

The Feasibility of Applying Pescatourism to the Small-scale Fisheries in Japan

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Small-scale fisheries (SSFs) often receive insufficient attention and are undervalued by governments and the public worldwide, including coastal areas in Japan. The small-scale fisheries communities in Japan face various problems such as ageing population, low income, and environmental degradation. In light of this, Pescatourism, a popular type of fishing tourism in Europe, has the potential to alleviate the vulnerabilities and adhere to the current sustainable regulations in Japan. Japan is also expanding its Umigyo industry, which enables fishers to engage in economic activities utilizing all regional marine-related resources. This initiative encourages SSF communities to develop their tourism industry as an element of Umigyo, providing tourists with an immersive experience of fishers' lives in these communities, similar to Pescatourism. Thus, this study aims to explore the extent of the existence of SSF communities in Japan and the potential role of Pescatourism in addressing their vulnerability and creating governance arrangements for viability. Case studies, including literature reviews, observations, semi-structured interviews and focus group discussion (FGD) were conducted in five ports in Shizuoka Prefecture and Miyagi Prefecture in Japan. There are gradually increasing SSF tourism markets supported by legislation, owing to the recognised economic, ecological, and social benefits from stakeholder cooperations in Japan. This study can help reflect Japan's efforts and attempts at achieving viability in SSF tourism and its adaptation to Pescatourism, with governance concerns.

Key words:

Small-scale Fisheries, Pescatourism, Umigyo, Interactive Governance, Vulnerability, Viability

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List of Acronyms

SSF - Small-Scale fishery

JSSF - Japanese Small-Scale Fishery

LSF - Large-Scale fishery

V2V - Vulnerability to Viability Global Partnership

SDGs - Sustainable Development Goals

FCA - Fishing Cooperative Association

TFP - Total Factor Productivity

MAFF - The Ministry of Agriculture, Forestry and Fisheries

ORE - Office of Research Ethics

DMO - Destination Management Organization

NPO - Nonprofit Organization

Chapter 1

Introduction

1.1 Background

According to Reinert and Lundy (2016), Thomas Jefferson said, “The care of human life and happiness, and not their destruction, is the first and only object of good government.” Mitigating vulnerabilities and implementing effective governance are necessary, particularly for the small-scale fisheries (SSF) in Japan. The economic performance of the SSF is hindered by lower fish stocks caused by climate change on the global scale (Schuhbauer & Sumaila, 2016), and fishers struggle to compete for resources and space against other sectors (Islam & Chuenpagdee, 2022). Consequently, small-scale fishers represent a noticeably vulnerable group due to their deteriorating livelihoods and well-being. In Japan, previous overfishing has led to fish catch restrictions and climate change has increased coral mortality and degraded nearshore ecosystems. These factors contributed to a drop in fishery production to 44% of 1987 levels by 2006, drastically affecting fishers’ livelihood and economic performance (Teh et al., 2020; Yagi & Managi, 2011). Although Japan is trying to be more environmentally sustainable, the ignorance of the social and economic impacts of SSFs has resulted in a dramatic decrease in the number of fishers, with fewer successors among small-scale fishers. This erosion undermines Japan’s fishing culture and unequal and non-sustainable development in coastal regions (Teh et al., 2020; Sakurai et al., 2019). Meanwhile, Jentoft (2017) points out that governments in many countries still often ignore SSF’s opinions. Enhancing current governance has significant potential, as research indicates that interactive governance and co-management are ideal methods for SSFs to build synergy among stakeholders, creating new opportunities and development pathways (Gelcich et al., 2019; Jentoft, 2017).

Pescatourism, as a kind of sustainable fishing tourism, is assumed to be a potentially sustainable solution because it allows fishers to work in fishery-related industries rather than fully rely on fishing. Piasecki et al. (2016) in their research highlighted Japan's traditional Cormorant fishing tourism that performs catching fish by trained cormorants while spectators watch from other boats. Authentic Pescatourism involves being on board traditional boats with professional small-scale fishers, but Japan's spectacular form of Cormorant fishing is also regarded as Pescatoruism (Piasecki et al., 2016). The blue economy activities, which encourage sustainable use of marine resources to ascend economic benefits in Asia-Pacific Island countries, focus on not only fisheries but also tourism (Bhattacharya & Dash, 2021). Compared with commercial tourism, which causes conflicts with fisheries, Lai et al. (2016) showed that Pescatourism raises fishers' income and reduces ecological extinction risks. Although fishing tourism is popular in some coastal areas and offers a potential income source for small-scale fishers, its implementation in countries outside of Europe may encounter governance and operation differences. For example, Piasecki et al. (2016) in their research pointed out that the local authorities in Turkey, as an external factor, can arbitrarily terminate the implementation of fishing tourism. Turkey's failure of Pescatourism raises concerns about current empowerment, interactive governance and co-management in Japan. Therefore, Pescatourism's compatibility with SSF and governance in Japan determines its feasibility.

Though there is already some worldwide research on SSF, governance arrangement, and Pescatourism, there remain some significant deficiencies. Firstly, there is a concern about fishing tourism's economic contribution to demand and practicality. Some research found that Japan's popular fishing activities are community-based tourism and recreational fishing without being on vessels (Arlinghaus et al., 2020; Goto, 2020). Therefore, the scale and popularity of Pescatourism are unclear in Japan. Moreover, although Lai et al. (2016)

demonstrated Pescatourism's visible contribution to the economy and culture in Mediterranean coastal communities, it is unknown how much Pescatourism can reduce SSF's social and economic marginalization in Japan, such as how much the extra revenue will contribute to the development of fishery communities. In addition to the economy, the limited literature on fishing tourism in Asia raises questions about the implementation from governance aspects, although Jentoft (2017) points out the benefits for stakeholders through interactive governance in Blue Growth. Research has found that legal barriers and bureaucracy interrupt fishing tourism, so appropriate legal frameworks are required for innovation projects (Piasecki et al., 2016). Thus, it is doubtful whether Japan has inclusive and interactive legislation to execute Pescatourism's innovation and whether stakeholders are satisfied with implementing Pescatourism. Likewise, little literature describes whether the job satisfaction from fishing is strong enough to retain successors in Japan. As a result, the vulnerability alleviation, fishers' practicality, and stakeholders' attitudes related to Pescatourism are worth studying.

1.2 Purpose Statement

This study will explore the potential role of Pescatourism in addressing the vulnerability of SSF communities in Japan and identify governance arrangements necessary for achieving viability. A qualitative methods design will be employed, involving the collection of qualitative data for inductive analysis followed by in-depth deductive analysis. Following a preliminary literature review, semi-structured interviews with fishers will be conducted to gain a basic understanding of the extent to which Pescatourism exists in Japan, the natural extent of the general vulnerability in SSF in the study site and their relationships and corresponding governance changes. The second qualitative phase will serve as a follow-up in each study site to confirm and explain the initial findings. The study plans to explore

Pescatourism's effect on vulnerability reduction and governance arrangement enhancement for SSF viability, involving fishers, individuals engaged in Pescatourism-related activities, governmental officials, marine experts, and tourists in the coastal areas of Shizuoka City.

1.3 Research Objectives

The purpose of this study is to explore the potential role of Pescatourism in addressing the vulnerability of SSF communities in Japan and to create governance arrangements that achieve viability. Specifically, the study aims:

- a) To examine the extent to which Pescatourism exists in Shizuoka and Miyagi, Japan.
 - i. What is the history of Pescatourism in Japan, and how long has it been practiced?
 - ii. What is the market size of Pescatourism in Shizuoka and Miyagi?
 - iii. How do the characteristics or forms of fishing tourism activities in Shizuoka differ from the official Italian Pescatourism version?
- b) To assess the existing vulnerabilities of SSFs in the study site.
 - i. What are the current socioeconomic and ecological challenges of Japan's SSF communities?
 - ii. How and to what extent do the current vulnerabilities harm the livelihood of the SSF fishers?
- c) To examine the potential role of Pescatourism in addressing the vulnerability.
 - i) To what degree is Pescatourism a sustainable economic alternative to traditional fishing?
 - ii) Through what methods does Pescatourism potentially protect cultural heritage, enhance the local social identity, and maintain the number of fisher successors in the study sites?
- d) To analyze how the fisheries governance arrangements facilitate Pescatourism as a driver of viable SSFs.
 - i. What is the current power dynamic in Pescatourism?

- ii. Who are the stakeholders, and what are their costs and benefits in implementing Pescatourism?
- iii. What are the degrees of stakeholders' satisfaction and interaction resulting from Peascatourism?

1.4 Literature Review

The literature review in Chapter 2 is conducted to obtain conceptual and theoretical understandings of previous research on the four areas of interest: vulnerability to viability for SSFs, Pescatourism, stakeholders in coastal governance, and ecotourism in Japan. It provides a theoretical baseline to illustrate the replication of Pescatourism in different places, identifies gaps in the existing research, and aids in understanding both the research and the methods previously applied to investigate these main fields.

1.5 Research Methodology

This thesis employed a case study approach in the lens of qualitative study, consisting of several stages to achieve a comprehensive understanding of Pescatourism in Japan and its impact on SSF communities.

Initially, a comprehensive literature review of fishery-related ecotourism at the research site was conducted to understand the current application of Pescatourism in Japan. This review involved sourcing journal articles and books by using keywords from the research fields followed by inductive semi-structured interviews. These interviews were analyzed inductively to identify features for testing different perspectives of vulnerability context concerns and livelihood vulnerabilities within SSFs. The final stage involved focus group discussions which were used to elicit more insights and explanations as participants discussed topics with others from the same stakeholder group.

The literature review provided a comprehensive understanding of the operation of Pescatourism and its existence on the research site. The in-person semi-structured interviews allowed for the exploration of emerging themes through predetermined but open-ended questions with probes. These interviews were conducted in person between the interviewees and the researcher, along with a translator in a conversational manner. Incidentally, the researcher could observe the appearance of the research site before or after the interviews. Finally, focus group discussions were used to generate more insights and explanations as participants discussed topics with others from the same stakeholder group.

The analysis part of this research on Pescatourism in Japan was based on the historical development, different activities, efforts of vulnerability mitigation of traditional Japanese Small-Scale Fishery (JSSF) fishing to viability, and the responsibility of the related stakeholder groups. The interviews inductively explored the themes and variables, while the results of the focus group were analyzed deductively by recording the frequency of the mentioned phrases.

1.6 Significance and Relevance

This study is important for four reasons related to the fishery-related ecotourism for SSFs: the existence and extent of Pescatourism in Japan, vulnerabilities, viabilities, and governance during and after the COVID-19 pandemic. Since the Blue Economy can promote Pescatourism, and SSFs in Japan need vulnerability mitigation and viability achievement for better livelihood, understanding Pescatourism's growth trend and efforts is vital. The research findings will inform the integration of Pescatourism and SSF to contribute to coastal resilience.

1. Globally, this study is part of the Vulnerability to Viability Global Partnership (V2V), which aims to generate knowledge to mobilize the transition of small-scale fisheries

from vulnerability to viability, thereby alleviating poverty among marginalized SSF populations. Since Japan is part of the V2V research network, this research results will benefit V2V researchers by systematically understanding the five study sites and supporting their future conclusions, pursuing Partnerships for the Goals (SDG 17).

2. This study aims to provide fishers with a new income channel through SSFs and to support the continuation of inheriting fishery culture through fishing tourism. By examining successful Pescatourism cases and their outcomes in other regions of Japan, this study seeks to address skepticism surrounding Fishing Tourism and provide the fishers with a reference for tourism development strategies.
3. This study also aims to analyze the governance arrangements in Japan to assess the degree of interaction among stakeholders and see their effectiveness in leading policymakers and government decision-makers in allocating relatively equal empowerment to ecotourism development in coastal areas. The recognized benefits and challenges of SSF governance can serve as a reference for other coastal countries.
4. As marine biodiversity should be recovered from the previous overfishing, Pescatourism is expected to decrease the SSF communities' reliance on merely fishing, thus improving industry diversification for Life Below Water (SDG 14).
5. Finally, this study is estimated to analyze Pescatourism's compatibility with stakeholders and the degree of efforts to revitalize the coastal communities where aging problems delay economic growth. This aligns with the goal of SDG 9 (Industry, Innovation, and Infrastructure) to create sustainable cities and communities (SDG 11).

1.7 Thesis Structure

This thesis presents an analysis of the feasibility of applying Pescatourism in SSFs in Shizuoka and Miyagi Prefecture in coastal Japan. It comprises six chapters in total – (1)

Introduction, (2) Literature Review, (3) Methods, (4), (5), and (6) Results, and (7) Conclusion.

Chapter 1 provides the background of the study, purpose statement, research objectives with research questions, study area and research methodology, and thesis significance. It also outlines the structure of the thesis as a roadmap for the readers.

Chapter 2 demonstrates a review of relevant literature, such as SSFs, Pescatourism, stakeholders in coastal governance arrangements, and the operation of ecotourism in Japan, as well as the conceptual framework that informs this project.

Chapter 3 describes the methods used to conduct this research, detailing the case study location, strategy of inquiry, study components, data analysis, limitations of the approach, and ethical considerations. Additionally, this chapter explains how the data were analyzed and interpreted to generate results.

Chapter 4 presents the extent of the development of Pescatourism at the study sites in Japan, identifying the activities and scales of local SSF fishers. Chapter 5 illustrates the current vulnerability contexts and their impact on livelihood and discusses the results of Pescatourism's efforts to alleviate these vulnerabilities. Chapter 6 analyzes the interaction among key stakeholder groups to achieve viability from the perspective of governance arrangements.

Lastly, Chapter 7 concludes the thesis by summarizing the key findings and discussions presented throughout the study and evaluates whether the operation and governance arrangements of Pescatourism in Japan are feasible enough for SSFs to move from vulnerability to viability.

Chapter 2

Literature Review

2.1 Introduction

This research topic focuses on assessing the feasibility of applying Pescatourism to small-scale fisheries in Japan. Bowen et al. (2009) define feasibility by breaking it down into several key areas. These include the acceptability of intended recipients to the intervention, the demand for interventions, and the probability and degree of implementation. They also emphasize practicality, particularly when the resources and commitments are limited, as well as the need for adaptation to the changes. Additionally, they also highlight the importance of assessing how well a new program integrates with existing ones and its potential for expansion to different populations or settings.

