Poverty and Vulnerability of Small-Scale Fishers in Marine Protected Areas: A Case Study of Tun Mustapha Park in Sabah, Malaysia

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Research Project Submitted in Partial Fulfillment of the Requirements

for the Degree of Master in Management

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DECLARATION

I hereby declare that the case study is based on my original work except for quotations and citations that have been duly acknowledged. I also declare it has not been previously or concurrently submitted for any other degree at Universiti Tun Abdul Razak (UNIRAZAK) or other institutions.

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Date: 29 June 2023

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VULNERABILITY TO VIABILITY
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By

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Coastal fisheries which are mainly carried out by small-scale fishers contribute significantly to national economies in terms of food production from marine sources. However, changes at both global and local levels are affecting the small-scale fishers to some extent. This study investigates the small-scale fishers' perception about their poverty and vulnerability especially with the establishment of the marine protected areas of Tun Mustapha Park in Sabah, Malaysia. A qualitative study involving 26 informants from seven mainland fishers' villages and representatives from Department of Fisheries and WWF Sabah in Kudat district was carried out. The findings showed that poverty is a subjective concept perceived differently among the fishers although it is generally accepted as a problem affecting majority of the fishers. The fishers also acknowledged their vulnerability due to factors related to lacking in resources, threats from commercial fishers and their intrusion into their fishing zone, declining interest among younger generation, among others. The fishers perceived positively the zoning in the Marine Protected Areas but claimed that this has not effectively improved their poverty and vulnerability issues. Hence, implications from this study led to greater collaboration among relevant stakeholders to ensure the small-scale fishers benefit economically and socially from the implementation of Tun Mustapha Park within their environment.

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

The Sustainable Development Goals (SDGs) or Global Goals were adopted in 2015 by the United Nations as a universal effort not only for eradicating poverty and protecting the planet but also, to ensure that by 2030, all people may enjoy peace and prosperity (United Nations Development Programme, 2023). Agriculture, forestry and other land-based industries are put under the green economy, shipping, minerals, oils and renewable energies, as well as fisheries and tourism make up for blue economy. In alignment to the SDGs, blue economy was added as a complement to the concept of green economy to act as a means of preventing environmental harm and ensuring that there is sustainability of the earth's ecosystem both on land and ocean. Hence, among the 17 goals identified under SDGs, Goal No. 14 is about conservation and sustainable use of the oceans, seas and marine resources.

Across the globe, marine protected areas (MPAs) began to be accepted as a strategy to protect marine biodiversity. Its humble beginning in 1962 when the World Parks Congress on National Parks called a meeting to incorporate marine, coastal and freshwater sites into the global network of protected areas. Great Barrier Reed Marine Park (GBRMP) was the world's first largest scale of MPA which was gazetted in 1975 and considered as the grandfather of modern MPAs (Day, 2016). Over the years, efforts to establish more MPAs in the world has escalated. However, Laffoley et al. (2019) commented that the ocean may span over 70% of the Earth's surface and provides more than 90% of biologically useful habitat but less than 10% is protected in MPAs. As can be seen from Figure 1.1, there are only 15,324 MPAs in the world with a total protected area of 26,302,971 km^2 and protecting only 7.26% of the ocean in 2018 (UNEP-WCMC & IUCN, 2018).

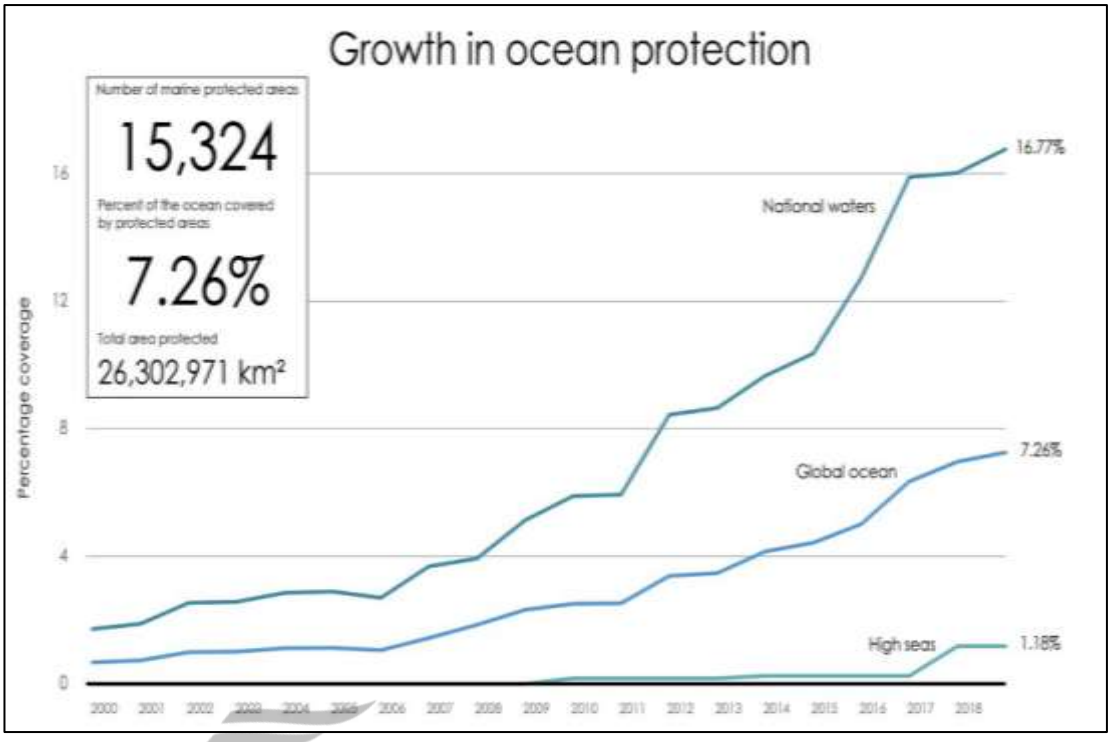

Figure 1.1 Global Coverage of Marine Protected Areas
Source: Laffoley et al. (2019)

Basically, MPAs are established mainly for the purpose of conservation but they are also important in maintaining the sustainability of coastal livelihoods and provision of goods and services to the people with tangible benefits. For instance, MPAs sustain coastal fisheries as a main source of food. Some MPAs permit regulated fishing so that the local communities continue to be provided by food and livelihoods while other MPAs might prohibit fishing so that the protected ecosystem can thrive and eventually provide spill over of fish larvae and adults to areas outside the MPA which can be fished (Laffoley et al., 2019). Sala and Giakoumi (2017) stated that MPAs that are well-managed have evidently been linked to greater yield in adjacent fishery catches and increase the profitability of local fisheries in the long run, thus, contributing to their sustainability. As the decline in global fish stocks continue to happen as a result of unsustainable fishing pressures alongside with climate change, MPAs are seen as an effective tool to conserve the remaining of the fish stock in the world and protect critical habitat while at the same time, allow the recovery of overexploited fisheries (Laffoley et al., 2019).

Indeed, fisheries and aquaculture are considered as means for reducing hunger, alleviating poverty and generating economic growth. Marine resources provide abundant source of animal protein, minerals and other essential nutrients (Tran et al., 2018). However, the Food and Agriculture Organization stated that overfishing is a threat to livelihoods and globally, the proportion of fishery resources at biologically sustainable levels has decreased from 90 percent in 1974 to 64.6 percent in 2019 (FAO, 2023a). These marine resources continue to be subjected to numerous threats not only from overfishing and natural death of fish (Diop et al., 2018) but worsened with climate change which resulted in sea surface temperature and acidity as well as ecosystem and biological change (Badjeck et al., 2010). This could also threaten the sustainability of marine fisheries industry and consequently, the national food security (Belhabib et al., 2016; Fikri et al., 2022).

Due to threats to sustainability, there should be initiatives to harmonise the environmental, social and economic aspects of living aquatic resources so that there are equitable benefits for communities (FAO, 2023b). Hence, Malaysia has also embarked on increasing MPAs to ensure conservation of marine biodiversity while at the same time, maintains that the people who are economically dependent on the sea for their livelihood are not adversely affected. Tun Mustapha Park (TMP) which is situated at the northern part of Sabah and spanning about 900,000 ha is the largest marine park in Malaysia. After a 13-year negotiation process since 2003, it was finally declared as a marine protected area in 2013 (WWF Malaysia, 2017). As shown in Figure 1.2, TMP is located within the Sulu Sulawesi Marine Ecoregions (SSME) which is considered primarily as a conservation seascape inside the Coral Triangle which is itself, regarded as the centre of the world's marine biodiversity. TMP boasts of a rich marine biodiversity as it is home to more than 250 species of hard corals, about 430 species of fish, endangered green turtles and dugongs, as well as covered with primary rainforest, mangroves and sea grass beds. However, TMP deals with threats of overfishing, destructive fishing practices and pollution. Hence, the significance of TMP cannot be overstated as the fishing grounds in this area provides support to more than 85,000 coastal dwellers and small-scale fishermen. Thus being said, the three main objectives for establishing TMP in the first place were emphasized by the Sabah State Government authority, Sabah Parks that include: (i) conservation of the marine biodiversity in

mangrove forests, coral reefs and coastal waters and protection of threatened marine species such as sea turtles; (ii) enabling the sustainable development of traditional and commercial fisheries, aquaculture, and seaweed culture; and (iii) eradication of poverty among the communities residing in coastal areas (WWF Malaysia, 2017).

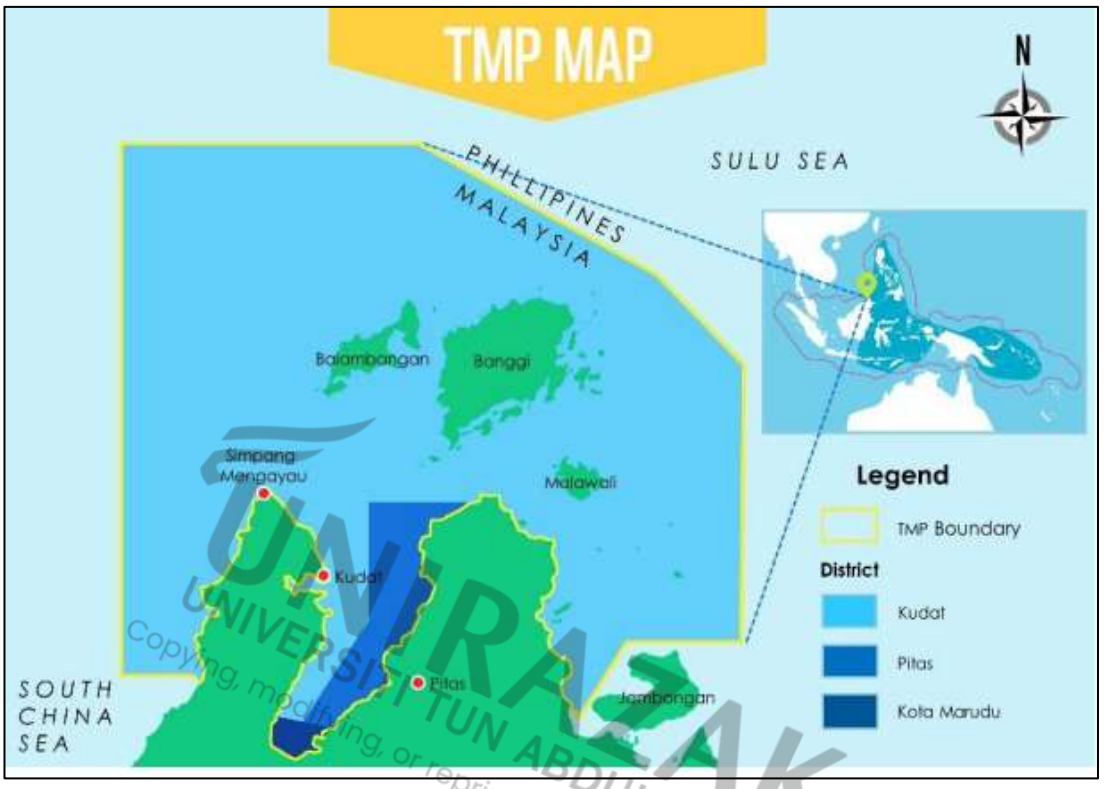

Figure 1.2 Location of Tun Mustapha Park within the Coral Triangle
Source: Jomitol et al. (2020)

TMP is placed under the International Union for Conservation of Nature (IUCN) Category VI Park protected area whereby fishing may occur legally subject to control and management from respective authorities. As a Category VI Park, there is a generally large area with most of it being in a natural condition and a proportion of it is under low-level sustainable natural resource management. In other words, it is considered as a multiple use MPA with the use of natural resources is compatible with conservation of the ecosystem and habitat, alongside with associated cultural values and traditional natural resource management system (Langley et al., 2019). Thus, a zoning plan was implemented in TMP to allow communities to continue their activities in designated zones. There are four different zones in TMP which are preservation, community-use, multiple-use, and commercial fishing zones as illustrated in Figure 1.3.

The commercial use zone covers 360,347.40 ha and is considered as the largest zone, accounting for 40.1% of the overall TMP area. This zone is located away from sensitive near-shore fishing activities and strictly reserved for fishing vessels of up to 70 Gross Register Tonnage (GRT), equipped with proper vessel and gear, and registered under the park and licensing from Sabah Department of Fisheries (SDoF). Meanwhile, the other zones include multiple-use zone with 35.2% coverage, community-use zone with 15.1% coverage, and the preservation zone with an allotment of 9.5%. The multiple-use zone covers an area that allow a variety of sustainable and low-impact activities which comply with management plan prescription. The community-based zone is close to the villages with medium to good habitat for local communities to use whereas the preservation zone includes areas with good pristine habitats and a network of representative habitat, also known as no-take zone (WWF Malaysia, 2017).

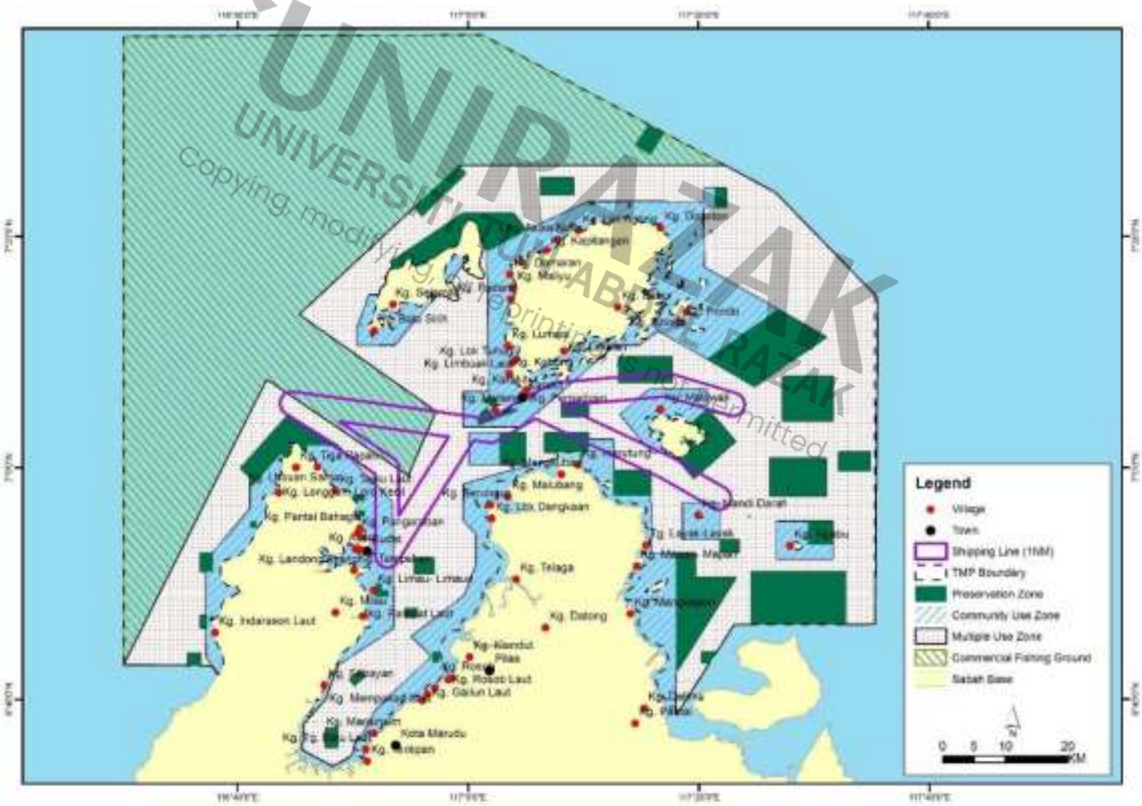

Figure 1.3 Zonation of Tun Mustapha Park
Source: Sabah Parks

Although MPAs have been evidently linked to the conservation of marine biodiversity and its roles in curbing over-fishing and exploitation and habitat destruction, its impact on poverty eradication and reducing the vulnerabilities of the fisher community has not been clearly understood (Azzeri et al., 2020; Zain et al., 2022). Hence, this study explores the incidence of poverty and vulnerability of small-scale fishers in the TMP area.

1.2 Problem Statement

Fisheries sector is considered as a significant contributor to national economics in Malaysia. According to the Department of Fisheries Malaysia (2020), the fisheries sector had produced 1.85 metric tonnes valued at about USD 3.3 billion. Sabah is one of the highest contributors to the fisheries sector in Malaysia with an average annual yield of 208,159.35 metric tonnes, valued at 1 billion ringgits from 2012 to 2018 (Institute of Development Studies, 2020). The main contributor to the fisheries sector in Malaysia comes from marine fisheries and added by contribution from aquaculture and inland fisheries (Fikri et al., 2022). Further to that, marine captured fisheries are hailed from coastal or inshore fisheries and deep-sea fisheries (Department of Fisheries, 2019). The coastal fisheries however, have gained a lot of attention due to the fact that the coastal areas deal with many changes including the implementation of global development policies that focus on poverty eradication and climate change (Mazuki et al., 2020). Further to that, fishing is a major source of income for the coastal communities, of whom, among them are the poorest fishers dwelling in small-scale fishing activities (Asmat et al., 2021). Osman et al. (2021) stated that small-scale fishers (SSFs) make up 65% of the population of fishermen in Malaysia.

Kudat district which falls under the TMP area besides Pitas and Kota Marudu is also considered as one of the poorest districts in Sabah as well as overall in Malaysia. The household income and basic amenities survey report in 2019 indicated that Kudat is ranked sixth in the lowest household income district group alongside with Pitas which is top on the list and Kota Marudu, as the third in the list. Kudat showed a household income average per month of RM2,592 compared to Sabah's average of RM5,745 and

national average of RM7,901 (Department of Statistics Malaysia, 2020). This implies that poverty is still an issue among the communities in Kudat district.

The Tun Mustapha Park which covers the three administrative districts of Kudat, Pitas and Kota Marudu is home to more than 187,000 people of which, almost half are depending on marine resources for their wellbeing and livelihood (Md Shah et al., 2022). The establishment of Tun Mustapha Park as a marine protected area in 2016 has resulted in conflicting notions pertaining to its impact on the livelihood of the SSFs, especially in relation to their poverty and vulnerability. One of the main arguments for such notion is due to the top-down management approach of TMP where the local communities who are the main user of the ecosystem services are often excluded or less involved in the decision-making processes (Cohen et al., 2019; Lim et al., 2021). Among others, the existence of TMP has led to restriction of fishing areas, control use of some fishing methods like fish bombing, among others.

In addition to that, the SSFs continues to become undermine by threats from commercial fishers who encroach upon their fishing ground despite the zoning of the TMP that prohibits the larger commercial fishers to fish in the coastal area, 3 nautical miles from shore (WWF Malaysia, 2017). Other issues involve the cross-sectoral conflicts arising from the competing uses of multiple sectors in the same ecosystem. The governance system for fisheries and other coastal and maritime activities manages these conflicts within sectors but often disregarded across sectors (Bellanger et al., 2020). These sectors may have different value system, aims and priorities which contribute to cross-sectoral conflicts to manage issues within the shared ecosystem. For instance, the Fisheries Department is responsible for licensing of fishers while the Malaysian Fisheries Development Authority (LKIM) provides subsidies to licensed fishers, and the other organizations provides community awareness program on conservation and sustainability of the ecosystem such as WWF Malaysia.

Although there is a rising number of studies relating to TMP as a marine protected area like Jomitol et al. (2020) and Md Shah et al. (2022), there is still a gross lacking of studies that focus on the impact of TMP and its zoning of fishing area on poverty and vulnerability of the small-scale fishers in the coastal areas. Hence, this

study attempts to investigate this phenomenon so that more insights are gained about the level of poverty and vulnerability of the SSFs within the TMP area.

1.3 Research Questions

The research questions posed in this study are stated below:

1. How do the small-scale fishers perceive their poverty and to what extent are their poverty level?
2. According to the small-scale fishers in Kudat, what makes them vulnerable and to what extent do these perspectives differ from the theory and other studies?
3. To what extent does the zoning in Tun Mustapha Park affect the small-scale fishers' vulnerability?
4. To what extent are the government support in dealing with small-scale fishers' poverty and vulnerability?

1.4 Research Objectives

The main purpose of this study is to investigate poverty among the small-scale fishers in Tun Mustapha Park as a marine protected area. The specific research objectives of this study are stated below:

1. To determine the perception of the small-scale fishers about their poverty and their poverty level;
2. To determine the perception of small-scale fishers in Kudat about factors contributing to their vulnerability;
3. To investigate the extent to which the zoning in Tun Mustapha Park affects the small-scale fishers' vulnerability; and
4. To investigate the extent of government support in dealing with small-scale fishers' poverty and vulnerability.

1.5 Scope of the Study

This study explores and investigates poverty and vulnerability of small-scale fishers (SSFs) who resides on the mainland coastal areas within the marine protected areas of

Tun Mustapha Park (TMP). The information gathered from the survey are based on perception of informants from among the SSFs and spokespersons from relevant government departments and agencies as well as non-government organizations actively involved in poverty eradication and sustainable development within the marine protected areas of TMP.

1.6 Significance of the Study

There are a few basic ideas to support the significance of this study. Firstly, in the context of new information and knowledge that contribute in towards theoretical significance, this study fills the research gap missing from past studies regarding the impact of TMP on the poverty and vulnerability of the SSFs in Kudat district. Secondly, this study also highlights two theories that can be used to understand the reason why poverty and vulnerability exists among the local communities in Kudat. Among others, this study includes a discussion of theories such as the theory of sustainable livelihood, and the theory of livelihood resilience to explain the studied phenomenon. The inclusion of a few theories provides different perspectives that can explain the incidence of poverty and vulnerability among the small-scale fishers.

Besides that, this study also provides empirical significance as the survey is a two-pronged approach that focuses on obtaining perception from the local fisher community and information from participating organizations such as the Fisheries Department and WWF Sabah. Thus, findings of this study potentially give insights to the poverty and vulnerability issues among the local small-scale fishers based on their own perception and inputs from the governing authorities.

In a nutshell, findings of this study can be used to facilitate informed decision-making in formulating future strategies for improving measures of alleviating poverty issues and reducing the vulnerability of the small-scale fishers. This study could also emphasize and steer the direction of TMP to become more community focused in their effort for conservation of the ecosystem and bringing greater benefits to all stakeholders, especially the local communities of fishers.

1.7 Chapter Summary

This chapter provides the background of the study, problem statement, research questions, research objectives, scope of the study and significance of the study. The information provided in this chapter gives a clear understanding of the focus of interest in this study and offer a guideline to how the study will be conducted to gain the outcomes it was intended for.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter explored and reported on the literature that was reviewed to provide more understanding about poverty and vulnerability of small-scale fishers within a marine protected area. Hence, this chapter begins with a description of marine protected areas whereby a brief history to the development of marine protected areas and a specific discussion on Tun Mustapha Park as an established MPA in Sabah, Malaysia is included. Further to that, this chapter also elaborates on two theories that serve as the underpinning theories of this study. This is further enriched with more detailed explanation about the concept of poverty and vulnerability, as well as presentation of related past studies. This chapter ends with a description of the conceptual framework to illustrate the issues of interest in this study.

