Patron-Client Relationships and Transformative Capacity: A Case Study of Bajau Fishers in Wakatobi, Indonesia's Response to Climate Change

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Abstract

In the absence of formal governance, the patron-client relationships have become a common internal dynamic among tropical fishing communities. Earlier research examined the numerous benefits exchanged between fishers and patrons, as well as their socioeconomic and environmental implications. Most of the research, however, emphasized a place-based perspective that focused on middlemen as the key patrons and only revealed the importance of relationships in fisheries and disaster management. This study explores the potential role of diverse patron-client relationships in the transformative capacity of Sama-Bajau fishers to the impacts and risks of climate change. Wangi-Wangi Island of Wakatobi was selected as the site of an exploratory qualitative case study involving 14 fishers and six different patrons living in and outside the locality of the fishers. The study collected and analysed data through in-depth interviews, informal conversations, field observation, and secondary sources. Findings indicate that fishers who collaborate with a variety of patrons residing within and outside their localities can reduce power disparities in their fishing activities. As a result, they could develop a transformative capacity to manage the impacts and potential risks of climate change. Future research should examine diverse patrons' role in developing the social resilience of fishing individuals, households, and communities.

Keywords

Patron-Client Relationships, Transformative Capacity, Climate Change, Bajau Fishermen, Wakatobi, Bajau Fishers Community

Introduction

It has been established that fisheries are a source of livelihood, employment, and food security for communities worldwide (Béné et al., 2016; Teh & Pauly, 2018; FAO, 2018). In 2018, approximately 38 million workers were employed in this sector, with the majority coming from Asian countries (FAO, 2020). There has also been an increase in human consumption of fish since the 1960s. It is estimated that 44% of all fish consumed worldwide is fresh, live, or frozen, despite the high price (FAO, 2020). In addition, this sector contributes to poverty reduction (FAO & OECD, 2015), improves the nutrition of millions of people (Thilsted et al., 2016), and has the potential to generate secure revenue for the government if it is managed effectively (FAO & OECD, 2015).

Approximately 90 percent of fishers in the world are employed in small-scale fisheries, which produce approximately 40 percent of the global catch (World Bank, 2012). In addition, this sector is integral to ensuring food and nutrition security, particularly in low-income countries. Fish has historically been the primary source of protein for poor and food-insecure people worldwide (Karawakuza & Béné, 2011). It is also reported that fish contains micronutrients and essential fatty acids, which supplement most poor people's diets (FAO, 2012). Sustainable fish production is likely to depend on internal dynamics between fishing individuals and communities, such as demographics and socioeconomics. Patron-client relationships (PCRs) are one of the dynamics involved.

In the small-scale fisheries sector, PCRs are prevalent at every level of the fish value chain (Ruddle, 2011; Kusumawati, 2013; Bjørndal, 2015). Generally, they are widespread (Pelras, 2000; Johnson, 2010; Minarno et al., 2016) and lucrative (O'Neill et al., 2019), especially in rural communities and small-scale coastal fisheries in low-income and developing nations. These relationships influence the utilization and management of local fish stocks and the flow of marine products. A potential role can also be played by the relationships regarding socio-ecological stressors, including climatic events, considering exchanged benefits between the two parties involved (Ferrol-Schulte et al., 2014).

Studies have demonstrated that patrons (primarily middlemen) can provide short-term support to individual fishers by, for example, buffering income loss during and after a stressor (Johnson, 2010; Crona et al., 2010; Ferse et al., 2014; Bailey et al., 2016; Minarno et al., 2016; O'Neill et al., 2019). A study by Kinseng et al. (2019) describes fishers in Banyuwangi as selling their fish to bosses, traders, and middlemen at the village, subdistrict, and city levels. They have recognized that these selling patterns assist them in addressing climate change-related challenges to their livelihoods. However, studies also covering the other patron entities such as government and non-government officers in the same localities as the middlemen have yet to be proportionally included. Like middlemen, both officers can influence power and influence to allocate resources, shape policies, and influence decisions (Pomeroy & Berkes, 1997; O'Neill et al., 2019; and Atmodjo et al., 2020). As a result, these relationships have yet to constantly enhance fishers' capacity to cope with, adapt or transform to socio-economic and environmental impacts because limited patron entities involved may create a syndrome of dependency.

Bajau fishers, one of the sea nomads in Southeast Asia, historically migrate seasonally and temporarily, thus exposing them to various patron systems in and beyond their localities. Different patron entities might have different rules and play different roles on the fishermen, thus likely resulting in different capacities to adapt to changes. Moreover, what types of benefits, how these benefits contribute to the transformative capacity of Bajau fishers to climate change impacts and risks, and whether the benefits enhanced or constrained the fishers' capacity to transform to the impacts and potential risks of climate change are underexplored. Transformative capacity refers to individuals' ability to access resources and support in the broader socio-political context to make informed decisions, establish institutions, and strengthen individual well-being and community resilience. It emphasizes enhancing well-being over preventing hazards, incorporating gradual transitions and development themes (Keck & Sakdapolrak, 2013). Considering this, the current

study aims to explore the existing gap by examining two research questions: (1) What are the prevailing PCRs among Bajau fishers on the island and beyond; and 2) how and why do their patron relationships enable or hinder their transformative capacity to climate change impacts and risks?

Patron-Client Relationships & Adaptation to Climate Change

In patron-client relationships, a patron, which can take various forms, such as a protector, patriarch, employer, ritual sponsor, or spiritual leader, assumes the role of supporting and defending lower-ranking citizens, known as clients (Foster, 1963; Pelras, 2000). This dynamic is characterized by a notable imbalance in exchanges, where patrons contribute more tangible resources while clients reciprocate with less tangible assets (Wolf, 1969). Hall (1974) also argues that patrons prefer dependent clients, offering support in exchange for loyalty, products, and political affiliation. In crucial situations, patrons can rely on the collective support of their clients, demonstrating the interconnected nature of this relationship. Eisenstadt and Roniger (1980) further emphasize establishing asymmetrical power relations, highlighting that patron, possessing resources that clients lack, provide support in exchange for loyalty or goods/services. This complex social construct encapsulates various dimensions of asymmetrical power relations, inequality of exchange, interdependence, and collective support in critical situations.

Historically, such mutually beneficial relationships have been considered typical in rural economies worldwide, especially in tropical developing countries where informal governance is present (Carney, 1989; Platteau, 1995). A patron-client relationship is a crucial mode of interaction in the small-scale fisheries sector (Ruddle, 2011; Kusumawati, 2013; Bjorndal, 2015). Additionally, it is possible to establish the reciprocal relationships in a written agreement that outlines the rights and obligations of each party (Mair, 1961), as is the case with certain East African tribes. The relationship may, however, also be considered non-binding (Pelras, 2000).

