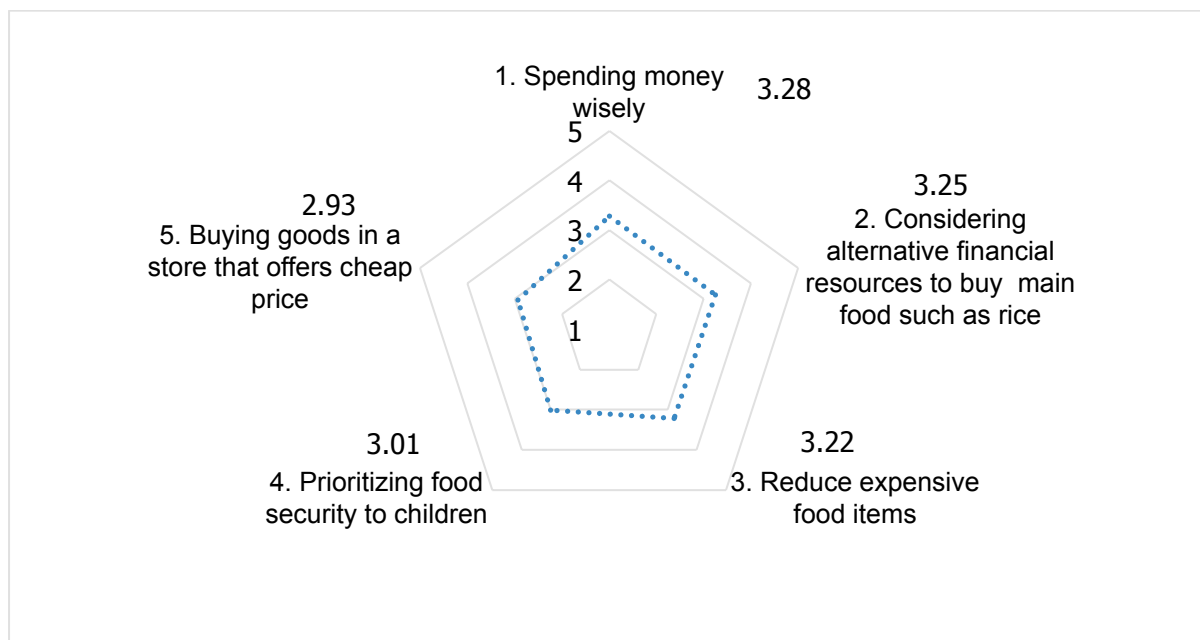
f) **Table 3 Government Financial Assistance to Fishermen**

Type of Assistance	Year Implemented	Rate of Financial Assistance
Fish catch yield incentive scheme	June 2008	RM 0.10/kg/month
Living allowance scheme	June 2008	2012 - 2014 : RM 200/month 2015 - 2016 : RM 300/month
Petrol and diesel subsidy scheme	2006	The financial assistance will be provided by the government according to needs
Natural disaster and fisherman welfare fund	2010	The financial assistance will be provided by the government according to needs
Loan funding for fishermen	2001	Financing limits: RM1,000 to RM25,000/participant
Fishermen group insurance	2012	Contribution RM100/year/participant
Special projects for fishermen housing	2012	2012 - 2016 : Repair (Peninsular) = RM 10,000

Type of Assistance	Year Implemented	Rate of Financial Assistance
		Repair (Sabah/Sarawak) = RM12,000 Build new(Peninsular) = RM 40,000 Build new (Sabah/Sarawak) = RM 50,000

Source: Fisheries Department of Malaysia (2017)

Even though there are various financial assistance schemes made available by the government, it is still insufficient due to inflation. Amongst the main causes goods and services price increase include the withdrawal of subsidies by the government on the basic necessity goods. This has significantly reduced the purchasing power of fishermen because their income is already at the low level. What more when certain fishermen households has a large number of dependents which causes the household per capita income to become further reduced. This situation reflects the adaptive strategy adopted by these fishermen, which is by becoming thrifty (using money and other resources carefully and not wastefully) when it comes to their spending. This adaptive strategy had recorded the highest mean score of 3.28, when compared to other strategies when faced with the rising costs of living. Figure 5 shows the various adaptive strategies that are being often applied by the fishermen when dealing with rising cost of living.