2.2 Marine Protected Areas

Md Shah et al. (2022) stated that marine protected areas (MPAs) are important management tool which is widely accepted globally to facilitate the conservation of marine and fisheries so as to sustain the ecosystem and reduce the incidence of over-fishing and exploitation. MPA was formally defined during the 4th World Wilderness Congress and this definition has been adopted by IUCN during the 17th General Assembly in 1988. The definition for MPA states that it is "any area of intertidal or sub-tidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment" (Humphrey & Clark, 2019; Md Shah et al., 2022).

2.2.1 History of the Development of Marine Protected Areas

MPAs is not exactly a new concept as it has been around during the first World Congress on National Park in 1962 (Humphreys & Clark, 2019). It becomes a constant

theme in the global agenda of various other events such as the 1976 Conference on Scientific Research in National Park, the 3rd United Nations Conference on the Law of the Sea (UNCLOS) 1976 and the United Nations Conference on Environment and Development (UNCED) in 1992. It was also explicitly mentioned in the Sustainable Development Goals (SDG)s; to be more specific, as SGDs Goal 14, Life Below Water that emphasizes on a few targets and milestones as indicated in Table 2.1. Mainly, these targets focus on the ocean in marine protected areas in terms of managing pollution, protection and conservation, encouraging knowledge and technology sharing, and safeguarding the economic benefits of the marginalised communities in the world, especially the small-scale fishers.

Table 2.1 Targets and Milestones of Marine Protected Areas in SDGs 14

Code	Description
14.1	Prevention and significant reduction of all kinds of marine pollutions, especially from land-based activities such as marine debris and nutrient pollution by 2025.
14.2	Management and protection of marine and coastal ecosystem as a way of avoiding significant adverse impacts as well as strengthening their resilience and acting upon restoration so that oceans are health and productive by 2020.
14.5	Conservation of the coastal and marine areas to at least 10%, in accordance to national and international law and based on best scientific information available by 2020.
14.7	Enhancing economic benefits received from sustainable employment of marine resources for small island developing states and least developed countries (SILDC) which encompasses managing fisheries, aquaculture and tourism in sustainable manner by 2030.
14.a	Scientific knowledge enhancement, research capacity development and marine technology transfer based on Intergovernmental Oceanographic Commission Criteria and Guidelines on the transfer of marine technology so as to enable the improvement of ocean health and increase marine biodiversity contribution to development of developing countries especially SILDC.
14.b	Provision of access for small-scale artisanal fishers to marine resources and markets.

Source: Md Shah et al. (2022)

In Malaysia, the concept of MPAs also caught on as marine fishery resources began to decline since the 1980s. Based on the availability of law under the reviewed law of Fisheries Act 1963 in 1985, marine parks were soon established in this country since 1994. Most of the Fisheries Prohibited Areas (FBAs) in Peninsular Malaysia were designated as marine parks in 1994. However, the first MPA was formed in Sabah in 1974 that spans a coastal area of 1,440 km long viewing the South China Sea on the west and the Celebes and Sulu Seas on the east. The MPAs in Sabah were part of the Coral Triangle Initiative (CTI) that covers other countries as well, like Indonesia, Papua New Guinea, Philippines, Solomon Islands and Timor Leste. Clifton (2009) explained that the CTI covers about 5.7 km^2 and hold a biodiversity of 76% known coral species. The management of MPAs in Malaysia is under different authorities with those in the Peninsular Malaysia being governed based on the Marine Order 1994 of the Fisheries Act by the Department of Marine Park Malaysia. Meanwhile in Sarawak, the National Park and Nature Reserve Ordinance 1998 oversee the establishment of MPAs and place under the jurisdiction of Sarawak Forestry Corporation. In Sabah, the Sabah Parks Enactment 1984 is used and the MPAs are governed under Sabah Parks (Md Shah et al., 2022). To date, there are six MPAs in Sabah with Tunku Abdul Rahman Park gazetted in 1974 as the first MPA in Malaysia, and covers five islands over an area of 49 km^2. Others are Turtle Island Park established in 1977 with an area of 17.4 km^2 covering three island, Pulau Tiga Park established in 1978 with three islands over 158 km^2, Tun Sakaran Marine Park established in 2004 with eight islands covering an area of 350 km^2 and Sipadan Island Park established in 2009 with an area of 13.5 hectares and covering only one island. Tun Mustapha Park was the newest addition to Sabah MPAs as it was established in 2016 and considered as the largest MPA with 50 islands and an area that spans about 10,000 km^2 (Md Shah et al., 2022; Nair & Ramachandran, 2016).

2.2.2 Tun Mustapha Park

Situated at the northern tip of Sabah, Tun Mustpaha Park or TMP (Longitude: 116.506076º and 117.588289º; Latitude: 7.621327º and 6.774793º) borders the Philippines on one side and is right where the Sulu Sea meets the South China Sea (Nurhasan & Andin, 2018). TMP covers three districts, Kudat, Pitas and Kota Marudu,

and is a part of the Sulu Sulawesi Marine Ecoregion (SSME), or what is more popularly known as the Coral Triangle (*see* Figure 2.1). Spanning an area of 898,762.76 hectares, TMP has the second largest concentration of coral reefs, mangroves, seagrass beds and endangered marine species in Malaysia. It is gazetted as a Category VI Park under the IUCN which allow sustainable uses and local communities who live within the area continue with their activities in the designated zones. The area comprises of productive fishing grounds that has the potentials to generate about 100 tonnes of fish catch on a daily basis, which provide supports to more than 80,000 people living on the coastal areas and islands.

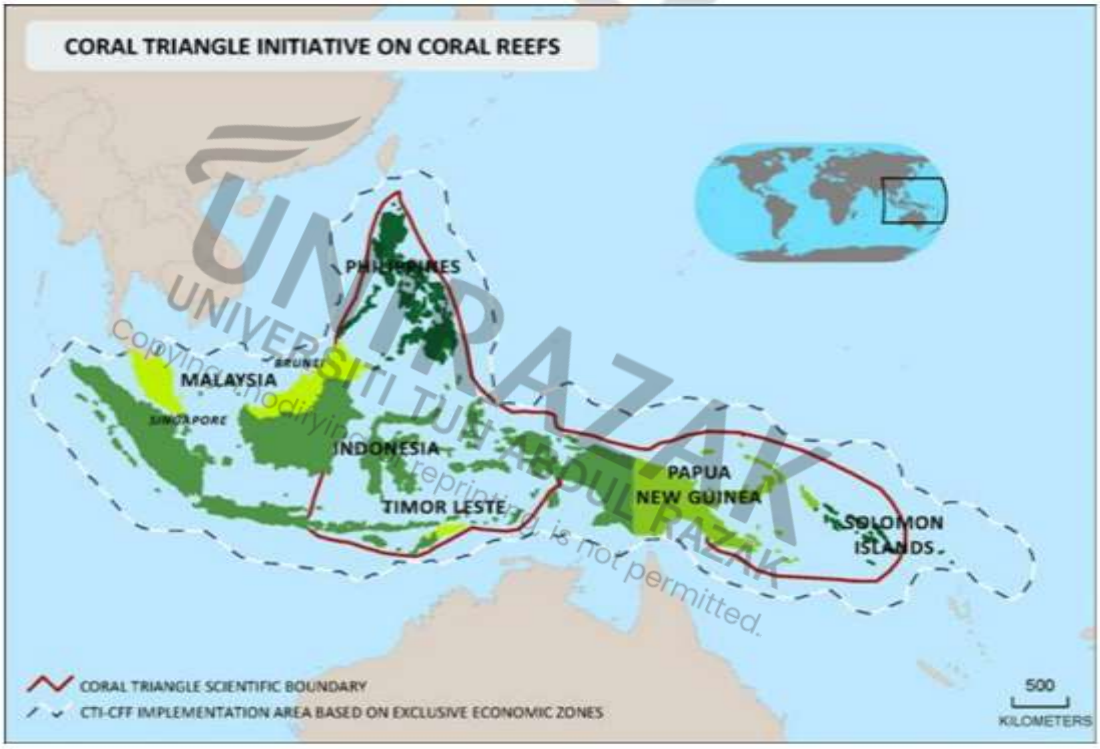

Figure 2.1 The Coral Triangle Initiative where TMP is Situated
Source: Nurhasan and Andin (2018)

When it was officially gazetted as a marine protected area in May 19, 2016, the TMP area was divided into four different zones which are: preservation, community-use, multiple-use and commercial fishing zones as illustrated in Figure 2.2 below (TMP Management Plan, 2016). Further explanation of these zones is given in Table 2.2.

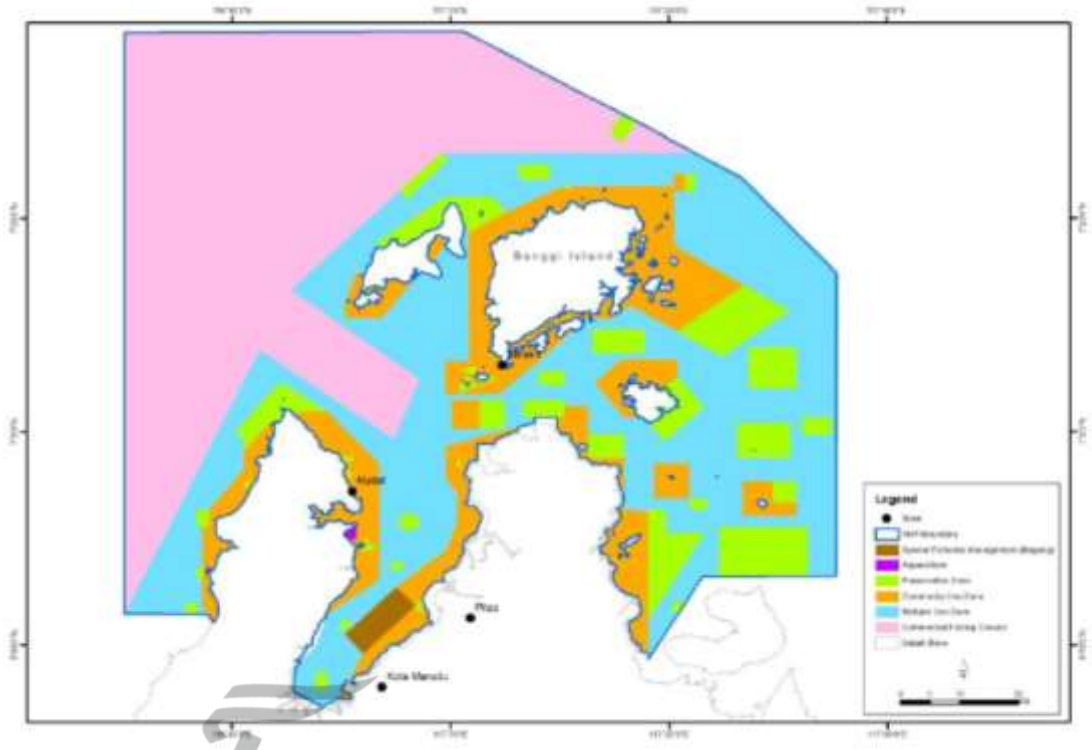

Figure 2.2 Zonation of Areas within the TMP
Source: Nurhasan and Andin (2018)

Table 2.2 Zoning at TMP: Type, Characteristics and Management Objectives

Depicted Zones	Boundary	Characteristics of the Zone	Management Objectives
Preservation		All extractive activities are not allowed A no-take zone	Giving protection to biodiversity, ecological processes and functions Protecting future fish stock Protects natural heritage.
Community-use	Below 3 nautical miles from shore	Non-destructive small scale and traditional fishing are permitted. Areas are close to villages	Conservation of biodiversity and ecological processes Rehabilitation of damaged habitat Enabling community participation in resource management Enabling local communities with the priority for sustainable usage of natural resources provided guidelines by Sabah Parks are adhered to
Multiple Use		Non-destructive, small-scale fishing activities and other sustainable development activities are permitted These activities are low impact and adhering to management plan prescription	Enabling continued sustainability of non-destructive and low-impact resource use activities Enabling management of natural resources that is aligned to biodiversity conservation and rehabilitation
Commercial use	More than 3 nautical miles from shore	All fishing activities are permitted. Strictly for fishing vessels up to 70 Gross Register Tonnage, have proper vessel and gear, registered and licensed under authorities (Sabah Parks and Fisheries Department)	Enabling continuous sustainability of commercial fishing activities Enabling fisheries management that are aligned to fish conservation, fish effort control and access to fisheries resources Enabling sustainable and low-impact development activities Enabling small-scale sustainable and low-impact economic activities

Source: Nurhasan and Andin (2018)

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In order to understand how Tun Mustapha Park affects the livelihood of the fisher communities within its area, it is necessary to understand the regulatory framework in this marine protected area. Table 2.3 presents the key acts, regulations and enactments that directly affect the fisheries management in the TMP area. As shown in this table, there are several laws applicable to fisheries management within TMP and it also implies that TMP requires a collaborative and participatory management approach from all stakeholders concerns like Sabah Park, Fisheries Department, Ko-Nelayan, LKIM and other enforcement authorities.

Table 2.3 Regulatory Framework in TMP

Legislation	Description
Park Enactment 1984	This enactment empowers the Sabah Park's Board of Trustees to initiate, coordinate and control activities in all parks in Sabah. It also highlights its role to assist the government in the adoption and implementation of measures, methods and policies deemed appropriate for park development.
Fisheries Act 1985	This Act relates to conservation, management and development of maritime and estuarine fishing in Malaysian fisheries waters and applicable to turtles and riverine fishing as well.
Fisheries (Prohibition of Method of Fishing) Regulation 1980	This regulation bans the use of unsustainable fishing practices such as using explosives, poison and electric fishing, pair trawls, beam trawls and drift gill nets of more than 10 inches.
Fisheries (Control of Endangered Species of Fish) Regulation 1999	This prohibits fishing for any endangered species of fish as specified in the Schedule, and this include disturbing, harassing, catching, killing, taking, possessing, selling, buying and exporting activities of such species.
Sabah Inland Fisheries and Aquaculture Enactment 2003	This enactment guides the sustainable development and management of inland fisheries and aquaculture in Sabah.
Enakmen Korporasi Kemajuan Perikanan dan Nelayan Sabah (Ko-Nelayan) 1981	This enactment empowers the establishment of Ko-Nelayan and make provisions for the promotion of fishing and aquaculture in Sabah.
Akta Lembaga Kemajuan Ikan Malaysia 1971	Regulating and managing fisheries enterprises including the processing and marketing of fish.

Source: WWF Malaysia (2017)

2.3 Theoretical Framework

The underpinning theories in this study consider two theories which include the theory of sustainable livelihood and the theory of livelihood resilience. Each of these theories are explained in greater detail in the following sub-sections.

2.3.1 Theory of Sustainable Livelihood

Allison and Ellis (2001) stated that small-scale fishers are often regarded as "the poorest of the poor". Hence, in order to understand and bring about positive change to the life situation of the community of fishers is by using a livelihood approach. The livelihood approach appears to be a favourite framework used to gain a better understanding about natural resource management systems (Ashley & Carney, 1999). Moser (1998) explained that this approach focuses on identifying what the people have rather that what they don't have, and strengthening the people's own inventive solution rather than substitute for or undermining them. The core principles in using the sustainable livelihood approach are summarised as:

- Giving emphasis to the social and economic activities at the centre of the analysis; in this case, fishing issues of the small-scale fishers.
- Exploring a broad view to determine options that management and development intervention can be done by considering beyond the traditional sectoral boundaries such as fisheries, agriculture and tourism and that incorporates relevant issues affecting all people regardless of occupation such as access to social services such as health, education, social security and such.
- Linking the local issues to wider concerns such as national policy and economic and social changes
- Working in partnership with fishers and other stakeholders in public and private sectors to promote management that is dynamic and adaptive.
- Sustainability is seen broadly with its four dimensions which are economic, institutional, social and environmental. Livelihood approach seeks a balance among these dimensions.

Livelihood as defined by Ellis (2000: p.10) refers to “assets (natural, physical, human, financial and social capital), activities and access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household.”

Reflecting on the definition given above, this applies to the scenario of this study as it focuses attention to the situation of the SSFs in terms of poverty and vulnerability due to impact from living in an area that is governed by the regulations of TMP. Further to that, Allison and Horemans (2006) presented that the sustainable livelihood approach (SLA) aims to reduce poverty and vulnerability in fisher communities. This approach is underpinned by the capitals and capabilities frameworks, and used in research about the role of SSFs in rural economies and their contribution to poverty reduction and improvement of their livelihoods. It is generally accepted that poverty, vulnerability and social exclusion in the communities of fishers are interrelated. SLA is used as a guiding principle and an analytical framework to understand the multifaceted concept of poverty. Hence, Figure 2.3 presents an overview of SLA to provide a guiding framework in understanding the management of natural resources, in the context of this study, referring the fishing activities among the SSFs residing in TMP area.

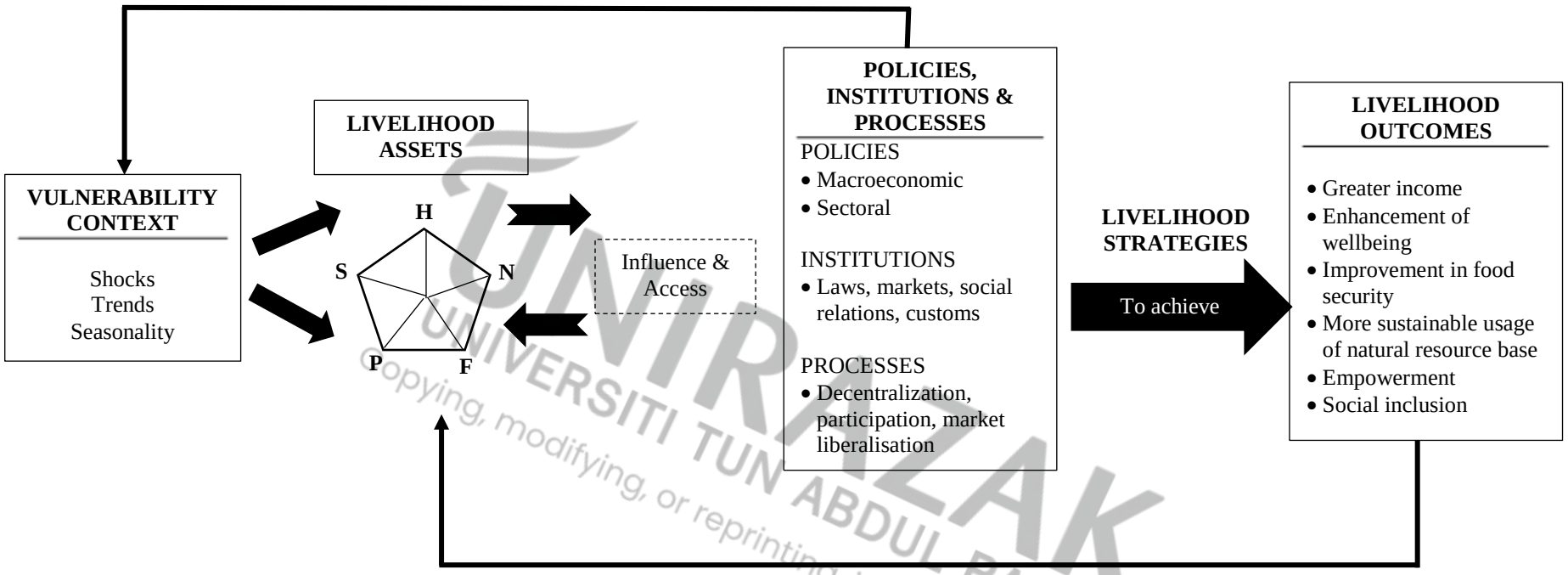

Figure 2.3 The Sustainable Livelihood Approach
Source: Allison and Horemans (2006)

The SLA framework explains that the livelihood assets comprise of five types of capitals (human, natural, financial, physical and social) that are owned, controlled and claimed or accessed by the households. Human capital refers to the capabilities in terms of the SSFs' health, labour, education, knowledge, skills and health while natural capital includes fish stocks, areas of fishing that can be accessed, land ownership for cultivation. Meanwhile, financial capital includes savings, credit and insurance, and physical capital are boats, house, home appliances, bicycles in the possession of SSFs as well as access to infrastructure and facilities (road, clinics, schools, etc). Lastly, social capital refers to community solidarity, association, membership organisation and peer-group networks that the SSFs can turn to for assistance or to gain advantage. These livelihood assets can be affected by vulnerability of the SSFs comprising of shocks, trends and seasonality which are beyond their control. Shock refers to storm damage to store facilities, toxic algal bloom, rising price of necessities like fuel, fluctuating price of fish in the market among others. Illness or death in the family as well as theft or loss of fishing net, or incidence of fire burning their houses are also factors of shock at the household level. Besides that, trends refer to declining catch volume, increasing prices for fish in the market, rising cost of food or medicine, and more. Seasonality reflects the climate cycle, festivities such as the Ramadhan month where fasting occurs and less people are going to sea, and other seasonal events disrupting the daily activities of the SSFs (Allison & Horemans, 2006).

On another side, the access to livelihood assets is influenced by policies, institutions and processes. For instance, TMP gazetted as a marine protected area resulted in the zonation of fishing activities that must be complied with by coastal artisanal fishers. Laws and regulations control their use of environmentally sustainable fishing methods, and their access to aids and subsidies from the government require them to own proper boat and engine, registration and licensing with the authorities and adherence to other criteria. At the same time, these policies, institutions and processes also support the livelihood strategies to improve the livelihood outcomes of the SSFs. For instance, TMP promotes the conservation and protection of breeding ground for fish so that this could subsequently ensure fish stock is maintained.

2.3.2 Theory of Livelihood Resilience

Livelihood is concerned with material and social assets, and activities such as fishing as a means of living (Scoones, 1998). The sustainability of livelihood happens when individuals or households are able to respond and recover from stresses and shocks without undermining their natural resource base (Chambers & Conway, 1992). Resilience is added into the concept of livelihood as this concept reflects the capability of the individual or household to bounce back from adversity. According to Manyena (2006), resilience is a word that originated from the Latin word, *resilio* which means "to jump back". Resilience may have initially been related to the physics and engineering fields as it describes the ability of materials to bounce back after shock and assume their original condition (Mohaupt, 2008). It was also thought to be a concept originating from the field of psychology and psychiatry as resilience becomes a concept that can be related to the risks and adverse effect of life events such as war and divorce that are experienced by children (Manyena, 2006). Holling (1996) however, related resilience to the field of ecology as he argued that in an equilibrium state, the system would behave in a certain way to move from the state of stability when they are stressed.

In the context of small-scale fishers and their state of poverty and vulnerability, the concept of resilience from an ecological perspective was considered by Nyamwanza (2012) to be more suitable. According to Gunderson (2000), ecological resilience is concerned with the 'width' or limit of the stability domain when stresses are present. Hence, the concept of livelihood resilience can explain adaptive capacity, which is a term used frequently to describe the predicament of fishers in their encounter with climate change. Gallopin (2006) defined adaptive capacity as the capacity of any human system from individual to humankind, to increase or at least, maintain their quality of life in a given environment or a range of environments. Nyamwanza (2012) stated that livelihood resilience and adaptive capacity are terms often cited in livelihood and based on the opinions of some scholars (Adger, 2000; Glavovic et al., 2002), livelihood resilience or adaptive capacity are the antonyms of vulnerability. Hence, livelihood resilience is considered as an important tool that can ensure the impact of vulnerability on livelihood assets does not lead to adverse outcomes.