The findings of several previous studies have demonstrated that patrons have supported small-scale fishers in various ways, while the fishermen have, in turn, offered other advantages to their patrons. According to Ferrol-Schulte et al. (2014), patrons have offered fishermen a wide range of benefits, such as the ability to obtain flexible credit for subsistence and investment, access to information, market access, access to resources, legal protection, gear, and boats. The patrons can also buffer income loss during and after shocks (Ferse et al., 2014; Bailey et al., 2016; Minarno et al., 2016; O'Neill et al., 2019). The clients provided loyalty, labor, social prestige, and low-cost products in return for the relationship. Through patronage relationships, patrons gained access to resources they would not otherwise have had, while clients received protection and support from patrons.

Mutual arrangements between patrons and their clients result in the exchange of benefits. Portes (1998) argued that a person's advantage is gained through developing relationships. As a result, both patrons and fishermen must be in a relationship to reap the benefits of the relationship. Past studies of the relationships among fishing communities have described various advantages among the patrons, for example, in resource use and social dynamics (Crona et al., 2010), institutional adaptation in fisheries and governability (Johnson, 2010), livelihoods, vulnerability, and resource management (Schulte et al., 2014), destructive fishing (Nurdin & Grydehoj, 2014), value chain dynamics (Bjørndal et al., 2015), fishing behavior (Minarno et al., 2016), socio-ecological changes (Kininmonth et al., 2016), natural disasters (O'Neill et al., 2019), adaptive and transformative capacities (González-Mon et al., 2019; Barnes et al., 2020). However, such relationships also have dark sides.

Among the problems, power imbalances can impede transformative adaptation because those who hold the most power may be able to prevent the changes (Pelling et al., 2015; Colloff et al., 2017; Barnes et al., 2020). The disproportion of power may be more prevalent in a fishermen community where the only patrons are the middlemen. A patron may also

entrap a fishermen family in a self-perpetuating cycle of dependence, poverty, and debt, once again putting them in a vulnerable position (Ferrol-Schulte et al., 2014). Moreover, the adaptation between patrons and clients can compromise the long-term sustainability of fisheries (Crona et al., 2010; O'Neill et al., 2019). Taking Minarro et al. (2016) as an example, they argue that this relationship has indirectly resulted in a deterioration of the environment by promoting a higher rate of exploitation. Despite continuing benefits from middlemen, fishermen's socioeconomic status remains disadvantaged due to dependency syndrome. The situation has led to unsustainable management of natural resources, making them more vulnerable to the effects of climate change.

The effects of climate change on small islands and islanders differ in extent and severity. In other words, the impacts, vulnerabilities, and adaptations to climate change will differ significantly among island regions and countries within the same region (Nurse et al., 2014). It has been found, for example, by Beyerl et al. (2018), that contrary to mainstream perceptions that sea-level rise (SLR) is the most pressing issue, islanders place a higher priority on droughts, cyclones, and other water-related issues. In Indonesia, different perceptions exist. SLR is expected to have a significant impact, which has thousands of small islands and a vast coastline. In terms of the number of people living in the lower-elevation coastal zone, the country is particularly susceptible to SLR (Neumann et al., 2015). Climate Risk Profile: Indonesia (2021) estimates that the proportion of the population likely to be permanently flooded by the 2070s through the end of the century will be 4,215,690 without adaptation. SLR is a threat because of long-term encroachment on coastal areas and the anticipated increases in the frequency of extreme sea-level events (Widlansky et al., 2015). Low-lying Indonesian islands are particularly at risk due to the return period of exceptionally high sea levels, which could be caused by cyclones (Vitousek et al., 2017).

Islanders have taken steps in response to perceived impacts and risks associated with climate change. Solomon Island residents, for example, have faced challenges related to salt intrusion, erosion, sea level rise, floods, cyclones, storm surges, landslides, coral bleaching, and food insecurity (Leal et al., 2020). This has led to the combination of disaster preparedness and adaptation strategies. The Solomon Islands have adapted to the impacts and risks of climate change by resettling to new locations (Ha'apio et al., 2018), conserving coral reefs and mangroves (Ha'apio & Gonzalez, 2015), and building updated public infrastructure. At the same time, the islanders also adopt building structures and materials that are stronger and more resistant to potential disasters (Leal et al., 2020).

Meanwhile, rather than moving to other areas or islands, fishers in Malaysia remain in their localities while coping with the effects of climate change. They have added more household members who can earn a living, embracing new technologies, learning new skills, and expanding economic opportunities (Ahmad et al., 2020). Bajau fishers in Indonesia have also developed some adaptive measures. For example, re-construct knowledge, maximize *lempara* fishing gear that is in line with current climate conditions (Nurlaili, 2012), utilize coastal resources, change capture areas, vary fishing gear, and diversify livelihoods (Dewiyanti et al., 2019).

The strategies above imply the capacity to cope, adapt and transform to the impacts and risks associated with climate change. The primary difference between coping and adaptation is the activities' duration. Coping capacity refers to the capability of dealing with extreme events (Smit & Wandel, 2006), while adaptive capacity typically pertains to a more extended period. It assumes that some learning has occurred before or after an extreme event or change in circumstances. According to Keck & Sakdapolrak (2013), adaptation applies strategic agency and long-term planning, while coping involves tactical organization and short-term motive. In contrast, *transformative capacity* is defined as the ability of people to access assets and assistance from the wider socio-political sphere to participate in decision-making processes and set up institutions that enhance both their well-being and the community's resilience against future crises. It is a significant shift in which people's well-being is improved rather than protected against present and future hazards. Hence, it combines themes of gradual transition and development (Keck & Sakdapolrak, 2013).

Methodology

Distinguishing the types of research is determined by observing the research questions presented at the beginning of the study (Yin, 1987). This study falls within the qualitative explanatory case study category because its research questions focus on "how" and "why" questions with an explanatory nature. A case study selected was the Sama-Bajau fishermen and this design enabled researchers to explain why and how phenomena occur, problems arise, or behaviours (Yin, 2009) with respect to PCRs and climate change. Moreover, a case study can be helpful in fields where not much work has been done and the phenomena being investigated need to be better known (Patton, 2002). The researchers determined the case study area based on the following criteria: population of Sama-Bajau fishermen, vulnerability to climate change impacts, expected level of fishermen involvement, and availability of diverse patron actors (more than one or instead of only middlemen). An initial brainstorming session with local experts in small-scale fisheries, climate change adaptation and resilience, and community development led to the selection of Wangi-Wangi Island in Wakatobi National Park as the qualitative case study area.