Japan has a long history of cormorant fishing as a spectator activity, dating back over 1300 years (Piasecki et al., 2016). Surrounded by the ocean, Japan's historical development has been deeply tied to marine resources (Sakurai et al., 2019). Its SSFs, which are defined as fishing vessels smaller than ten gross tons, occupy 88% of powered vessels (Teh et al., 2020). However, rural fishing communities in Japan faces worsening conditions due to the dramatic decline in fishery production, caused by both biological and economic overexploitation, and social problems like an aging population and fewer successors ((Teh et al., 2020; Yagi & Managi, 2011; Sakurai et al., 2019). Consequently, this study seeks to address the gaps in the literature on Pescatourism in Japan by exploring local fishers' demand for Pescatourism as a means of mitigating vulnerability, examining how governance of Pescatourism supports SSFs and assessing the potential market for Pescatourism's in Japan.

The literature review will provide an overview of knowledge of Pescatourism as a strategy for transitioning SSF vulnerability to viability. It will begin with the background of SSFs, including their importance for coastal social wellbeing, the factors contributing to their vulnerability, and methods for enhancing their viability. Next, the review will examine the

roles of stakeholders in coastal governance and their impact on SSF's growth. It will then explore the characteristics of Pescatourism, its socioeconomic contributions, and the governance support required for its successful implications. Finally, the conceptual framework of this research is based on the sustainable livelihood framework for tourism.

2.2 SSF's Vulnerability to Viability

2.2.1 SSF's Importance

According to Schuhbauer and Sumaila (2016), SSFs represent over 90% of fishing vessels globally, providing the livelihood of 22 million fishers. Although the number of people employed in SSF is about 24 times greater than in large-scale fisheries, SSF almost discard no fish at the sea, consume only one-fourth of the oil used by large-scale fisheries (LSF's) and catch about 15 million tons fewer fish than an LSF (Pauly & Zeller, 2016). Thus, although SSFs operate with lower efficiency and rely on manual labor, they are more environmentally friendly with more employment positions than LSFs. The value that SSFs offer is not only the profits but also traditional, cultural and social values (Schuhbauer & Sumaila, 2016). Thus, SSFs are considered as the socially vulnerable groups in terms of livelihood. For example, due to SSF's characteristic of disorganized occupations, they are regarded as the last market for the poor, unskilled, and surplus labor (McClanahan et al., 2009). However, they face various conflicts, including those related to socio-ecological resilience and management.

2.2.2 Factors of SSF's Vulnerability

SSFs encounter different types of vulnerability, including socioeconomic, socioecological, and marginalization factors. Nowadays, there are several indicators to assess vulnerability, such as an indicative Vulnerability Capacity Index considering the material, institutional and attitudinal vulnerability (Weeratunge et al., 2014). In terms of the factors of

socio-ecological resilience, Lee and Park (2021) list the individual, social, and physical environments as variables in a social-ecological model. Likewise, according to Islam and Chuenpagdee (2022), SSFs' vulnerability factors are in the biophysical, economic, social, technological, and governance fields, while biophysical and governance are most commonly vulnerable. SSF is a vulnerable group due to continuous poverty, and their economic performance is low because of the uneven allocation of the benefits from their fisheries as well as the pressure from globalization and climate change (Schuhbauer & Sumaila, 2016). However, top-down resource management disempowers fishers with untransparent language (Nayak et al., 2014). This results in a low communication efficiency and understanding between the government and SSFs.

Similarly, the long-term marginalization of the SSFs worsens their vulnerability from environmental, social, political and economic shocks to exacerbating poverty and harming fishers' human rights (Weeratunge et al., 2014). For example, discussions about Blue Economy and Blue Growth initiatives often excludes most SSFs (Islam & Chuenpagdee, 2022). In order to alleviate the marginalization, research shows the significance of considering the well-being and environmental resources through multiple power structures in the ecological, economic, and political arenas to rebuild fishers' identities (Nayak et al., 2014). Consequently, the ignorance of fishers' benefits from governance aspects is a barrier to SSF's economic and social development, especially when the environmental problem worsens the SSF stocks.

In addition to the barriers in the socio-ecological system, management is another conflict for SSF competitiveness. As the investment activities in SSF are much fewer than in industrial fisheries, there is a sparse distribution of SSF along coastlines without large landing sites or markets in many countries (McClanahan et al., 2009). According to Andrew et al. (2007), in addition to the weakness of SSF's intra-sectoral management, like overfishing and

excess capacity, some challenges originated outside, such as market distortions. Other industries with commercialization may further exploit SSF's access and withdrawal in the coastal areas. Recent studies have pointed out SSFs competition with other sectors for resources and space, including industrial, recreational, foreign and even illegal fishing, coastal non-renewable and renewable energy developments, and commercial tourism; however, there is often a lack of appropriate infrastructure and access to services for SSF (Islam & Chuenpagdee, 2022; Campbell et al., 2013; Bennett et al., 2021; Miret-Pastor et al., 2019). In particular, after the tourism sector occupied the beach where local people dwell in coastal Brazil, the original local fishers had to quit to the margins of the beach (Nayak et al., 2014). Therefore, innovation in the management structure of SSF is required to enhance its economic growth and competitiveness.

2.2.3 Potential Supports for SSF's Viability

There are already some suggestions for enhancing SSFs to alleviate marginalization, including increased empowerment and public concerns. Schuhbauer and Sumaila (2016) define economic viability as maintaining nonnegative net benefits to society from fishing, with the suggestion of considering social and governance for economic viability. Although food security, subsidies or prevention of biodiversity loss are useful external support to the fishery's economic viability (Schuhbauer & Sumaila, 2016), it is still important to rebuild fisheries to enhance social-ecological and political resilience for more flexibility and options for the fishery (Nayak et al., 2014). Similarly, improving international, regional, and local interventions is also necessary for the global context of ecological risks (Aswani, 2019). Research has found that the considerable changes in societal priorities and values are the foundation for governance improvement in SSF's durable management (Andrew et al., 2007). Governance should be applied because Cánovas-Molina et al. (2021) show the importance of public policies on fisheries and aquaculture in solving poor enforcement, corruption, and

illegal and unregulated fishing of both SSF and LSF overfishing, especially LSF as a main driver of overfishing. Socially and spatiotemporally, it is hard to achieve compliance for users and managers without fair local governance and community empowerment (McClanahan et al., 2009). As a large range of stakeholders is a challenge (Andrew et al., 2007), establishing more forums can facilitate rational management of small-scale resource extraction against the background of competing interests (McClanahan et al., 2009). Small-scale has been a topic in the worldwide forum, although its attention is much smaller than the industrial-fisheries topic (Campbell et al., 2013). Consequently, empowerment through governance and public awareness of SSF's culture and demand facilitates their rebuilding.

Adaptive governance can be implemented to organize the fishery commons. Islam and Chuenpagdee (2022) show that states' institutional, organizational and financial support can boost the capacity of fisher organizations, and Gelcich et al. (2019) have shown Chile's territorial user rights to artisanal fisher associations (TURFs) network as an example of co-management for ecosystem services and stewardship for new opportunities and growth pathways. In addition to the co-management that shares responsibility between government and user groups for cost reduction and better decision making, there are three other typical types of institutional arrangements. However, research shows that bureaucracy-based and market-based institutions often limit small fishers, while community-based forms sometimes have inefficient rules with unsafe working conditions (Imperial & Yandle, 2005). Therefore, there is a potential to apply co-management to sustain biodiversity and the supply of multiple ecosystem services (Gelcich et al., 2019), especially invertebrate resources and small-scale fisheries (Aswani, 2019). Similarly, co-management brings more pluralism of occupations, which McClanahan et al. (2009) regard as a more efficient alleviation of poverty and risk than the previous specialization on fishery resources. As a result, systematic governance that

respects culture and value, the public concern for fishers' livelihood, formal institutions, and the co-management of occupation pluralism facilitates SSF's socio-ecological resilience.

2.3 Pescatourism

2.3.1 Fishing Tourism as A Method for SSF Viability

There is potential for the tourism industry to consider the social value to stakeholders in addition to the merely economic value. Incorporating the social and cultural dimensions is vital for innovative strategies and policies to develop tourism (d'Hauteserre & Funck, 2016). Bhattacharya and Dash (2021) claimed that fisheries and tourism are included in the Blue Economy. Thus, research advises the fishing sector to collaborate with the nautical, sports, or tourism industry for more job positions and less internal conflict (Miret-Pastor et al., 2019).

Pescatourism can match the demand for the improvement of livelihood through the pluralism of occupations as well as the maintenance of culture. Lai et al. (2016) in their research pointed out that tourism that is considered Pescatourism includes casting and pulling in the net, cooking fish for lunch, swimming or scuba-diving in the open sea, and visiting fishing villages or places of interest. In addition, Meneghello and Mingotto (2016) denoted that Italian-style aquatic tourism lets tourists participate in fishers' work as recreational, educational, and hospitality services. For instance, Piasecki et al. (2016) claimed that Pescatourism has learnt from other successful tourism cases to invite tourists to fishers' houses for accommodation and eating, and some souvenirs are sold locally. As a result, fishing tourism's activities on boats instead of tourist resorts can reduce harm to fishery commons when some fishers become tour guides in tourism activity and do less fishing. Surveys on the Turkish Aegean and Mediterranean coasts have found that 81% of fishers are interested in Pescatourism as another income channel, while 51% of fishers' preferred job in addition to fishing is marine-related tourism (Ünal et al., 2022). Consequently, Pescatourism

becomes an attractive alternative for SSF fishers, providing another salary from the secondary fishing industry in some countries.

The form of Pescatourism can be broad. Tsafoutis and Metaxas (2021) in their work showed fishing tourism's appropriate spread and popularity on small-scale vessels in the Mediterranean Sea, Europe, and Greece. In contrast, the popular fishing tourism activities in East Asia are majorly sightseeing through aquarium watching and historical culture in China (Yang et al., 2017, as cited in Arlinghaus et al., 2020), and recreational fishing (Arlinghaus et al., 2020) and community tourism in Japan (Goto, 2020), which are mostly unrelated to vessels. This does not mean there is no Pescatourism in Asia. The spectacular form where the tourists watch fishers' performances from accompanying vessels is also a part of Pescatourism activity (Piasecki et al., 2016).

2.3.2 Pescatourism's Socio Economic Contributions In Europe

Pescatourism shows environmental and cultural efforts. Piasecki et al. (2016) regard the preservation of fish stocks and marine and coastal environments, the inheritance of the craft's historical heritage, and the spread of public recognition of coastal biodiversity protection as environmental aims. Environmentally, Ünal et al. (2022) pointed out that fewer fishing tools, such as nets, bait, and longline hooks, lead to less pressure on marine resources. Meanwhile, a day's Pescatourism with only 20% of standard catches can gain higher profits (Lai et al., 2016). Thus, Pescatourism makes fishers assort the limited catch for natural resources to pursue environmental benefits (Piasecki et al., 2016). Regarding the educational perspective, fishing tourism aims to improve stakeholders' values through environmental education and awareness (Tsafoutis & Metaxas, 2021). Pescatourism brings tourists in contact with fishers and their techniques and cultural value, fishing culture, food tradition and sea-land territory involvement as dimensions of successful Pescatourism (Lai et al., 2016). Similarly, Sakurai et al. (2016) explained that joining activities such as observing the wildlife in the coastal area

can attach future generations to the coastal area to enhance their aspiration for conservation in the coastal area. Thus, artisanal fishers working in Pescatourism can reduce pressure on fish stock and improve tourists' recognition and connection to the ocean and fish culture for environmental protection.

Pescatourism can lead to social stability and economic growth for SSF communities. As a branch of sustainable fishing tourism, Mendoza De La Luz (2021) showed how the combination of Pescatourism, blue economy, community, and strategies can help in social and economic development. The value of ecotourism probably leads to economic success because Biggs et al. (2012) claimed that lifestyle values effectively enhance the resilience of nature-based tourism enterprises to crises. Lai et al. (2016) have shown a sample that 500,000 Pescatourism trips result in a turnover of 35 million euros in Italy, although the earnings were concentrated in the summer months. Ecotourism's economic and social contribution is not only in Europe, as Hunt et al. (2015) showed Costa Rica's ecotourism led to more stable jobs for local people. As a result, as shown by Piasecki et al. (2016), Ecotourism opens the door for stable employment, new revenues, fishers' involvement throughout employment, and promotion of the consumption of local and traditional foods as economic aims of Pescatourism activities. Lai et al. (2016) also found in their research that there is high tourist satisfaction with Pescatourism in Sardinia, especially because of its fishing experience, land excursion, and the fish as food. Thus, Pescatourism has considerable room for growth with appropriate governance and social strategies.

In their efforts to improve regulations for fishery stakeholders, Chen and Chang (2017) highlighted several measures, including the reduction of conflicts between commercial and recreational fishing, the establishment of a safe boarding area at the fishing harbour, monitoring programs for management, marine education, and rules for recreational fishing vessels. Financially, Europe offers diversification funds for fishing tourism due to its

potential for sustainable income, employment, and better coastal living quality (Miret-Pastor et al., 2019). Socially, Piasecki et al. (2016) emphasized the importance of raising public awareness about fishers and designing tourism products that match the cities' uniqueness. As a result, if we compare the utterly commercial tourism motivated by the Blue Economy that harms SSF, Pescatourism integrates sustainable tourism with SSFs, bringing social and economic value to different groups.