2.4 Poverty among Small-Scale Fishers

Poverty among the small-scale fishers is discussed in this chapter by first discussing the various definitions of poverty and continues towards explaining the concept of poverty in the Malaysia context and the current status of poverty among small-scale fishers in Malaysia generally, and in Sabah and Kudat more specifically.

2.4.1 Definition of Poverty

Poverty and low income are globally popular subjects which are constantly targeted in terms of alleviation and eradication programs in all countries, developed or least developed. Defining the term 'poverty' is crucial from a policy perspective. In general, an early definition of poverty was given by Rowentree (1901) who defines it as a state of insufficient family income to meet basic needs such as food, shelter and clothing to enable them to stay at a sufficient level to live. Meanwhile, another earlier definition of poverty was given by Townsend (1979) who stated that it is about lacking in resources by individuals, families and group of communities to obtain good type of food, and inability to interact with the community as there is no guarantee of safety. Todaro (1985) proposed another definition of poverty whereby, a person is considered poor when he cannot meet his needs for shelter, food and clothing as well as having a low income below the minimum required level. Ishak (1996) added that poor is a situation where the household does not earn enough income to cover a certain amount of expenses for the minimum basic needs such as food, clothing, shelter and other basic non-food needs.

In order to define poverty with a multidimensional perspective, other opinions like Abbott and Pollard (2004), Chambers (1995) and Sen (2001) were also considered. According to Abbott and Pollard (2004) and Chambers (1995), poverty refers to insufficiency for maintaining the development of human due to difficulty in attaining basic amenities such as education and health, partaking in socioeconomic activities, and obtaining adequate resources to fulfil the basic needs of the households. Sen (2001) contradicted this definition by stating that poverty does not mean having low income or few wealth because a person living under the poverty level can still be happy about their way of life. This is because the poor still have access to other basic amenities that

are provided by the government such as road, water supply, health facilities and education. ; The United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP, 2000) categorises poverty into money poverty, access poverty and power poverty. These definitions imply that poverty can be understood from social, economic, political and physical perspectives.

2.4.2 Poverty Measurement in the Malaysian Context

In the Malaysia context, poverty was initially measured based on financial and income aspects, using the monetary approach. Since the 5th Malaysia Plan, poverty was divided into absolute poverty and relative poverty. During the World Summit for Social Development in 1995, absolute poverty was defined as a lack of basic needs which include food, clean water supply, sanitation facilities, health, clothing, education and information. Table 2.4 shows the dimensions of the food PLI and non-Food PLI according to the definition of PLI in the 2019 national survey of household income and basic amenities in Malaysia.

Table 2.4 Dimensions of Poverty Line Income 2019

Dimensions	Items Included
Food PLI	• Vegetables and fruits • Rice, other grains, grain-based products (such as wheat) and tubers • Legumes, fish, chicken, meat and eggs • Milk and other dairy products • Reduced intake of fat, greasy food, sugar and salt
Non-food PLI	• Clothing and footwear for house • Utilities such as electricity, water, gas and fuel • Home appliances • Health • Transportation • Education • Communication and culture

Source: Bhari et al. (2022)

The Poverty Line Income (PLI) is used to determine the income level of households and individuals. Under absolute poverty, there are food PLI and non-food PLI. In 2020, the value of food PLI was RM1,169 and non-food PLI at RM1,038. Total PLI was valued at RM2,208 (Abd Rahman & Che Sulaiman, 2023; Department of Statistics Malaysia, 2020). Meanwhile, relative poverty reflects the mean or median national income and those who fall below the values are considered as poor (Nair & Segaran, 2015). It is also a measure of household income with a specific standard of living as dictated by the society. Another measurement called Gini Coefficient measures income inequality and distribution (Department of Statistics Malaysia, 2020). The value of Gini Coefficient is between 0 and 1 and a higher value indicates a fairer distribution of income.

Besides using a monetary approach to measure poverty, the multidimensional approach is also used as well. Poverty is regarded as a scarcity, according to the World Bank (2000) and during the World Social Development Summit in 1995 at Copenhagen, other aspects of poverty were agreed on. This includes the following:

- Lacking in income source and productive source for survival
- Hunger and malnutrition
- Low level of health
- Lacking access to education and other services
- Exposure to infections and death from disease
- Homeless state and inadequate shelter
- Environmental threats
- Discrimination
- Social exclusion that causes the individuals to participate less on shared decision making in social, societal and cultural activities.

The concept of multidimensional poverty lies with the argument that human well-being is not only determined by income but other dimensions such as health, education, spirituality and social (Bhari et al., 2022). The United Nations Children Fund (2018) argued that urban poverty arises from the fact that 97% of households are not getting nutritious food due to rising price of goods. Poverty from a spiritual perspective

was explained in Sutrahman (1996) who said that those with poor soul are susceptible to threats of corrupted faith, disturbed mind, unethical decisions, and deterioration of the family structure. Further to that, poverty is also related to lacking in education and those who were not given the opportunity to go to school might be trapped in the vicious cycle of poverty (Bhari et al., 2022).

Further along the way, the Oxford Poverty and Human Development Initiative (OPHI) introduced a standard using the multidimensional poverty measure based on the Akire Foster Method that was developed in 2007. OPHI and UNDP presented a new version of the multidimensional poverty measurement and adapted to use in SDGs in 2018. The standard measures three dimensions of poverty namely, health, education and living standards with health and education further broken down into two indicators each and living standards with six indicators. The determination of poverty is based on a dividing line whereby the dimensions are assigned with their respective weightage to indicate their relative importance to describe inadequacy and deficiency. UNDP (2018) defines an individual or a household as being multidimensional poor when its weightage totalled 30% or exceed one dimension. Table 2.5 describes the dimension of the Alkire Foster multidimensional poverty index adopted by UNDP.

Table 2.5 Alkire Foster Multidimensional Poverty Index

Dimensions	Indicator	Measurement	Weightage	SDG Concerns
Health	Nutrition	Any person below 70 years of age who is malnourished	1/6	SDG2 – Zero Hunger
	Death rate	Child mortality in the household within the last 5 years	1/6	SDG 3 – Health and Wellbeing
Education	Completed school	Member(s) of the household aged 10 years or more who failed to complete six years of schooling	1/6	SDG 4 – Quality Education
	School registration	Preschool who did not attend school	1/6	SDG 4 – Quality Education
Standard of Living	Cooking fuel	Lacking clean cooking fuel and instead, using faeces (dung), wood, charcoal or coal	1/18	SDG 7 – Affordable and Clean Energy
	Sanitation system	No sanitation facilities or shared with other households	1/18	SDG 6 – Clean Water and Sanitation
	Drinking water	No water facilities and no access to drinking water within 30 minutes' walk from their house	1/18	SDG 6 – Clean Water and Sanitation
	Modern assets	Possession of radio, TV, refrigerator, computer, telephone, bicycle, motorbike, etc.	1/18	SDG 1 – No Poverty
	Housing	Inadequate housing materials in any of the three components: floor, roofs or walls.	1/18	SDG 11 – Sustainable Cities and Communities
	Electricity	No electricity	1/18	SDg 7 – Affordable and Clean Energy

Source: OPHI (2018)

In Malaysia, the dimension of MPI was adapted to the context of the country and during the household income and basic amenities survey in 2019, education, health, standard of living and income were used to measure poverty. However, the indicators

and their description for the Malaysian context is slightly different as shown in Table 2.6.

Table 2.6 Multidimensional Poverty Index in Malaysia (2019)

Dimensions	Indicator	Measurement
Health	Access to health services	The nearest health facility is more than 5 km and there are no mobile health services provided
	Access to clean water supply	No access except from treated tap water supply in the house and public water pipes or public taps.
Education	Total school years	All members of the household between 13 and 60 years old have less than 6 years of schooling.
	School attendance	Children between 6 to 12 years old do not go to school.
Standard of Living	Conditions of residence	Bad or starting bad
	Room density	There are more than two people in the household per room
	Home toilet facility	Other than pull-out toilet and flush toilet.
	Access to garbage collection facilities	No scheduled garbage collection
	Use of transportation facilities	Members of the household are not using private or public transportation facilities
	Access to basic communication equipment	No landline telephone or mobile phones
Income	Household rough monthly income	The gross monthly household income is below the household PLI for the district, state or country

Source: Department of Statistics Malaysia (2020); Bhari et al. (2022)

In Malaysia, the terms B40, M40 and T20 are terms to categorise households based on their income. B40 households are those with income below RM4,850 while M40 are those earning between RM4,850 to RM10,959 and T20 earns on average, more than RM10,959. As shown in Figure 2.4, 16.0% of households in Malaysia are in the B40 group, 37.2% in the M20 group and 46.8% in the T20 group in 2019 (Department

of Statistics Malaysia, 2020). For Sabah particularly, B40 households represents 16.3% with income below RM3,489, M20 accounts for 37.5% with income between RM3,490 and RM8,199 while T20 households accounts for 46.2% with income more than RM8,199 in 2019 (Department of Statistics Malaysia, 2020b). MPI measures relative poverty to complement the measurement of using PLI and in Malaysia, MPI was used during the 11th Malaysia Plan. The measurement was able to help the government to provide more information necessary for developing effective policies (Economic Planning Unit, 2015), particularly in addressing B40 issues. MPI determines access to basic facility and services needed for social mobility, and thus, helps in the identification of needs among the low-income households more accurately (Ismail et al., 2022).

2.4.3 Current Poverty Status in Kudat, Sabah and Malaysia

The Institute for Democracy and Economic Affairs (IDEAS, 2020) reported that the incidence of poverty in Sabah shows that there are 19.5% of households with absolute poverty, 14.7% in relative poverty and a Gini coefficient of 0.397. The PLI for Sabah is RM2,537 according to the Household Income and Basic Amenities Survey Report in 2019. Based on these figures, it shows that Sabah recorded a high percentage of absolute poverty and relative poverty with higher inequality of income distribution compared to other states in Malaysia. Figure 2.4 depicts the poverty situation in Sabah.

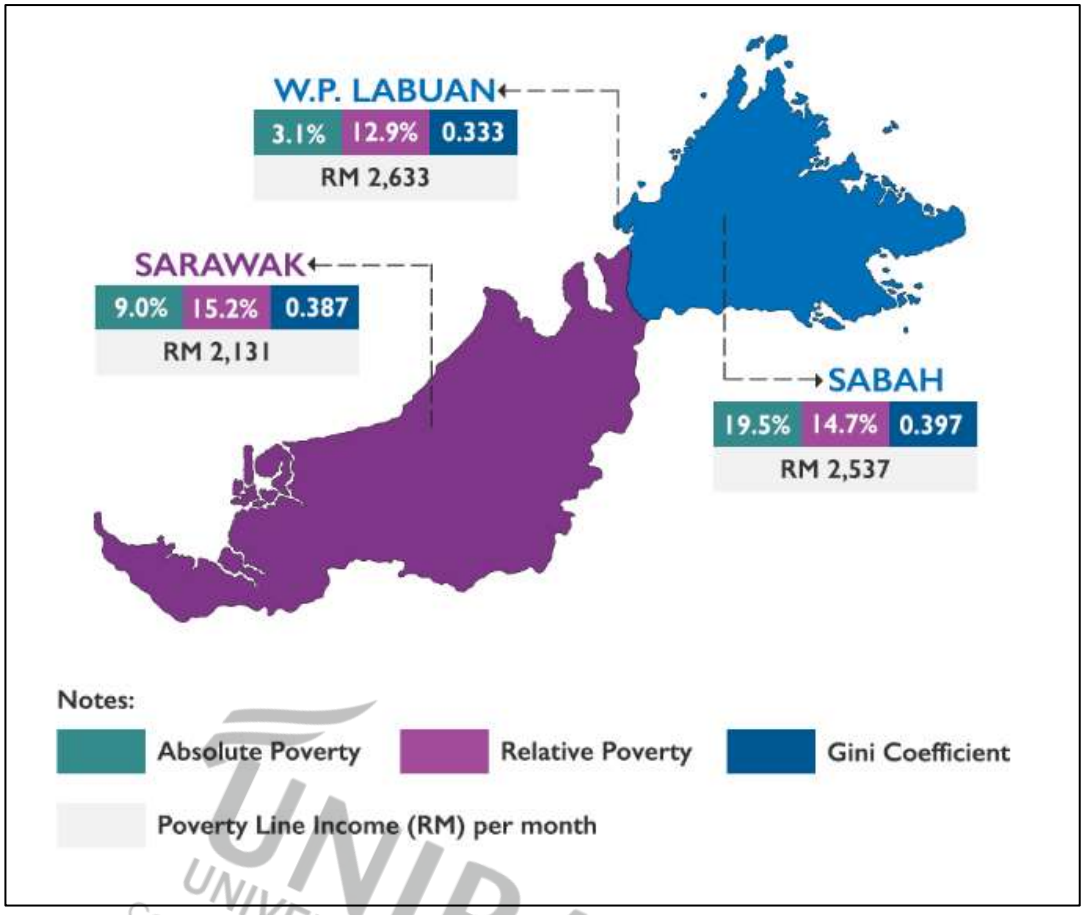

Figure 2.4 Incidence of Poverty in Sabah Based on 2019 Survey
Source: IDEAS (2020)

The same report specifically for Sabah shows that for Kudat, the median income is RM2,592 and average income is RM3,966. The incidence of absolute poverty is recorded at 41.5% with a Gini coefficient of 0.427. as shown in Figure 2.5, Kudat recorded a median and mean of household gross income at the bottom four with Pitas, Tongod and Kota Marudu with the lowest income level (Department of Statistics Malaysia, 2020b). Pitas and Kota Marudu are the other two districts within the jurisdiction of the Tun Mustapha Park.

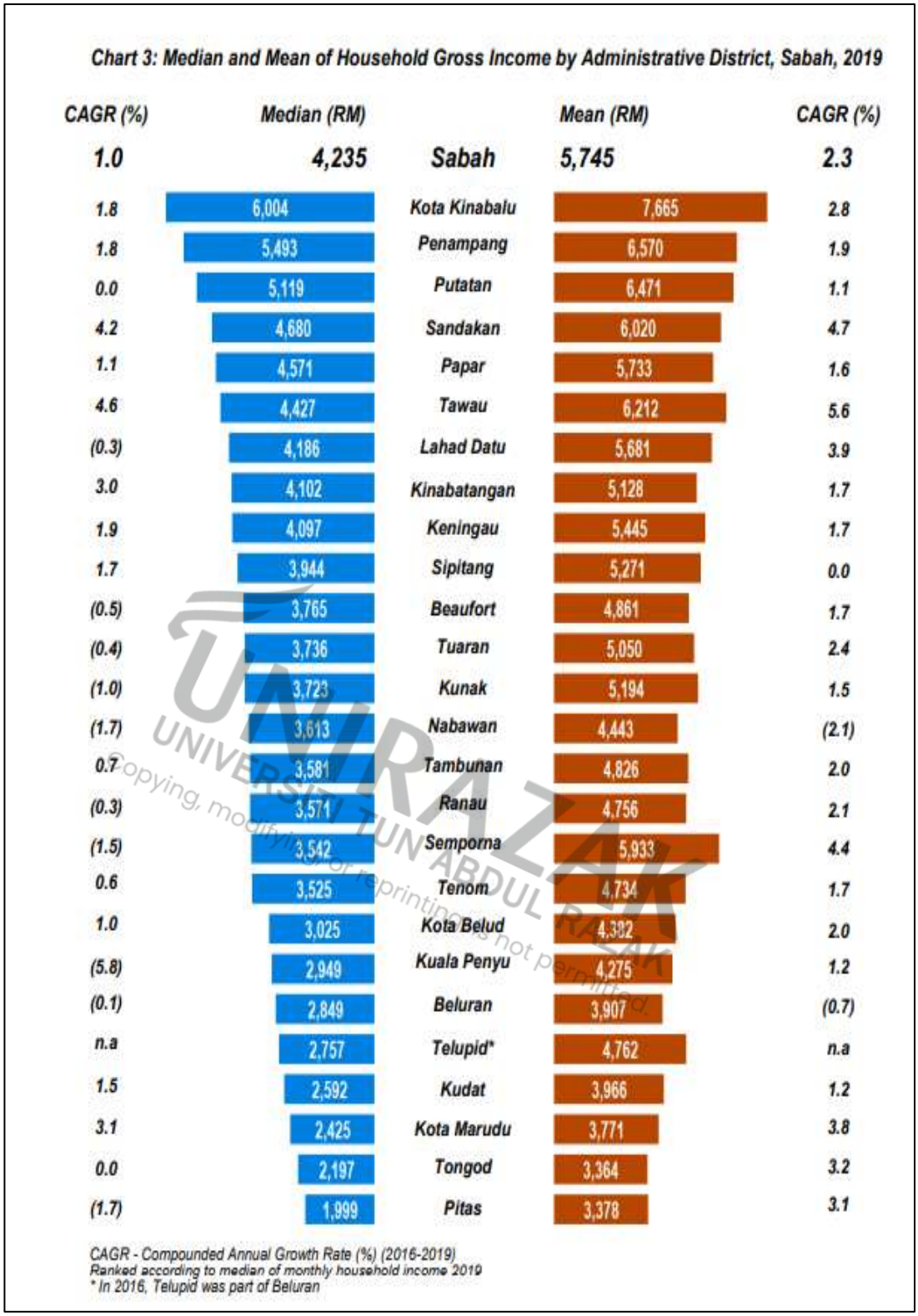

Figure 2.5 Mean and Median of Household Gross Income by Administrative District in Sabah (2019)
Source: Department of Statistics Malaysia (2020b)

The poverty measurement also considers the use of MPI which is presented in the scale between 0 and 1. A higher degree of MPI reflects greater incidence of deprivation in multiple dimensions. The MPI at the national level based on the 2019 income and basic amenities survey has decreased from 0.0152 in 2016 to 0.0110 in 2019 (Department of Statistics Malaysia, 2020). However, for Sabah, the MPI value has increased from 0.0622 in 2016 to 0.0758 in 2019 (Department of Statistics Maaysia, 2020b). Figure 2.6 illustrates the poverty situation for Sabah.

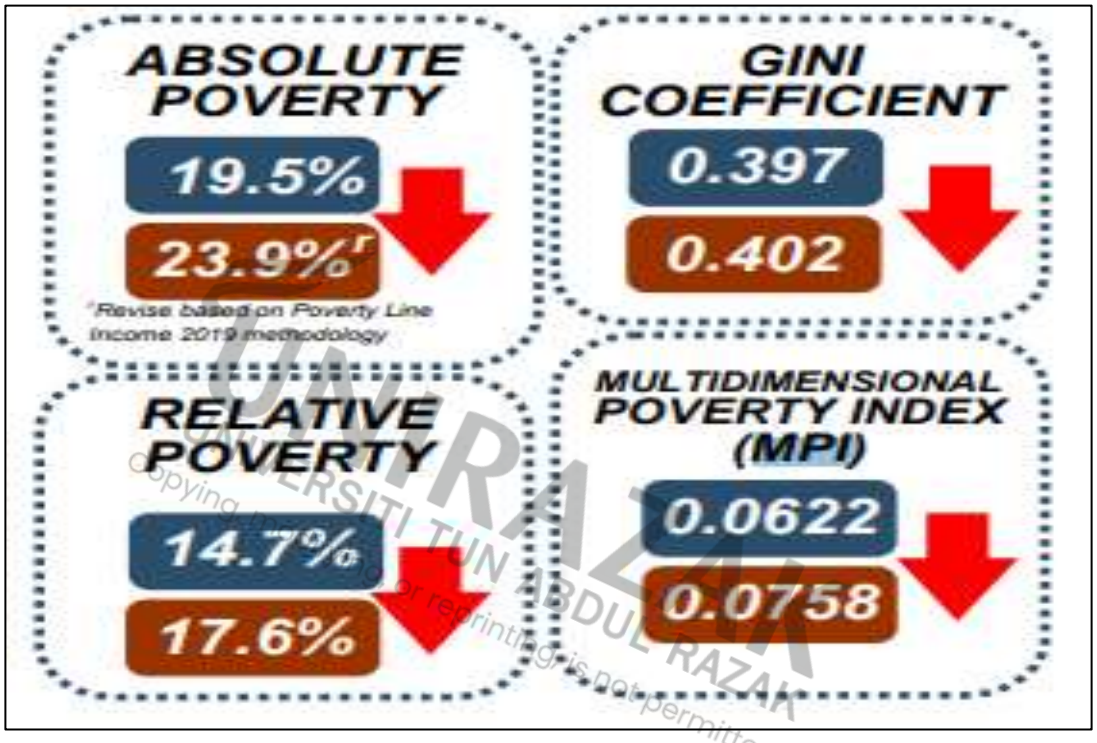

Figure 2.6 Poverty Incidence in Sabah (2019)
Source: Department of Statistics Malaysia (2020b)

2.4.4 Poverty Eradication Program in Malaysia for Small-Scale Fishers

In Malaysia, poverty eradication has been a main goal since gaining Independence in 1957. The efforts for poverty eradication in this country can be gleaned from the existing policies and programs.

The New Economy Policy (NEP) introduced in 19971 serves as evidence to the effort of the Malaysian government to eradicate poverty. NEP was implemented until 1990 and was partially successful in bringing down the level of poverty to 30%. For the

period between 1991 and 2000, the National Development Policy (NDP) was launched in 1991 aimed at national unity and maintaining continuous economic development. This policy continues to address poverty with a greater focus on rural areas such as provision of education and training, job opportunities, development of local economic spurting centres, transport, housing, and water and electricity supply. The policy was able to generate more Bumiputeras as entrepreneurs, intellectuals and serving as government employees. Additionally, other policies include the National Blue Ocean Strategy (NBOS) to spearhead the development of Malaysia as a developed nation with high-income citizens and greater wellbeing. NBOS also became the launching platform to initiate the National Transformation 2050 (TN50) which aspires Malaysia in the top 20 world ranking. Inasmuch, NBOS was a platform to encourage creativity and innovation especially among youth, and move towards the Government Transformation Program (GTP). GTP provides a clear vision through its strategic programs which are citizen centred so that Malaysia could truly become a developed country by 2020. The objectives of GTP are mainly to focus on the people based on the concept of 1Malaysia, with the slogan "People First, Performance Now". Hence, GTP has two main aims that is, the National Key Results Area (NKRA) and the Ministerial Key Results Area (MKRA). The NKRA identified six Key Performance Index (KPI) to address education access and equality, reduce crime rates, fight corruption, improves the living standards of low-income people, empowers rural and interior infrastructure, and improves public transport (Che Jusoh, 2019).

The fourth KPI which is focused on uplifting the living standards of low-income people was aligned to the initial effort of poverty alleviation. The key ministry which was assigned with this KPI is the Minister of Women, Family and Community Development. The ministry had established a unit called Delivery Management Office (DMO) to take up the responsibility to ensure the success of the National Key Result Area – Low Income Household (NKRA – LIH) programs. The unit was established in 2009 and the main intention was for liberating those under absolute poverty from their existing situation (Che Jusoh, 2019).

Among others, the government has introduced various incentives such as e-Kasih and Sahabat Amanah Ikhtiar (AIM). In its earlier effort in 2010, a total of 62,000

households with income averaging at RM750 were identified through the e-Kasih system. The 1AZAM (Akhiri Zaman Miskin) program was initiated for women and targeting 44,643 households with absolute poverty based on the principles of Productive Welfare. Under this program, there were various activities such as AZAM Tani, AZAM Niaga, AZAM Kerja and AZAM Khidmat. A grant worth RM4.7 million was awarded to 946 women entrepreneurs through the Teman 1AZAM pioneer program where financial assistance of RM1,000 to RM5,000 were given to each people for business development. Besides that, schooling assistance for school-going children and monthly assistance through the Social Welfare Department were also provided. Single mothers were also given opportunities to follow intensive entrepreneurship training for six months to encourage them into business endeavours. For Sabah specifically, the e-Kasih program comprises of seven activities which are Income Enhancement Program, Economy Enhancement Program, 1 Azam Khidmat Program, 1 Azam Kerja Program, 1 Azam Niaga Program, 1 Azam Tani Program and Household Aids Program. These programs were implemented by various organizations such as the State Development Department for Income Enhancement Program, Human Resource Development Department for 1 Azam Khidmat and 1 Azam Kerja Khidmat. Meanwhile, 1 Azam Niaga Program was implemented under the Sabah Women Affairs Department and 1 Azam Tani under the Fisheries Department (Che Jusoh, 2019).