Records from non-governmental organizations and village administration offices were used for criterion-based sampling. The sampling units were the Sama-Bajau fishermen, who used traditional fishing gear, mainly focused on subsistence fishing, and had a fishing career longer than ten years with multiple patrons. Snowball and purposive sampling were applied for fisher and patron informants selection. Fishers who met the set criteria were identified during discussions with local experts and village heads (key informants). This sampling strategy adopted Stake's advice (2005), who claims that sampling is choosing cases and data sources that give us the most profound understanding of the case. Moreover, the researchers replaced few fisher informants with the others as they refused to participate and were away fishing for long periods. The other informants, including patrons, were also suggested by those the researchers initially met and interviewed.

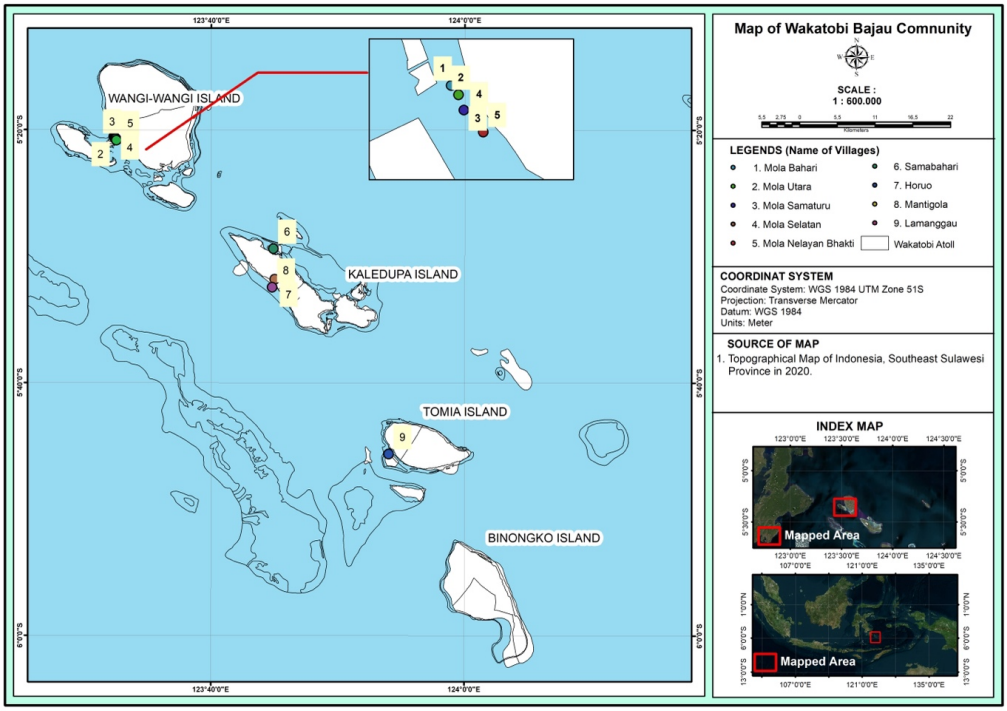

Fig 1. Map of Sama-Bajau Fishers in Wakatobi. Insert: Research Area in 5 villages of Bajau (1, 2, 3, 4, 5). The area is often called Mola Region. (Source: Researcher).

The researchers obtained ethical approval from Universiti Putra Malaysia Ethical Committee prior to conducting fieldwork. During the interview, the fishers and patron informants were explained the purpose of the study, and consent to participate were sought out from them. Their responses and information were kept private and confidential.

The fieldwork lasted six months, from September 2021 to February 2022. Interviews, field observations, and gathering and analysing official documents were used to collect data from fieldwork. To begin with, the researcher interviewed some patron informants, such as middlemen, government officials, non-governmental organizations/activists, and private companies' employees who have long-term relationships with the fisher informants. A brief overview of PCRs was conducted before digging into them more deeply in an in-depth interview with the fishers. Besides asking some questions and clarifications during the interview, the researchers also asked them to provide information about the following prominent fishers that they thought could participate in the study, although the researchers had the list of potential ones provided by the patron informants (government and non-governmental workers). This was to double-confirmed that the recommended fishers were resourceful data sources.

The data collection procedures continued until no new information appeared (saturated). When doing the in-depth interview, the researcher also paid attention to the surrounding situation related to the climate change impacts and the social capital among the fishers, particularly the relationship between patron and his clients. The researcher used a semi-structured interview during the process as it allows the interviewee to provide detailed answers, gaining insight into their opinions and perceptions, and follow-up questions can be asked as necessary (Greeff, 2007). The question-and-answering activity was carried out in a natural process and environment. Even the guideline questions were prepared in a loosely manner, and unstructured to allow easy flow of interaction during the in-depth interview. According to Richards and Morse (2007), the questions should also be asked in a manner that encourages detailed responses.

The researchers planned to involve between 5 and 30 informants to ensure data richness, trustworthiness, and rigor. Gentles et al. (2015) suggest 25-50 data sources, including interviewees, practices, policies, or actions, depending on a study's complexity and depth of data collection (Yin, 2011, p. 91). However, the study reached saturation with 20 informants, including 14 fishers and six patrons. After hearing or reading the research information sheet, all 20 informants signed the informed consent form. To enrich the data and information from them, other data sources from field observation, informal talks with other common fishers, a religious leader, one customary leader, six Bajau fisherwomen, two local teachers, and two youth and document analysis were also documented during the fieldwork period. Later in this study, these local actors were called common informants to differentiate with the study’s informants.

During data collection, the researcher used a recorder on a mobile phone. The in-depth interview lasted about one and a half hour on average per informant. In a few cases, however, the researcher re-interviewed certain fisher informants to clarify or dig into their responses more. Afterward, the researcher transferred the audio files to a personal computer for further analysis. Additionally, the researcher used senses such as eyes, ears, the diary book, stationary, a DJI Mavic 2 Pro drone, and a camera. Observations included the boundaries of Bajau's five villages, settlement patterns, signs of sea level rise, pre-fishing, handling of fish after landing, transactions between common fishers with buyers, collectors, and traders, impacts of wind speed on fishers’ homes, the way they prepare fishing baits, and money lending and borrowing.

An initial analysis was conducted before fieldwork began by identifying a series of initial themes from a literature review. Several preliminary themes were presented as interview questions and probes. The initial themes were revised and developed during and after data collection, as well as regularly re-reading the research diaries and reading literature. After the fieldwork, the data and information collected were conventionally analyzed through cross-referencing and later repetition of some points to ensure the answers' accuracy, following the circular process of qualitative analysis (Dey, 2005). Technically, after writing up the interview notes, the notes were analyzed reflectively and critically. The process of coding transcripts and identifying themes was conducted circularly; codes were defined manually, then classified into

themed categories, and finally correlated to literature as advised by Kitchin and Tate (2000) that thematic coding is used to identify recurring themes and ideas during and between interviews.