2.3.3 Relationship Between Governance and Pescatourism

Pescatourism has the potential to be successfully duplicated in other countries, as evidenced by Piasecki et al. (2016) which shows its successful spread in Mediterranean countries. The concept of Pescatourism, or similar terms, is also spreading more widely to countries like Brazil to grow fisheries tourism. However, different modes of governance in different countries limit its spread to its regions or near Asia. For example, government agencies are reluctant to allow Pescatourism in Turkey due to the shortage of clear legislation and essential efforts, as well as the safety and hygiene concerns (Ünal et al., 2022), and the local authorities can arbitrarily terminate the implementation of fishing tourism. Thus, bureaucracy's policies lack the concerns of facilities and support of the local communities. As Pescatourism's organization in a thorough and regulated manner increases the adoption extent of Pescatourism among small-scale fishers in France, Italy, and Greece (Piasecki et al., 2016), Turkey is encouraged to learn their management practices and legislative frameworks to remedy the interactive governance's second-order supportive mechanisms (Ünal et al., 2022). Moreover, local governance of resources through strong local institutions is important for ecotourism to achieve its conservation success (Stronza et al., 2019). In addition to these, the uneven distribution of funds is another problem. For example, most of Europe's diversification funds are transferred to tourism instead of the fishery (Miret-Pastor et al., 2019). Therefore, better coastal governance should exist for more equal rights between

stakeholders and clear legislation without bureaucratic interruption. In contrast to this, Herbold et al. (2020) pointed out that community-based tourism can include a focal organization in the network, such as the governance arrangement. Therefore, the relationship between the governance arrangement and fishing tourism can be mutually beneficial.

2.4 Coastal Governance with Stakeholders

2.4.1 Stakeholders' Power in Coastal Governance

The interactions among stakeholders can benefit each group more practically than top-down governance. Recent evidence suggests that coastal development is concerned with the development of human well-being, environmental sustainability, and economic profits (Bennett et al., 2021). Thus, coastal governance should consider all three pillars of sustainability. However, research reveals that the government sometimes ignores vulnerable groups' opinions, such as SSF (Jentoft, 2017). More specifically, Bellanger et al. (2020) in their research highlighted top-down regulations' weaknesses in addressing the common-pool resource problem and dynamic factors, such as the high transaction costs without sufficient negotiation among the parties and economic incentives. Moreover, researchers state that bureaucratic regulations often ignore the local fishers' needs for tourist activity to make unrealistic decisions and interrupt the implementation of innovative programs (Piasecki et al., 2016). Financially, Tak-chuen (2005) explains the uneven distribution of costs and benefits, noting that officials gain the most among the various levels of government, while the benefits from tourism revenue remain minimal when tourism developmentalism blends with bureaucracy. Luckily, as power is not always sourced from the top, local groups can defend their space-and-resource-related rights and encourage the validity of policies through their narratives (Bennett, 2019). According to Campbell et al. (2016), there are a range of governance actors in addition to the state government, including scientists in partnership with

state and UN agencies, private sector actors and NGOs. Therefore, co-governance relies less on the government and encourages fairer and reasonable benefit distribution among actors.

2.4.2 Global Trend of Stakeholders Cooperation

There exists several collaborations in ecosystem-based governance for coasts and marine, and stakeholders play a vital role in this area. These partnerships aim to protect ecosystems and economic sustainability by solving the accumulative influences of pollution and fisheries depletion (Gonzales et al., 2019). There is a significant effort to mitigate biodiversity loss and poverty by effectively managing coastal systems to pursue the Sustainable Development Goals (Blythe et al., 2020), and cooperation is important not only between governments from countries but also among civil society actors in the regions (Gonzales et al., 2019). However, ocean-based economic development sometimes requires additional transparency, decision-making rights and information to include key stakeholders. (Bennett et al., 2021). Similarly, the Blue Economy, leading to excessive external investments and interests, can harm local culture, cohesion, and livelihood (Bennett et al., 2021). As insufficient attention to socially marginalized groups' benefits and development is a complaint, there are constant improvements for stakeholders in coastal governance. For example, Gonzales et al. (2019) pointed out that Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and the State of Oceans and Coasts (SOC) provided platforms to stakeholders for synergies among the various sectors. Consequently, the global pattern of coastal governance is raising its attention to stakeholders' rights by boosting their interactions.

2.4.3 Tensions of Cooperation between Stakeholders

Interaction demands an understanding of values, collective actions and equal rights to minimize stakeholder conflicts. Due to the conflict with other fisheries, SSF faces constrained development that impacts food security and fisheries' livelihoods (Campbell et al., 2013). Therefore, for the enhancement of the governability of fisheries, the system needs interaction

(Jentoft & Bavinck, 2014). Fortunately, Jentoft (2017) in his research shows that governance being interactive through institutional innovation can solve conflicts and improve transparency and shared responsibility among stakeholders to support Blue Growth and maritime spatial planning. And yet, conflicts among stakeholders still exist. Jentoft and Bavinck (2014) believe that the 'empowerment' of weaker parties facilitates constructive interaction in co-management. Otherwise, even though interactive knowledge integration can reduce conflicts, it can also be hindered by power (Jentoft, 2017). Moreover, there can also be a value boundary because conflicts can be caused by different user groups' diverse perceptions of resource values (Bellanger et al., 2020), but Jentoft (2017) highlighted that conflict can give people a chance to clarify their values instead. There are some suggestions for a long-term interaction for coastal governors. Bellanger et al. (2020) showed a Social-ecological system and transaction cost framework as complementary governance methods to encourage cooperative management and collective-choice rules with the exchanges of some type of property rights. Ostrom et al. (1999) identify trust, reciprocity, and reputation as factors for reciprocal cooperation. Consequently, reducing the gap in empowerment allocation and gaining a better understanding of each other's value and demand can facilitate long-term trust in interaction.

2.4.4 Interactive Governance for Stakeholders

Interactive governance theory represents more collaboration among stakeholders. It matches the rebuilding of options and opportunities for fisheries through consultation with stakeholders and institutional partnerships, which focuses on the fisheries from the social, cultural and economic perspectives (Khan & Chuenpagdee, 2013). Research has displayed that interactive governance is used to study environmental governance, fisheries systems, the link between governance and governmental institutions, and the engagement of stakeholders (Edelenbos et al., 2010; Jentoft & Bavinck, 2014; Partelow et al., 2020). It is also suitable for

the negotiation between fishery and tourism stakeholders because Nouzari et al. (2019, 2020) show underground planning and flood risk management as successful cases of using interactive theory's four criteria, which are equality, influence, reasonable debate, and transparency, to assess stakeholders with different interests in achieving common goals in a policy. Reactive and proactive interactive governance matches SSFs' desires for poverty alleviation, well-being, and intrinsic value through participation in governance (Jentoft & Chuenpagdee, 2018). Thus, it matches the stakeholder theory for the cooperation between SSF and commercial tourism. Research explains that stakeholder theory creates value for customers, suppliers, employees, financiers, communities, and managers in business ethics, marketing, and management (Parmar et al., 2010). The interactions between stakeholder groups, which include both problems and opportunities, can indicate the first order of justice (Nayak, 2022). Consequently, interactive governance can be used to the value of marine tourists, marine tourism companies, and SSF fishers.

2.5 Ecotourism in Japan

2.5.1 Condition of Marine Tourism in Japan

Japan boasts a significant market for coastal tourism due to its cultural and economic significance. Marine tourism in Japan exemplifies a close relationship between people and objects, such as places, cultural sites, heritage buildings, and historical landmarks, which demonstrates the relationship between humans and non-humans (Jamal & Higham, 2021). Geographically, Japan is surrounded by the ocean, so its historical development has been closely tied to marine resources (Sakurai et al., 2019). The cultural significance of fishing, sushi as seafood, and fishing techniques display the maritime culture of Japan (Bestor & Bestor, 2014). Despite being one of the top tourist-generating countries in the world, Japan's

marine leisure market predominantly serves Japanese customers rather than international tourists (Funck, 2006).

The performance of marine tourism in Japan can be stable, with a noticeable decline in tourist numbers over time. In 2010, the Japanese tourism industry contributed 2.4% of the gross national product, with 49.4 billion yen of radiation effect and 4.24 million employment positions (Yang & Liu, 2018). According to Japan Tourism Statistics (2023), the number of visitors traveling to Japan peaked at over 30 million in 2018 and 2019 before the COVID pandemic. In 2022, the number of visitors recovered to approximately 80% of the 2015 levels. Although Japan is one of the top tourist-generating countries in the world, its marine leisure market caters almost exclusively to Japanese customers (Funck, 2006). Additionally, some unregulated behaviors by leisure tourists pose several challenges.

Coastal tourism without regulation can lead to problems. According to Funck (2006), fishing is the second most popular marine leisure activity, but 79% of fishing cooperatives encountered problems with leisure participants' depletion of stocks through overfishing by amateur fishermen. Similarly, on a lake scale, Yoshiyama et al. (2016) pointed out that recreational overfishing led to a declining Miyabe charr stock in Japan's Shikaoi Town in the 1970s, which was solved by the nonprofit organization 'Hokkaido Tourism Union' and the recreational fishery management program 'Great Fishing in Lake Shikaribetsu' (GFS) that limits angling for 50 days of the year and only 50 persons per day. Therefore, a more regulated form of tourism with more biodiversity and environmental concerns is required.

2.5.2 Ecotourism Development in Japan

There hasn't been much noticeable growth in the ecotourism market in Japan. Globally, ecotourism represents the fastest-growing sector of the tourism industry (Uzama & Walter, 2018). However, due to the emphasis on marketing Japan as a destination for international tourists, the tourism boom in Japan brought a negligible increase in ecotourism (Uzama &

Walter, 2018). Progress is being taken to support ecotourism's development. 2003 witnessed the Ministry of the Environment starting the promotion of ecotourism with a commission to discuss the benefits and problems of ecotourism, and 2008 witnessed the enactment of a law to promote ecotourism with four principles: conservation of natural tourism resources, tourism promotion, economic and social development and environmental education (d'Hauteserre & Funck, 2016). Due to Japan's comprehensive concern with sustainability thinking, it matches "regenerative tourism" which takes another step forward in the idea of sustainable development because it redesigned the overall tourism system to reduce environmental damage and improve life quality (Çakar & Uzut, 2020). As a result, there is an institutional foundation for the future ecotourism/regenerative tourism development.

There are some governmental actions for promoting ecotourism in Japan. Research shows that Japan's possible ecotourism is through its dense population with a highly developed tourism market and it focus on environmental education (d'Hauteserre & Funck, 2016). There is maritime education for young children. For example, Hinase Junior High School in Bizen City has a formal marine education program (Sakurai et al., 2019), and the coastal area of Otsuchi located in the Sanriku region has an environmental education program for not only elementary and high school students but also for residents (Sakurai et al., 2016). Similarly, the ecotourism curriculum is encouraged to be included in Japan's adult education to match the UN's sustainable development (Uzama & Walter, 2018). As a result, marine education can build sustainable awareness as a foundation for coastal ecotourism.

There is a higher demand for tour guides for ecotourism. Experienced guides or instructors are important in the ecotourism industry (d'Hauteserre & Funck, 2016). Research has highlighted that tour guide plays a crucial role in enhancing tourists' awareness of the natural environment, local communities, and cultures. It aims to foster positive feelings, help tourists acquire new skills, and encourage active participation. However, to achieve these

goals effectively, tour guides should undergo training that includes aspects such as ecotourism principles, environmental education, interpretation skills, knowledge of the ecotour system, and an understanding of tourists' needs (Yamada, 2011). Local people can act as an important human capital to facilitate the understanding of the local environment and culture. For example, Sakurai et al. (2019) explain that Hinase Junior High School's program collaborates with local fishermen so that students can conduct interviews with local fishermen and fishery science institute staff. Therefore, it is possible for some fishers to be tour guides. Meanwhile, the ecotourism curriculum for adults aims to show improvement in Destination Japan to deliver learnt knowledge to tourists (Uzama & Walter, 2018), which represents the potential of ecotourism. Thus, fishers have been concerned as educational resources, and there are channels for their training and work.

2.6 Conceptual Framework

It is assumed that the application of Pescatourism in Japan enhances vulnerability mitigation. The framework used for this research includes the sustainable livelihood framework for tourism proposed by Shen et al. (2008), which includes institutional arrangement (governments, tourism enterprises, local community, and tourists), livelihood outcomes (sustainable economic, social, environmental, and institutional development), and vulnerability context (shocks, trends, seasonality, and institutions). Procedural satisfaction is also a key concern in interactive governance. Nouzari et al. (2019, 2020) have identified four criteria to assess stakeholders' procedural satisfaction in interactive governance, which are: quality, influence, reasonable debate, and transparency. In the context of Pescatourism as a form of ecotourism, Jaini et al. (2012) highlighted the indicators of sustainable tourism as defined by the World Trade Organization for social, ecological, economic and planning aspects.