In terms of fisheries subsidies, Lee and Viswanathan (2019) explained that small-scale fishers received numerous subsidies like price support, income support, input support and landing incentives. Fishers are provided with a monthly allowance of RM300 (prior to 2021 was only RM250) as income support and diesel subsidy of RM0.53 per litre. In 2017, the fisheries subsidies amounted to RM524.12 million (Lembaga Kemajuan Ikan, 2017). Fuel subsidies accounts for 60% of total fisheries subsidies while living subsidies account for 31.69%. Fuel subsidy helps the fishers to lower their cost of fishing by reducing the expenditure for fuel during fish harvesting while living subsidy address the income stability especially during monsoon season that makes it difficult for fishers to fish as the weather becomes unbearable (Ali et al., 2017). In 2021, a total of 32,711 and 15,926 recipients respectively received petrol and diesel subsidies and for Sabah, the number of respective recipients were 6,232 for petrol subsidy and 1,703 for diesel subsidy (Lembaga Kemajuan Ikan Malaysia, 2023). Catch

incentives were given to fishers based on the fishing zones operated by the fishers. There are three zones whereby Zone A, B and C fishers receive catch incentives of RM0.10 per kilogram while Zone C2 fishers receive RM0.20 per kilogram (Husain et al., 2020). Zone A are mainly the artisanal small-scale fishers while Zone B and C are fishers using trawl to fish (Lee & Viswanathan, 2019). However, **eligibility for these subsidies require the fisher to be registered and licensed with the Fisheries Department.** Therefore, not all fishers might not be able to enjoy these facilities and use them to improve their poverty status.

The Fisheries Department in Sabah also provides direct aids to fishers such as fish cage materials, sea weed culture materials, freshwater fish brood stock incentives, mollusc culture materials, fish processing and fish feed processing equipment, fish and prawn pond culture materials, hatchery materials, small fishing boats, fishing gears, and marine equipment. These direct aids are provided to fishers with four main objectives: (i) helping SSF with some initial capital to start or expand their enterprise so that they can improve their incomes and standard of living; (ii) attract new entrepreneurs and operators into the aquaculture industry; (iii) helping the poor fishers to enhance their fishing capabilities and improve their income; and (iv) encourage fishers to have an additional or alternative source of income or economic activity (Department of Fisheries Sabah, 2023).

2.5 Vulnerability among Small-Scale Fishers

The issue of vulnerability among small-scale fishers in this section is discussed by firstly, defining the concept, and secondly, exploring the issues of vulnerability among small-scale fishers especially in the context of Malaysia.

2.5.1 Concept Definition of Vulnerability

According to Millan (2019), vulnerability which is about susceptibility to change, is a prior condition of the system due to socioeconomic and environmental stressors. Sources and causes of vulnerability are plentiful like limited availability of resources, overcapacity, overfishing, poor governance and other factors that are at a larger scale beyond the fishers' control such climate change, threats from larger competitors,

globalized market, technological advancement, urban and land transformation, among others (Schuhbauer & Sumaila, 2016; Utete et al., 2018). On a more general definition, the United Nations Office for Disaster Risk Reduction (UNDDR) explained vulnerability as "people, assets or a system's susceptibility to the impacts of hazards and is determined by physical, social, economic and environmental vulnerability factors or processes such as available resources and assets, food security and coping capacity" (Millan, 2019).

In defining vulnerability even further, the concept broadens to physical and social vulnerability. While physical vulnerability refers to the vulnerability of elements and assets like buildings and infrastructure, social vulnerability refers to the susceptibility due to circumstances in daily life and their changes (de Ruiter & van Loon, 2022).

2.5.2 Vulnerability Issues of Small-Scale Fishers

Vulnerability among the small-scale fishers is inevitable given their high dependency on natural resources and strong affinity to the coastal areas (Chuenpagdee & Jentoft, 2015). According to Etongo and Arrisol (2021), the characteristics of small-scale farmers include their possession of relatively small fishing vessels, close to the coastal areas, labour-intensive harvesting strategies, shorter fishing trips, relatively lower catch per travel, and limitation in capital investment. Hence, many factors due to global and local change processes affect the livelihood of this community which include socioeconomic conditions, political situations, and climatic changes (Salas et al., 2019; Bavinck et al., 2018). A schematic representation of vulnerability measurement based on exposure, sensitivity and adaptive capacity proposed by Etongo and Arrisol (2021) is shown in Figure 2.7 below. Vulnerability due to exposure is due to several climatic drivers while sensitivity issues include key drivers such as employment and income from fisheries among others. Meanwhile, adaptive capacity drivers comprise of education, health, number of household members doing fishing, fishing experience, and possession of natural and financial capital besides income.

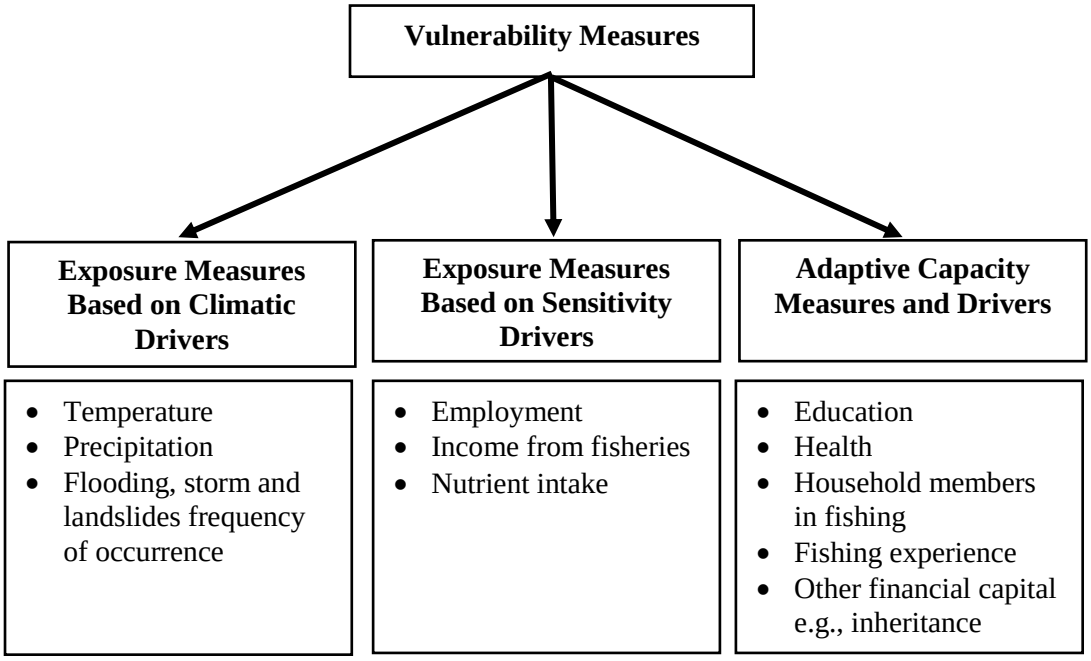

Figure 2.7 Vulnerability Framework (Etongo & Arrisol, 2021)

Another conceptual framework presented in Samsinar et al. (2021) is shown in Figure 2.8 that explains the various drivers of exposure, sensitivity and adaptive capacity. The framework implies that vulnerability of the small-scale fishers is multidimensional and caused by various factors.

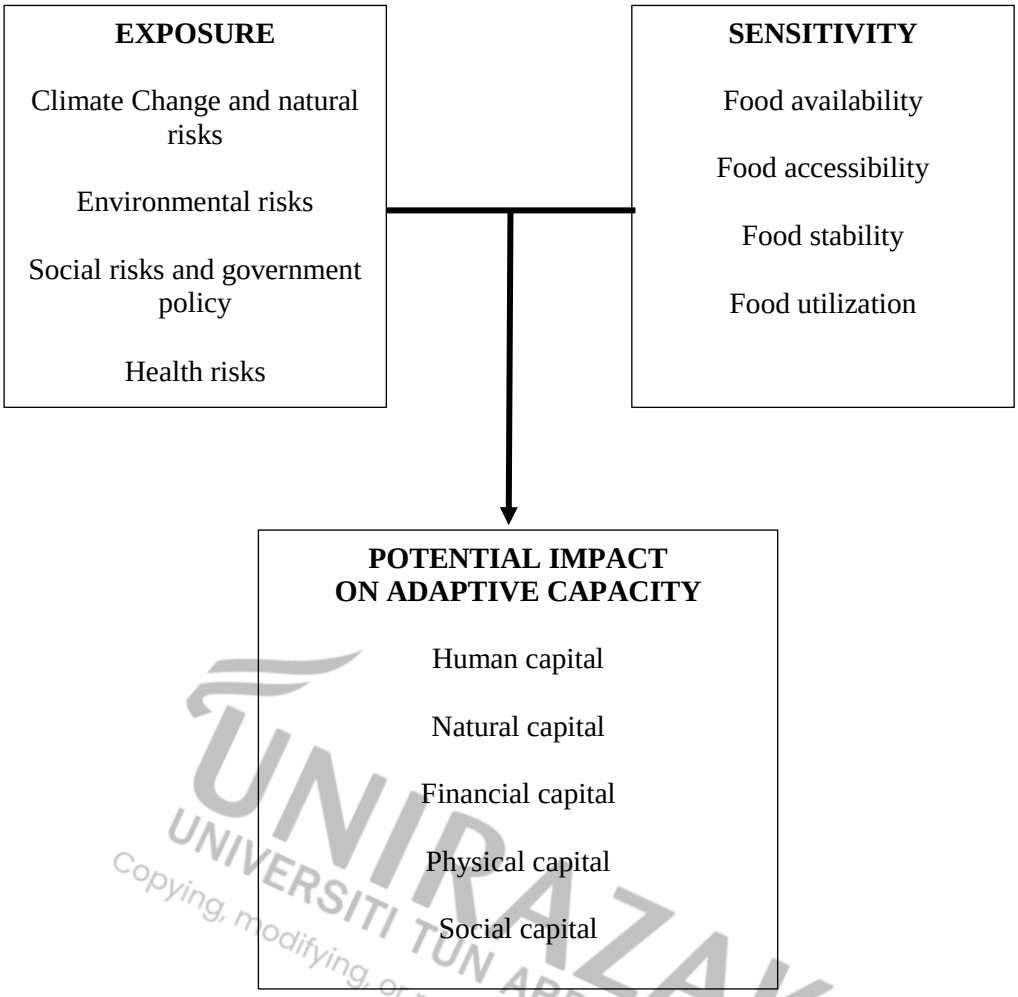

Figure 2.8 Framework for Small-Scale Fishers' Vulnerability (Samsinar et al., 2021)

Overfishing is regarded as a global change due to rising demand for fishery products. Thus, this could cause the SSFs to become more vulnerable as they have to work harder to have significant daily catch to sustain their livelihood. Other than that, lack of enforcement of fishing regulations, pollution, tourism and use of destructive and illegal fishing method like bombing also lead the SSFs toward vulnerability. These issues are related to the degradation of coral reefs, seagrass bed and mangroves along the coastal areas, and thus, threatening the livelihood of the fisher communities (Baum et al., 2016; Forero et al., 2017; Kapembwa et al., 2021).

The establishment of MPAs is also seen as a factor contributing to the vulnerability of the small-scale fishers. Zain et al. (2022) said that the role of MPAs in

the livelihood of small-scale fishers is perceived differently. To some, MPAs contributes towards increasing local fish catch but to others, it is seen as a restriction of access to marine resources, especially from the viewpoints of the marginalised and vulnerable communities. The fisheries management in Tun Mustapha Park is carried out by the intervention of several government and non-government authorities which is summarised in Table 2.7.

Table 2.7 Government and Non-Government Authorities Responsible for Fisheries Management in TMP

Authorities	Roles and Responsibilities
Sabah Parks	The lead actor in preserving areas in Sabah including TMP as a marine protected area for natural heritage conservation
Borneo Marine Research Institute (UMS)	Involved in the teaching and learning, research and publications, provision of social services and balancing knowledge specialization on marine resources management in MPA such as TMP
Coral Triangle Initiative Sabah	Provides a stable and productive future for the direct and indirect beneficiaries of marine resources Also responsible for minimizing habitat degradation, reorganizing economic and social structure of resource users, assurance of food security, determination of the capability and capacity for climate change adaptation and assurance of sustainable rehabilitation of coral reef areas.
Sabah Wildlife Department	Emphasising wildlife conservation program via activities that include management, enforcement, enrichment and wildlife studies.
Department of Fisheries Sabah	Responsible for the management and development of the fisheries sector. Involved in the registration and licensing of SSFs. Providing direct aids to SSFs Enforcing regulations to those using illegal fishing methods Promoting more SSFs into aquaculture venture At the district level, the Fisheries Office (Kudat, Pitas, Matunggong and Kota Marudu) are responsible for fisheries management in their respective districts.

Authorities	Roles and Responsibilities
District Office (Kudat, Kita Marudu, Pitas)	Serves as the chief coordinator of all development activities at the district level Serves as a local branch to the State Secretariat and Federal Government KPIs of the District Office include: • Modernization of living standards of the rural communities • Provision of basic infrastructure and facilities • Creation of employment opportunities and community development • Provide access to government aids such as e-Kasih
Community Development Leadership Unit (Tanjung Kapor, Matunggong, Pitas, Tandek)	Assist the government in fostering relationship between the government and the people Engaging people and encouraging their participation in fisheries management Dissemination of information about policy, planning and other information to the people Becomes the eyes and ears of the government to know issues and concerns of the people
Native Court (Kudat, Kota Marudu, Pitas)	Address the issues of unity, identity and custom in each community
Sabah Economic Planning Unit	Involved in the socioeconomic development planning in the administrative area of Kudat, Pitas and Kota Marudu which are also under the TMP jurisdiction
Fisheries Development Authority Malaysia (LKIM)	Promote effective and efficient management of fish business and marketing Establish and oversee credit facilities for SSFs so that these are fully utilised Register, regulate and supervise fisheries associations
Ministry of Domestic Trade and Consumer Affair	Develop business opportunities and improve the socioeconomic status of people through wholesale and retail profiles, cooperatives, franchise, direct sales, small hawkers and downstream petroleum sector Regulate the sales and distribution of essential goods, petrol and diesel, and direct sales transactions Implement weight and size rules Administer and develop intellectual property protection system
Ko-Nelayan Kudat	Improve the standard of living of the SSFs and their welfare through sustainable fisheries practices

Authorities	Roles and Responsibilities
Ministry of Rural Development	Increasing income of rural community to 80% of rural population
	Ensure that 30% of villagers embarks on entrepreneurial activities
	Improve the wellbeing of village community
	Attain 100% coverage of basic infrastructure and utilities
	Eliminate poverty and reduce the poverty rate to 2.8% (national level)
	Increase income and employment opportunities to rural communities
	ensure villagers receive 100% benefits from information and communication technology
Royal Malaysian Police and Marine Police	Protecting the national waters from any unwanted threats
	Prevent, detect and investigate crime (non-compliance to regulations and laws)
	Implementing security intelligence in groundwater
	An agent of the government information in remote areas
Marine Department	Develop and implement navigation safety, seafarer management, port facilities security and marine training operations
Malaysian Maritime Enforcement Agency	Enforcing law and order under any federal law in the maritime zone of Malaysia
	Carry out maritime search and rescue tasks on the ocean in the maritime zone of Malaysia
	Perform air and beach surveillance
	Control and prevent maritime pollution in the oceans
Port and Harbour Department Kudat	Licensing of Sabah small vessels under 15 GRT
	Traffic control and signal station at ports and rivers
	Port and wharf maintenance
	Control seafloor surveying, excavation and land reclamation activities in ports, rivers and coastal areas
	Collection of port taxes
	Monitor construction of marine structure, harbours, landing sites on ports, river and beaches

Source: WWF Malaysia (2021)

2.6 Related Past Studies

A review of the literature was carried out to determine the current interest in relating marine protected areas with the poverty and vulnerability of small-scale fishers globally and specifically related to TMP in Sabah. Generally, it was found that there is a rising interest in this situation which are further elaborated as follows:

Md Shah et al. (2022) conducted a study to investigate the livelihood of the fishing communities in MPA, particularly at Marudu Bay that is situated in Kudat, Sabah. Using **a qualitative approach and in-depth interviews with five informants,** this study found that in terms of human capital which are described based on education, health, leadership, skills and training, the targeted level has not been attained. In addition to that, the informants claimed a lacking in opportunities for increasing their household income. Fishing was also implied as an unattractive occupation. Although this article did not particularly explore the poverty and vulnerability of the fisher community, the article did mention that overfishing, destructive fishing methods, and climate change serve as drivers of their vulnerability. Further to that, the study is guided by the Sustainable Livelihood Framework (SLF) which also takes vulnerability into consideration.

Another study by Reuben and Gunggut (2021) provide insights to the roles and contribution of Sabah Park as the main authority into transforming TMP as a marine protected area in a 13-year struggle since 2003 to 2016. This article did not discuss about fisher communities' poverty and vulnerability, but it gives comprehensive information about MPA and the importance of having TMP as one. Based on the Kingdon's Model of Agenda Setting, this article explains about the role of Sabah Park from the perspectives of problem, policy and political streams. Overall, the article stresses on the importance of understanding the livelihood of the community and securing their commitment and engagement in realizing and making the TMP as a successful MPA.

Samsinar et al. (2021) presented a literature review paper that was presented in an International Conference on Public Policy and Social Science in Negeri Sembilan's

UiTM campus. In their paper, a conceptual framework of measuring vulnerability among fishers was presented. More specifically, the framework is useful to identify which risks or exposures will affect the food security of the fisher community. Hence, this can ensure effective solutions are developed to address the situation.

Another interesting perspective of the research issues pertaining to provision of subsidies as a means of alleviating poverty among fishers was highlighted in Lee and Viswanathan (2019). They argued that the subsidies work well to improve the livelihood of the SSFs but at the same time, could cause adverse impact on depletion of fisheries resources in the long run. Hence, other alternatives such as encouraging SSFs towards alternative income generating activities in tourism and aquaculture were recommended. This led to the implication that despite the provision of subsidies, this does not effectively improve the poverty situation among SSFs in the long run.

In Millan (2019), this Master thesis from the Memorial University of Newfoundland showed some intriguing findings pertaining to the vulnerability and viability of the SSFs in Sisal, Yucatan, Mexico. Their studies confirmed that there are multiple stressors of vulnerability and in the case of the SSFs in this study, social dimensions of vulnerability were the main concern. However, there are also aspects of the community such as community solidarity and leadership that can be used to improve their livelihood and minimize the impact of vulnerability.

Additionally, Kapembwa et al. (2021) also addressed the issue of income, vulnerability and livelihood strategies of SSFs but in this study, the area was located in a man-made lake in Zambia, the Itezhi-Tezhi Lake. Their findings led to the conclusion that SSFs were not gaining adequate income and they were also exposed to vulnerability threats due to closing of the fishing season and failures in crop and livestock production. Hence, this study also stresses the importance of introducing SSFs to other alternatives to gain income as well as a call to the government to develop a livelihood inclusive policy framework to ensure the SSFs are not marginalised even more.

Yet in another study by Yonvitner et al. (2020), vulnerability is not only focused on SSFs but on the other way round, SSFs can cause vulnerability to the fish stocks too.

This could be related to inconsiderate fishing with the use of fishing methods that are harmful to fishes, especially the juvenile fishers. Although SSFs in general seem to be using environmentally sustainable fishing methods but caution should be taken to ensure that the fish stock is protected. Hence, this situation stresses the importance of marine protected area as in the case of TMP establishment to protect the biodiversity of marine resources in Kudat, Pitas and Kota Marudu areas.

These studies are summarized in terms of their research aims, research scope, methodology and main findings in Table 2.8 below.

Table 2.8 Literature Matrix of Related Studies

Author(s) and Year	Research Aims	Research Scope	Methodology	Major Findings
Md Shah et al. (2022)	Investigating the sustainable livelihood strategies of the fishing communities in a marine protected area	Using the sustainable livelihood framework to analyse the indicators of sustainable livelihood capitals and strategies among the fishing communities in the MPA (Marudu Bay, Kudat)	Qualitative approach with in-depth interview using 5 informants based on purposive sampling method	Human capital standards were not met for education, health, leadership, skill and training. Lacking in option for income improvement of the households Fishing seen as an unappealing job.
Reuben and Gunggut (2021)	Investigating the role and contribution of Sabah Part in the establishment and management of TMP as an MPA in Sabah	The research provides a comprehensive description of Sabah Park's effort in realizing TMP as an MPA within a 13-year struggle by being the lead actor in the gazetting process	Qualitative approach with literary sources based on a Kingdon's Model of Agenda Setting	A chronological report of Sabah Park's role and contribution from 2003 to 2016 until TMP was gazetted as an MPA by Sabah State Government. Sabah Park played numerous roles in the establishment of the TMP Steering Committee such as fisheries management, marine habitat protection, shoreline management, control of land-based pollution, livelihoods and enterprise management, education and awareness.
Samsinar et al. (2021)	Proposing a conceptual framework to reassess the vulnerability of small-scale fishers	A development of a vulnerability index for small-scale fishers after considering various stressors and determining the adaptation capacity of the fishers	Literature review using search engine such as Scopus, Web of Science, Jstor and Google Scholar	The development of the conceptual framework that can be used to assess the vulnerability of small-scale fishers. The framework includes exposure and sensitivity drivers that impacted on adaptive capacity.

Author(s) and Year	Research Aims	Research Scope	Methodology	Major Findings
Lee and Viswanathan (2019)	Investigating the impact of subsidies in the fisheries sector of Malaysia on resource sustainability	Exploration of the impact of subsidies given to SSFs and suggesting ways for improving the subsidy so that it will not only improve welfare of the fishers but sustain fisheries as well. The study is focused on Peninsular Malaysia only.	Literature review based on existing and published articles and other documents	The provision of subsidy does not always work for the best among fishers as it could lead to adverse impact such as encouraging depletion of fisheries resources. Although these subsidies help in alleviating poverty among fishers but it is a short-term solution and there should be more effort instead in engaging fishers in alternative income activities such as aquaculture and tourism.
Millan (2019)	Determining the vulnerability and viability of SSFs in Sisal, Yucatan, Mexico	An investigation of the vulnerability and viability of the SSFs in coastal areas of Sisal, Yucatan, Mexico based on two perspectives – a simplified participatory diagnostic approach, and an interactive governance.	A qualitative approach using in-person surveys with semi-structured questionnaires. Focus group discussion was also used to further discuss the SSFs vulnerability issues and explore potential solutions to address these issues.	Generally, social dimensions which include lack of respect for regulations, issues related to migration, lack of support from financiers, and lack of support and recognition for women in post-harvest related activities were considered the main vulnerability. Rich ecosystem, community solidarity, and strong leadership can foster livelihood of the people. Likewise, proactive attitudes, high capacity and in-depth knowledge are assets of the community to improve their current livelihood.