Discussions focused on the potential role of PCRs in enhancing or hindering the transformative capacity of Bajau small-scale fishermen to the impacts and risks of climate change. To interpret the information from informants gathered through in-depth interviews, various responses were compared against one another to ensure accuracy. They were cross-referenced against previous studies conducted at the site selections and beyond, as well as official records. Accordingly, the elements of transformative capacity and the potential role of PCRs in influencing it were grouped thematically based on this approach.

Results and Discussion

Over years, Bajau fishers in Wangi-Wangi Island, much like their counterparts in other tropical developing countries, have developed and maintained a patron-client relationship with middlemen to exchange benefits and services that are mutually advantageous. In addition to middlemen, fisher informants in this study reported interacting with various other patron actors, such as employees of private companies, government officials, and non-governmental organization staff, residing in the same locality as the fishers and beyond. Despite the absence of formal contracts, these patron actors, possessing a relatively high socioeconomic status, regularly engage with the fishers and exchange benefits and services. Such relationships have the potential to develop the fishers' transformative capacity towards the impacts and risks of climate change.

Existing PCRs among the Fishermen Respondents

1. Middlemen

Over many years, the fisher informants have cooperated with some local middlemen (often called Boss). They are Bajau, half-one or marrying a Bajau woman living in the same villages as the fishers and connecting them with markets outside of Wakatobi for years. The nature of the relationship varied, ranging from business to other factors such as residing in the same localities, the proximity of the fishing grounds to the boss' business center, the types and conditions of fish caught, a reasonable price and service of bosses, and a strong emotional tie. Interestingly, kinship and indebtedness, considered defining characteristics of PCRs (Acciaoli, 2000), appear to fade in this study.

Several fisher informants interviewed reported fishing near Wakatobi's reefs or beyond, but only when they could not yield a substantial catch. After a few fishing days, they would return to the island and meet with one or two bosses to exchange their haul, depending on the caught fish species and whether the catch died or lived. In contrast, those who fished for tuna had more bosses due to their high mobility compared to reef-based fishers. During certain seasons, these individuals would temporarily relocate to other districts in Southeast Sulawesi or other provinces (Figure 2). In East Nusa Tenggara, for example, they would work with a different boss, either with Bajau or non-Bajau cultural roots, and with similar business agreements but often received more benefits from their initial Boss in Wangi-Wangi Island. For instance, all fishing needs, such as subsidized fuels, ice, and wrapping plastics, were provided by the Boss at his place, so the fisher informants did not need to go everywhere in searching for such essentials.

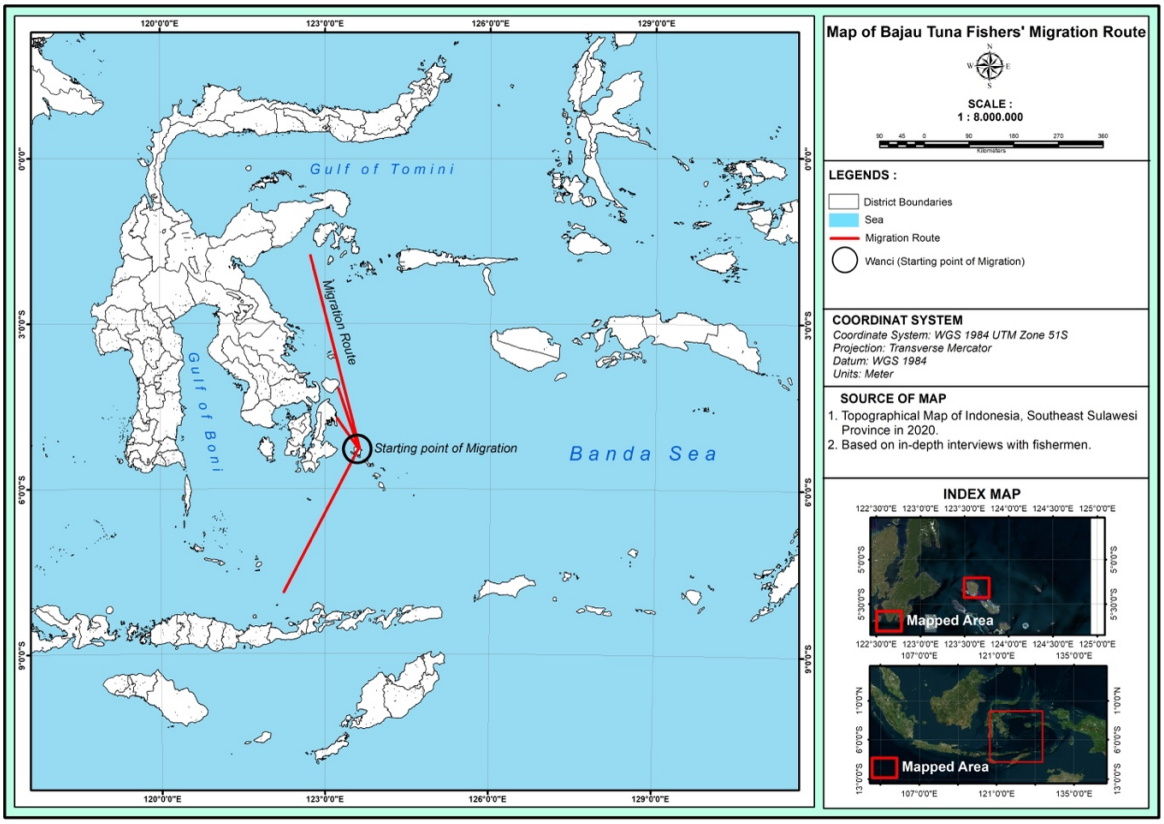

Fig 2. Map of Migration Route of Fisher Respondents (Bajau Tuna Fishers). The fishers have own boss in each destination. (Source: Researcher).

The following nature of the relationship between boss and fisher informants is related to the price and quality of services offered by the first party. Fisher #3 expressed that "*I would remain loyal to the current boss as long as his price remained superior*." Nevertheless, other fisher informants indicated that they would sell their catch to a different boss offering higher prices, even if they had previously obtained assistance from a particular boss. This phenomenon was observed when the fishers were no longer indebted or received authorization from their original boss, notwithstanding their outstanding loans.