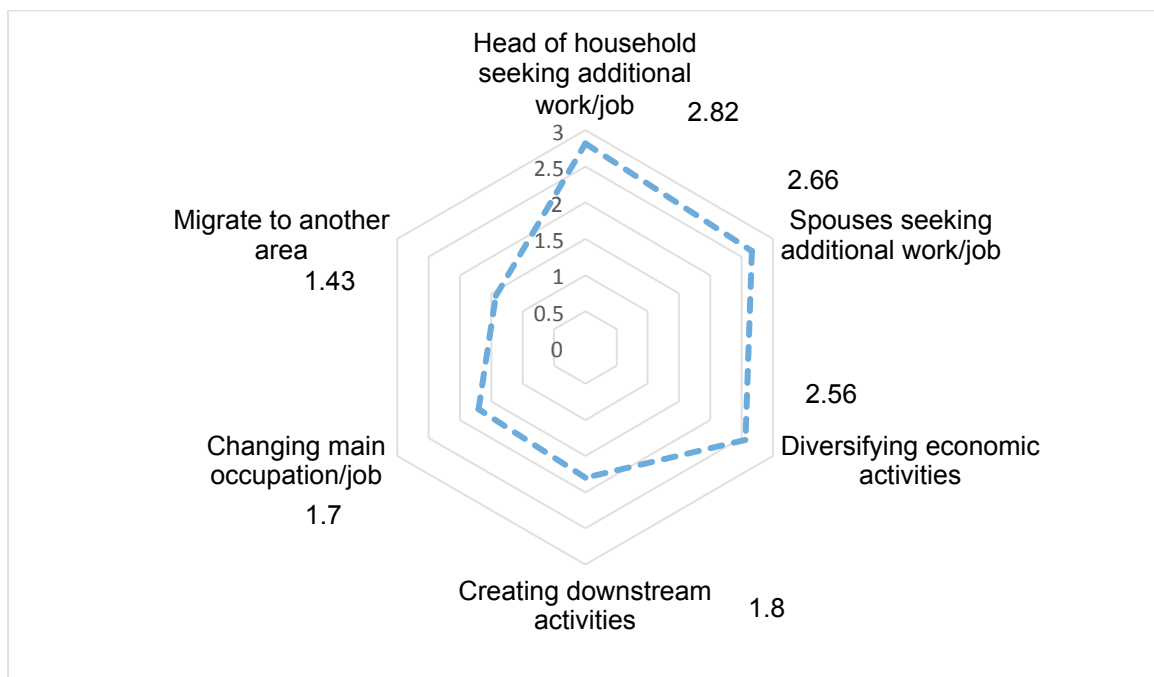


g) Figure 5 Mean Score of Adaptive Strategies Often Applied When Dealing With Cost Of Living

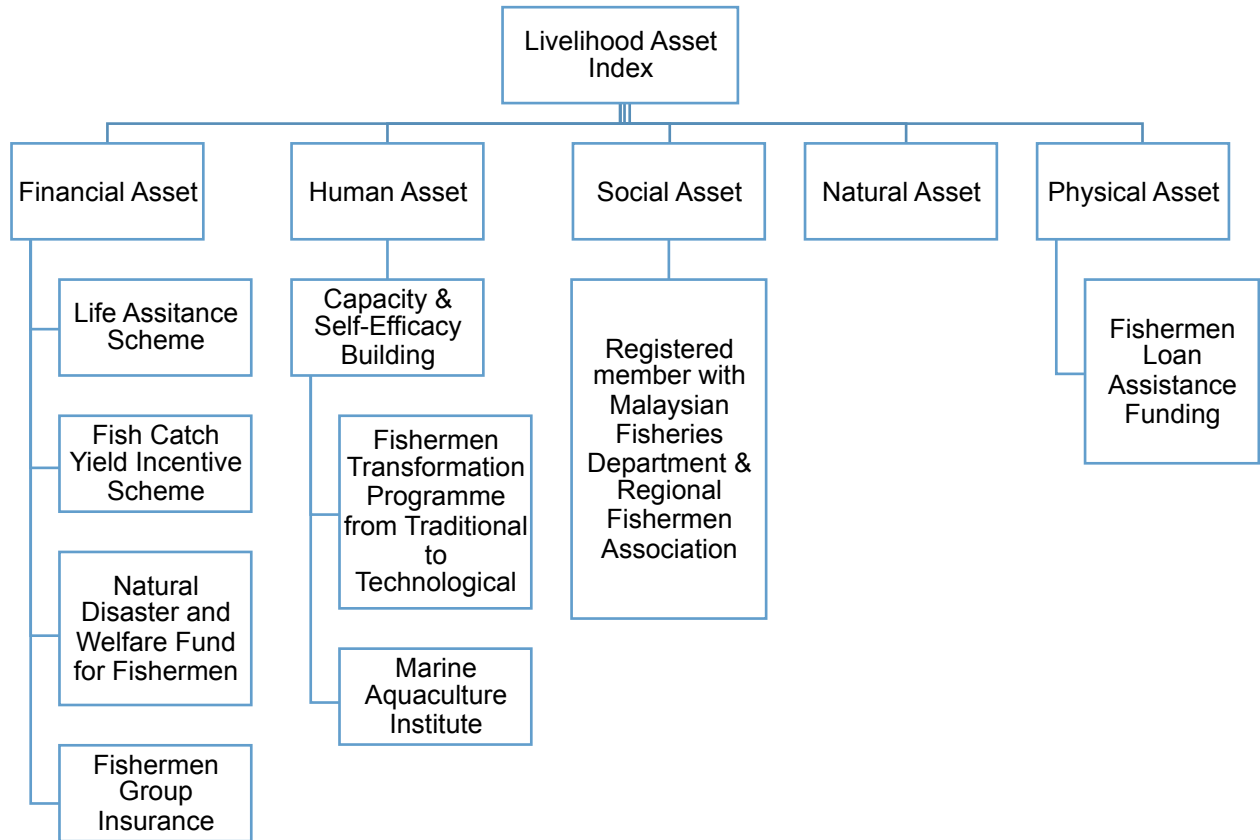
In the context of increasing level of income, this research showed that some of the household breadwinners (or head of household) have additional jobs in order to improve