Author(s) and Year	Research Aims	Research Scope	Methodology	Major Findings
Kapenbwa et al. (2021)	Assessment of the relationship among income, vulnerability and livelihood strategies of the SSFs at Lake Itezhi-Tezhi, Zambia	A case study of the SSFs residing at Lake Itezhi-Tezhi, Zambia which is a man-made lake, to see the association of income, vulnerability and livelihood strategies among these people.	A mixed method approach using both quantitative and qualitative data,	Fishing income is insufficient and cannot sustain the SSFs livelihood. This was further compounded by vulnerability of the SSFs to shocks caused by the effects of the closed fishing season and crop/livestock production failures.
Yonvitner et al. (2020)	Investigating the vulnerability of marine resources to SSFs in the tropical area	The study focuses on Sunda Strait in Indonesia to determine the pressure of SSF on fish stocks in this area.	Quantitative based on secondary data collected monthly for 3 years in one of the main fishing ports in Sunda Straits	The SSFs appear to be using environmentally sustainable fishing techniques but there is still impact on juvenile fishes in certain area. This calls for a need to protect immature fish of species for commercial and subsistence purposes. This study highlights the importance of having MPA in nursery grounds and establishment of minimum landing sizes to ensure maturity of the fishes.
Harker et al. (2022)	Investigating the relationship of livelihoods, wellbeing and Marine Protected Areas	An assessment of the association among livelihood, wellbeing and marine protected area based on a community survey in Watamu Marine National Park and Reserve, Kenya.	Quantitative based on data collected from telephone survey questionnaires involving 308 participants.	The benefits of having MPA include its contribution to subjective wellbeing such as better health and ability to enjoy a clean and healthy creek and ocean. The disbenefits include relational and material wellbeing whereby it could increase conflict and social tension, and caused increased poverty and fewer supplies of food. The study emphasizes on good partnership and relationship with the community to ensure their livelihood is not adversely affected.

2.7 Conceptual Framework

The conceptual framework of this study takes into consideration the theoretical framework and related studies which have been elaborated in previous sections. In general, this study aims to explore the poverty level and vulnerability issues of the small-scale fishers in Kudat, whereby fishing in the coastal areas is governed by the gazettement of Tun Mustapha Park as a marine protected area. Figure 2.9 shows the conceptual framework adopted for this study.

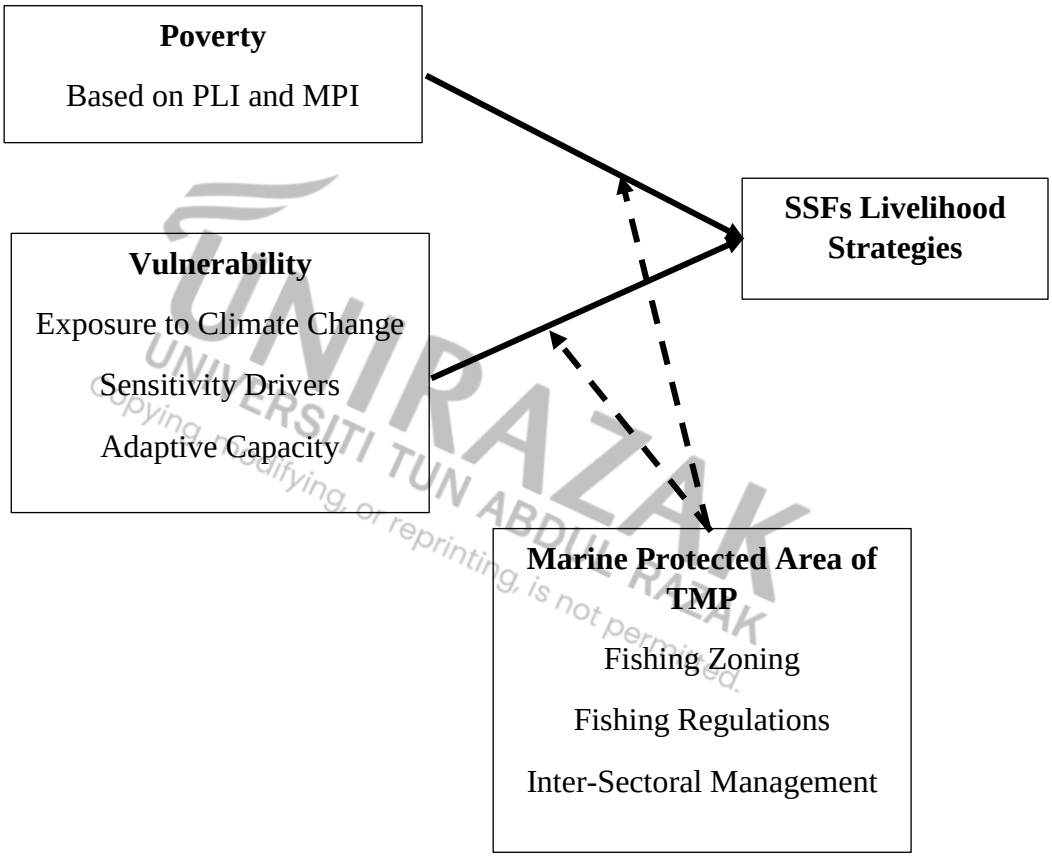

Figure 2.9 Conceptual Framework of This Study

2.8 Chapter Summary

This chapter has presented a comprehensive review of the literature that covers a description and explanation about marine protected areas in general and Tun Mustapha Park specifically. The chapter also discusses and highlights the underpinning theories that make up the theoretical framework of this study. Further along, the concept of

poverty and vulnerability were discussed that include term definition and their occurrence in the context of Malaysia and small-scale fishers. Related past studies were also tabulated and discussed to show some recent interest relating the phenomenon of interest in this study. Lastly, the conceptual framework of this study was proposed based on the analysis of the theoretical framework and empirical evidences from past studies.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology used in this study. It includes a description of the research design, the research setting, population and sampling method, interview procedures and data analysis techniques.

3.2 Research Design

This study undertook a research design that is qualitative in nature. Cropley (2022) explained a qualitative study as one that uses a systematic subjective method using naturalistic and interpretative approach with data collected through interviews. Besides that, this research is also an exploratory study in nature as it used in-depth interviews to gather data from informants. Creswell & Poth, 2018). This is quite beneficial as it determines the perception of the intended target, the small-scale fishers in this study, regarding their poverty and vulnerability, and relate these perceptions to their fishing activities within a marine protected area, the Tun Mustapha Park. This study helps to comprehend the context and acquire the additional insights based on feedback from the informants. However, the small sample size in this study causes the limitation in terms of generalization of the findings to the entire population of small-scale fishers in Kudat district (Denzin & Lincoln, 2011). Nonetheless, the qualitative and exploratory design enables the analysis of real-world situations which could shed lights to poverty and vulnerability issues faced by the small-scale fishers. Since this study employs face-to-face interview in the local environment setting where the small-scale fishers are located, this provides greater insights to their real-life situations in present time.

3.3 Research Setting

The research setting is based on the location of Tun Mustapha Park which covers mainly the Kudat district's coastal areas. Small-scale fishers are located at the coastal areas of both mainland and other neighbouring islands such as Balambangan and Banggi.

However, for this study, the research is set to cover small-scale fishers on the coastal areas of mainland district of Kudat. It excluded small-scale fishers on the coastal areas of the neighbouring islands. The main reason for the exclusion of these small-scale fishers is due to rough weather conditions during the survey period which made it difficult to reach these areas. Thus, only small-scale fishers in Kudat district on the mainland coastal areas were included in this study.

3.4 Population and Sampling Method

3.4.1 Defining the Study Population

According to the Places in the World (2023) statistics, Kudat is a mid-size district in Sabah, Malaysia with an estimated population of 32,393 people. However, the total population of small-scale fishers in Kudat has never been established. An unpublished report from the Fisheries Department in Kudat identified a total of 224 full-time small-scale fishers on mainland and island coastal areas, who reside in 32 villages (Jabatan Perikanan Kudat, 2023). The number of part time small-scale fishers however, was not established.

3.4.2 Sample Selection

The sampling of the small-scale fishers was based on purposive sampling and carried out based on the following inclusion and exclusion criteria in Table 3.1.

Table 3.1 Inclusion and Exclusion Criteria of Sample Selection among Small-Scale Fishers

Inclusion Criteria	Exclusion Criteria
• Individual is a full-time fisherman • Individual is a small-scale fisher residing in any of the villages on the coastal area of Kudat	• Individual is working part time or have income from other jobs • Individual is not a permanent resident in the villages on the coastal area of Kudat

Purposive sampling is about selecting information-rich samples and use them in in-depth interview to get their perception about the phenomena of interest (Shaheen et al., 2016). In the case of this study, purposive sampling is based on a small sample size but could potentially answer the research questions due to their richness of information.

3.4.3 Samples

The samples of this study comprise of small-scale fishers who are involved full-time in fishing activities in the coastal areas of mainland Kudat district and representatives from the relevant government and agencies directly involved with the wellbeing and economic activities of these small-scale fishers. For the small-scale fishers, their status as a full-time fisherman was determine based on their own volitional statement during the interview. In some villages, the samples are interviewed using a focus group discussion approach when there is more than one informant willing to become the study sample. The focus group discussion approach is considered as an effective way of motivating the informants to share their opinions as they are more comfortable to speak in groups rather than individually (Nyumba et al., 2018). According to Morgan (2002), single focus group which is an interactive discussion about a given topic by a collection of participants with a team of facilitators in one place can be carried out. Kamberelis and Dimitriadis (2005) added that a small group of two to five informants can be considered as a mini focus group to enable the discussion of topics when all informants cannot be gathered at once in one place.

Table 3.2 presents the demographic characteristics of the informants who participated in the in-depth interview during the survey. A total of seven villages participated in the survey with informants ranging from two to five in every village. The total number of informants for the survey is 26 full-time small-scale fishers.

Table 3.2 Demographic Characteristics of the Survey Informants

Interview Location	Exclusion Criteria
Landung Ayang	• Number of informants: 5 • Age range: 33 to 62 years old • Ethnic group: Mostly Bajau
Tanjung Kapur	• Number of informants: 5 • Age range: 30 – 55 years old • Ethnic group: Mostly Bajau
Kampung Ayer	• Number of informants: 5 • Age range: 25 – 65 years old • Ethnic group: Brunei, Sungei, Bugis, Bajau, Jawa Rungus
Pengaraban	• Number of informants: 5 • Age range: 28 – 65 years old • Ethnic group: Bajau, Bugis, Brunei, Jawa, Rungus
Muhibbah	• Number of informants: 2 • Age range: 30 – 55 years old • Ethnic group: Ubian
Pantai Bahagia	• Number of informants: 2 • Age range: 30 – 60 years old • Ethnic group: Bajau Simulun, Ubian
Tajau Laut	• Number of informants: 2 • Age range: 45 – 65 years old • Ethnic group: Bajau Samah

Meanwhile, for the representatives of relevant government and agencies, initially request letter was sent out to identified organisations such as the Fisheries Department, District Office, Malaysian Fisheries Development Authority (*Lembaga Kemajuan Ikan Malaysia*), World Wildlife Fund Malaysia of Sabah (WWF-Sabah) and Sabah Parks. However, only two organizations responded to the request letter which are the Kudat Fisheries Department as the government organization and the WWF-Sabah as the non-government organization. Thus, only these two organizations participated in this study who were represented by their senior officers.

3.5 Interview Procedures

This study employs an in-depth interview to gather information from both groups of informants – the small-scale fishers and representatives from the government and non-government organizations. The process of data collection begins with interview with the representatives from the Fisheries Department and WWF-Sabah before proceeding to the informants in each targeted village. The interview protocol is shown in Appendix 1 whereby open-ended questions were posed based on every research questions. The questions were presented to the informants in local Malay dialect to facilitate understanding about the question and issues to be discussed.

3.5.1 Interview with the Government and Non-Government Authorities

The interview with the government and non-government authorities was carried out prior to interview with the fisher folks. The interview took place at their respective offices. The interview with the Fisheries Department was represented by the Department Head while the interview with WWF-Sabah was represented by its senior officer. The interviews were recorded after obtaining consent for recording from the participating representatives. The in-depth interviews were able to gather detailed information and to probe and reflect to gain further understanding (Morris, 2015).

3.5.2 Interview with the Fisher Folks

The informants from among the small-scale fishers responded to the questions in the interview in local Malay dialect. The interview was recorded after obtaining permission from the informants. The interview was carried out in an informal manner and using a conversational method so that the informants are at ease and participate more freely in the discussion (Anastassiou, 2017).

3.6 Data Analysis Techniques

Qualitative content analysis based on a thematic approach was used in this study to analyse data from the interviews. Mayring (2000) defined qualitative content analysis as a method for classification of written or oral materials into identified categories of similar meanings and these categories represent either explicit or inferred

communication. Alhojailan (2012) added that thematic analysis is a systematic way of analysing data by classifying and presenting patterns of themes within the collected data. Themes, according to Joffe and Yardley (2004), describe the bulk of the data. According to Shava et al. (2021), there are seven steps in carrying out the qualitative content analysis which are:

- Formulating research questions to be answered
- Selecting the sample to be analysed
- Defining the categories to be applied
- Outlining the coding process and the coder training
- Implementing the coding process
- Analysing the results of the coding process.

In this study, the research questions were formulated and presented in the first chapter. They were used as guideline to determine the questions posed during the interview and the target samples to answer these questions. The audio recording from the interviews were transcribed and qualitatively analysed to determine the main themes and sub themes in the responses given by the informants. The determination of these themes and sub themes is based on the coding process. Once the coding process is completed, the responses from these interviews were used to answer the respective research questions.

Braun and Clarke (2006) presented a six-phase guideline to extract themes from the interview verbatim transcription. The thematic analysis comprises of the six steps below:

1. Familiarise with data
2. Generating the initial codes
3. Searching for themes
4. Reviewing the themes
5. Defining the themes
6. Writing up the result

According to Maguire and Delahunt (2017), the steps are not necessarily linear but recursive in nature. During the first step, the transcribed interview will be read and re-read to gain familiarity with the text. Notes are jotted down initially. In the next step, data are organized systematically and in a meaningful way. **Coding helps to reduce the collection of data** into smaller meaningful chunks. The **coding method is guided by the research questions** and the questions posed during the interview. At this stage, a theoretical thematic analysis was carried out rather than an inductive one. Coding was carried out based on segment of data and not line-by-line coding. This means that open coding was preferred. During the third step, themes were search from among the coded data. Themes refer to patterns that captures something significant or interesting about the data and related to the research questions. Then, **the next step is to review the themes whereby the initial themes were reviewed, modified and developed**. This is followed by defining the themes to identify the essence of every theme (Braun & Clarke, 2006). Sub-themes were also identified based on the interaction with the main themes.

The villages are coded as V1 for Kg. Landung Ayang, V2 for Kg. Tanjung Kapur, V3 for Kg. Ayer, V4 for Kg. Pengaraban, V5 for Kg. Muhibbah, V6 for Kg. Pantai Bahagia and V7 for Kg. Tajau Laut. Informants from each village are coded RO1, RO2, RO3, RO4 and RO5 for villages with five informants and RO1 and RO2 for villages with two informants. There are four research questions which are coded as Q1, Q2, Q3 and Q4. Excerpts from the interview were coded using three main links: (i) village where the informant reside (V1, V2, V3.... V7); (ii) interview question coded as Q1, Q2, Q3 and Q4; and (iii) informant's identification code (RO1, RO2…RO5). Hence, excerpts from an informant who participated in the interview in Kg. Landung Ayang, answering the first research question and is identified as the first informant will be coded V1/Q1/RO1.

Meanwhile, the authorities involved in this study which are the Department of Fisheries Kudat and WWF Kudat were coded using two links: (i) interview question coded as Q1, Q2, Q3 and Q4; and (ii) acronym for their respective organization whereby Department of Fisheries Kudat is coded as DOFK and WWF Kudat as WWFK. Hence,

excerpts from the senior officer representing the Department of Fisheries Kudat answering the first research question is coded Q1/DOFK.

CHAPTER 4

FINDINGS

4.1 Introduction

This chapter presents the findings gathered from the interview with the informants of the study from the government and non-government representatives and the community of small-scale fishers. Based on thematic analysis of collected data, findings are presented based on the identified themes and main themes pertaining to the research questions. Hence, there are four main themes identified in this study: (i) SSFs perception about their poverty; (ii) SSFs perception about their vulnerability; (iii) Impact of Zoning in TMP on SSFs' poverty and vulnerability; and (iv) Government support in dealing with SSFs' poverty and vulnerability.

4.2 Small-Scale Fishers' Perception about their Poverty

During the focus group discussion with the seven groups of informants from different villages along the coastal area of mainland Sabah in Kudat district, and the interview with senior officers from Department of Fisheries Kudat (DOFK) and WWF Kudat (WWFK), the discussion was guided by questions to lead the informants into sharing their thoughts but the questions are not limited to these three initial questions as stated below:

1. In your opinion, are the SSFs in Kudat poor?
2. What are your reasons for this opinion?
3. What are the evidences in their daily life to show this evidence?

Based on the thematic analysis of the transcribed interviews, the following sub-themes were derived: (i) perception of SSFs' poverty situation; (ii) Justification supporting SSFs' poverty situation; and (iii) Supporting evidence based on daily life of SSFs. Findings pertaining to these sub-themes are presented in the following sub-sections.

4.2.1 Perception of SSFs' Poverty Situation

The incidence of poverty among SSFs were perceived differently by the informants. However, in general, the informants and authority representatives were in agreement that most SSFs are poor but the number of those categorised as hard-core poor or under absolute poverty has declined in the past years. Most fisher households are however, in the category of relative poverty. Nonetheless, informants from Kg Landung Ayang and Kg. Pantai Muhibbah did not agree entirely that small-scale fishers are poor. The informant from Kg. Landung Ayang stated that some small-scale fishers are financially well. They save money at home and use the money to buy fishing equipment in cash rather than taking loan. Excerpts from the interview with this informant are shown below:

> "*Berharta tiada tapi berduit, ada. Kereta, rumah bukan mainan, tapi dorang simpan duit di rumah…" [material wealth none but money is available. Car, house is not a priority but they do keep money at home]*
>
> *"Kalau kita mau tau dorang kaya, dorang akan guna duit untuk beli alat-alatan nelayan…. contohnya enjin lah, 40 horse power sampai 13 ribu. Mana ada loan, cash tu. Bot sampai 3 hingga 4 ribu cash" [if we want to know whether they are rich, they will use money to buy fishers' equipment…. for instant, engine with 40 horse power up to 13 thousand. They don't take loan; it is paid in cash. Boats can be up to 3 to 4 thousand…. cash."*
>
> *[V1/Q1/RO1]*

Viewpoint from the WWFK representative implied that the fishers indeed have cash available but he stressed on the fact that these fishers might not have sustainable saving to cover their expenses all the time, especially during bad weather condition when they cannot go to sea.

"Memang dorang ada cash but whether they have reserve money or not. Their savings?" [Sure, they have cash but whether or not they have reserved money or savings.]

[Q2/WWFK]

The poverty situation of the SSFs can also be related to their attitude. According to one of the informants, there are fishers who would go to the sea and gain a good haul and then take things easy. When they felt that they have no more money, then they would go out to sea to find sustenance.

"Ada sifat nelayan ni, bila dia dapat satu ribu, dia cuti tiga hari… rasa-rasa mau habis sudah itu duit, baru lah ke laut." [There is this fishers' attitude, once they get a thousand, they take three days leave… when they feel there is no more money, then they will go out to sea.]

[V1/Q2/R01]

Another informant from Kg. Pantai Bahagia also stated that not all are really poor. Although some do receive e-Kasih aids which implies that they are in the hardcore poor category, but they are actually in the relative poverty category, as they can still earn a living from work at sea or on land. Excerpts from the interview are indicated below:

"*Inda juga kerana bergantung kepada rezeki satu-satu. Walaupun sama-sama kapal tapi tidak sama rezekinya…" [not really but depends on each and everyone's abundance]*

"*Ada juga yang berdaftar dengan e-kasih…. dalam 50 orang… biasanya tergolong dalam miskin tegar tapi tidak semestinya miskin tegar. Gelaran saja bah… ada juga kerja pigi laut, di darat…" [there are some who are registered with e-Kasih… about 50 people…. generally*

considered as hardcore poor but not really hardcore. Only as a title. Some go to work at sea, on land….]

[V6/Q1/RO1]

4.2.2 Justification Supporting SSFs' Poverty Situation

In general, the informants from the seven villages agreed that poverty is an issue among the small-scale fishers but majority are in the category of relative poverty and only a few are in the category of absolute poverty. Representatives from DOFK and WWFK stated that there has been consistent effort from the government to identify households who are hardcore poor and register them to receive e-Kasih aids. The number of hardcore poor has decreased significantly over the past few years but these households are among the Malaysian citizens. There are still marginalised households who did not receive e-Kasih aids or other assistance especially from the island fisher communities as some of those considered as hardcore poor are illegal immigrants with no identification card.

The representative from DOFK

"*Pasal kemiskinan ini, biasanya kalau nelayan yang betul-betul miskin dan daif ini, sebenarnya mereka berada di Kawasan pulau lah.." [there are some who are registered with e-Kasih… about 50 people…. generally considered as hardcore poor but not really hardcore. Only as a title. Some go to work at sea, on land….]*

[V6/Q1/RO1]

Further to that, an informant from Kg. Tanjung Kapor shared his opinion that fishers in his village are generally and this can be linked to the availability and ownership of fishing equipment. Nevertheless, he conceded that, even those with small boats using outboard engine would not be starved but have enough to eat. In his own words, the following excerpt is presented:

"*Betul… pendapat saya, bagi kami orang nelayan, tidak semestinya orang nelayan ini mampu. Bergantung dari segi apa kita punya perkakas lah, kalau perkakas kita besar, maka kemampuan boleh lah, tapi macam bot-bot yang enjin sangkut, saya rasa makan tu cukup-cukup juga lah" [true, my opinion, for us fishers, it is not that we are capable. Depends on what are our equipment. If our equipment is big, then more capable but for boats with outboard engine, I think we have just enough to eat.]*

[V2/Q1/RO3]

As shown in Figure 4.1 and Figure 4.2, the village scenario depicts a situation which may be considered as evidence of relative poverty based on the measurement using MPI. Most of the houses lack facilities and sanitation is poor with the surrounding area filled with rubbish.

Figure 4.1 Village Scenario at Kg. Landung Ayang

Figure 4.2 Village Scenario at Kg. Ayer

4.2.3 Supporting Evidence Based on Daily Life of SSFs

Evidence of daily life among the SSFs supports the notion that most households are indeed in the category of relative poverty with income averaged at RM50 per fishing trip for those working on larger boats owned by others while those with their own boats and engine can haul in as much as RM50 to RM200 per fishing trip and those without boats and engine, and using traditional methods for fishing such as fishing rod could still catch enough to feed the family. However, an informant from Kg. Ayer did say that there are also occasions when there is no fish to catch at all (V3/Q1/RO4).

According to the informant from Kg. Pantai Bahagia, their village has seven large boats called “kulibu” with a 5-tonne capacity and carry about 12 fishers in one fishing trip. Normally, their profit from their daily catch is divided in half between the owner of the boat and the crews. The portion for the boat owner is further divided between the owner and the engine boat master (juragan) based on 3:1 ratio. The juragan will also take his share from the other 50% portion for the crews. For instance, after

deducting the expenses such as fuel, fish feed and etc and a nett profit of RM2000 is gained in a fishing trip with 9 crews, the owner will get RM750, the juragan will get RM250 and additional RM100 from the portion for the crew, and each crew will get RM100. Hence, the income from a fishing which normally takes an overnight trip can yield RM100 per fisher crew (V6/Q1/RO1).

Figure 4.3 and Figure 4.4 shows that the yield of fish from every fishing trip is still good despite a decline in fish volume over the past few years. The catch of the day is sought by buyers who come to the village to buy the fish and sell them at the wet market in Kudat or in other districts, including Kota Kinabalu. Hence, according to the informant, there is already fish as their daily sustenance. The only thing needed is money from their work as fishers and from the sales of the fish is to buy rice to complete their meals (V6/Q1/RO2).