The researcher identified 31 bosses who purchased various fish, both alive and dead, at the end of the research (Table 1). While the fisher informants perceived more bosses as beneficial, the opposite was true for the bosses, as they sought to compete with the others. As such, they adopted strategies to minimize the fishers' tendency to seek other bosses and worked tirelessly to deliver high-quality service to them, including limiting their gain. This service was offered in various forms, including the boss's willingness to purchase any quantity of fish, providing amenities like hot coffee while waiting for payment, dining with the fishers, and avoiding pressuring them to settle their debts or advances too quickly.

> *"In the 1990s, there was only one fish boss here. He set a price of Rp 5,000 per fish caught. Later, several other bosses appeared until there are now dozens. Since then, fish prices have been competitive between one boss and another. Due to some price overlap, there is little profit among the bosses. Bosses must keep fishermen's trust because they are assets."* (Patron #1)

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Table 1. Distribution of Bosses in Wangi-Wangi Island of Wakatobi

No	Village	*Boss*	Bought Fish
1	Mola Bahari	#1	Pelagic, octopus and demersal/reef fish
		#2	Pelagic and demersal/reef fish
		#3	Pelagic, octopus and demersal/reef fish
		#4	Octopus
		#5	Pelagic/tuna
		#6	Pelagic and demersal/reef fish
2	Mola Utara	#7	Pelagic, live reef fish, live lobster & octopus
		#8	Pelagic and demersal/reef fish, octopus & live lobster
		#9	Tuna
		#10	Tuna
3	Mola Samaturu	#11	Pelagic and demersal/reef fish, octopus
		#12	Demersal/reef fish
4	Mola Selatan	#13	Pelagic & tuna
		#14	Demersal/reef fish & octopus
		#15	Live lobster
		#16	Demersal/reef fish & live lobster
		#17	Sea cucumber
		#18	Demersal/Reef Fish
		#19	Octopus
		#20	Octopus
		#21	Sea cucumber
		#22	Demersal/Reef Fish
5	Mola Nelayan Bakti	#23	Octopus & Demersal/Reef Fish
		#24	Tuna, Reef Fish, Lobster and Sand Shrimp
		#25	Tuna
		#26	Sea cucumber
		#27	Octopus & Demersal/Reef Fish
		#28	Octopus
		#29	Dried fish
		#30	Octopus
		#31	Demersal/Reef Fish

Source: Primary Data 2021

As said, kinship and indebtedness appear to fade in this study. Fisher #1, for example, argued that "*I have a family relationship with my boss's wife, but my work ties to him are more business-related*." The finding stressed that the fishers' relationship with bosses was more transactional than familial, exploitation, and lent. Another key result of this study pertains to the role of the relationship in regulating the utilization and management of local fish stocks. Specifically, some bosses were found to invest in destructive fishing methods and force fishers to do the same, as these techniques were believed to yield more significant and faster catches. Bosses could dictate to the fishers how to fish with this method since they could provide fishing equipment. Even so, the fisher informants continued to use traditional gear with some bait modifications because they knew that fish habitat affects fish stocks.

These findings contradict Ferse et al.'s (2012, 2014) claim that middlemen control the species choice in small-scale fisheries through specialized gear but support their argument that middlemen govern selected fish through market access, as observed in the research area. Therefore, middlemen can still play a crucial role in structuring fishery dynamics, regulating the utilization and management of local fish stocks, and governing the flow of marine products,

even in the presence of formal governance measures such as zonation in Wakatobi National Park and because of the existence of other patron actors. These findings differ from Basurto et al.'s (2013) argument that such a role only occurs where legal authority or capacity to influence fisheries management is lacking, as suggested by González-Mon et al. (2019).

Both fisher informants and their respective bosses have cooperated for years because of strengthened trust and norms of reciprocity among them. The exchange of socio-economic and information advantages reflects the interchange between the bosses and the fishers. Both parties have mutual support based on the consistency and reliability of their transactions built over many years. The fishers have tried to be punctual in supplying their boss with desired fish on time and maintaining the quality. The more they obey the agreement, usually unwritten, the more benefits and services they could enjoy, particularly during hardship due to weather or seasonality in fishing. They also were transparent about the number of fish they caught and showed loyalty. Even though their bosses informed them that the price was higher in other bosses, they, who were completely free from debt or down payment (DP), would still share part of their catch.

On the boss' side, he tried to keep the fishers' loyalty by allowing them to negotiate the price reasonably, although they still had debt or DP. He also maintained a personal relationship with his clients by, for instance, attending and supporting ceremonies or mediating conflicts among the fishers. Moreover, he would share information about market prices, weather predictions from his mobile phone, fishing locations, and new fishing methods. Thus, the last nature of the relationship between bosses and the fishers is a strong emotional tie. A complete exchange of benefits and services between the parties will be elaborated on in the next section.

2. Employees of Private Companies

Five companies have operated on Wangi-Wangi Island and its surroundings, primarily for tuna. Even so, the fisher informants barely sold their catch to the companies for reasons such as the advantage from bosses was almost the same, the landing base was closer to the bosses' station than the factory site, and few informants still owed some DP to the bosses. Fisher #4 argued, "*I do not bring fish to the company because the purchase price is almost the same and the factory's location is a bit far. I still have DP from the boss*". By contrast, the other informants (reef-based fishers) had a long-standing relationship with a company that purchases live reef fish. Unlike tuna companies, this one is outside the island and offers a relatively higher price than bosses of reef fishes on the island. This section mainly describes its employees' relationship with the reef fisher informants.

The employees had almost the exact nature of the relationship as bosses, except they did not have family relations but could speak Bajau and live outside of the fishers' localities. Both employee and fisher informants interacted on daily basis. Additionally, both parties have a common interest in sustainable reef fisheries. They have strictly followed the company's standard of procedure related to the allowed fish species, weight, length, and the way of fishing. Patron #3 claimed, "*we did not accept fish below 500 grams because they usually do not spawn yet*." Moreover, the employees knew when fish were caught using bombs or cyanide. In these circumstances, they would refuse the fish and revoke the fisherman's membership card, preventing him from bringing his catch to the company's station. Fisher #6 explained that "*the company implements a conservation system to ensure that fisheries remain sustainable. They knew when fish was caught by cyanide or bomb.*" Fisher informants upheld the company's protocols, prohibiting illegal fishing methods, ensuring proper post-catch handling, and meeting size and species criteria. Additionally, fisher informants could obtain support from the company, including interest-free loans for expenses like fishing or equipment and household needs during adverse weather. This reciprocal arrangement upheld a steady supply for the company.