their families' quality of life. However, the number of these involved in such activities is still very small, and the mean score of this item was less than 3.0 (refer to Figure 6). This shows that the fishermen do not have other skills to depend on and this forms an obstacle for them to diversify their economic resources.

Figure 7 show the relationship between livelihood asset with financial and non-financial assistance by the government for the fishing community. The government aid was observed to be more biased toward financial aid rather than capacity and self-efficacy building .However, there is no link between government aid and natural assets. This is because the natural factor endowments in a region will determine its natural assets and the government is not the provider of the natural assets.



h) Figure 6 Mean Score of Adaptive Strategy Approach to Increase Level of Income



i) **Figure 7 Livelihood Asset and Government Aid**

5 CONCLUSION

There is no SSN established in Malaysia in real terms, that is, from the aspects of integrated institutions, structure, and mechanism. There are only subsidies, and social and economic aids that are administered in an ad-hoc fashion by the government to target groups, like fishermen, to sustain their livelihood. Therefore, the implementation of the SSN model mechanism should take into account the pattern of their livelihood assets, vulnerability context, and adaptive strategy. This SSN model is capable of securing the income of fishermen and at the same time minimise the impact on fishermen’s income in the event of economic shocks, natural disasters, or the death of the breadwinner. On the whole, it is arguable that the value of the monetary aid scheme provided by government is comprehensive because it covers a variety of dimensions that comprise of consumption and investment based aid. However, the pattern of government aid to fishermen is more focused on financial assistance and less on capacity building and self-efficacy of fishermen. The balance between financial input and capacity building can help fishermen rescue them from the poverty trap. Therefore, fishermen should take the initiative in changing their attitudes by participating in self-efficacy and capability building programmes to increase productivity and have the vision to exclude themselves from the inter-generation poverty trap.

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6 REFERENCES

- Allison, E.H., & Horemans, B. (2006). Putting the principles of the sustainable livelihoods approach into fisheries development policy and practice. *Marine Policy*, 30, 757-766.
- Anna Arokia Nathen, Doris Padmini Selvaratnam & Norlaila Abu Bakar. (2011). Hubungan tingkat pendapatan dan kehidupan lestari: Kerangka konseptual. *Prosiding PERKEM VI*, 2, 27-37.
- Bebbington, A. (1999). Capitals and capabilities: A framework for analyzing peasant viability, rural livelihoods and poverty. *World Development*, 27 (12), pp 2021-2044.
- Birkmann, J. (2006). Measuring vulnerability to promote disaster-resilient societies: Conceptual frameworks and definitions. In: Birkmann, J. (Ed.) *Measuring Vulnerability to Natural Hazards – Towards Disaster Resilient Societies*, United University Press, pp 9-54.
- Chambers, R. & Conway, G. (1991). Sustainable rural livelihoods: Practical concepts for the 21st century. *IDS Discussion Paper*.
- Coleman, J. S. (1988). Social capital in the creation of human capital, *American Journal of Sociology*, 94, 95-120.
- Department for International Development. (1999). Sustainable livelihood guidance sheets. *Department for International Development (DFID)*. London.
- Ellis, F. (2000). *Rural Livelihood Diversity in Developing Countries*. New York: Oxford University Press.
- Fisheries Department of Malaysia ((2017). Statistics of Government Assistance to Fishing Community. Unpublished Report. Fisheries Department of Malaysia: Putrajaya.
- Fisheries Department of Malaysia. (2014). Number Of Fishermen Working On Licensed Fishing Vessels By Equipment Group and State, 2013. Retrieved from 2013.www.dof.gov.my/dof2/resources/user_1/UploadFile/Penerbitan/Senarai Penerbitan/smpp/Table_1.1_2013_.pdf
- Gazi Md. Nurul Islam & Tai, S.Y. (2013). Property rights and access: The case of community based fisheries management in Bangladesh. *Journal of Agricultural Science*, 5 (6), 164 – 173.
- Goldman, I. (2000). Sustainable Livelihoods Approaches: Progress and Possibilities for Change. http://www.eldis.org/vfile/upload/1/document/0812/SLA_Progress.pdf.
- International Strategy for Disaster Reduction (2002): *Living with Risk: A Global Review of Disaster Reduction Initiatives*, Geneva: UN Publications.
- Jonathan. G. (2000). Sustainable livelihoods. *International Social Science Journal*, 17(4): 77–86.
- Karim Hussein & Nelson, J. (1998). Sustainable livelihoods and livelihoods diversification. *IDS Working Paper 69*.
- Lawal, J. O., Omonona, B. T., & Oyinleye, O. D. (2011). Effects of livelihood assets on poverty status of farming households' in Southwestern, Nigeria. Paper presented at the EAAE 2011 Congress Change and Uncertainty Challenges for Agriculture, Food and Natural Resources, August 30th – September 2nd, 2011, ETH Zurich, Zurich, Switzerland.
- Linderbergh, M. (2002). Measuring household livelihood security at the family and community level in the developing world. *World Development*, 30 (2), 301-318.
- Morse, S., McNamara, N., Acholo, M. (2009). Sustainable livelihood approach: A critical analysis of theory and practice. *Geographical Paper No. 189*. University of Reading, UK. Retrieved on 15th April 2016 from <http://www.reading.ac.uk/web/FILES/geographyandenvironmentalscience/GP189.pdf>