Figure 4.3 Fishing Boat Arriving in the Morning after a Night Fishing Trip

Figure 4.4 Buyers Waiting to Buy the Fish at 7.00 am

4.3 Small-Scale Fishers' Perception about their Vulnerability

The second theme in the finding refers to the perception of SSFs about their vulnerability. To initiate and encourage the informants to share their experience and knowledge, some trigger questions were asked as follow:

1. In your opinion, are SSFs in Kudat vulnerable?
2. What are the reasons to support your opinion?
3. What are evidences in daily life to show such vulnerabilities?
4. Do you feel that your life and the future of your children and family vulnerable in the near future?
5. Do you feel that your life and the future of your children and family vulnerable in the future?
6. According to your opinion, what are the factors causing vulnerability related to your children's education, climate, lacking in own education, lacking in equipment and gears for fishing, lacking in technology and others?

Based on the definition of sub-themes from the transcribed interviews, the following sub-themes were determined: (i) General perception of SSFs' vulnerability; (ii) Justification and evidence of SSFs' vulnerability; (iii) Climate change vulnerability; (iv) Vulnerability due to Competition from Commercial Fishers; (v) Vulnerability due to Children Education; (vi) Vulnerability due to Own Education; (vii) Vulnerability due to Lacking in Equipment and Gears; (viii) Vulnerability due to Lacking in Technology Knowhow; and (ix) Vulnerability due to Lacking Access to Aids and Subsidies.

4.3.1 General Perception of SSFs' Vulnerability

Almost all of the informants agree that they are vulnerable to a lot of stresses in their daily life. They acknowledged that their catch from fishing is no longer like in the early 1970s and 1980s as there is a decline in fish availability and the increase in competition among fishers including the commercial fishers. Representatives from DOFK and WWFK also agree that SSFs are vulnerable to a lot of factors besides climate change now.

4.3.2 Justification and Evidence of SSFs' Vulnerability

The villages selected to participate in the interviews were all from mainland Kudat coastal area with distance from Kudat town area about 5 km to 20 km away. Kg. Landung Ayang, Kg. Tanjung Kapur, Kg. Ayer, Kg. Pengaraban, Kg. Muhibbah and Kg. Pantai Bahagia are less than 10 km from town and only Kg. Tajau Laut is about 20 km away. Interviews with the informants from each of the villages showed that climate change and depleting fish stock are the main issues faced by the SSFs. However, the main factors causing their vulnerability were not exactly the same. Table 4.1 listed some of the main vulnerabilities that were emphasized by the informants from these villages. There were seven villages from the mainland and vulnerability issues from island SSFs were contributed by the representatives from DOFK and WWFK.

Decrease in fish stock and fishing areas is shown as one of the main vulnerabilities mentioned by informants from several villages. Other than that, access to fisheries aids and subsidies, and lacking in technology knowhow, lacking in communication technology were also highlighted as vulnerabilities of the SSFs. Harsh

weather and climate change are also noted to threaten the livelihood of the fishers. However, among the islanders, representatives from DOFK and WWFK stated that besides access to fisheries aids and subsidies, the practice of illegal fishing method like bombing and use of poison. An interesting finding added by the informant from Kg. Pantai Bahagia is the recent reduction of petrol and diesel supply to fishers in Sabah. These vulnerabilities will be further discussed in their own sub-sections below.

Table 4.1 Main Vulnerabilities Highlighted by Informants in Different Villages

Code	Village	Main Vulnerabilities
V1	Landung Ayang	• Decreasing interest and expertise of younger generation about traditional fishing skills • Decreasing fish stock and fishing areas • Harsh weather and climate change
V2	Tanjung Kapur	• Lacking in fishing equipment and gears • Lacking technologies knowhow • Access to fisheries aids and subsidies
V3	Ayer	• Decreasing fishing stock and fishing areas • Harsh weather and climate change • Encroachment of fishing areas by commercial fishers • Lacking in communication technology
V4	Pengaraban	• Restriction to catch other marine products which are listed as endangered species e.g., some mollusc • Changing political leadership • Misuse of power among authorities • Use of illegal fishing like bombing and poison by others
V5	Muhibbah	• Access to fisheries aids and subsidies • Low education level among fishers • Lacking in fishing equipment and gears • Encroachment by commercial fishers
V6	Pantai Bahagia	• Decreasing fishing stock and fishing areas • Lacking in communication technology • Weather and climate change • Encroachment by commercial fishers • Limitation in Fuel subsidy
V7	Tajau Laut	• Changing political leadership • Misuse of powers among authorities • Lacking in technology knowhow
Islands	Banggi and other islands within TMP	• Use of illegal fishing method like bombing • Access to aids and subsidies

Source: From Informants in the Survey

4.3.3 Climate Change Vulnerability

Climate change and harsh weather are inevitable environmental factors contributing to the vulnerability of the SSFs in Kudat. In some villages, the impact of weather change and harsh weather on their capability for fishing activities is considered a significant threat to their livelihood. As mentioned by an informant from Kg. Pengaraban, when wet season comes, they have to find other ways of working. Thus, climate change is inevitable but it does not mean that they don't have other means of living. However, attitude does come into play as some fishers are hardworking while others are lazy.

> *"Apabila terkena musim tengkujuh, mereka akan kerja di darat macam tukang kayu. Tetapi sikap nelayan ada satu. Ada yang rajin dan ada yang malas" [when it is the wet season, they can work on land like carpenter. But fishers have their own attitude. Some are hardworking, some lazy.]*
>
> *[V1/Q2/RO4]*

Bad weather is not always something that cause vulnerability to the SSFs. According to one of the informants, there are more fish coming out after a flooding season, especially the high-quality fish. This could be a good haul for the fishers.

> *"Tidak semestinya cuaca tidak bagus tiada pendapatan. Macam baru-baru ini, cuaca tidak bagus tapi semua ribu pun…musim banjir ikan keluar, satu hari mau satu ribu… ikan numbur satu lagi keluar. Dalam empat lima hari, dia boleh tabung lima enam ribu." [Bad weather does not mean no income. Like recently, the weather was not good but it comes in thousands. flooding season, fish go out, one day can gained one thousand…even the best fish comes out. In four or five days, can save five to six thousand.]*
>
> *[V1/Q2/RO4]*

Not every fisher takes advantage of the great hail during bad weather though, as some are simply lazy as mentioned by one of the informants.

> *"Tidak semua nelayan ini sama. Bila tengok cuaca, setengah-setengah nelayan ini tidak mau. Malas tu jadi punca." [Not all fishers are the same. When they see the weather, some fishers do not want to. Laziness is the reason.]*
>
> *[V1/Q2/RO2]*

However, for those who do take the opportunity, the haul can be good. A night of fishing yields the number one fish, the red snapper. Hence, it depends on the fishers whether to reap the benefits during raining season or not.

> *"Yang baru-baru ini, satu malam boleh dapat satu bakul ikan numbur satu lagi tu. Ikan merah. Kalau satu bakul tu lebih kurang 800 hingga 900. Dalam satu bakul setengah lah seorang dapat, mungkin dalam seribu setengah lah satu malam" [recently, a night can yield a basket of the number one fish, the red snapper. If a basket is about 800 to 900. In a one and half basket that a person gets, maybe a thousand and half a night.]*
>
> *[V1/Q2/RO2]*

4.3.4 Vulnerability due to Competition from Commercial Fishers

Another issue that is constantly brought up by the fishers from these villages is the threat from commercial fishers. Although the commercial fishers are not allowed to fish within the 3 nautical miles near the shore but encroachment can still happen. Based on the explanation given by the representative from DOFK, the majority of fishers in terms of catch are from the commercial fishers and a smaller portion from the small-scale fishers at a ratio of 80:20. Although both types of fishers are given their own designated place to fish, the DOFK representative concurred that encroachment is still an issue.

The department has installed I-VMS (Inshore Vessel Monitoring System) on these commercial boats to detect the location of these commercial boats and thus, enforcement can be carried out the minute, they were found to be encroaching the zone prohibited to them.

> *"Nelayan komersil 80 persen dan nelayan tradisi 20 persen, maka itu diwujudkan zon-zon. Nelayan komersil tidak boleh masuk Kawasan nelayan kecil. Namun berlaku pencerobohan. Tapi telah pasang alat sebanyak 98 buah buat iaitu IVMS untuk bot komersil. Kita boleh tahu kalau mereka menceroboh masuk. Jadi kami boleh maklumkan kepada maritim dan polis marin untuk buat tindakan" [Commercial fishers, 80 percent and traditional farmers, 20 percent (yield), so zones were established. Commercial fishers cannot enter the zone for SSFs. But encroachment does happen. A device has been installed on 98 boats, I-VMS for commercial boats. We can know when they encroach. So, we can inform maritime and marine police to take action.]*
>
> *[Q2/DOFK]*

The issue of encroachment is considered serious as the DOFK representative also stated that foreign fishers from Vietnam were also detected and encroaching in this area in pursuit of prized marine resources like sea cucumber.

> *"Kudat ini juga menjadi mangsa pencerobohan nelayan asing Vietnam sebab dorang tahu di kawasan ini khususnya di pulau-pulau ada banyak khazanah contohnya balat." [Kudat is also a victim of encroachment from Vietnam foreign fishers as they know the area here especially the islands have heritage such as sea cucumber.]*
>
> *[Q4/DOFK]*

These large vessels are considered a threat to the SSFs as they take all the fishes even the small one. Hence, the artisanal fishers are left with nothing to fish. A few of

the informants complained that they took the effort to lure the fish from their hiding place with fish feed called ‘bubuk ikan’ which is basically small shrimps but once the fish come out, the large vessel would use their smaller boats to encircle the area to capture all fish within the vicinity (V3/Q2/RO4; V4/Q2/RO2). Sometimes, these large vessels would lure the fish with strong lights in the night to early dawn, and leaving the SSFs with nothing to catch, even the small ones (V7/Q2/R01). As mentioned by one of the informants, hauling fishes even the young fishes are done by these large vessels.

> *“Kapal besar ni, kalau dia angkut sampai anak-anak ikan sekali. Kalau nelayan kecil, tidak.” [large vessel, once they catch, even include the young fishes too. For small fishers, they don’t.]*
>
> *[V1/Q2/RO3]*

Most of the fishers felt helpless with the situation as they cannot do anything except to accept their fate as lamented by one of the informants.

> *“Kadang-kadang dorang ini mencuri, kau mau bergaduh sama dorang, mau kau dilanggar, dia besar kau kecil. Mati kau. Baru tu bukan dia kenal kau manusia.” [sometimes they come to steal, you want to fight with them, you want to be run over, they are big, you are small. You could die. Some more, it is not that they are humane.]*
>
> *(V3/Q2/R01)*

Such encroachment can be dealt with using enforcement by various authorities including maritime and marine police. The complaints must be supported by evidence of the location of the encroachment, and at best, the complaints are at real-time occurrence. In some of the villages, there are fishers’ group who can forward their complaints of encroachment to the authorities. They are also equipped with communication device to report the incidence. However, not all the villagers and SSFs have such device. Most of them claimed that they do bring their handphones when they go fishing at sea but the handphones are kept in the sealed compartment together with

copies of their fisher license to ensure it does not get wet. Furthermore, even if they have their phone at the time, there is no internet connection at sea.

> *"Nelayan kecil ini ada group. Mana yang pandai bercakap dengan badan berkuasa, mereka kasi tahu. Ada alat hubung sendiri di laut lah untuk memberitahu pihak berkuasa" [small fishers have their group. Those who are good in speaking with the authority will inform them. They have their own communication device at sea to inform the authority.]*
>
> *[V1/Q2/RO4]*

> *"Ada fon tapi bersimpan dalam kotak kalis air, berbungkus plastik Bersama lesen nelayan kami. Mana keluar itu kalau memancing. Lagi di laut, mana ada internet." [there is handphone but kept in water resistant box, wrapped in plastic with our fisher license. It is not out during fishing. Also, at sea, there is no internet.]*
>
> *[V3/Q2/RO3]*

4.3.5 Vulnerability due to Children Education and Lacking Interest in Fishing

The provision of primary and secondary education to children is considered as a measure of poverty and quality of life in Malaysia. It could also be seen as a vulnerability factor for the SSFs in terms of their ability to send their students to school. However, as mentioned by one of the informants, most fishers stress the importance of education for their children as they are well aware of their own state of low education level.

> *"Kebanyakan nelayan sangat utamakan pendidikan anak-anak. Biarlah bapa tiada sekolah, yang penting kamu. Sudah ada perubahan" [Most fishers stressed on education for their children. It does not matter that father has no schooling as long as the children have. There is change.]*
>
> *[V1/Q2/R01]*

Although it is good that the fishers regard education as an important asset for their children, they also agreed that they do not encourage their children to become fishers anymore. A few informants stated that they prefer their children to find employment by working in the public and private sector instead (V1/Q2/RO2; V4/Q2/RO1). Some of the informants admitted that their children are not interested to catch fish in the sea and most families do not encourage their children to work as fishers (V2/Q2/RO4; V3/Q2/RO4; V6/Q2/RO2). However, there are also children who did not fare well in education, that they did not pursue their secondary or tertiary education. These children would then follow in their father's foot step to become fishers {V7/Q2/RO1).

Hence, the reluctance of the younger generation to become fishers and the discouragement from families toward fisher as an employment could become a vulnerability to the community of fishers in the long run as there will be lesser local individuals becoming fishers in the near future.

4.3.6 Vulnerability due to Own Education Level

A quick survey of the demographic profiles of the informants who participated in this study had shown that a majority of them have primary to secondary education only. Many fishers especially in the island region have low level of education. This cause them to become vulnerable especially when they have to apply for permits and license. As explained by DOFK representative, some of the island fishers have to come to the mainland to obtain permit for fisheries, boats, fishing equipment and so forth. Some might want to apply for subsidies and living aids. However, they are challenged by their level of literacy and education as they do not understand the process, even to fill in forms and make banking transactions. As stated by the DOFK representative,

> *"Disebabkan mereka mungkin agak naif, mereka tidak tahu macamana mengurus sebab jauh sangat. Contohnya di Banggi, mereka terpaksa pergi ke Kudat untuk benda-benda begini, dapatkan lesen bot, lesen perikanan dan lepas itu, berurusan dengan kami dan LKIM. LKIM yang akan bagi bantuan. Duit masuk dalam akaun bank. Apabila berurusan*

dengan bank inipun, mereka agak..., ya lah, orang kampung, susah bagi mereka." [Because they may be naïve, they don't know how to manage them because they are far. For instance, Banggi, they have to come to Kudat for things like obtaining bot licence, fisheries license and then, to deal with us and LKIM. LKIM will give them aids. Money goes into their bank account. When they deal with the bank, they become… yes, they are simple folks, difficult for them.]

[Q2/DOFK]

4.3.7 Vulnerability due to Lacking in Equipment and Gears

According to findings from the interviews and confirmed by information gathered from the representative from DOFK, not all fishers are equipped with adequate and suitable fishing equipment and gear. Most of the fishers are still using small boats which they made on their own, using paddles, not equipped with safety equipment, and often using traditional fishing equipment like hook and line, driftnet and traps. Information from Kg. Muhibbah stated that because of the use of traditional methods like hook and line, some SSFs may not even haul any catch in a day to feed their family.

"Kalau balik pergi rumah, lauk pun tidak dapat. Kami ini memancing guna umpan hidup. Kadang-kadang tidak dapat." [going back home, we don't even get anything for meal. We fish using life bait. Sometimes, we don't get anything.]

(V5/Q2/R01)

The informants also stated that they do not have the capital to buy their own equipment and gears for fishing, and expecting assistance from the government. However, such assistance is not easily accessible, as explained by one of the informants.

"Kemampuan membeli peralatan sendiri perlu bantuan. Mau e-Kasih. Kalau tiada e-Kasih, tidak dibantu. Meminta memohon pun, yang senang-senang, goyang-goyang kaki dapat, yang betul-betul meminta,

tidak dapat." [Capability to buy own equipment requires assistance. Wanting e-Kasih. If there is no e-Kasih, cannot be assisted. Though we ask, apply, but those who got it are those who didn't do anything rather than those who really need them.]

(V5/Q2/R01)

Based on comments from the informants, they truly appreciate the assistance and it is important that the assistance should be given to the right people so that it can be truly valued.

"Orang nelayan ini, bila dia dapat satu enjin, satu bot, kalah-kalah dia dapat emas satu kilo. Tetapi itu benda bila kau bagi kepada orang yang tidak boleh menggunakan itu barang, tidak ada nilai. Kadang-kadang dia kasih jemur, paling tidak dijual. [these fishers, when they get one engine, one boat, as if they got one kilo of gold. But if these things are given to those who are not using them, there is no value. Sometimes, it is left out in the sun, or even being sold.]

(V7/Q2/R01)

4.3.8 Vulnerability due to Lacking in Technology Knowhow

Based on the interviews with the informants from among the SSFs and the representatives from DOFK and WWFK, lacking in technology knowhow is one of the vulnerabilities of the SSFs in Kudat. Most of the SSFs may not have their own boats and engines or even safety equipment. Far more, to own devices such as GPS, I-VMS and such.

"Lagipun cara penangkapan mereka pun agak tradisi, bot pun kecil, tidak ada teknologi yang canggih di atas bot, jadi kalau dorang berdaftar dengan kami, kami boleh bantu dengan bagi kursus seperti kursus GPS" [However, their fishing method is a bit traditional, boats are small and

they have no advanced technology on the boat. If they are licensed with us, we can help them by giving them training like GPS training.]

[Q4/DOFK]

However, the informants are willing to learn new technologies that could help them manage their fishing more efficiently. Some of them would not mind being given the I-VMS but they admitted that they would not be able to afford such device (V2/Q2/RO3; V3/Q2/RO5).

"Kalau aku punya pandangan, itu pengesan ikan, dia masih tidak boleh lawan itu kemahiran nelayan. Itu pengesan, untuk laut dalam boleh. Pesisir tidak boleh. [In my opinion, the fish detector, still cannot beat the skills of the fishers. The detector, is for deep sea, not for coastal area.]

(V1/Q2/R01)

Informants from Kg. Landung Ayang however, placed their confidence in their ability to detect the presence of fish using their traditional knowhow and claimed that modern device such as the fish detector only works in deep sea condition.

"Kalau aku punya pandangan, itu pengesan ikan, dia masih tidak boleh lawan itu kemahiran nelayan. Itu pengesan, untuk laut dalam boleh. Pesisir tidak boleh. [In my opinion, the fish detector, still cannot beat the skills of the fishers. The detector, is for deep sea, not for coastal area.]

(V1/Q2/R01)

4.3.9 Vulnerability due to Lacking in Access to Aids and Subsidies

Access to aids and subsidies was also highlighted as a factor causing the vulnerability of fishers especially in terms of getting the equipment for fishing and living aids to improve their livelihood. The provision of aids and subsidies to the SSFs mainly comes from the e-Kasih program although there is also assistance given by the Fisheries

department on an annual basis. Other agencies such as LKIM also provides loan facilities to enable the SSFs to buy their own equipment and necessities. However, to obtain these aids and subsidies, access is not straightforward and transparent. Often, the aids are not channelled to the right recipients. As mentioned by one of the informants, those who truly need the equipment would be truly grateful. /

> *"Orang nelayan ini, bila dia dapat satu enjin, satu bot, kalah-kalah dia dapat emas satu kilo. Tetapi itu benda bila kau bagi kepada orang yang tidak boleh menggunakan itu barang, tidak ada nilai. Kadang-kadang dia kasih jemur, paling tidak dijual. [these fishers, when they get one engine, one boat, as if they got one kilo of gold. But if these things are given to those who are not using them, there is no value. Sometimes, it is left out in the sun, or even being sold.]]*
>
> *(V7/Q2/R01)*

The informants of this study claimed that access to these aids and subsidies are not easy due to too many criteria to meet, and too many organisations involved in the approval process.

> *"Kadang-kadang kita meminta bantuan daripada kerajaan, terlalu banyak syarat untuk memohon. Susah. Kalau memohon, kena minta pergi Perikanan, Pelabuhan, LKIM. Jabatan-jabatan lain susah mau bagi sokongan." [Sometimes we ask assistance from the government, too many conditions for applying. Difficult. If we apply, we have to go to Fisheries, Port, LKIM. Other organizations are reluctant to give support.]*
>
> *(V3/Q2/R04)*

According to the explanation from the government representatives, e-Kasih is a program that focuses on helping the hardcore poor. The role of DOFK is to provide list of names of potential recipients of e-Kasih based on the recommendation of the village

chiefs. Nevertheless, the process of selecting villagers as recipients for e-Kasih seems to be lacking in transparency and although there appears to be roles and responsibilities played by each and every government and non-government's department/agencies, yet, there is no real collaborative effort of a transparent selection process. The informant who is also a village chief proposed that the community leaders in the particular village should be included in the assessment and decision making

> *"Kadang-kadang ini, penilai itu dari daerah lain, mereka hantar ke sini untuk tanya-tanya begitu, macamana dia tahu kedudukan sebenarnya orang itu,. Bagilah orang tempatan yang diberi tauliah di sini adalah Pengerusi JKKK atau JPKK. Bagi dia peranan dan kita buat satu jawatankuasa pemantau untuk JPKKN supaya telus." [Often, the assessors are from different district that they sent here to ask. But how can they really know the real situation of the person. Give the authorised local people like the JKKK or JPKK Chairperso. Give them the role and we can create a monitoring committee for the JPKKN so that it is transparent.]*
>
> *[V7/Q2/RO1]*

As mentioned by one of the informants, the number of hardcore poor in the villages is not high as most of the villages are in the category of relative poverty. Hence, it is necessary that the selection of the right people to receive the assistance should include the participation of the leaders in the village.

> *"Sebenarnya kalau di sini ini hanya 4 atau 5 sahaja yang miskin tegar. Semua di sini ini miskin. Cuma untuk mendapatkan kelulusan sebagai e-Kasih ini, bukannya mudah…. bagilah kuasa kepada pengerusi JKKK yang betul-betul untuk menyenaraikan orang-orang dia e-Kasih. Kalau dia khianat, kalau dia menipu, kita ada undang-undang, tangkap dia.kerana tidak boleh dipercayai"[actually, here, there are only 4 or 5 hardcore poor. The rest are poor. But to get approval as e-Kasih is not easy… empower the JKKK chairperson who can truly list their people*

for e-Kasih. If they desist or lie, we have laws, catch them if they are not trustworthy.]

[V7/Q2/RO1]

The situation was highlighted in almost all of the villages that participated in the interviews. Hence, they are also seeking for solutions to improve the current situation. As one informant stated below, more stringent effort such as giving compound should be done to curb the practice of selling the equipment provided to them.

"Kita tekankan ini adalah hak kerajaan, tidak boleh dijual… kurang-kurangnya ketua kampung harus kasih faham harta itu tidak dijual. Kalau jual, dikompaun." [we stressed that this is government's rights, cannot be sold…at least, the village chief has to made them understand that the property is not for sale. If sold, will be compounded.]

(V5/Q2/R01)

4.3.10 Vulnerability due to Other Factors

Other vulnerabilities presented during the interviews include the use of illegal fishing method such as fish bombing. However, in all the villages that participated in the interview, fish bombing is no longer practised but in other areas such as Indarason Laut in the Matunggong area and in Banggi island, fish bombing is still rampant. The DOFK representative explained that the bombed fish is mostly used for the salted fish market.

"Memang tiada sudah bom ikan lah di Kawasan Landong Ayang. Biasalah di pulau. Dorang bom ikan untuk pasaran ikan masin. Area sebelah Indarason, masuk daerah Matunggong dan Pulau Banggi masih guna. Mereka guna untuk pasaran ikan masin." [here definitely no more fish bombing at Landong Ayang. Normally the island. They bombed fish for the salted fish market. Area around Indarason, in the Matunggong Area and Banggi island, still in use. They use for salted fish market.]