Although employees were replaced periodically, usually after two or three years, the company's presence for more than ten years has established foundations of trust and norms of reciprocity with the fishers. The employees rarely

manipulated market prices and provided exemplary service while weighing, recording, and delivering fish purchases. They would reward the fishers if they performed well, evidenced by more catches per period, appropriate size, and weight. Such a relationship pattern is in line with Onojaefe and Leaning's (2007) study suggesting that in addition to simple operational skills, people in business require a variety of competencies that facilitate relationships and partnerships. In exchange, aside from sustained live fish supply, the employees could ensure the quality of the fish as the fisher respondents applied the company's rules and knew how to handle the fish better after being captured.

Maintaining consistency in implementing the company's rules built trust between the employees and fishers. There was a mutual understanding that each party should adhere to the unwritten norms of reciprocity when conducting business in this area. The results of this case study are consistent with those of Humbas et al. (2021), who found that establishing trust between parties may be mutually beneficial. Despite this, the case differs from theirs regarding the relationship between suppliers and fishermen. In contrast to Humbas' study, the fishers worked directly with the company without the involvement of suppliers. As a result, they were able to receive additional benefits, which potentially affected the dynamics of their patron-client relationship. Through this direct collaboration, the fishers had more control over their products and prices, which led to higher profits. On the other hand, due to the absence of suppliers, the employees can establish a stronger and more personal relationship with the respondents enabling them to better understand their needs and challenges.

3. Governmental Officials

Acknowledging the district's limited resources and reliance on trade, fisheries, and tourism, the Wakatobi and Republic of Indonesia governments through its extension workers and park officials have supported small-scale fishers, including fisher informants. Compared with typical fishermen, Sama-Bajau fishers received priority in support because of their number and existing socio-economic and ecological concerns, such as stunting, poverty, and illegal fishing. In 2020, the district's total number of full fishermen was 5,682 persons (BPS Wakatobi, 2021). In particular, the fisher informants have been considered by the government as agents of change to influence broader sustainable fishing practices within their community.

> *"Nearly 95% of our total area comprises sea and small islands, also almost all of our district area falling under the designation of a national park, further recognized as a world biosphere reserve. This unique ecological setting limits our developmental avenues compared to mainland regions, leading us to concentrate on key sectors including fisheries, tourism, and marine trade. Among these, capture fisheries take precedence, given its vital role in sustaining a significant portion of our population engaged in fishing activities. This sector remains a top priority for us, and our steadfast support for our fishermen is unwavering"* (A key informant)

The extension officers offer these fishers access to crucial resources such as fishing tools, boats, and cooling boxes as well as access to their traditional fishing grounds within the national park area. This measure safeguards the livelihoods of these fishers from potentially harmful practices conducted by other fishers within and beyond Wakatobi.

> *"The government gave us the trust to protect our fishing areas from bombing or poisoning by other fishermen. So, if someone wants to bomb, we usually warn them nicely that this is our fishing area. Sometimes we also report to national park officials"* (Fisher #1)
>
> *"The fishers actively defined and oversaw their fisheries access areas, including designated no-take zones vital for fish breeding. This collaborative effort was met with consensus and adherence"* (Patron #6)

The fisher informants received diversified support from the government, encompassing capacity-building training, workshops, and financial aid aimed at bolstering their cooperative. Beyond these tangible benefits, the liaison with government officials enabled them access to vital information and networking opportunities. This indirect connectivity with the upper echelons of government gave them leverage to broaden their contacts with their peers. Fisher #10 claimed, “I am happy to attend when invited to a meeting because I can also add fellow fishermen besides getting information about fisheries. I also feel valued because government officials heard me”. Notably, this support was selectively provided by the government to collective groups of fishers demonstrating compliance with regulations and active involvement. Individual entities were not the primary recipients of such support.

Reciprocally, they actively participated in better fisheries management and marine conservation efforts. Aside from continuing their traditional fishing method, they also shared essential fish catch data and insights for government’s policy formulation. Fisher #6 stated, "*In addition, when discussing organizing fishermen, it is not with the boss or fish companies but with the local government and NGOs. Then if we talk about regulations, we must work with the local government and the National Park. In several meetings with government organizations, I expressed my opinions on the facts of our fisheries and criticized government regulations, but with clear objectives so that they would at least listen to us*." Such reciprocity was built by fostering trust through ongoing meetings with officials based on mutual respect.

This study finds that trust between patrons and clients is not exclusively developed through common ethnicity, geographic location, regular encounters, duration of relationship, or quality of reciprocal benefits. The relationship between government officials and fisher informants displays a high degree of reciprocal trust, influenced by professional expertise, accountability, and mutual respect. For example, Fisher #2 argued, "Even though the officers sometimes change, I still believe in them because they are part of the government that will continue to care about us as fishermen because we care about reefs." Additionally, the fishers did not attribute perceived unfair aid distribution to the officers' actions. Instead, they understand that the decision-making power often resides with superior officials who may take a politically-driven approach. This aligns with O'Neill et al.'s (2019) finding that political ties directly affected the pace of relief aid distribution. Despite this, due to their mutual respect, these perceived inequities did not lead to significant conflict. Therefore, the relationship between government officials and fisher informants is nuanced, embodying dynamics of both patron-client and partnership relationships, reinforced by the active participation of fisher informants.

4. Non-Governmental Officers

The fisher informants have been affiliated with an international NGO for over 10 years. In addition to this organization, they have also collaborated with another NGO for about two years. The NGOs' staff have built the capacity of the fishers to manage fisheries and conserve the marine environment and have connected them to different groups of people, government officials, private companies, and donors. Most of the staff were not Bajau and lived outside the area where the fishers lived. They visited the site and met the fishers only in conjunction with planned workshops and training. The day-to-day interaction was conducted by another staff who is a Bajau scholar living in the same area as the fishers since he was born.

Initially, both parties were involved in public consultations regarding national parks and zoning management. From there, the fishers' awareness and participation in combating illegal fishing practices and conserving wildlife increased through some follow-up training, workshops, and community organizing. Additionally, through NGO facilitation, in 2016, the fishers formed fisher groups and later unified into a fisher forum. A Bajau staff member of the NGO has since assisted the platform and its members in developing a working plan focusing on sustainable fisheries and conservation, as well as market access and fair trade.

"Besides marine conservation, sharing knowledge, and finding solutions to fishermen's difficulties, I can regularly consult with my friends on how to obtain diesel at a reasonable price. Because each member's resources have been pooled, we have venture funds, so fishing necessities can be searched easily. The NGOs also facilitated training sessions on managing collective finances" (Fisher #1)

Following a series of meetings and consultations with the district cooperative department facilitated by the NGO's staff, the fishers decided to change their forum into a legal cooperative, namely *Koperasi Paddakauang Samatta* (later referred to as *Koperasi*). Additionally, the NGO staff connected the *Koperasi* with another private company based outside Wangi-Wangi Island that purchased a wide range of fish and non-fish species at a competitive rate. The fishers have since enjoyed additional benefits because of this initiative. With other forum members, they sold part of their catch, saved part of their income at the *Koperasi*, and encouraged other common fishers to join it.