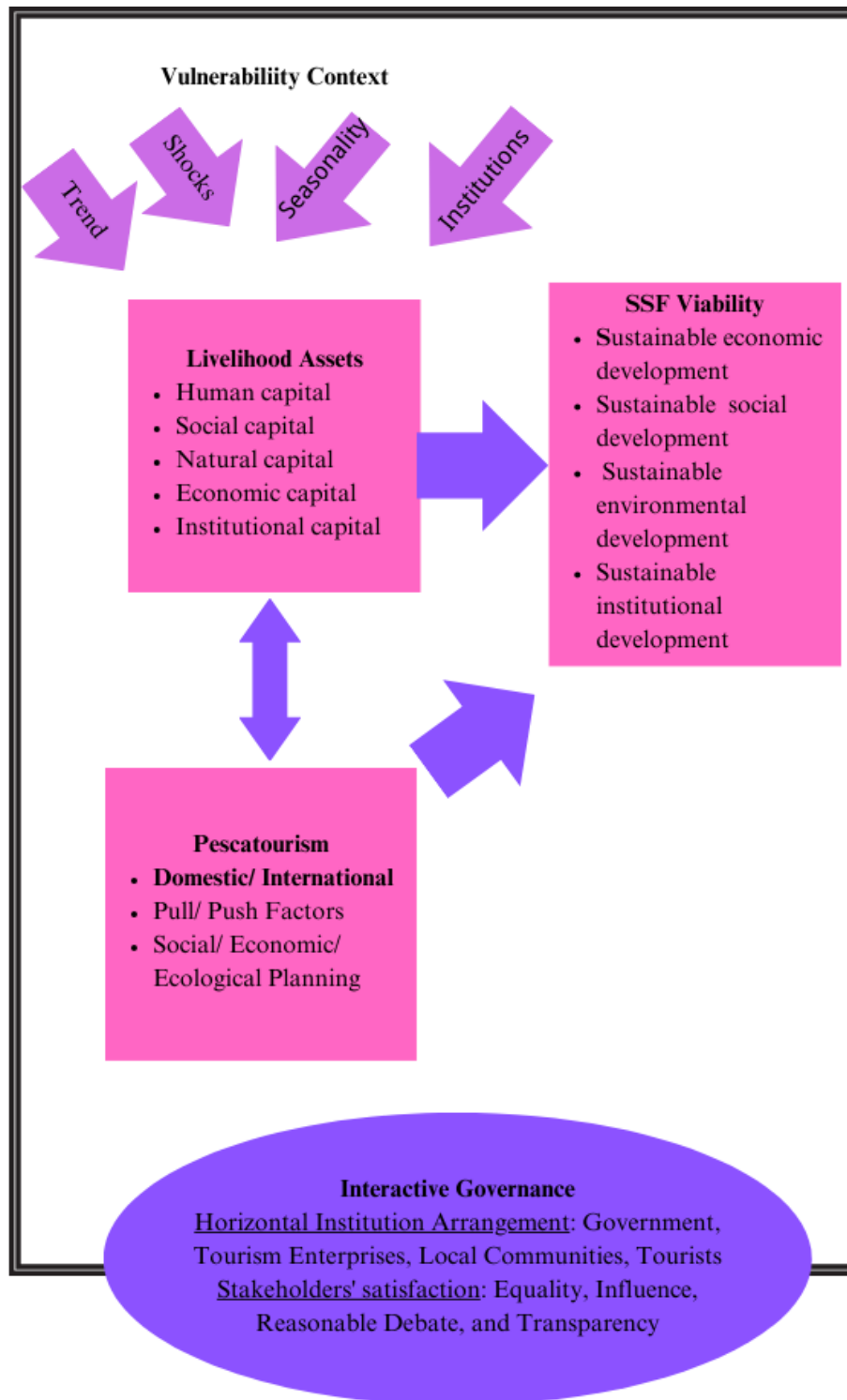


Figure 2.1: Conceptual Framework

2.7 Gap

Firstly, while the general ecotourism market in Japan is growing slowly, it is unknown if Pescatourism, as an ecotourism branch, performs better in Japan. Furthermore, there is a lack

of description about how much Pescatourism impacts the marginalization of SSF and whether it improves the consideration of this vulnerable group. Consequently, the extent to which Pescatourism contributes to vulnerability reduction in coastal communities is also unclear. Moreover, the details of the modern development of Pescatourism lack examination. There is also a dearth of data to analyze how Pescatourism supports the governance arrangement to pursue long-term viability in SSF communities, including the details of stakeholders' interactions. Furthermore, the costs and benefits of Pescatourism in Japan have not been analyzed, which is a crucial factor of the cooperation. Lastly, there is limited research on the resiliency of Pescatourism to external shocks, leaving it unclear whether Japan's current society and biodiversity can maintain Pescatourism's long-term development.

2.8 Conclusion

Pescatourism, as a form of sustainable fishing tourism on the vessels of the SSFs, has the potential to play a viable role in mitigating the conflict between fishery and commercial tourism to achieve a socioeconomic contribution in many countries. SSFs are of significance to maintaining the livelihood, inheriting artisanal fishery techniques and preserving coastal cultures in many countries. However, SSFs are extremely vulnerable due to social ignorance, biodiversity loss, deprived areas and rights of external investment in commercial activities. Originated in Europe, Pescatourism has promoted sustainable fishing tourism, leading to environmental awareness and more income for SSF fishers. Despite this, its long-term benefits to SSFs are unknown, and it is unsuitable for bureaucratic institutions. The coastal governance, with a trend of stakeholder engagement, may facilitate the spread of Pescatourism to other countries. Past literature shows that Japan's activities are limited because most of its activities are spectator forms and recreational fishing on SSF fishers' boats. Meanwhile, the viability of SSF and the expansion of ecotourism depend on coastal

governance with more interaction among stakeholders, so Pescatourism's future market and conflicts among stakeholders in Japan are worth further research.

Chapter 3

Study Area and Research Methodology

3.1 Introduction

This thesis aims to understand how Pescatourism has potential in Japanese small-scale fisheries (JSSF) and how the fisheries governance arrangements facilitate the existing Pescatourism in Japan based on the perspectives and expertise of research participants. This chapter first explores the case study context, narrowing from the scale of Japan to the specific locations: Mochimune Port, Yui Port, and Tagonoura Port in the central Shizuoka Prefecture, Higashiizu in the southern Shizuoka Prefecture, and Higashi Matsushima in Miyagi Prefecture. Each case represents the situation of Umigyo Tourism in Japan to some degree, but their similar and special features or representativeness are explained later as the basis for opinions. Subsequently, the chapter defines the methodology and data collection methods used in this research, including issues of sampling and the data analysis methods. The limitations of these methods and the strategies applied to alleviate them are also demonstrated in this chapter.

3.2 Study Area

3.2.1 Background Information on Japan

This section focuses on cultural and geographical information about Japan, which is important for understanding the social context and the marine conditions in Miyagi and Shizuoka Prefecture in subsequent chapters. Regarding the social context in Japan, it has a special culture as a developed country. According to Yamashiro (2013), Japan is homogeneous in its ethnicity, culture, and Japanese language, although there are still some minority groups leading to unpredictable cultural diversity. There is a popular fish culture in Japan, which is famous worldwide. According to Bestor and Bestor (2014), sushi, as a food covering rice/ rice bowl (Don), fish, and vegetables, has been an ethnic specialty that has successfully expanded to the whole world since the 1970s. As a result, people in Japan regard

fish as a central food culture, and the people are less aware of issues like racism and/or marginalization due to the homogeneity that is present in the society.

In terms of geographical information, Japan's location is located on the west of the Pacific Ocean, with a length of over 3000 km from north to south. It is surrounded by the ocean, so its historical development relied on marine resources (Sakurai et al., 2019; Takayanagi, 2020); roughly 18,480-mile coastlines bring Japan accessible maritime resources almost everywhere, leading to significant marine education in the country (Bestor & Bestor, 2014). Consequently, Lou (2013/2022) demonstrates that there is a fishing village per five or six kilometers along the coastline in Japan. In essence, due to Japan's location surrounded by the ocean, its adequate fish resources have led to fishing villages and related businesses throughout history.

3.2.2 Study Sites in Miyagi and Shizuoka

Miyagi (38°21'N 140°58'E) is a prefecture with many SSF communities. Matsushima Bay is a famous bay that brings sufficient marine resources to Miyagi. Meanwhile, Shizuoka Prefecture (34°55'N 138°19'E) is located in the Chūbu region of Honshu, Japan. The location on Japan's Pacific Ocean coast has Suruga Bay, formed by the Izu Peninsula, and Lake Hamana, which is regarded as one of Japan's largest lakes. Mountain Fuji, a well-known cultural icon and the tallest volcano in Japan, is partially located in Shizuoka Prefecture. According to Li and Namikawa (2020), Shizuoka Prefecture's location, the Tokyo and Nagoya areas attract a good number of tourists from the metropolitan area. Thus, both Shizuoka and Miyagi are close to nature's beauties and resources.

These two prefectures include some ideal sites for the SSF data collection (Figure 3.1). Research indicates that 4 to 5 cases are most appropriate for the case study (Creswell & Creswell, 2018), and the coastal locations correspond to enough study sites. Shizuoka's SSF is supported by most fishery enterprises, which enhances local residents' employment (Li &

Namikawa, 2020). As a result, there is a considerable potential for these local communities to apply Pescatourism, which is regarded as the combination of the series of SSF leisure and services.

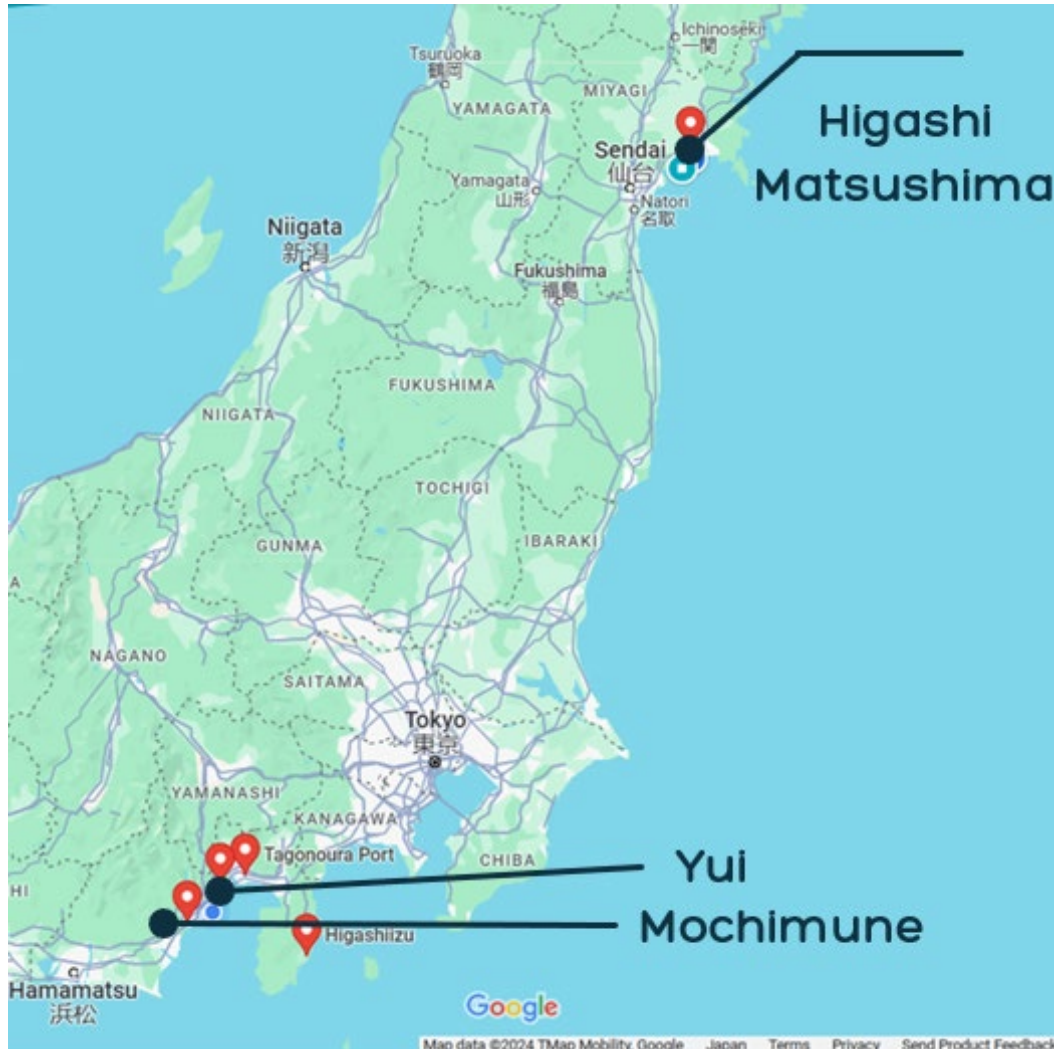


Figure 3.1 Locations of Five Study Sites.

3.3 Research Approach and Design

Different methods of qualitative research were applied to collect data for this research. The case study was designed to evaluate a program, event, activity, process, or individual in-depth through archives, interviews, and observation (Creswell & Creswell, 2018; Eisenhardt, 1989), which aligns with the understanding of Pescatourism's context of operation in the study site. Therefore, four qualitative data collection procedures were applied over a

sustained period: literature review, observation, interviews, and focus group (shown in Table 3.1 and Figure 3.2).

Table 3.1 The data collection procedures conducted.

Phases	Data Collection Methods	Description of the Procedures
Before Attending Japan	Literature Review	Keywords, such as “fishing tourism,” “coastal Japan,” “marine education,” “SSF,” and “Japan ” were researched using online scholar engines. Articles and books related to the research area and topic were provided (SSF and Umigyo industry in Japan) by the host supervisor of this thesis. This review led to inductive coding of the historical development of fishing tourism, factors of Pescatourism, types of vulnerability, and marine-related regulations in Japan.
Attending Study Sites in Japan	Observation/ Semi-Structured Interviews/ Focus Groups	Observations, often documented with photos for visual aids, were typically the initial step at each of the five ports. The focus was on: • The size of the SSF infrastructures. • The shapes and scales of boats. • The seafood-related styles menus. • The appearance of restaurants and food. • The nearby environment and facilities. • The Pescatourism-related activities, facilities, and promotional materials. The first few interviews were inductive to explore new findings and supplements of the findings from the literature review. There was coding from narrative to category to themes. After the general situation was understood, focus groups and interviews deductively explored the details of the research objectives and their hidden reasons.
After Leaving Japan	Literature Review	There were <u>brochures and magazines</u> related to the research collected in FCA buildings, prefectural buildings, and museums, which brought details and explanations to the codes. When doing the analysis, some names of organizations and fishing styles (such as the Destination Management Department), which were not searched or found in the previous literature review, were reviewed to give the research more details and explanations of their functions and efforts.