[Q2/DOFK]

The fish bombing practice was initially introduced by illegal immigrants residing in this area and due to mixed marriage, local people learned the method.

> *"Bom ikan… sebenarnya dibawa oleh pendatang asing yang tinggal dan menetap sini. Nelayan sini ada mempelajari cara ini." [fish bomb…. Actually, was brought here by illegal immigrants living and residing here. The local fishers learned this method.]*
>
> *[Q2/DOFK]*

The fish bombing practice has been actively addressed through the collaboration of various agencies as explained by the DOFK representative.

> *"Kita juga ada satu projek usahasama dengan beberapa agensi seperti WWF, Taman-Taman Sabah, Polis Marin, kita pernah pasang beberapa alat untuk mengesan letupan ini" [We also have a collaborative project with several agencies like WWF, Sabah Parks, Marine Police. We have installed some device to detect these bombs.]*
>
> *[Q2/DOFK]*

Besides that, the fishers and fish mongers also act as the eyes and ears for such practice. Any bombed fish sold in the fish market would quickly be reported to the authority.

> *"Di sini bila ada ikan yang ditangkap guna bom ini. Jika dibawa ke pasar, lain meja akan kasih tahu kami (Perikanan)." [Here, when there are fish caught by bomb and brought to the market, other tables will inform us.]*
>
> *[Q2/DOFK]*

A recent issue highlighted by informants in the interview is the limitation to diesel supply that they can get from the petrol stations. Previously, the fishers can buy

200 litre per day from the petrol station in 2022 but a new regulation was made effective as of January 6, 2023 to limit the supply of diesel to only 50 litre per day (*see* Appendix 4). The restriction in supply was considered as "cutting the throats" of the fishers as they stated that a trip to the sea often requires a long journey of 3 to four hours and fuelled by more than 50 litre per day (V7/Q2/RO1). Hence, lacking in fuel resources could threaten the livelihood of the fishers as this is a main resource for their fishing activity.

4.4 The Impact of Zoning in Tun Mustapha Park on Small-Scale Fishers' Vulnerability

The third theme in this study relates to the impact of zoning in TMP to the SSFs vulnerability. In generating discussion and gathering more insights from the informants, the following questions were used as guide during the interview.

1. Do the SSFs in this village understand the concept of zoning at TMP?
2. Does the existence of the zone threaten the livelihood and fish capture for the SSFs?
3. In your opinion, do you support the existence of the fishing zones?
4. Does the zoning protect your fish catching area?
5. Does the zone help to prevent threats from competitors among the commercial fishers?

There was no division into sub-themes for this theme and the main theme was used to capture the feedbacks and opinions from the informants. The informants from Kg. Pengaraban stated that most of the villagers were caught unguard with the gazettement of Tun Mustapha Park as a marine protected area and establishment of the fishing zones in 2016. However, they had no choice but to accept the decision. Based on feedbacks from the informants, the zoning at TMP is accepted as it is although, their understanding about the existence of TMP might vary. A majority appears to accept the zoning as something mandated by the government, and they have to follow and adapt to the situation. The impact of zoning to the SSFs livelihood and their fish capture appears to be an issue that is not given much thoughts except in their claims that the zoning was ineffective in curbing the encroachment issues from large fishing vessels.

Although the zone exists, it appears that the large commercial vessel could still lure fishes to them using strong lights during the night.

> *"Walaupun ada zon tapi masalahnya, kapal besar tu pasang lampu. Ikan-ikan datang sama dorang." [Although there are zones, but the problem is, these large vessels turn on lights. The fish come to them.]*
>
> *(V5/Q2/R01)*

The informants felt that the zoning was still ineffective especially in curbing the commercial fishers from encroaching and taking fishes of all sizes including the young ones which are sold to the fertilizer factory.

> *"Payah ikan sekarang. Pasal apa, yang kecil-kecil pun tidak sempat besar. Ikan mau bertelur tidak sempat bertelur, sudah kena tarik. Ada kilang baja di sini." [fishing is tougher now. Why? Because even the young fishers have no chance to grow big. Fish want to lay eggs also not able to, they are already pulled. There is a fertilizer factory here.]*
>
> *(V3/Q2/R04)*

They know the existence of laws but the informants from these villages felt that enforcement of law to curb encroachment from the commercial fishers is still lacking.

> *"Kalau tidak ada tindakan, tidak ada guna. Sebab semua ini perlu tindakan. Jabatan Perikanan ada semua garis panduan, tatacara, peraturan. Kalau ada tindakan, boleh selesai itu." [if there is no action, then it is useless. Because all these require action. The Fisheries Department has all the guidelines, procedures, regulations, if there is action, this can be settled.]*
>
> *(V3/Q2/R04)*

4.5 Government Support in Dealing with Small-Scale Fishers' Poverty and Vulnerability

The fourth theme deals with government support in dealing with SSFs' poverty and vulnerability. For this part, the main informants are the senior officers from DOFK and WWFK. However, opinions from the SSFs were also considered. To develop the sub-themes, the following questions were asked during the interview.

1. What are the roles of your department/agency in addressing the poverty and vulnerability issues of the SSFs?
2. What are examples of programs or activities carried out under your department/agency to help SSFs alleviate poverty and reduce their vulnerability?
3. What is the success rate of these programs and activities carried out under your department/agency?
4. What are the challenges that your department/agency faced in dealing with SSFs' poverty and vulnerability?
5. What are future recommendations and solutions from your department/agency to deal with the SSF's poverty and vulnerability?

After reviewing the transcribed interviews, the following sub-themes were selected and will be discussed as findings in this study: (i) Government's roles in poverty alleviation and reducing vulnerabilities of SSFs; (ii) Programs/activities on poverty alleviation and addressing vulnerability of SSFs; (iii) Challenges of the past/current programs/activities; (iv) Future endeavours

4.5.1 Government's Roles in Poverty Alleviation and Reducing Vulnerabilities of SSFs

The Fisheries Department and other NGOs such as WWF play their respective roles to help the SSFs in poverty alleviation. The Fisheries Department representative stated that SFFs are eligible for financial aids and subsidies from the respective authorities such as LKIM but one of the criteria to obtain these aids and subsidies is that the SSFs must be registered and licensed. In other words, SSFs among the illegal immigrants and

without proper documentations are not eligible for this assistance. However, a majority of those under the hard-core poverty category are individuals and households who may not have proper documentations although they have resided in Kudat for many years. For local SSFs, their access to financial aids and subsidies begins with registration and license from the Fisheries Department.

> *Dorang ini tidak ada sokongan dari segi kewangan lah. Maksudnya disini, bila mereka tidak berdaftar dengan kami, sudah pasti mereka akan menangkap ikan ini, method mereka dengan cara tradisi, yang dulu-dulu punyalah. Tapi bila mereka berdaftar dengan kami sebenarnya, ada dua kemungkinan. Satu, mereka akan dapat elaun sara diri, tiga ratus satu bulan, kalau laki bini, sudah enam ratus kan. Kalau musim tengkujuh tidak dapat menangkap ikan, mereka masih ada benda ini. Satu lagi, mereka akan ada subsidi minyak. Mereka mendapat harga subsidi minyak di stesen-stesen minyak dalam seringgit tiga puluh sen untuk petrol" [they don't have support financially. This means that when they are not registered with use, of course they will catch fish but their methods are traditional, of the past. But when they register with us, actually there are two possibilities. One, they get subsistence allowance, 300 a month, if husband and wife, already 600. During wet season and they cannot catch fish, they have this thing. Another one, they will have fuel subsidy. They can get the price of subsidized fuel at the petrol stations at RM1.30 for petrol.]*
>
> *[Q4/DOFK]*

Although the ownership of fisheries license seems important and provide access to financial aids, loans facilities and subsidies, the number of all fisheries license at present is only 1,300 and fishers who are boat and engine owners are only about 900. The rest of the licenses are licensing for different types of nets and others. Based on estimation of DOFK, only 50 percent of the fishers in Kudat are licensed.

"lesen yang dikeluarkan dalam 1300 orang tetapi pemilik yang betul-betul dalam 900. Ada lesen-lesen lain untuk menangkap ikan. Dalam 50 persen sahaja daripada nelayan sini Kudat ada lesen lah." [licenses are issued to about 1300 persons but actual owners are only about 900. There are other licenses for fishing. About 50 percent only of the fishers in Kudat are licensed.]

[Q2/DOFK]

T**he WWFK** representative added that most fishers are not familiar with the licensing process and how to obtain financial aids and subsidies from the government. As an NGO, their **main roles are to disseminate information and assist these fishers to the right authorities.** Hence, WWFK as a NGO plays the role of information dissemination to the local communities when they carry out their programs and activities with the communities.

"As NGO, we give them guidance where they can get license, aids when we meet them. Usually, we have monitoring facilitation process where we meet most of the fishermen, and some of them got access to aids, so when they asked us, we share the information to them but after that, it is up to them lah."

[Q2/WWFK]

It is also the responsibilities of the government agencies such as Fisheries Department and WWF to create awareness and instil safety in fishing activities among the SSFs. One way of doing this is to remind the fishers of the consequence for not having life safety jacket enough for their use during at sea.

"150 tu denda oleh maritim kalau tidak ada jaket keselamatan" [150 is the penalty by Maritime if there is no life safety jacket.]

[Q2/DOFK]

Another role of the government through the **Fisheries Department is in the provision of various trainings** for the SSFs. These programs are varied and deals with enhancing their awareness about safety in fishing practices and methods, introduction of new technologies, alternatives besides sea fishing, among others. However, responses to these programs are not exactly promising.

> *"Memang banyak latihan untuk nelayan tetapi sambutan mereka. Bagi saya di Kudat, benda-benda baru, mereka tidak mau, mereka lebih selesa dengan cara penangkapan mereka. Contohnya, I-VMS tu lah, bila kita suruh pasang, dorang berkeras tidak suruh pasang sebab mereka tidak mau kita tau di mana dorang menangkap ikan." [There are in fact, many training for fishers but their response... For me in Kudat, new things, they don't want, there are more comfortable with their ways of fishing. For example, I-VMS, when we ask them to instal, they are adamant not to install because they don't want use to know where they are fishing.]*
>
> *[Q2/DOFK]*

Similarly, response to their trainings on aquaculture in Kudat is not great as there is less demand for freshwater fish.

> *"Akuakultur semakin popular kalau di bahagian darat. Tapi di Kudat ini, kurang sambutan untuk ikan air tawar." [Aquaculture is gaining popularity in the mainland. But in Kudat, there is less response to freshwater fish.]*
>
> *[Q4/DOFK]*

4.5.2 Programs/Activities on Poverty Alleviation and Addressing Vulnerabilities of SSFs

The government through the Department of Fisheries conduct various programs and activities to help with poverty alleviation and addressing vulnerability issues of the

SSFs. Among them is awareness campaign to curb the practice of fish bombing, planting artificial corals, and promoting fish stock through conservation of critical marine animals such as turtles.

> *"Kita ada juga buat beberapa kempen untuk anti bom ini. Apabila ada pameran-pameran, kami ada demonstrasi untuk mengenalpasti ikan yang ditangkap menggunakan bahan letupan dan denda-denda yang dikenakan kepada mereka yang memiliki atau menggunakan bom." [we have done a few campaigns for anti-bombing. When there are exhibitions, we demonstrate how to identify fish caught by using bomb and the penalty for those in possession and using bombs.]*
>
> *[Q4/DOFK]*

> *"Kita juga ada satu program dipanggil 'Melabuhkan Tukun Tiruan' Kita akan ada beberapa kampung yang kita rasa sesuai kampung itu sesuai untuk labuhkan tukun dan tukun ini tujuannya untuk meningkatkan populasi ikan. Bila tukun ini ada di kampung mereka, dorang macam tidak perlu merantau jauh untuk menangkap ikan. Di Kawasan Kudat dan Banggi. Tahun ini mungkin dibuat di Lok Tohok Banggi." [we have one program called 'Anchoring the Artificial Corals'. We will have a few villages which we think is suitable for anchoring the corals and the aim of the corals is to increase the fish population. When there are corals, the fishers in the village does not need to go far to fish.]*
>
> *[Q4/DOFK]*

> *"Kita ada buat satu program TED – Turtle Excluder Device. Tujuannya untuk kita mendidik kapal pukat tunda ni supaya kalau dorang dapat penyu kan, jadi penyu akan dapat melepaskan diri dia sebab penyu ini masih berguna untuk kita punya terumbu karang di sini" [We did one TED program – Turtle Excluder Devise. The aim is to educate trawlers*

so that when they capture turtles, the turtles should be able to escape as these turtles are needed for us to have coral reefs here.]

[Q2/DOFK]

"Bila batu karang rosak, makin sengsaralah nelayan-nelayan di sini." [When corals are damaged, then, the fishers here would be more miserable.]

[Q4/DOFK]

4.5.3 Challenges of Past and Current Programs/Activities

The implementation of projects and activities for the local community is not without challenges. **According to the DOFK representative, the main challenge is the weather itself. The unpredictable weather limits their capacity to outreach the villages especially those which are far.** Another challenge is their own equipment in terms of boats, vehicles and equipment. In order to reach the villages, their own asset must be in good condition and adequate in size.

"Bila kita ingin bergerak untuk membantu nelayan, kita pun bergantung kepada cuaca. Keadaan cuaca agak tidak menentu. Kita kena bergerak awal pagi, balik sebelum tengahari. Sedangkan jauh perjalanannya.Jadi, kadang-kadang kami terpaksa bermalam." [When we want to move to help the fishers, we have to depend on the weather. The weather can be unpredictable. We have to move very early in the morning and get back before noon whereas the journey is far. So, sometimes, we have to stay overnight.]

[Q4/DOFK]

"Kita punya aset pun sebenarnya, kita punya bot mesti gagah dan besar. Sebab di sini, jarak perjalanan agak jauh untuk sampai ke kampung

nelayan ini." [We have assets but truthfully, we need boats that are strong and big. Because here, the journey is far to reach the villages.]

[Q4/DOFK]

Another issue that challenges the implementation of projects and activities by the Department of Fisheries as well as other agencies is the cooperation and involvement of the local communities. The local leadership must be strong and the leaders committed to help their people but only a few of these villages have such asset. Leaders like in Limbuak, Banggi is an example of such leadership whereby he helps his people in the registration and licensing process, as indicated in the following excerpt.

"Limbuak di Banggi lah. Dia punya JKK amat membantu. Dia yang akan check perahu sendiri untuk 20 orang dia dan dia sendiri akan datang sendiri ke sini (pejabat perikanan) untuk berurusan bagi pihak mereka…. Dia sanggup tolong orang semua tu. Berbanding dengan orang kampung tu datang sendiri. Jadi, kami pun senang lah kerja." [Limbuak in Banggi. The JKK is extremely helpful. He will check the boats himself for 20 people and he himself will come here to deal for them… He is willing to help all his people, rather that the villagers come on their own.]

[Q4/DOFK]

4.5.4 Future Endeavours

The Fisheries Department along with other government and non-government agencies are always thinking of new and innovative strategies to help SSFs in alleviating their poverty status and dealing with their vulnerabilities. The Fisheries Department for instance, is still trying their best to encourage more SSFs in Kudat to embark on aquaculture business and to integrate the business in a broader sense to include other potentials in Kudat, which is tourism.

"Kita ada beberapa yang kita namakan Pengusaha Ladang Akuakultur Contoh (PLAC). Maksudnya dia pernah buat ternakan ikan dalam sangkar dan sudah bermula dan sekarang sudah cantik. Dia boleh tarik pelancong sebenarnya. Orang-orang lebih suka tengok benda hidup sebenarnya, seperti ikan. Oleh itu, bila kita bawa mereka pergi tengok, dengan persekitaran yang ada laut, ada burung-burung, ada kapal-kapal lagi, jadi cantiklah. Ada ikan besar-besar lagi. Jadi dorang sukalah. Khayal dorang di sana, jadi, advantagenya, naluri kita sebenarnya kita lebih tertarik kepada benda-benda yang bergerak dan sebagainya, boleh menenangkan fikiran, jadi ada advantage kepada kami." [We have several called Models of Aquaculture Farm Operators (PLAC). This means that he has done fish rearing in cage before and is now operating and nice. This can attract tourist actually. People are keener to see living things like fish. Hence, we can bring them to see an environment with sea, birds, ships, so it is nice. There are also big fish. So, they like it. They become mesmerised there. The advantage is, it is our natural sense to be attracted to moving things and all, can clear the mind, so an advantage for us.]

[Q4/DOFK]

Besides that, future endeavours include more engagement with the local communities and encouraging them to participate in decision-making about issues and management of the marine park that concern their livelihood [V7/Q4/RO1; Q4/DOFK; Q4/WWFK].

CHAPTER 5

DISCUSSION, RECOMMENDATION AND CONCLUSION

5.1 Introduction

This chapter presents the discussion, recommendations and conclusion of the findings that were reported in the previous chapter. The discussion of the research findings is based on the research questions and addressing the incidence of poverty and vulnerability of the SSFs, impact of TMP Fishing Zones and Government support to SSFs. After that, the implications of these findings are discussed from theoretical, methodological and practical perspectives. Then, recommendations of future endeavours are given and the chapter ends with an overall conclusion.

5.2 Discussion of Research Findings

The discussion of the research findings is based on the research questions which are stated below:

1. How do the small-scale fishers perceive their poverty and to what extent are their poverty level?
2. According to the small-scale fishers in Kudat, what makes them vulnerable and to what extent do these perspectives differ from the theory and other studies?
3. To what extent does the zoning in Tun Mustapha Park affect the small-scale fishers' vulnerability?
4. To what extent are the government support in dealing with small-scale fishers' poverty and vulnerability?

Based on these research questions, the following sub-sections were created to answer each of the research questions.

5.2.1 Poverty among SSFs

Evidence from the interviews with informants from both the SSFs and government and non-government representatives showed that majority of the SSFs are in the relative poverty category. In other words, only a small percentage of the SSFs are in the hardcore poor category. Nonetheless, this is especially through when the statistics cover only Malaysian with proper documentations. Although there appears to be about 5 to 20 percent of e-Kasih recipients in each of the villages who can be categorised as hardcore poor, a reality check among the informants indicated that most SSFs are relatively poor. By using the PLI indicator alone, the incidence of poverty cannot be ascertained because the monthly income of the fishers is not stable. **In good times, they can earn a few thousands a day, while on bad weather condition, they might not earn nothing. Thus, the MPI measurement was more accurate to describe the poverty level of the fishers.** By using the MPI method, relative poverty is indicated in most of the fishers. Although they may have fish as their protein supplement of the day, the fishers still need to buy other food items like rice, vegetable, cooking oil, and others. As for non-food items, it appears that the fishers do have sufficient clothing and footwear but other home facilities and appliances as well as utilities might not be adequate. Some of the villages where the SSFs are currently residing are squatter colonies where there are issues of standard living conditions. According to Bhari et al. (2022) and Department of Statistics Malaysia (2020), one of the criteria to determine poverty is standard of living. There must at least be rooms with not more than two occupants per room, garbage collection facilities, availability of private and public transportation, and possession of landline telephones or handphones. The visits to the seven villages and observation of the living condition around these villages implied that many villages did not comply with the standards for living condition. Hence, this supports the general notion and validates the survey report from the Department of Statistics Malaysia that SSFs are relatively poor.

5.2.2 Vulnerability among SSFs

Survey on the SSFs in Kudat also led to interesting findings about their vulnerability. As explained in the Vulnerability Framework in Etongo and Arrisol (2021) and Samsinar et al. (2021), there are many factors causing vulnerability among fishers. **In**

this study, climate change and natural risks are considered as the main vulnerability of the SSFs as the unpredictable weather could cause fishers to not go to sea and stay at home. However, findings indicated that there is adaptive capacity in some of these SSFs. Attitude for instance, is a driver of adaptive capacity. Allison and Horemans (2006) explained that human capital which encompasses skills, experiences and attitude are adaptive capacity to deal with vulnerability. Based on findings from the interview, it was found that the climate change is inevitable but it does not always seem to be a vulnerability but instead, with resilience, bad weather can be perceived as an opportunity to catch more fish. **Findings from the survey implied that the catch during raining seasons and after flooding can be more as fish tends to go out in pursuits of the debris and other sludges brought by the flood and rain.** It requires a hardworking attitude rather than being lazy among the SSFs. Besides that, fishing is a traditional job of the SSFs and they have their own knowledge and experience in detecting where the fish are located. **Thus, these human capital factors – attitude, knowledge, experience – are considered as adaptive capacity to improve the livelihood of fishers and decreasing their vulnerability.**

Further discussion on vulnerability based on human capital includes the issues of education among the SSFs and their children. The findings showed that most of the SSFs have low level of education. Hence, their adaptive capacity to deal with this issue is to ensure that they emphasize education for their children. Nonetheless, the indirect effect of these children pursuing their education is that, not all of these children will become fishers in the future. Mainly, those who did not do well in their schooling return to their traditional job as a fisher.

Other than that, the vulnerability of the SSFs can be described in terms of natural capital such as fish stocks, accessed fishing areas and such. From the interviews, environmental risks and government policies are triggers to their vulnerability. The practice of overfishing, use of illegal and non-environmentally sustainable fishing methods such as fish bombing, and encroachment from commercial large vessel fishers are threats to the livelihood of SSFs in Kudat. Government policies such as enforcing fishing zones in the TMP areas were deemed as

a means of improving their natural capital but lacking in enforcement, difficulty of the SSFs to report encroachment incidence and their helplessness when facing these commercial fishers in their own areas undermine the benefits of the TMP policy for fishing zonation. Their lacking in technological knowhow and advanced communication devices such as I-VMS, GPS and such were also hindrance associated with their vulnerability on natural capital. WWF Malaysia (2017) admitted that trawlers and purse seines' activities into the traditional fishing zones can be detrimental to the fish population and reducing fish stock in future time.

The vulnerability of SSFs was further examined in terms of physical capital. As shown from the survey findings, most of the SSFs experience inadequacy of boats, engines, safety equipment and even house amenities and appliances. They are also equipped with traditional self-made boats, oars, nets and fishing rods. Their challenges to access aids and assistance in terms of equipment and gears for fishing from the government further added to their vulnerability. **One of the adaptive capacities highlighted from the survey interviews is the need for local leadership among the SSF communities. Major hindrances in acquiring the assistance from the government include: (i) the need for fishers' registration and licensing;** (ii) understanding the application process for the aids and subsidies; (iii) collaboration at inter-sectoral level to help SSFs in the whole process. **The whole process of applying for the aids and subsidies requires a lot of documentation, validation of documents, and cross-referencing among the respective authorities such as Fisheries Department, Port Authority, LKIM, District Office, and others.** The vulnerability of the SSFs in terms of physical capital can be lessened if the SSFs are able to register and obtain their fisheries license, understand the process of obtaining aids and assistance and following through the process successfully. However, as indicated from the survey, only 50% of SSFs are registered and licensed with the Fisheries Department.

Further to that, financial capital in terms of savings, credits, and insurance are also affected by vulnerability of the SSFs (Samsinar et al. 2021). **Survey findings indicated that there are times when the SSFs are laden with cash as their haul from fishing could sometimes be in the few thousand ringgits. However, their**

savings are mostly cash hidden at home, and only a few have bank accounts. The term 'insurance' is quite foreign among the SSFs and the survey findings indicated that none of the SSFs invest in any insurance, except those that are attached to their loan facilities at LKIM. Further to that, only those with fisher license are eligible to loan facility from LKIM. A majority of the SSFs are depending on aids and assistance given by the government. However, as it was extracted from the survey findings, access to aids and subsidies from e-Kasih program is not transparent nor easy.