Fig 3. End Year Meeting of Fisher Koperasi Attended also by Head of Cooperative Department of Wakatobi. (Source: Koperasi Padakkauang Samatta)

In return, the fisher informants actively attending training, workshops, group meetings, and co-monitoring and surveillance. They also consistently recorded their catch and reported it to the NGO's staff. Fisher 7# argued, *"we carry a logbook whenever we fish in our respective locations. In it, we fill in the type of fish caught, the estimated weight, the presence or absence of fish bombing activities by other fishermen, and the presence of turtles, whales, or sharks we also note. After that, we deposit the logbook with our NGO friends." Moreover,* the fishers often suggested things the NGOs should include in their following working plan proposal to donors, whether they were asked for or not. Furthermore, they showed relatively high trust in NGO staff. This could be proved when asked to attend a meeting on a fishing day; they would follow it if invited.

"If I am invited to a meeting, even if I have plans to sail to sea, I prioritize participating because I enjoy meetings and can learn a great deal of helpful information. I explain this to my wife so that she can also understand it" (Fisher #6)

As the frequency and impact of climate change impact increase, both parties share a long-term sustainability perspective. Healthy ecosystems, they believe, would protect their livelihoods regardless of weather changes. Fisher #3 stated, "*We also noted that habitat destruction can impact our income as coral reefs serve as a home for our fish.*" However, while the NGOs played a crucial role in aiding fishing communities affected by climate change, they may also have unintentionally created competition among fishers by distributing support unequally or focusing on specific groups rather than others. This can cause resentment and conflict between different groups of fishers (Hanley et al., 2014; Ong et al., 2015; and O'Neill et al.,2019), thus weakening the collective action required to better respond to the impacts and risks of climate change. Nevertheless, an intervention program should be carefully designed to ensure better representation and equality.

The findings also suggested that both parties trusted each other because of factors such as expertise, empowerment, accountability, and mutual benefits. The NGOs staff acknowledged the fishers' knowledge and skills in traditional fishing methods and conservation awareness, while the fishers recognized NGO expertise in capacity building, community organizing, and network development. Fisher #6 argued, *"when it comes to organizing fishermen and developing business networks, we don't go to our fish bosses, but to our NGO friends."* Additionally, the NGO staff is believed because of the consistency between words, actions, and results of cooperation, which can be directly felt or observed by the fishers. The NGO staff also asserted, "*I have confidence in the fishermen's group because I have witnessed their efforts to organize, form a group, and establish the current Koperasi (Patron #1).*" As both appreciated each other, their reciprocity was also adequately maintained. It was reflected in their knowledge exchange, capacity building, access to resources, and advocacy.

PCRs and Transformative Capacity

Repeated climate change events have pushed the fisher informants to plan for the upcoming ones. They learned some aspects before and after a change, thus adapting and transforming rather than just coping. In general, they have responded to frequent impacts such as unpredictable weather, changes in wind patterns, and natural disasters. These include remaining at home and fishing near the island for consumption only, spending savings, pawning gold, modifying baits, changing, and adding fishing grounds, avoiding debt, and running a cooperative. They can develop diverse strategies, particularly transformation ones, because of various exchanged benefits and services with some patrons. As described earlier, fisher informants and patrons have exchanged benefits and services resulting from trust and reciprocity embedded in their relationships. The advantages and some more are listed in the following table.

Table 2. Various Benefits and Services Exchanged in Various PCRs

Patron Actors	from Patron	from Fisher Informants
Boss (Middlemen)	Access to markets, assistance during bad weather (loans), fishing costs, good services (well behaved during the cooperation), price (because no debt was incurred or cash was paid in advance), advance cash for boat repairs, replacement fishing equipment, access to subsidized fuels (in East Nusa Tenggara) and engine replacement upon request.	Sustained Fish supply, loyalty, and labour.
Private Companies	Access to the market; security in times of adversity; good service at a reasonable price; provision of fishing costs; loan for gears and new engines if necessary; and reward for proper performance.	The availability and quality of fresh fish; the size and target of the catch; and the maintenance of fish quality
Government Officials (inside of Wakatobi) - Wakatobi National Park Authority (WNPA), Cooperative Service (CS), Fishery and Marine Department (DKP)	A grant program that provides boats, cool boxes and gear, workshops and trainings for building capacity, up-to-date information about fisheries practices and management, and empowerment programs (for example eco-tourism and aquaculture initiatives)	Provide catch and socio-economic data for the formulation of policies & programs, active and collective participation, adhere to fishing regulation and zoning of national park.
NGOs	Fisheries management, conservation, and financial literacy knowledge and skills; friends of discussion to exchange information and possible solutions; improved savings systems and group business capital; aids for fishers group use; bridged and linked informants to other people and institutions/donors.	Projects are secure or implemented, a good reputation of the NGOs in the eyes of funders, fish catch and socioeconomic data are provided.

Source: Primary Data 2021

The table above demonstrates a combination of short and long-term perspectives, enabling gradual capacity transitions of the fishers from coping and adaptive to transformative (Figure 4). The fishers have mobilized and capitalized three different but complementary types of social capital based on their diverse PCRs for years. Bonding social capital pertains to connections between fishers and their respective bosses within the same villages. Bridging social capital, on the other hand, refers to the ties and relationships between fishers and respective bosses beyond the fishers' localities, employees of the fishing company, government staff, and NGO officers. These patron actors have bridged them with other people and institutions outside localities but still on the same island or in Wakatobi. Meanwhile, linking social capital is fisher informants' ties and relationships with external actors, such as donors and other fish buyers, facilitated by the governmental organization and NGOs.

Bonding social capital provides the fishers essential resources, mainly in financial form, to cope with adverse weather and fishing seasonality. The extreme weather, both on land and while at sea, had reduced their income because they could not fish either because they remained home for some days or returned home before fishing. They generally spent savings and pawned gold stored at home to cope with such impact. While such responses could expense resources needed for the upcoming bad weather events, for example, in this case, such activities allowed fishers' future action as they have options outside their home. In terms of financial need, they could, for instance, withdraw their savings at *Koperasi* or, as they have less debt or DP and, simultaneously, there were several bosses, they were unrestricted to see any Bosses who would invest in their fishing operation with fair terms and conditions.