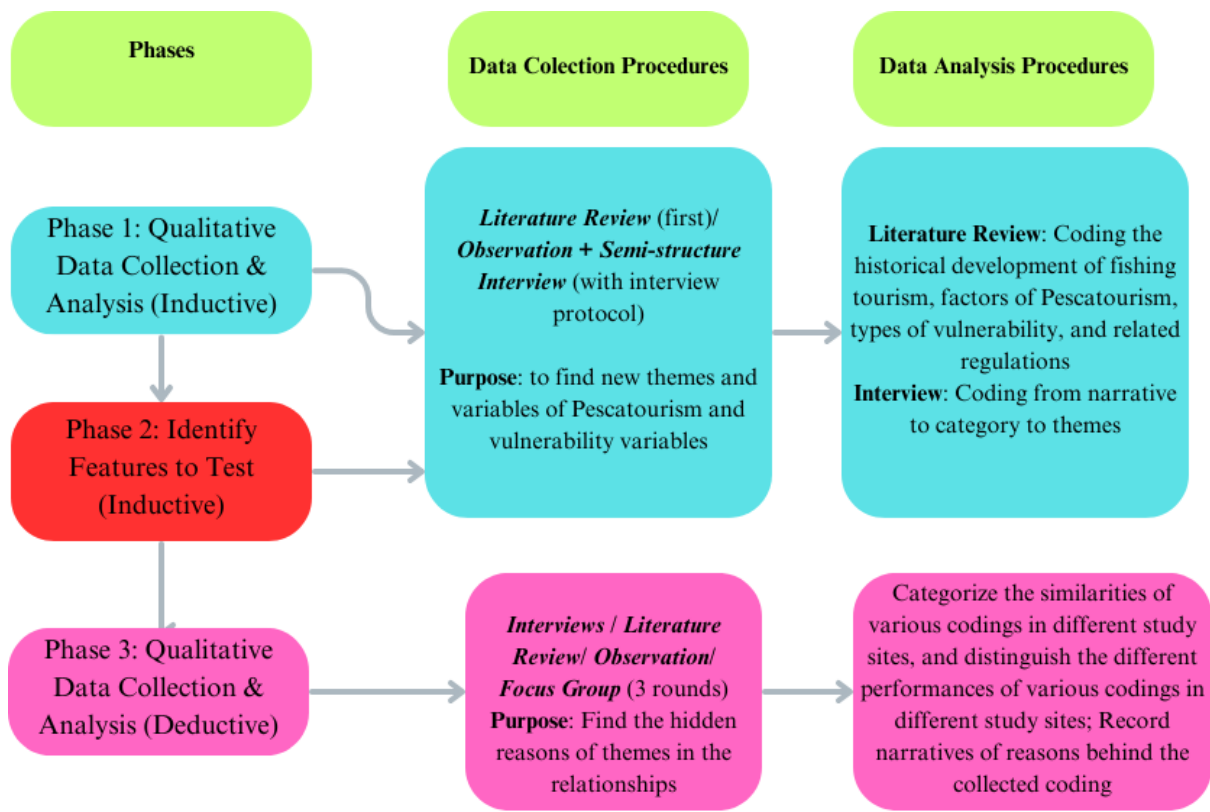


Figure 3.2: Visual model that illustrates the research strategy.

The pragmatic worldview focused on research problems and questions based on actions, situations, and consequences (Creswell & Creswell, 2018), and the real-world problem with a focus on the understanding of the application of Pescatourism was based on Japan's previous overfishing leading to the current lower fish volume when the climate change and degradation of nearshore ecosystems result in worse SSF livelihood in Japan (Yagi & Managi, 2011; Teh et al., 2020). Therefore, the outcome of this research was to test if Pescatourism is effective at reducing vulnerability in the SSF community and enhancing viability through the enhanced governance arrangement, with details of the condition of various study sites. Then, the pragmatic worldview encouraged different types of data collection and analysis through both quantitative and qualitative research to explore the current governance's empowerment to stakeholders and Pescatourism market size with benefits to the coastal communities (Creswell & Creswell, 2018), but only qualitative data

collection was applied in this research due to the more tedious and time-consuming steps of operating quantitative surveys.

3.4 Sampling Strategy

There were 5 study sites in 2 prefectures in Japan, so this study required participants in person at each study site. Research with a similar topic, about Fisheries-Based Ecotourism in Bangladesh, showed the stakeholder groups in their research included eco-tour operators, angling club members, environmental specialists, restaurant owners, travel agencies, artisanal fishers, academics, and officials from the Ministries of Civil Aviation and Tourism, and there were ten semi-structured interviews from each group (Mozumder et al., 2018). However, in the Japanese context, the inductive interviews found the limited existence of travel agencies and eco-tour operators in these two prefectures, while the Japanese nature of fishermen-led activities can ignore the angling club members and replace them with Fishery Cooperative Associations (FCAs) instead. Thus, the adapted sampling size of this research's qualitative individual semi-structured interviews included 18 local SSF staff (SSF fishers, FCA staff, restaurant staff, and seafood processors), 5 marine academic professors (the mixture of environmental specialists and academics), and 3 officials. Similarly, 2 officials, 2 fishers in the restaurant field, and 5 Umigyo tourists joined the focus groups.

The host supervisor of this study explained that in Japan, it is difficult to conduct interviews because people generally do not give interviews with unknown individuals. My host supervisor, being Japanese, had strong connections with fishing communities and fishery-related institutions. Because of this, I could not conduct an interview myself, as people would not agree to be interviewed. As a result, I could only interview individuals that were known to my host supervisor, resulting in a smaller sample size for this research. The population of this research contained adults and elders, who were over 18 years old. People who did not speak English, Japanese, or Chinese were excluded because the translator could

only translate Japanese into English or Chinese. Luckily, all the interviewees in the interviews and focus groups spoke either Japanese or English, although none of the interviews were conducted in Chinese (in Tables 3.2 and 3.3).

Table 3.2. Interviewees

Locations Conducting Interviews	SSF Staff	Prefectural/Regional Staff	Marine Academic Professors
Mochimune (Central Shizuoka)	6 Interviewees: Processor: 102101/120701 FCA Staff: 102102 Fishers: 102103/120701/ 102104	3 Interviewees: 112801 120801 121801	
Tagonoura (Central Shizuoka)	1 Interviewee: FCA/Restaurant: 102501		
Yui (Central Shizuoka)	4 Interviewees: Restaurant: 110801 FCA Staff: 120603 Fishers: 120601/120602		
Higashiizu (southern Shizuoka in Inatori)	4 Interviewees: FCA: 120802 Fishers: 120803/120804/ 120805		
Higashi Matsushima (Miyagi)	3 Interviewees: Restaurant: 120101 Fisher: 120102/120201	/	
Tokai University in Shizuoka	/	/	5 Interviewees: Tourism Field: 112801 Umigyo Field: 120401/121501/ 122601/011601

Table 3.3 Focus Groups Participants

Stakeholder Groups	Number of Participants
Restaurant Owners	2 Participants --O20231130 (01)/ O20231130 (02)
Prefectural Officials	2 Participants --R20231130 (01)/ R20231130 (02)
Umigyo Tourists	5 Participants —T20240116(01)/ T20240116(02)/ T20240116(03)/ T20240116(04)/ T20240116(05)

3.5 Data Collection Methods

The primary data of this research was collected through interviews and focus group discussions from 20th October 2023 to 19th January 2024. The data snowball-sampling collection took place in the institutions of different stakeholder groups so that the participants had the corresponding identities. Research explains that snowball sampling is a respondent-driven sampling that lets the first participant invite the second nominee, who can recruit the third participant (Etikan et al., 2016). The snowball sampling was extremely suitable for this research as Japan's fishermen are not used to being interviewed by unknown people. My host supervisor helped me do the snowball sampling by leading me to her network with the official staff, fishers in FCAs and restaurants, and local seafood processing staff, who were willing to be the interviewees of this research. The first participant in each stakeholder group in each study site often helped me to spread my recruitment, and the subsequent participants helped me by informing more participants that they knew; and through snowball sampling screened the identities of the following participants were collected and observed. Upon having the subsequent participants, the translator of this research asked some general questions to ensure whether they were the appropriate stakeholder group for the data collection.

There was a screening process to determine which stakeholder group the participants should be categorized in. As I went to the fieldwork with the guidance of my host supervisor, I could check my participants' identities in person before the beginning of each of the data collection. As my supervisor often guided me to meet her acquaintances in the fisheries field, their identities all matched with my expected interviewee group. In terms of the language, I could ensure that they spoke in English or Chinese while my translator checked if they spoke Japanese. Finally, participants were asked to give their verbal consent to offer their answers to the study, followed by permission to record the interview audio (which was optional). Noticeably, because of Japanese culture, the audio recording, which was not mandatory but helpful, was not approved by the interviewees for all the interviews and focus group discussions. Therefore, I requested the interviewees to pause for a while from time to time to give me some time to document their sentences by handwriting word for word in my notebook. In other words, the notes that were taken from the interviews were detailed enough.

3.5.1 Literature Review

The literature review of this research explored the brief condition, background of SSFs' operations, development, dilemmas, and the existing relationships of the SSFs with other stakeholder groups in Japan, as well as in any Pescatourism; i.e. tourism operated by SSF fishers. According to Tikito and Souissi (2019), a systematic literature review shows what has been discovered through an objective and transparent summary. In the qualitative phase, a preliminary literature review was first done to obtain a conceptual and theoretical understanding of the history, phenomena, and factors of the Pescatourism operation. It collected scholarly articles, books, and secondary sources related to Pescatourism's existence in Japan, and a Japanese book written by Lou, which was translated into Chinese in 2022,

brought descriptions of several cases of coastal communities in Japan. Understanding the contextual background helped me to better prepare for the interviews and focus groups. In the study sites, JSSF-related literature, such as booklets, magazines, and brochures, were collected in the FCAs of each study site and nearby institutes, including museums and universities.

3.5.2 Observation

Observation data is one of the qualitative methods (Creswell & Creswell, 2018). When I arrived before doing the interviews, the sites of the related restaurants and fishery areas were the locations for non-participant naturalistic observation. As they were new places for me, I made some note-taking to better understand the degree of the existence of Pescatourism in SSFs in Shizuoka, such as the total artisanal boats and small-scale boats applied for Pescatourism, the number of fishers, the tourists queueing up in front of the Pescatourism restaurants, and the appearance and seats in fishery-related restaurants. I sometimes witnessed the line and looked at the diversity of recipes. Meanwhile, I took some photos of the appearance of the SSF boat and port/ocean without any individuals shown in the photograph to visually describe the form of SSF in Shizuoka and Miyagi. Sometimes, some valuable data was found near the study sites, such as the JSSF-related posters on the local trams and the tsunami-related data in the 3.11 Disaster Recovery Memorial Museum.

3.5.3 Semi-structured interviews

The in-person semi-structured interview improved the understanding of the local Pescatourism operation, the vulnerability of SSFs, and Pescatourism's existence's influence on the governance arrangement. Research has shown that its purpose is to understand the participant's perspective instead of the phenomena, and each interview is unique, with main open-ended questions with follow-up probe questions (Adeoye-Olatunde & Olenik, 2021). In

other words, after I received answers to the predetermined questions, I could ask for further details based on the previous answers. Firstly, I recorded a memo with the reflexivity of possible cultural bias to make the readers recognize the potential impacts caused by my Chinese background on my role as a researcher. An interview protocol was designed before the interview. When I recorded information through handwritten notes, the two-page paper consisted of an introduction, 5 to 10 interview content questions with probes, and closing instructions, which gained insights into participants' experiences, beliefs, attitudes, and opinions (Creswell & Creswell, 2018). A few open-ended questions were asked during the one-hour interviews. It was expected to be one hour per interview, and its number per day depended on how many interviewees I could conduct on each site, which was often between 1 and 4. The data storage included a hard copy to record keywords and important quotes.

The data collection procedure was through snowball sampling as a nonprobability sampling, which highly depended on my host supervisor's network. Admittedly, posters were also prepared to recruit some participants, as the posters included my information and the study description so that people interested in it were able to contact me. However, the first stakeholder of each group on each site to contact was the active interviewee, whom my host supervisor helped me contact. The posters were more like a supplement to the description of my project to them. The location with fishers was in FCA buildings or near the ports, while the interviews with restaurant staff, officials, and environmental or marine specialists were in their corresponding institutions. The interviews of the thesis were mostly conducted in the mornings and afternoons, with some taking place in the early morning. For instance, during the FCA meetings with the fisheries, the early morning interviews involved witnessing the fishers returning to FCA and selling their catch to the local buyers, regardless of whether it was a weekday or weekend. I normally asked them for interviews after the fishers had returned from their trips. The appointments with officials and environmental specialists were

decided according to their convenience and free time. Although my host supervisor was sometimes my translator, another student translator, who signed a protocol at the beginning, helped me operate the interviews by asking questions and listening to the answers due to my linguistic barrier in understanding the Japanese language.

3.5.4 Focus Group

The stakeholder groups corresponded to fishers, tourists, and officials. The timeframe and location were almost the same as the interviews, and a student translator also attended. Convincing sampling was used to recruit participants who were initially contacted by my host supervisor. This process was followed by snowball sampling which helped to recruit more participants, especially among tourist stakeholders. My host supervisor, who knew the initial participants arranged the interviews and those participants then assisted in recruiting further interviewees. The focus group explored the hidden reasons for Pescatourism's improvement in vulnerability alleviation and stakeholders' attitudes based on the results of the finished interviews and questionnaires. Creswell and Creswell (2018) explain that focus groups bring together 6 to 8 participants to discuss a particular topic. However, finding enough participants to join the focus groups to match the ideal number in any port was difficult, so I sometimes could only find two people in some groups. Nowadays, the requirements for the number of people are lesser, as Cortini et al. (2019) described the dyad, the triad, and Mini Groups categorized as smaller focus groups. Research also says that the typical number of focus groups for dissertation research consists of 2 to 12 participants (Graham & Bryan, 2022). The dyad focus groups were applied two times with officials and Umigyo-related restaurant owners, while a mini group was once applied with five tourists. Open-ended qualitative research questions were used for an in-depth analysis to explore the hidden reasons for the

inductive information collected. As the interviewee always resisted audio recording, handwritten notes were the only recording method.

Each participant group was asked to share their insights and create additional views after I asked every question. There were normally 5-10 questions for each focus group, while the whole length was roughly 1 hour. The focus group explored the hidden reasons for Pescatourism's improvement in vulnerability alleviation and stakeholders' attitudes based on the results of the finished interviews and questionnaires, such as the degree of Pescatourism's support on SSF vulnerability and the implementation and effort of Pescatourism's governance arrangement for SSFs. The data storage included a hard copy to record keywords and important quotes through edited transcription.