Another aspect of vulnerability is reflected in social capital. As shown in the survey, one of the adaptive capacities to deal with encroachment and competition from commercial fishers is through community solidarity and association. In some of the villages, the SSFs felt helpless against the competition from commercial fishers because they are fighting the issue individually and not in a group. However, in other villages, they have their own association to safeguard and protect their areas from being encroached by these commercial fishers. Another example of adaptive capacity based on solidarity and network of the community is in their effort to report bombed fish that are sold in the market. Hence, this curbs the locals into fish bombing practice because the market is protected by the community.

The survey also highlighted the role of community leadership as a social capital to deal with SSFs' vulnerability. Exemplary leadership as mentioned in the survey showed that leaders could also play their roles in assisting their people in the registration, licensing and application for aids and subsidies. The local leaders also voiced their concerns for a more transparent process in mobilising aids and assistance to the local community whereby these leaders should be included in the decision-making process.

5.2.3 Impact of TMP Fishing Zones on SSFs

The fishing zones in the TMP areas appeared to be of less concern to the fisher communities as they felt that they were not included in the management of the TMP. Most likely, they are simply the recipient of the policy and they have to adapt to the changes in their daily life. One of the reasons for the indifference among the SSFs lies

with the rampant and continuous encroachment of the commercial fishers despite the gazetted zoning for fishing in Kudat. The community of fishers felt that the zoning did allocate them a privileged area for their fishing activities but **the lacking in enforcement and monitoring of the fishing zones diminishes the benefits of such zoning.** However, d**espite the lack of awareness among the SSFs about the benefits of TMP fishing zonation, the survey also showed that the gazettement of TMP and the zonation of the fishing areas do indeed benefit the coastal local fishers.** Efforts for conservation was not only carried out by Sabah Parks alone but other departments and agencies are also playing their parts. For instance, the Fisheries Department embarked on a project to generate artificial corals to enhance fish stock for the identified villages, training and awareness programs to reduce non-environmental and non-sustainable fishing methods like fish bombing, and release of captured turtles to help the growth of coral reefs.

5.2.4 Government Support to SSFs

This study also found that there are various government supports not only in terms of providing aids and assistance to the SSFs but also in creating awareness and providing training and development to them. The findings showed that the government is putting a lot of efforts into poverty alleviation and reducing SSFs' vulnerabilities. However, these programs and activities also require greater responses from the fisher communities. Further to that, their capability to provide support to the community should also be boosted by providing them with adequate and appropriate assets such as boats, engines, vehicles, among other things, to carry out their responsibilities. The findings from the study also showed that NGOs like WWF Kudat are also advocating governments' programs and activities to the local community.

5.3 Implications of Research Findings

The implications of the research findings are discussed from the perspectives of theory, methodology and practice. Further elaboration is provided in the following sub-sections.

5.3.1 Theoretical Implications

In this study, the understanding of poverty was based on the conceptualization of poverty and its measurement that is practiced in Malaysia, and adapted at the international level, in alignment to the SDGs (Bhari et al., 2022). Hence, the theoretical framework provided a clear picture of how to measure the status of poverty among the SSFs during the survey. Nevertheless, it was also shown that some of the terms used in determining the poverty status of the household are quite subjective. For instance, if the poverty level is measured by living standard based on their possession of physical capitals such as cars, television, cooking stove, etc., then the household would be easily categorised as poor. However, the survey interviews showed that the SSFs are not concerned with their standard of living quarters and they are comfortable and happy living in a house with less furniture and lacking in home appliances. They are also happy with their status of having no car of their own. **Nonetheless, their main concern and the measure of their wealth is based on the size of their boat, the power of their engines, and fishing equipment that they have.** Hence, from this theoretical concern, the current MPI used to measure poverty in Malaysia should consider sensitivity to different needs of the community.

Besides that, the underpinning theories in this study were based on the theory of sustainable livelihood and livelihood resilience. Findings from the study showed that the Sustainable Livelihood Approach (SLA) provided a good framework to understand the vulnerabilities of the SSFs (Allison & Horemans, 2006; Etongo & Arrisol, 2021; Samsinar et al., 2021). However, these theories were more suitable to explain vulnerabilities and how the SSFs deal with their vulnerabilities to ensure a better livelihood. Although poverty can be explained within this framework especially in alignment to the MPI, but these theories at best showed a gap to explain poverty clearly. Thus, the SLA needs to be revised and added with aspects of poverty to transform it into a more comprehensive framework.

5.3.2 Methodological Implications

This study employed the use of qualitative approach using in-depth interviews with informants from the community and government representatives. One of the advantages

of this approach as shown in this study is the capability of this approach to generate a rich source of information. Furthermore, carrying out the interview in the local setting where the villages are located had also proven its advantages. The villages are more open and willing to share their opinions freely. The interviews with the local communities were successful in this study because of the commitment and cooperation from the Fisheries Department in Kudat. The officers and their staff willingly accompanied the researcher during the survey which helps to generate trust with the local people. It was also noted that having the ability to speak in the local Malay dialect is important as the SSFs are more comfortable to speak in the daily conversational language. Hence, these aspects of methodology were the success factor of this study, especially in amassing a rich information that answered the posed research questions.

5.3.3 Practical Implications

From a practical viewpoint, the findings from the study provided many aspects of the SSFs' livelihood that can be improved to ensure a better outcome in terms of poverty and vulnerability. Findings showed that governments' efforts in the past have improved the quality of life among the fishers as the incidence of hardcore poverty has been significantly reduced. However, some of the issues highlighted as their vulnerabilities should be addressed accordingly to ensure these vulnerabilities do not lead them back into poverty. Among them are:

- Designing a more efficient system and process for registration and licensing of SSFs;
- Designing a more efficient system and process for aids and subsidies application with more inter-sectoral collaboration and networking such as cross-referencing application among different departments/agencies;
- Encouraging participation from local leaders in the monitoring and application of aids and subsidies of the SSFs;
- Increasing more efforts on enforcement and monitoring encroachment of commercial fishers into the traditional fishing zones;
- Encouraging more community network and association in monitoring and reporting encroachment cases;

- Encouraging more children of fisher community to take up aquaculture or other entrepreneurial activities to sustain their future livelihood.

5.4 Recommendation on Future Research

This study had provided vast and insightful information to understand the issues of poverty and vulnerability among the SSFs. Besides that, this study has also highlighted the impact of TMP on their livelihood and the government's support to address poverty and vulnerability issues of the SSFs. Nevertheless, this study has also shown a significant gap especially in measuring relative poverty of the fisher community. There is a subjectivity in determining the correlation between physical and material possession, and their state of happiness and wellbeing. Thus, future study should explore the relationship between the poverty state of the livelihood of the SSFs with their wellbeing. Such study might provide more insights to understand how fishers' life is related to their wellbeing and happiness.

5.5 Conclusion

Overall, this study concludes that the SSFs in Kudat mainland coastal areas are relatively poor but they have adaptive capacity including their resilience of the weather, expertise and experience in fishing and finding fishing sites, community solidarity and leadership, and governmental support to address the vulnerabilities in their live. The SSFs in Kudat in general, have not quite understood the benefits they gained from TMP being gazetted as a marine protected area but they also accepted the regulations such as fishing zones, prohibition of fishing in the protected zones, and etc as part of life changes. Hence, more concerted efforts to bring awareness as well as encouraging their participation in decision-making relating to their livelihoods in the TMP area should be carried out. Besides that, despite the various challenges such as inefficient system lacking in transparency of the monitoring and granting process for aids and subsidies, the government especially Fisheries Department and NGOs especially WWF in Kudat have been committed in bringing about positive change on the livelihood of the SSFs.

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APPENDIX 1 – INTERVIEW PROTOCOL

PERIHAL LOKASI

1. Nama Kampung: ……
2. Ketua Kampung: ……..
3. Bilangan penduduk:
4. Jarak dari bandar Kudat:
5. Bilangan yang mengikuti perbincangan:

Objektif 1:

To determine the perception of the small-scale fishers about their poverty and their poverty level

1. Sila nyatakan nama, umur, bangsa dan pekerjaan Tuan?
2. Adakah Tuan nelayan sepenuh masa atau separuh masa?
3. Pada pandangan tuan, adakah golongan nelayan di daerah Kudat ini miskin
4. Apakah sebab dan alasan Tuan terhadap pandangan tersebut (miskin atau tidak)
5. Apakah bukti kemiskinan yang ditunjukkan dalam kehidupan seharian nelayan mengikut pandangan Tuan?

Objektif 2:

To determine the perception of small-scale fishers in Kudat about factors contributing to their vulnerability

1. Pada pandangan tuan, adakah golongan nelayan di daerah Kudat ini terancam kehidupannya?
2. Apakah sebab dan alasan Tuan terhadap pandangan tersebut (terancam atau tidak)
3. Apakah bukti ancaman yang ditunjukkan dalam kehidupan seharian nelayan mengikut pandangan Tuan?
4. Adakah nasib dan masa depan anak-anak Tuan dan keluarga terancam dalam masa terdekat ini?
5. Adakah nasib dan masa depan anak-anak Tuan dan keluarga terancam di masa akan datang?
6. Menurut pandangan Tuan, apakah faktor-faktor yang menyebabkan Tuan merasakan kehidupan nelayan di daerah Kudat ini terancam?
    a. Pendidikan anak-anak
    b. Masalah cuaca
    c. Kekurangan Pendidikan sendiri
    d. Kekurangan perkakas dan peralatan menangkap ikan
    e. Kekurangan pengetahuan tentang teknologi
    f. Lain-lain

Objektif 3:

To investigate the extent to which the zoning in Tun Mustapha Park affects the small-scale fishers' vulnerability

1. Adakah Tuan memahami tentang konsep zon di Taman Tun Mustapha
2. Adakah kewujudan zon ini memberi ancaman terhadap kehidupan nelayan dan penangkapan ikan
3. Apakah pendapat Tuan tentang konsep zon ini sama ada menyokong atau tidak diwujudkan.
4. Adakah zon ini melindungi kawasan penangkapan ikan untuk kegunaan Tuan?
5. Adakah zon ini dapat mengelak ancaman daripada pesaing nelayan yang komersil?

Objektif 4:

To investigate the extent of government support in dealing with small-scale fishers' poverty and vulnerability

1. Apakah peranan agensi/jabatan Tuan untuk menangani isu kemiskinan dan ancaman terhadap golongan nelayan?
2. Apakah contoh program atau aktiviti yang dilaksana di bawah agensi/jabatan Tuan untuk membantu nelayan mengatasi kemiskinan dan ancaman terhadap kehidupan mereka?
3. Apakah kejayaan program dan aktiviti yang telah dilaksana oleh agensi/jabatan Tuan setakat ini?
4. Apakah cabaran yang dihadapi oleh pihak Tuan untuk menangani isu kemiskinan dan ancaman terhadap golongan nelayan?
5. Apakah cadangan masa akan datang atau semasa yang akan dilaksana untuk menangani isu kemiskinan dan ancaman terhadap golongan nelayan?

APPENDIX 2 – APPROVAL LETTER FOR SURVEY

UNIRAZAK
UNIVERSITI TUN ABDUL RAZAK

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E crm@unirazak.edu.my
www.unirazak.edu.my

Our ref : UNIRAZAK/GSB/01/1029/23
Date : 26 January 2023

To Whom It May Concern

Dear Sir/Madam,

Student Name : Athena Kimberly Sipaun (RCM191101001)
Research Project Title : Poverty and Vulnerability of Small-Scale Fishers in Marine Protected Area: A Case Study of Tun Mustapha Park

Please be informed that the above-mentioned student is currently pursuing Master in Management at SIDMA College, Sabah (UNIRAZAK Regional Centre). She has been a registered student since November 2019 semester. She is required to complete the above research project as a full requirement to the degree of MIM at SIDMA College, Sabah.

As such, we would be most grateful if you could allow her to conduct a survey, collect, process and analyze data pertaining to her research area. The data obtained will be strictly used for academic purposes and respondents' anonymity ensured.

If you have enquiries with regard to the above, please do not hesitate to contact us at 03-2730 7081 or email at abdulrahman@unirazak.edu.my.

Thank you.

Yours sincerely,

Abdul Rahman Bin Omar Amiah
Deputy Dean (Operation)
Graduate School of Business
Universiti Tun Abdul Razak

cc: Assoc Prof Dr Gazi Md Nurul Islam, Supervisor

APPENDIX 3 – REQUEST LETTER TO GOVERNMENT DEPARTMENT

Athena Kimberly
(Alamat)

7 Mac 2023

Pengarah/Ketua
Lembaga Kemajuan Ikan/Jabatan Pelabuhan Kudat/Pejabat Daerah/Taman Tun Mustapha
Alamat

Tuan/Puan,

PERKARA: RESPONDEN KAJIAN PENYELIDIKAN UNIVERSITI TUN ABDUL RAZAK

Perkara tersebut di atas adalah dirujuk.

Untuk makluman tuan/puan, saya merupakan seorang pelajar peringkat Sarjana dalam bidang Pengurusan di Kolej SIDMA, Sabah (Pusat Kawasan UNIRAZAK) dan sedang melaksana kajian tentang "Kemiskinan dan Ancaman terhadap Nelayan Berskala Kecil di Kawasan Perlindungan Marin: Kajian Kes di Taman Tun Mustapha". Surat sokongan tentang status saya sebagai penyelidik dikepilkan bersama untuk makluman tuan/puan.

Kajian ini merupakan satu kajian berbentuk tinjauan kualitatif yang menggunakan kaedah temubual dengan pihak-pihak kerajaan yang berkaitan seperti Jabatan Perikanan, Lembaga Kemajuan Ikan, Jabatan Pelabuhan, Pejabat Daerah, Taman-Taman Sabah dan pihak bukan kerajaan seperti WWF Kudat.

Bagi melaksana kajian ini, saya ingin memohon kerjasama dari pihak tuan/puan untuk perkara tersebut di bawah:

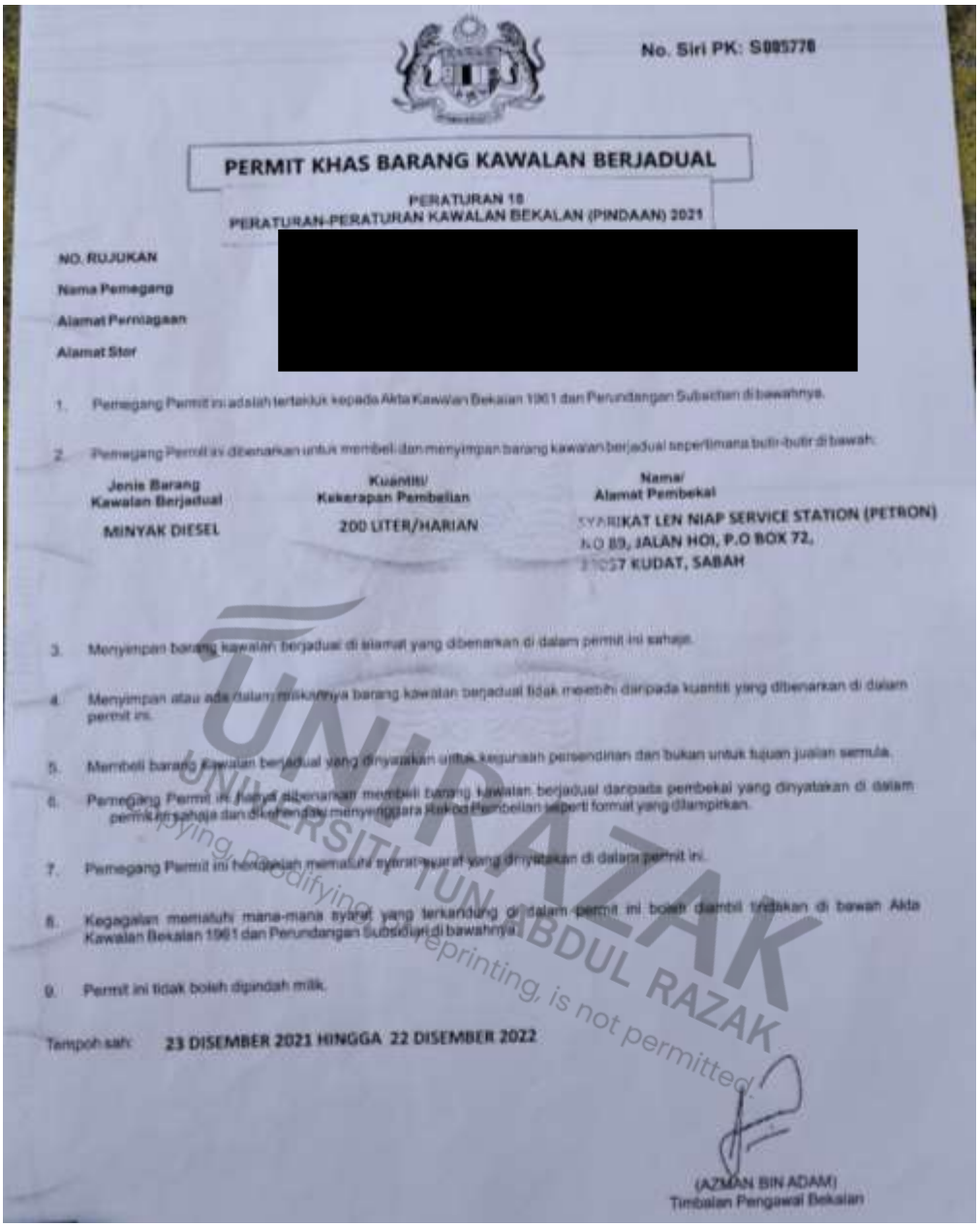
- ☑ Menyediakan seorang wakil (pegawai yang terlibat secara langsung dengan nelayan) untuk menjadi responden dalam kajian ini. Wakil ini nanti akan ditemubual sama ada secara dalam talian (*Zoom Meeting*) ataupun secara bersemuka mengikut keselesaan dan keperluan.
- ☑ Memberikan sebarang maklumat berbentuk laporan dan dokumen bercetak lain yang boleh membantu melengkapkan maklumat tentang nelayan dan situasi yang dihadapi oleh mereka.

Kerjasama dari pihak tuan/puan amat diperlukan kerana maklumat yang diperolehi daripada kajian ini dapat dimanfaatkan semula untuk memberi gambaran jelas tentang situasi kemiskinan dan ancaman terhadap nelayan berskala kecil di daerah Kudat, dan seterusnya digunakan untuk merangka rancangan strategik menangani isu berkenaan. Oleh itu, saya amat berharap untuk mendapatkan kerjasama dari pihak tuan/puan.

Sekian, terima kasih.

Athena (Digital Signature)
Student Number

APPENDIX 4 – REGULATIONS ON FUEL SUPPLY TO FISHERS



No. Siri PK: S085778

PERMIT KHAS BARANG KAWALAN BERJADUAL

PERATURAN 18
PERATURAN-PERATURAN KAWALAN BEKALAN (PINDAAN) 2021

NO. RUJUKAN
Nama Pemegang
Alamat Perniagaan
Alamat Stor

[redacted]

1. Pemegang Permit ini adalah tertakluk kepada Akta Kawalan Bekalan 1961 dan Perundangan Subsidiari di bawahnya.

2. Pemegang Permit ini dibenarkan untuk membeli dan menyimpan barang kawalan berjadual sepertimana butir-butir di bawah:

Jenis Barang Kawalan Berjadual	Kuantiti/ Kekerapan Pembelian	Nama/ Alamat Pembekal
MINYAK DIESEL	200 LITER/HARIAN	SYARIKAT LEN NIAP SERVICE STATION (PETRON) NO 89, JALAN HOI, P.O BOX 72, 89507 KUDAT, SABAH

3. Menyimpan barang kawalan berjadual di alamat yang dibenarkan di dalam permit ini sahaja.

4. Menyimpan atau ada dalam miliknya barang kawalan berjadual tidak melebihi daripada kuantiti yang dibenarkan di dalam permit ini.

5. Membeli barang kawalan berjadual yang dinyatakan untuk kegunaan persendirian dan bukan untuk tujuan jualan semula.

6. Pemegang Permit ini hanya dibenarkan membeli barang kawalan berjadual daripada pembekal yang dinyatakan di dalam permit ini sahaja dan dikehendaki menyenggara Rekod Pembelian seperti format yang dilampirkan.

7. Pemegang Permit ini hendaklah mematuhi syarat-syarat yang dinyatakan di dalam permit ini.

8. Kegagalan mematuhi mana-mana syarat yang terkandung di dalam permit ini boleh diambil tindakan di bawah Akta Kawalan Bekalan 1961 dan Perundangan Subsidiari di bawahnya.

9. Permit ini tidak boleh dipindah milik.

Tempoh sah: **23 DISEMBER 2021 HINGGA 22 DISEMBER 2022**

(AZMAN BIN ADAM)
Timbalan Pengawal Bekalan

No. Siri: PK/2023/B/S-000033

PERMIT KHAS BARANG KAWALAN BERJADUAL

PERATURAN 18,
PERATURAN-PERATURAN KAWALAN BEKALAN (PINDAAN) 2021

No. Rujukan
Nama Pemegang
Alamat Perniagaan
Alamat Aktiviti Dijalankan

[redacted]

SYARAT-SYARAT PERMIT KHAS

1. Pemegang Permit Khas ini adalah tertakluk kepada Akta Kawalan Bekalan 1961 dan Perundangan Subsidiari di bawahnya.
2. Pemegang Permit Khas ini dibenarkan untuk membeli dan menyimpan barang kawalan berjadual sepertimana butir-butir di bawah:

Jenis Barang Kawalan Berjadual	Kuantiti / Kekerapan Pembelian	Nama / Alamat Stesen Minyak
DIESEL	50 LITER / HARIAN	SYARIKAT MINYAK PETRON MALAYSIA, NO. 89, JALAN HOI, P.O BOX 72, 89057 KUDAT, SABAH

3. Membeli atau ada dalam milikannya barang kawalan berjadual tidak melebihi daripada kuantiti yang dibenarkan di dalam permit ini.
4. Membeli barang kawalan berjadual yang dinyatakan dalam Permit Khas ini untuk kegunaan persendirian dan bukan untuk tujuan jualan semula.
5. Pemegang Permit Khas ini hanya dibenarkan membeli barang kawalan berjadual daripada stesen minyak yang dinyatakan di dalam Permit Khas ini sahaja dan menyenggara Rekod Pembelian seperti format yang dilampirkan.
6. Pemegang Permit Khas ini perlu menggunakan bekas yang selamat semasa pembelian barang kawalan berjadual di stesen minyak.
7. Permit Khas ini tidak boleh dipindah milik.
8. Pemegang Permit Khas ini dilarang meminda mana-mana butiran di dalam Permit Khas ini.
9. Satu salinan Permit Khas ini perlu diserahkan kepada stesen minyak yang diluluskan dalam Permit Khas ini.
10. Pemegang Permit Khas ini hendaklah mematuhi syarat-syarat yang dinyatakan di dalam Permit Khas ini.
11. Kegagalan mematuhi mana-mana syarat yang terkandung di dalam Permit Khas ini boleh diambil tindakan di bawah Akta Kawalan Bekalan 1961 dan Perundangan Subsidiari di bawahnya.

Tempoh Sah: **06 JANUARI 2023** HINGGA **05 JANUARI 2024**

APPROVAL PAGE

TITLE OF PROJECT: **POVERTY AND VULNERABILITY OF SMALL-SCALE FISHERS IN MARINE PROTECTED AREAS: A CASE STUDY OF TUN MUSTAPHA PARK IN SABAH, MALAYSIA**

NAME OF AUTHOR: **ATHENA KIMBERLY SIPAUN**

The undersigned is pleased to certify that the above candidate has fulfilled the condition of the project paper prepared in the partial fulfilment for the award of the degree of Master in Management.

SUPERVISOR

Signature **:** _____

Name **:**

Date **:**

ENDORSED BY:

_____

Dean

Graduate School of Business

Date**:**