In the case of tuna fishers, climatic change and seasonality in fishing did not restrict their capacity to cope with the impacts as they have other bosses in other districts or fishing grounds (Figure 2). Fisher #8 claimed, "*If the tuna catch is not good here, I go to East Nusa Tenggara when I get information from my boss there that the tuna catch is increasing. Usually, he will send me the travel cost to bring my boat there. The weather is also more favorable in East Nusa Tenggara, unlike here, where it often changes. Many high mountains are there, so it can block the wind.*" Thus, even though they allocated some resources to cope with prolonged bad weather, they could still migrate seasonally and temporarily for fishing because of bonding social capital with another boss in the other fishing grounds. This result differs from Peth and Sakdapolrak's claim (2020), saying that coping or reactive actions might limit the future scope of activity as the actors have used all the means to avert the situation.

Meanwhile, bridging and linking social capital have provided the fishers with non-financial support, enabling them to go beyond coping and adaptation. The capacity building and community organizing over the years helped the fishers to develop some transformation responses for the impacts and risks of climate change (Table 3). Both types of social capital have provided them with access to resources and support from broader socio-political contexts such as government and NGOs programs, other institutions, and social networks to make informed decisions that improve their well-being and resilience while keep protecting the reefs.

Table 3. Potential Risks of Climate Change, Transformative Strategies, and Involved Patrons

Perceived Potential Risks	Transformative Strategy	Utilized & Mobilized Capital	Applied by	Involved Patrons
Increase risk on lives & Livelihoods	Better coping and adaptation strategies, running *Koperasi* & building its network with external actors; built & mobilize co-resources; avoiding debt at all cases as much as possible; saving money at home; investing in more gold; and applied better fisheries management and marine conservation.	Social, financial, human, and environmental capital	Individual but mainly collective as a group	Government and Non-Government Officers

Source: Primary data, 2021

The table demonstrates how diverse patron-client relationships helped fishers utilize social capital to develop their human, financial, and environmental resources, resulting in better capacity to transform. The significance of the latter resources in addressing climate change impacts and risks remains crucial, but it is demonstrated that social capital

serves as a catalyst for other assets. Bene et al. (2016) argue that social capital and cohesion are more critical for resilience than human, financial, and physical resources. Freduah et al. (2018) also claim that social capital is crucial for facilitating adaptive and transformative actions to climate and non-climate stressors compared to other assets. In Papua New Guinea, staying connected in social networks has allowed fishers to take adaptive and transformative steps to face climate change (Barnes et al., 2020).

The involvement of various patron actors in the present study made the status of independency and collectiveness thrive among the fisher informants. Such things were made possible because, at the same time, the government and non-government staff continued their support. The continuation of program deliveries ensured the fishers' cash flow and investment cycle and contributed to the long-term sustainability of small-scale fisheries. Therefore, the fishers can even bounce forward their lives and livelihoods after specific or repeated climatic events instead of just bouncing back (Figure 4). Even if their rest savings and pawning gold is insufficient, for instance, they know how to manage the catch result, thus avoiding being re-trapped in a debt cycle. This result differs from the study of Ferrol-Schulte et al. (2014) and Minarno et al. (2016), highlighting the syndrome of dependency and short-term perspective in fisheries management in a single patron relationship case.

> *"After each fishing trip, the catch, and all fishing expenses, including household expenses, are recorded. I always set aside profits to buy fuel for the next operation, including saving for gold. My wife and I always emphasize avoiding going into debt, especially to daily or weekly cooperatives, because they are rude when collecting, and the interest is too high. As long as we have savings and assets at home, we use them in times of difficulty. If I still need more money for my fishing needs, I can go to our Koperasi to withdraw my saving or go to the company to borrow from their employees because there is no interest, and it is up to us when we want to repay, and they do not fix the amount"* (Fisher #1)

The case study also suggests that their capacity to transform is related to their ability to gradually cope and adapt to climate change impacts and risks (Figure 4). This aligns with Keck and Sakdapolrak's (2013) idea that transformative change involves gradual progress and capacity development. Even after experiencing shocks, the fishers remained resilient and stable. They invested in the *Koperasi* and households while practicing eco-friendly fishing and protecting the reefs. They remain committed to sustainable fishing practices despite any future uncertainties. Fisher #5 said, *"I will keep fishing with my current method no matter what the weather or catch looks like."* This shows that sustainable fishing is one of their priorities in response to climate change impacts and risks.

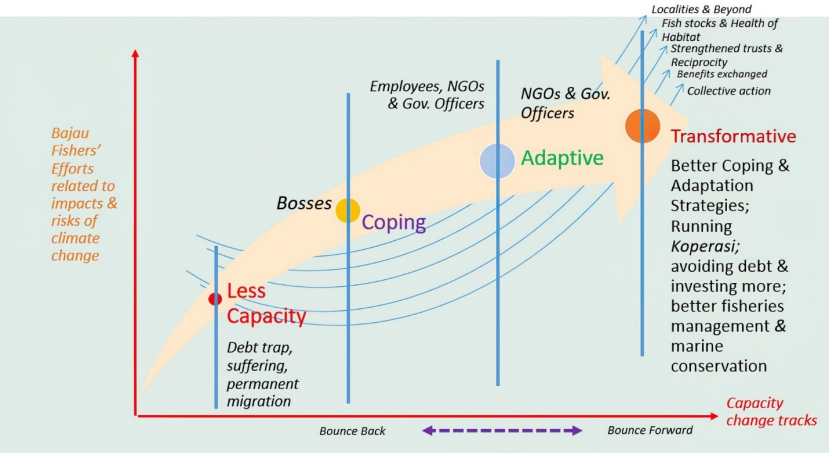

Fig 4. Graph showing the efforts being invested by the fisher respondents alongside their gradual capacity to response climate change impacts and risks. It shows their role in each capacity development supported by their respective patrons. (Source: Researcher)

Conclusion

This study explored the multifaceted patron-client relationships (PCRs) among Sama-Bajau fishers, which serve dual roles. They cater to economic transactions and constitute a tripartite social capital framework that equips them to weather climate change impacts and risks. Local middlemen, fishing companies, or employees furnish bonding social capital, offering financial assistance and emotional connections within their communities. Crucial resources to handle adverse weather and shift fishing areas seasonally emerge from this facet of social capital.

Beyond local confines, the fishers establish augmenting networks with external bosses, government personnel, and NGO representatives, exemplifying bridging social capital. This broader network fosters resilience and precipitates a shift from simply coping with climate change to adaptive responses. Linking social capital manifests through relationships with national governmental entities, donors, and other fish buyers enabled by the government and NGOs. These connections pave the way to more significant socio-political resources, facilitating decision-making to bolster well-being and climate change resilience.

These relationships, capacity-building efforts, and habitat conservation boost their social resilience against climate change. The transformative potential of such deep-seated network relationships underscores the need for additional research.

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