3.6 Data Analysis and Interpretation

After reading the documents about Pescatourism and the vulnerability of SSF in Japan with keywords such as "Japan," "SSF," "Pescatourism," "FCAs," and "coastal governance," a literature review distinguished the activities included in Pescatourism and underscored the change of the practices and regulations of fishing tourism over time. My host supervisor in Japan also mentioned a term called Umigyo, which is hard to find through scholar engineers, and gave me some documents and books with Umigyo explanations. Regarding the interviews, after the first phase, I took notes from the interviewees before applying edited transcription into written words to make an accurate script formalized for reliability, conciseness, and clarity. Then, I inductively coded and labelled concepts and themes with computer software for thematic analysis. As an inductive analysis includes a bottom-up approach to build patterns, categories, and themes (Creswell & Creswell, 2018), It proceeded from organizing the useful narratives about Pescatourism, vulnerability, and governance arrangement to coding to categorizing codes into themes. Then, in the content analysis of the

focus group, the deductive coding checked the accuracy of the results of the codes and helped to gather more information that identified the hidden reasons for Pescatourism's potential.

The data from the interviews and focus groups were analyzed together as a whole, treating them both as qualitative texts. Regarding how to show the results more visually to make them easy to read, tables and figures were used to exhibit the findings (Creswell & Creswell, 2018), while the horizontal and vertical rows displayed the themes and codes, respectively. Following this, textual interpretations (Creswell & Creswell, 2018) and photos from the study sites were included for visual support. The coding process, supported by MAXQDA, is illustrated in Figure 3.3, which Rädiker (2020) highlighted as an advantage of the systematic analysis of interviews. Thus, I was able to continue my analysis without worrying about the change in my equipment as Rädiker (2020) denoted that the file system of MAXQDA is the same in Windows or macOS, which contains a transparent user interface with the original data, the analytical categories, one's own notes, comments, and analysis results. As different countries may have different vulnerability conditions, they may have different contexts. Subsequently, the analysis will explore the relationship between the context of vulnerability and the different perspectives on livelihood among SSF fishers.

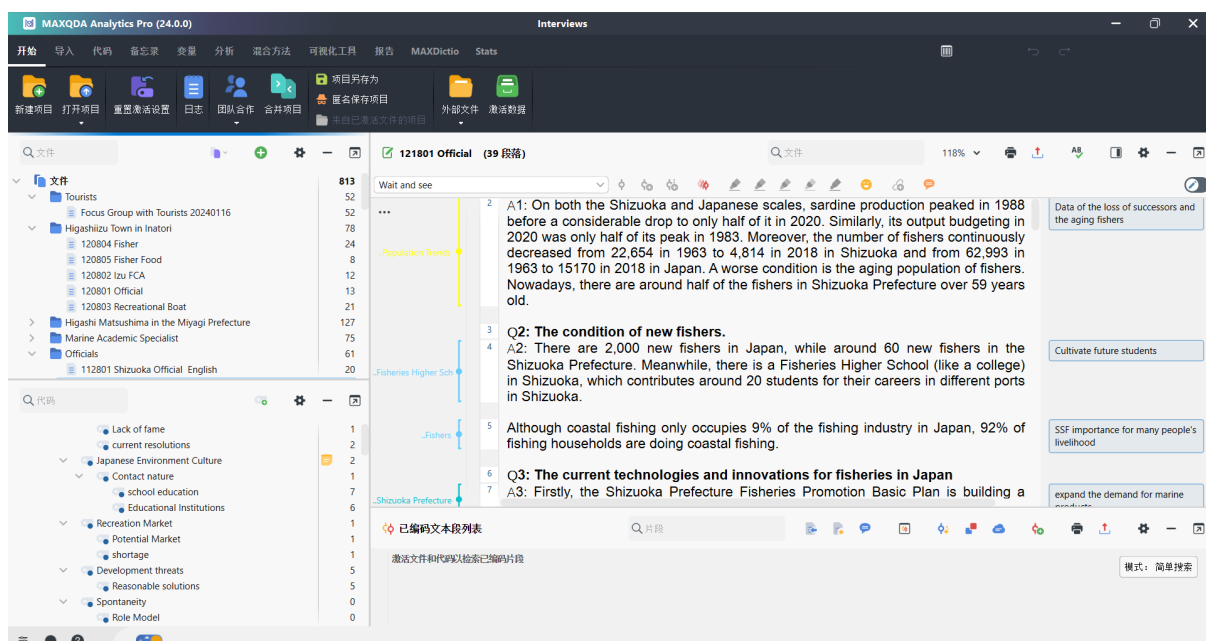


Figure 3.3. User Interface for Coding in MAXQDA

3.7 Validity and Reliability

In terms of qualitative research, the study used standardized interview protocols, and I ensured my translator understood its procedures in advance. The two-page interview protocol often included 5 to 10 questions and recording methods as appropriate guidance (Creswell & Creswell, 2018). Additionally, the research was conducted over 3 months in a non-native country. The self-reflection, describing bias, and the prolonged time in the field provided trustworthy narratives and in-depth understanding (Creswell & Creswell, 2018). My prior knowledge of Japanese, gained through two Japanese classes, provided a foundation for understanding Japanese society. Thus, the biasness was continuously minimized over time. At the same time, I often checked with my translators if my paraphrased understanding matched the information given by the interviewees. When they were also unsure about it, they could ask the interviewees to check it or give more details. Finally, the triangulation collected data from different sources to seek congruence (Creswell & Creswell, 2018), while my research involved literature, interviews, and focus groups to prove the consistency of different information channels. Likewise, the similar answers to the same questions from different stakeholder groups showed their accuracy and consistency.

3.8 Study Limitations

Research limitations and scope of further research was done through comparing the findings with previous studies and interpreting the results and outcomes (Creswell, 2014). Few of the limitations found in this research are related to the samples, methods, and Pescatourism in Japanese. Limited representatives from various communities or stakeholders were the first limitation. For example, travel agencies appeared in some other similar research, but my research did not include this stakeholder group as there were not so many of

them in my study site. Secondly, since the sampling is non-probability convenience sampling, it may not have represented the entire population and external generalizability. However, the snowball non-probability convenience sampling was the only practicable and reasonable method in the Japanese context. Thirdly, the original information might have been lost to some extent during the translation process i.e translating the interview question from English to Japanese and translating the answers from Japanese to English. In this research, some English words were replaced with Japanese words because the English words did not convey the meaning properly. For instance, the Japanese word “Umigyo” was used to address the word “marine business”. Finally, a social desirability bias may be inevitable when the participants want to show their good behaviors and efforts because the interviewees' praise of the hometown and exaggerating effects may occur unconsciously, especially when talking with official agents and institutes holding Pescatourism-like events.

3.9 Ethics

This research gathered some information from marginalized communities that are socially vulnerable. To ensure ethical standards, precautions were implemented to safeguard participants from potential issues. Participants were fully informed about the study's purpose, provided with oral consent, and assured of the voluntary nature of their involvement. Prioritizing discussions on how to respect participants' social and cultural needs during data collection was always the central concern of this study. Anonymity was maintained by not disclosing participants' names in the information gathered, which was done by digital encoding. Interviews were conducted in a respectful and non-intrusive manner, fostering a sense of inclusion without pressure between participants and researchers. The overall aim was to engage JSSF communities as partners in the research process to better focus on honoring their voices and traditional knowledge to pursue the possible viability.

This research project received full ethics clearance from the University of Waterloo Office of Research Ethics under ORE # 45453 on August 07, 2024 (see Appendix C for ethics clearance notice).

Chapter 4

Exploring The Nature and Extent of Pescatourism in Japan

4.1 Introduction

To meet the broad goal of this thesis, which is to test the feasibility of applying Pescatourism in the SSF sector of Japan, it is essential to learn about the existence of Pescatourism in the country. For this, the study will focus on specific sites in Shizuoka and Miyagi Prefectures. According to Li and Namikawa (2020), Japanese SSF (JSSF) is distinguished by non-powered boats or powerboats of less than ten metric tons, set-net fisheries, and aquaculture. Pescatourism has been a potential method for SSF communities in coastal communities to be viable in European countries. Pescatourism, derived from the Italian word combining "fishery" and "tourism", emerged in 1982 as a way for fishing communities in the European Union to promote sustainable tourism activities (Goto & Takayoshi, 2017). Pescatourism activities include casting and pulling in the net, cooking fish for lunch, swimming or scuba-diving in the open sea, and visiting fishing villages or other points of interest (Lai et al., 2016). In Japan, Lou (2013/2022) also showed the presence of similar ecotourism activities such as scuba diving, trawling, village homestay, fishing, and small-fishing boat adventures. These are part of the "Umigyo", a term used since 1985 to describe industries related to sea. According to Li and Lou (2018), "Umigyo is defined as a series of economic activities carried out by community people centered on fishermen, for answering diverse needs on marine and coastal use, utilizing not only fishery resources but also all kinds of regional marine related resources." Thus, the ecotourism styles of Umigyo, which is the sea industry, also match Pescatourism. Some research also stated that Pescatourism's standard includes the prohibition of trawls, no more than 12 people on the boat, tourists under 14 years old being accompanied, structural facilities during the active

period, and lifesaving means (Goto & Takayoshi, 2017). As a result, there is also a security concern regarding the Pescatourism activities.

An overall explanation of Pescatourism in Japan is necessary. Research mentioned the indicators for analysis, including customers' profiles, market orientations, accommodations and services, and various angles of community involvement (Shen et al., 2008). Lou (2013/2022) acknowledges that there is almost no research on the role of activating community industries in fishing villages. However, there is some basic research and case studies of the current conditions of Umigyo in SSF communities. When attempting to understand the existence of Pescatourism in the study sites in Japan, it is critical to begin by comprehensively examining its history, its Japanese features, and its scale of operation. This chapter focuses on this examination, which addresses the first research objective (Box 4.1). This chapter aims to find the degree of the existence of Pescatourism, similar to Umigyo, especially in the five study sites in Japan. The literature review will go deep from the tourism industry in Japan into the fishery-related ecotourism in Shizuoka and Miyagi. More precisely, the interview and focus group data will further analyze the history, the uniqueness of activities different from the Italian version, and the popularity of Pescotourism in Japan.

Objective 1: To examine the extent to which Pescatourism exists in Shizuoka and Miyagi, Japan.

- i. What is the history of Pescatourism in Japan, and how long has it been practiced?
- ii. What is the market size of Pescatourism in Shizuoka and Miyagi?
- iii. How do the characteristics or forms of fishing tourism activities in Shizuoka differ from the official Italian Pescatourism version?

Box 4.1 Review of the first research objective.

4.2 The History the Operation of Pescatourism in Japan

The existing literature provides a clear description of the activities, development history, and growth scale of Pescatourism throughout Japan before the devastating tsunami in 2011. This information can facilitate an inquiry into the latest stakeholders' recognition and attitude towards the existence of Pescatourism as well as supplement that historical understanding of Pescatourism in Japan. Additionally, examining Pescatourism projects reported outside Shizuoka can help to explore the existence and potential development of Pescatoruism in Shizuoka.

4.2.1 Umigyo Tourism as Synonyms to Pescatourism

The implementation of Pescatourism can be categorized as a form of Umigyo in Japan. This kind of tourism includes experiential fishing, recreational fishing guidance, and responses by fishermen's cooperatives (Goto & Takayoshi, 2017). Similarly, Li and Lou (2018) described Umigyo as encompassing a series of economies organized by community fishermen to meet various marine and coastal needs. These activities utilize marine-related resources, including the sea, culture, tradition, and landscapes. For example, Li and Namikawa (2020) explain that Nagisahaku is a form of Umigyo where tourists stay back on a beach to enjoy local seafood cuisine, explore fishing village scenery, and closely observe and experience the culture of the SSF industry.

According to Li and Lou (2018), Umigyo is different from traditional fisheries, which rely entirely on fisheries resources and is more likely to have conflicts with activities like scuba diving, recreational fishing, pleasure boat sailing, and renewable energy development. Research categorizes Umigyo activities into five types: to stay, to play, to buy, to eat, and to learn based on the perspective of the value of the fishing communities Lou (2013/2022). Therefore, the combination of these values is almost the same as Pescatourism, and fishers implement both forms of tourism entirely.

Table 4.1 Similarities between Pescatourism and Umigyo Tourism

	Pescatourism	Umigyo Tourism
Operators of Activities	Fishers	Fishers
Activities	(Representative Examples) Stay: Visiting fishing villages or places of interest; Homestay. Play: Swimming or scuba-diving in the open sea. Buy: Catering and souvenirs. Eat: Cooking fish for lunch on the boats. Learn: Casting and pulling in the net.	Stay, Play, Buy, Eat, and Learn (Will be further described in Section 4.3)
Expected Outcomes	● Preservation of fish stocks and marine and coastal environments ● Inheritance of the craft's historical heritage ● Spread of public recognition of coastal biodiversity protection ● Community Economy ● Environmental education and awareness	● Utilize all kinds of regional marine-related resources ● Spread culture, tradition withing the landscapes ● Community economic revitalization ● Marine Education and public awareness

Note. Data are from Pescatourism literature (Lai et al., 2016; Meneghello & Mingotto, 2016; Piasecki et al., 2016; Tsafoutis & Metaxas, 2021) and Umigyo literature (Li & Namikawa, 2020; Lou, 2013/2022; Li & Lou, 2018.)

The case site was in Shizuoka and Miyagi, Japan, but innovative Umigyo has also been developed in the SSF communities in other provinces. For example, in other SSF communities, such as in Shizuoka Prefecture, research points out Ito SSF is famous for its diving activities Lou (2013/2022). Moreover, Umigyo has been popular throughout Japan, as research has found some typical samples of the combination of tourism and Umigyo in Japan,

such as seafood restaurants in Yui, Shizuoka and Eguchi, Kagoshima, fish tourism with diving services in Ito, Shizuoka and Onna village, Okinawa, marine education program collaborating with local fishermen in Okayama, the sightseeing diving and trawling activities in Tokushima Prefecture, and education and recreation in Higashihazu, Aich (Lou, 2013/2022; Sakurai et al., 2019; Lou & Yu, 2022). Marine Specialist [121501] expected an ideal destination image of the SSF communities to be with beauty, delicious food, and happiness. Therefore, it has the potential to explore the existence of other possible Umigyo activities and businesses in Shizuoka, such as its homestay in fishery villages and adventures on SSF boats. Consequently, Umigyo Tourism, similar to the form of Pescatourism, has a variety of activities operated by SSF fishers.