- Murphy, D. J., Wyborn, C., Yung, L. & Williams, D. R. (2015). Key concepts and methods in social vulnerability and adaptive capacity. *General Technical Report RMRS-GTR-328*.
- Mustaffa Omar, Mohd Samsudin, Ishak Yussof & Sharina A. Halim. (2012). Kemudahterancaman dan kelestarian hidup komuniti luar bandar : Satu penelitian dari sudut kerangka kelestarian hidup. *Journal of Tropical Marine Ecosystem*, 2, 71–82.
- Mustaffa Omar, Wan Ahmad Amir Zal Wan Ismail, Sharina Halim & Hood Salleh. (2014). Status modal insan dalam menjamin kelestarian hidup suku Che Wong dan Jahut: Suatu analisis perbandingan. *Malaysian Journal of Society and Space*, 3, 73-89.
- Nesar Ahmed, Troell, M., Allison, E.H. & Muir, J. F. (2010). Prawn postlarvae fishing in Coastal Bangladesh: Challenges for sustainable livelihoods. *Marine Policy*, 34, 218 – 227.
- Omar, M (2013) Status modal insan dalam menjamin kelestarian hidup Suku Che Wong dan Jahut: Suatu Analisis Perbandingan, Persidangan Kebangsaan Ekonomi Malaysia ke VIII (PERKEM VIII); Johor Bahru, 7-9 Jun 2013;1195-1209
- Roberts, M.G. & Yang, G.A. (2003). The international progress of sustainable development research: A comparison of vulnerability analysis and the sustainable livelihoods approach. *Advance in Earth Science*, 22(1): 11–21.
- Robison, L. J., Siles, M. E., & Songqing, J. (2011). Social capital and the distribution of household income in the United States: 1980, 1990 and 2000. *The Journal of Social Economics*, 40, 538 – 547.
- Scoones, I.,(1998). Sustainable rural livelihoods: A framework for analysis. Institute of Development Studies Working Paper 72. Brighton: University of Sussex.
- Siti Fatimah Abd Rahman. (2006). Kriteria kualiti hidup berkeluarga. *Utusan Malaysia*. Dicapai melalui laman web <http://www.ikim.gov.my/index.php/ms/utusan-malaysia/7225-kriteria-kualiti-hidup-berkeluarga>
- Solesbury, W., (2003). Sustainable livelihoods: A case study of the evolution of DFID Policy. ODI Working Paper 217. London: DFID
- Su, F. & Shang, H. Y. (2012). Relationship analysis between livelihood assets and livelihood strategies: A Heihe River Basin Example. *Sciences in Cold and Arid Regions*, 4(3), 265-274.
- United Nations, 2018, Sustainable development goals. Downloaded 27 February 2018, <<https://sustainabledevelopment.un.org/>>.
- World Bank, 2018, Social protection, downloaded 27 February 2018, <http://www.worldbank.org>>.
- Yusuf Bangura. (1994). Economic restructuring, coping strategies and social change: Implications for institutional development in Africa. *Discussion Paper No 52*, United Nation Research Institute for Social Development (UNRISD).