4.2.2 Ecotourism Industry in Japan

In terms of general coastal tourism, there is a large market in Japan due to its cultural and economic effects. As a maritime nation, Japan's history witnessed its dependence on marine resources (Sakurai et al., 2019). Fishing has been a part of its history, and sushi, along with fishing techniques, is a proud cultural aspect of Japan (Bestor & Bestor, 2014). The increasing curiosity and appreciation of wildlife motivate people's positive attitudes toward the biodiversity of coastal areas (Sakurai et al., 2016). However, despite being one of the top tourist-generating countries in the world, Japan's marine leisure market caters almost exclusively to Japanese customers rather than foreign tourists (Funk, 2006).

Pescatourism, a form of ecotourism, is a branch of Umigyo. There has not been a noticeable growth in the ecotourism market in Japan. Undeniably, ecotourism represents the fastest-growing part of the tourism industry globally (Uzama & Walter, 2018). However, due to the emphasis on marketing Japan as a destination for international tourists, the tourism boom in Japan brought only a negligible increase in ecotourism (Uzama & Walter, 2018). There have been progressing actions to support ecotourism. In 2003, the Ministry of the

Environment began promoting ecotourism, and in 2008, a law was enacted to boost ecotourism for the conservation of natural tourism resources, tourism publicity, economic and social development, and environmental education (d'Hauteserre & Funck, 2016). For example, Onna Village in Okinawa Prefecture has shown relatively ideal environmental and economic Umigyo governance arrangement to match Pescatourism so that Onna Village becomes a famous coast national park with abundant leisure activities, such as sightseeing tour, sea bathing, and Okinawan cuisine (Lou, 2013/2022). One of the study sites, Yui, has also acknowledged the positive effects of the 20-year history of ecotourism through seafood canteens and marine education services [120603]. As a result, it is valuable to analyze the operation of fishery-related restaurants, recreational fishing and diving, education, and accommodation services in Umigyo in Japan, especially after the reinforcement promotion strategies of ecotourism in 2003 and the clear principle of ecotourism set in 2008.

4.2.3 History of Umigyo Tourism in Japan

There have been several innovations in Umigyo tourism in Japan, including unique learning experiences, meals, and sightseeing activities. According to Piasecki et al. (2016), Japan's traditional fishing tourism, which involves fishers catching fish with trained cormorants to the spectators on other boats, can be traced back over 1300 years. However, some activities have become more interactive with tourists, and the project varies in different areas.

There have been many developments and activities in different coastal fishery villages before and after Umigyo was first proposed in 1985 (figure 4.1) as described by Lou (2013/2022). Before 1970 there were already some equipment and programs supporting the operation of fishing tourism. In the 1970s, tourism development occurred in SSF small fisheries communities in many coastal prefectures through infrastructure construction, B&B

guest houses and government funding support, representing cooperation among fishing cooperative associations (FCAs), local governments, fishers and tourism associations. From the late nineteen 70s to 1985, the growth of the fishery industries in Japan was very positive, reflected by the peak of the number of SSF boats. During this time, there was positive growth in coastal tourism, with JSSF Fisher better utilizing the coast for recreation in Shizuoka and a large number of guest houses in Fukui. However, some challenges arose for JSSFs. There was an oil crisis impacting crawling fishing liked when the coastal tourism business attracted numerous tourism agencies particularly in Kanagawa, where more regional marine activities occurred.

There were shifts towards the marine recreation business around 1980, which inevitably led to conflicts between traditional fisheries and marine recreation businesses in most areas of Japan until 1990. There were more safety problems due to conflicts with external tourist agencies in Kanagawa, while the late 1980s witnessed a decrease in the number of SSF successors. Luckily, the establishment of marine-recreation-related councils in different areas resulted in more communications to alleviate these relations. Shizuoka developed its diving business, and Fukui innovated its business with its seasonal menus. After 1990, although the cooperation among stakeholders with a safety system led to Kanagawa's fishing tourism to alleviate conflict, the external investigation into Shizuoka's coastal recreation led to conflicts, even after a diving council was built. Shizuoka witnessed a huge decrease in the number of tourists diving, sightseeing, and trawling around 2010, which were the main Shizuoka projects, although they still maintain the operation, but there is a greater popularity of few activities in the communities with educational elements related to Experience Village Project and seafood with spa service.

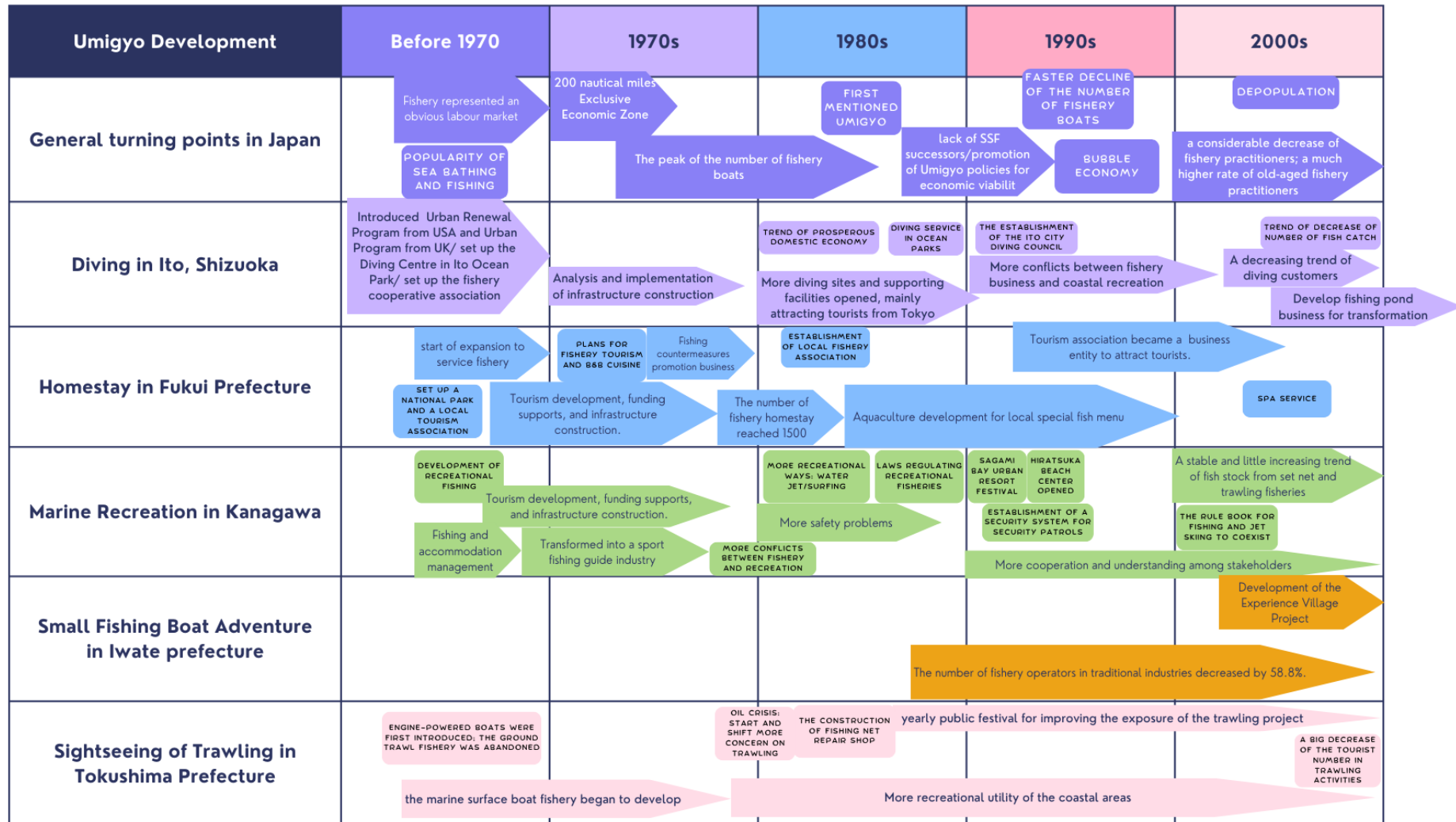


Figure 4.1 Recent history of the development of Pescatourism activities in Japan (Lou, 2013/2022)

The Pescatourism development encountered a drawback in 2011 due to a severe natural disaster which led to loss of life and property. More precisely, there were several tsunamis that damaged fishing vessels, especially the Great East Earthquake on March 11th, 2011, named as the 3.11 Earthquake. The earthquake forced some residents, particularly the younger generation, to move to other places (Sakurai et al., 2016). The 3.11 Earthquake is well-known worldwide, particularly due to research focusing on the secondary disaster in Fukushima. This event led to the release of radioactive material from a nuclear station and resulted in relocating nearby fishermen elsewhere until 2016 (Mabon & Kawabe, 2023). As a result, the SSF communities, which were located closest to the ocean, suffered a lot from the severe tsunami caused by the 3.11 Earthquake.

As the most devastating tsunami disaster in recent Japanese history, the 3.11 tsunami and subsequent tsunami caused varying degrees of death and destruction across different prefectures. The Miyagi Tsunami Museum showed that Miyagi and the nearby areas suffered the most from the tsunami resulting in 1109 deaths and 5519 buildings destroyed in Miyagi. In contrast, Shizuoka experienced a slight level of tsunami (Exhibited in Figure 4.2). Officials (FG 20231130) stated that *"Miyagi was one of the areas that suffered the greatest losses from the tsunami. This place used to focus on fishing tourism, with a hundred guest houses with restaurant and accommodation services led by fishermen, but only ten were still in operation after the 3.11 Earthquake."* The post-disaster reconstruction was lengthy, especially for the fishers who lost their fishing and aquaculture assets. A Nori Aquaculture fisher in Higashi Matsushima [120101] revealed that it took 3 years for him to cooperate with other fishers to rehabilitate the aquaculture business. Thereby, it took a long time for the SSF communities living closest to the 3.11 Earthquake area to recover their fishing business along with the fishing tourism industry after the significant loss of life and infrastructure.



Figure 4.2 Miyagi Tsunami Museum with Injury Data

In addition to the damaged guesthouses, there has been an impact on the convenience of public transport because of the 3.11 Earthquake. According to a fisherman in Higashi Matsushima in the Miyagi Prefecture [120201], "*Nobiru Beach used to have a lot of swimming tourists because it is close to the Nobiru tram station and has very convenient transportation, especially during the summer. Thus, there were many stores. Some tourists could go for Fishing Tourism in SSF ports incidentally. However, the number of tourists coming now is much less because the 3.11 Earthquake has relocated Nobiru Station further away, which is around 15 minutes on foot.*" As a result of the lethal tsunami caused by the

3.11 Earthquake in Miyagi, the destroyed facilities and loss of property suspended its Umigyo Tourism growth, while the popularity of the coastal activities was drastically destroyed.

Many Japanese people developed phobias about the ocean after the trauma caused by the severe tsunami, and recovery has taken a long time. The 3.11 Earthquake brought immense pressure to most survivors in the high-magnitude regions. Research exhibits that disruptive natural disasters with extraordinary magnitude have caused an increase in suicide rate in the subsequent years because of survivors' physical, mental, and economic distress (Matsubayashi et al., 2013). Even in SSF communities suffering slight damage from the tsunami, such as Shizuoka, the 3.11 Earthquake also brought a fear of the ocean among the tourists. According to a Yui Port fisher [120603], *"The 3.11 tsunami left a mental shadow for many parents to regard the ocean as a dangerous zone to avoid their children joining the coastal activities, and Japanese people still need time to recover their mental health."* Likewise, all the tourist participants in FG 20240116 showed that although they like the ocean, they still inevitably feel a little bit scared due to its danger. Thus, the severe tsunami has led the public to psychological fear of the sea in Japan, no matter which magnitude each prefecture suffered.

After 2020, Umigyo Tourism faced new challenges and opportunities. There was a noticeable health shock and political support for the implementation of Pescatourism in JSSF. In terms of the health shock, COVID-19 slowed down its operation for a long time. According to Ito-Morales (2022), self-restraint, called Jishuku in Japan, is synonymous with self-control, voluntary restraint, self-censorship, and voluntary ban, which led to the state of Emergency of self-constraint on April 16, 2020, across Japan. This voluntary lockdown, without any governmental or prefectural orders, involved stopping non-essential commercial activities and avoiding going out to avoid the spread of the virus. October 2021 marked the

beginning of the revival of general tourism for Japanese people due to the first full drop of its coronavirus state of emergency when over 59% of Japanese people were fully vaccinated (Sato, 2021). According to an FCA staff from Tagonoura Port [102501], *“Before the pandemic, many people came, including many tourist groups. However, during the pandemic, the number of tourists decreased because of self-restraint during the pandemic. Afterwards, the number of guests in 2022 ranks second in the history of the canteen.”* One of the tourists in FG 20240116 said that COVID restrained him from social contact and made him stressed, so he needed tourism activities to push him to facilitate himself back to normal days; thus, Japanese people’s long-term depression during the self-restraint was the result of the domestic tourism bloom in 2022 after the unblock in 2021. As a result, fisher-operated tourism development stagnated between April 2020 and October 2021 because of the State of Emergency caused by COVID-19 self-restraint in Japan, especially when most people were fully vaccinated.

The complete reopening schedules of COVID-19 and the Umigyo becoming a political act brought potential opportunities for more tourists and input into Umigyo Tourism. Afterwards, October 2022 was the turning point of the revival of international tourists because of the resumption of visa-free travel to dozens of countries, which gradually opened its border to save Japan's shuttered souvenir shops and hotels (Komiya & Sugiyama, 2022). Shimizu (2023) illustrates that May 8, 2023 witnessed the removal of the State of Emergency to end the self-restriction priority. A fisher in Higashiizu [120804], in his opinion, highlighted that local tourism was back to normal from COVID to a large extent in December 2023. Consequently, the removal of every COVID-related entry requirement in 2023 is estimated to gradually bring more foreign tourists to Japan, including ecotourism and Pescatourism in SSF communities. In addition to COVID-19 being a challenge, the acknowledged Umigyo Policy has been an opportunity for Pescatourism development. Both the specialist [121501] and

official staff [121801] clarified that Umigyo has been formally written in Japanese politics for regional revitalization since March 2022 so that there are no classification of main or side businesses between fishing and other businesses, so the government would bring more financial and political support to take action of the improvements in SSF communities to pursue the achievement of Umigyo viability, such as more subsidies for JSSF communities and operation of events near ports. For example, the Shizuoka Prefecture Fisheries Federation staff [112801] exhibited more active designing strategies to improve the market of Umigyo tourism, such as maximizing the use of fishing boats, which are unused in the afternoon, for fishing tourism and adding keyword searches in Maps and GPS of every fisher-operated canteen. Thus, both Japan's tourism operations went back to normal after the pandemic and the Umigyo revolution from a political initiative to a policy in 2022 turned more concerns and investments in Umigyo development.

Figure 4.3 shows the history above since 2011, starting with the big turning point called the 3.11 Earthquake.

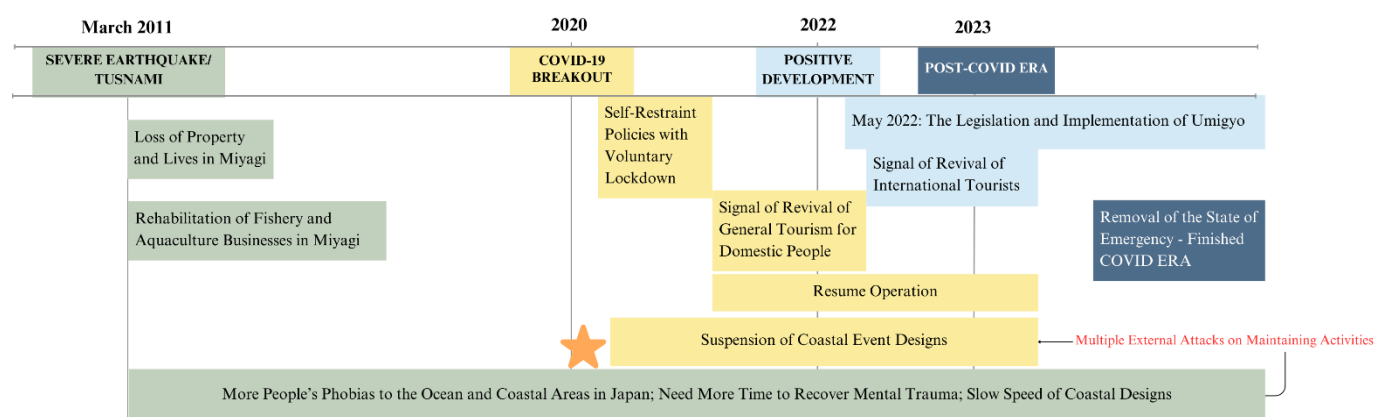


Figure 4.3 Recent Major Events of Umigyo from 2011 to 2023.

Note: Data are from observation, literature, semi-structured interviews answered by FCAs, JSSF fishers, academic specialists, and prefectural marine officials, and focus groups answered by tourists who experienced Umigyo Tourism.

4.3 Umigyo Market Operation in Japan

This section analyzes the current Umigyo tourism market, including the general conditions in Shizuoka Prefecture and those in different study sites. The steps for analyzing the study sites include identifying both the unique and similar activities occurring at each site, as well as examining the characteristics of these activities. As this section focuses on the market size, it aims to analyze the features of the developments that are presented on the study sites. According to Lou (2013/2022), the current seafood market flows from fishing villages (in regional markets) to cities (in wide-area markets), while the regional market includes the factors:

- **Demand Characteristics:** Regional markets are formed based on the regional needs of local consumers, including food, entertainment, and comfort needs.
- **Flow System:** Regional markets can easily build transparent relationships, allowing consumers to share the distribution costs and giving producers better means to provide reliable food.
- **Product Characteristics:** In addition to viewing seafood as food, it can also become a service, an idea, and an additional product.

The descriptions of regional market characteristics are shown in Table 4.1 below. The Pescatourism Market can be reflected by market characteristics No.1, 2, 3, and 5 in Chapter 4; market characteristic No.6 can be seen in the vulnerability to viability in Chapter 5; market characteristic No.4 can be reflected in the governance feature in Chapter 6.

Table 4.2. Expected Market Characteristics of Umigyo Market at A Regional Scale.

Market Characteristics	Regional Market
1. Trading Places	Place of Origin

2. Demand Characteristics	- Regionally inclined specific consumers (Prosumers, local consumers, travellers, volunteers, etc.) - Regional Demand - Niche Market - Food market + Leisure market
3. Flow System	- Transparent Relationships - Safety and Security System
4. Product Characteristics	Items, Services, Ideas
5. Feature of Development	- Spontaneity (Like-minded people spontaneously participate, are willing to help others, and pursue the meaning of life) - Public Welfare (Offer and producing funds and services that are helpful to everyone in the region) - Sustainability (Pursue corresponding effects and efficiency to achieve business sustainability) - Non-profit (Not aiming at profit and benefit maximization) - Mission (Have a sense of mission to contribute to the community to advance its development as the primary goal)

Source: Adapted from Lou (2013/2022: pg. 249-251).

In the context of Japan, research shows a few typical samples in Figure 4.1 of the combination of tourism and Umigyo in Japan. However, Shizuoka officials [121801] also said, *“Although the initiative of unified use of resources exists, only 30% of the coastal ports started businesses other than merely fishing in 2018 in Shizuoka Prefecture.”* This section focuses on the common conditions in Shizuoka, including its outstanding products, existing pulling and push factors, existing regional market characteristics, and weaknesses. As the specialists and officials in the interviews were mostly from Shizuoka, this sector’s range is Shizuoka Prefecture instead of a larger region or even the whole of Japan.

During an interview, an official staff [121801] displayed some remarkable humanistic activities and physical activities in Shizuoka, which are described below:

- **Representative humanistic activities in Shizuoka JSSF Communities:** Global Marine Fishing Tournaments in Shimoda since 1985/ a Cuba match in Lake Hamana/ a domestic Food Contest in Numazu (up to 125,000 tourists in the recent session);

- **Umigyo-related Services in Nishiizu Town:** Reserve a fishing spot/Fishing gear rental fee/ recreational fishing boats/direct sale shops/Izakaya to cook the caught fish/parking lot (indirect);
- **Umigyo-related Services in Yaizu Town:** Seafood processing and port sightseeing tours/a hub for different stakeholders to interact/consider the future accommodations/ City buses;
- **Umigyo-related Services in Ito City:** experience fishing/Watch fishermen fishing with fixed nets/eat the caught fish and take them home/diving services and equipment (FCAs hold).

Thus, Shizuoka Umigyo Tourism is concerned with exciting events as an attraction. The rental business, the boarding sightseeing and fishing experience (less stimulating), the renting of scuba-diving equipment (more stimulating), the local food and souvenirs, the hub for rest and interaction, and transportation are the current outstanding services and products.

4.3.1 Push Factors of Umigyo Tourism

It is important to understand Japanese people's willingness and demand to travel. According to Hannonen and Hoogendoorn (2022), push factors correspond to people's professions, relaxation methods, demand in social contacts, like socialization in fishery communities, and so on. It is valuable to learn about tourists' insights into the push factors towards Umigyo Tourism in Shizuoka, especially after COVID-19's self-restraint.

This research had a focus group discussion to explore the push and pull factors of Umigyo tourism in Japan to identify the possible changes that might have taken place during the COVID-19 pandemic. Previous research before the end of the pandemic highlighted (i) people enjoying nature with family or friends, (ii) improvement of physical health, (iii) discoveries and learning, and (iv) escaping of the motivational push factors of nature-

based tourism in Japan (Jones & Nguyen, 2021). The answers received from the FG 20240116 also include the four factors mentioned above.

More precisely, about (i) people enjoying nature with family or friends, a participant mentioned that "She is personally interested in tourism, especially hanging out with friends to improve their relationship." In addition to the existing networks, another participant showed his sadness when COVID restrained him from social contact, so he expected to build new networks with others through tourism. Meanwhile, all the participants clarified that beautiful natural sights could heal their minds, and a few of them find cute things and like taking photos. In addition to the natural beauty, two participants in FG20240116 also explained their joy of nature, which also includes delicious local food and hot springs. Luckily, according to a Higashiizu official [120801], hot springs appear in some JSSF communities, especially Higashiizu which regards its famous hot springs as the major recreational industry of tourism.

There is still the existence of (ii) improvement in physical health, as two tourists indicated their enthusiasm for marine physical activities, which are fishing, surfing and diving, respectively. The tourism bloom for travelers to have fun after the self-restriction of COVID, mentioned in 4.2.3.4, was a result of the long-repressed desire to socialize and travel. In addition to physical activities, another source of well-being practice found is the consuming of fish, such as the slices of raw fish called Sashimi (Figure 4.4). All 5 tourists from FG 20240116 showed their inspiration for eating fresh seafood. Moreover, both the restaurant staff from the FG 20231201 underlined, "Sashimi is commonly used in Japanese cuisine, not only for its freshness but also for the taste of the food itself. Some Japanese people believe that consuming food without additives can prolong lifespan, a belief that aligns with Japan's reputation for having a remarkably high number of centenarians." Thus, Sashimi not only represents Japan's food culture but is a widely accepted tip for physical well-being.



Figure 4.4 Appearance of Sashimi

Regarding (iii) discoveries and learning, it matches Umigyo's high emphasis on indoor education. A professor [122601] pointed out that Japanese education focuses on experiential education to let students be more connected to nature. All the tourists in FG 20240116 also noted that Japanese education focuses on experiential learning, encouraging students to frequently engage with nature through various nature-related courses. Likewise, both specialists [122601 and [011601] said some schools cooperate with fishers to learn about and experience their lives and observe fish at a close distance in coastal areas. Undeniably, some inland regions are not close to Japan's coasts, and specialists [122601] claimed that education there is probably more related to agriculture. However, specialists [122601] also said, "As Japanese people regard the forest as the lover of the ocean, chatting about the forest during natural education is related to marine education." In some inland regions, there were some museums with marine-life topics, such as the National Museum of Nature and Science, Tokyo, which are free to students, while some middle students did sketches of natural scenes in a park in Tokyo by teachers' guide on a workday (observation, November 14, 2023). Thus, even though two tourists were born somewhere inland, the education system has brought the

youth sufficient interest in learning nature-related topics to maintain their curiosity and desire for the ocean. Finally, about 4) Escaping, one of them claimed, "Tourism helps him escape from the same reality day after day to feel relaxed." Likewise, another one explained that he goes traveling to thank himself for his hard work during busy periods. When life is back to normal, people pursue something different in their lives.

4.3.2 Pull Factors of Umigyo Tourism

In addition to the tourists' motivation to travel in Japan, JSSF has its advantages and charming features that attract tourists to come to Japan. According to Hannonen and Hoogendoorn (2022), the pull factors influencing general tourism are the reasons people choose specific destinations. These factors include the small number of tourists, the diversity of species, the beauty of the location, its proximity to home, and the affordability of tickets. Regarding the number of tourists in Shizuoka, the relatively smaller number of tourists can avoid crowds of people in the destinations, which is also called overtourism. Noticeably, overtourism, which means the unexpectedly large number of visitors to destinations, causes harm to local communities, especially to heritage resources, pollutants, litter, noise, and ecological injuries (Çakar & Uzut, 2020). An official in the fisheries field [112801] explained that some local people prefer a quieter environment; therefore, they dislike the boisterous atmosphere, especially in Tokyo and Kyoto, even though tourism brings economic benefits to Japan. The interviewee also compared Shizuoka with the popular regions by stating that *"Shizuoka is a suburban area with fewer people, so it is still far from the tourist number capacity."* Therefore, there is a pull factor of the appropriate number of tourists in Shizuoka.

Biodiversity is also mentioned as a pull factor in Shizuoka. According to an official from Shizuoka Prefecture Fisheries Federation [112801], "Suruga Bay is the deepest in Japan, and the warm tide in the surrounding sea brings more fishery resources." The unique fish species in different ports will be shown in Section 4.3.4.1 later, which has a variety of common fish

and special species not shown in other ports. For example, an official in the fisheries field [112801] explained, “*The warm tide in the surrounding sea brings fishery resources.*” One of the tourists in FG 20240116 clarified that unique souvenirs of special fish species are attractive, and another tourist said that the different species caught in different seasons attracted him to go to the same ports several times in one year, which raised his curiosity about the cooking crafts of various fish species. In a similar context when asked about food, 3 tourists in FG 20240116 believed that JSSF is one of the few places where they can have the freshest seafood, and they felt excited to see the process of fish getting caught. Some JSSF communities not only have diverse fish species but also different types of local fruits and vegetables, such as in Higashiizu, a well-known place of production of wasabi and summer oranges [120801]. Therefore, the desire for biodiversity for their taste and watching fish catch is a strong pull factor.

When it comes to the aesthetic value as a coastal pull factor, it can be reflected from different perspectives. Although the ocean, with its water and species, is beautiful in itself, the scenery of the surrounding land areas can enhance the overall beauty of the destination. Firstly, some landmark attractions are observed in some JSSF communities. For instance, a specialist in the tourism field [112801] ensured that Mountain Fuji is also a well-known cultural heritage in Japan, attracting many foreigners for sightseeing. Participants in Yui [120601] and Tagonoura [102501] were pleased that Mountain Fuji can be seen directly from their ports and activity regions, which brings breathtaking and aesthetic value. Moving to Higashiizu Town in the south of Shizuoka, away from those JSSF communities in Suruga Bay, it has its unique beauty features other than Mountain Fuji. A local official [120801] enumerated the local beautiful mountains with grass and trees, the Pampas grass of Hosono Highland, the castle building stone, a Hokkaea Moon Road reflected on the ocean, and a 45m tree that is over 1000 years old, which attracted many singers to attend its coast for their

music videos. As a result, the JSSF communities in Shimouka, known for their stunning sea views and valuable landscape, are even more attractive due to their special and beautiful scenery. Finally, the cost of Umigyo Tourism is quite reasonable, even with the available discounts. The specific details of the recreational activity forms are outlined in section 4.3.4.2, but here are some prices that participants have shared. The only Umigyo Tourism Product shown in all four study sites is about the fisher-operated restaurants. The current common pricing range of bowl rice is often between 700 and 1000 yen in Mochimune, Tagonoura, and Yui (observation, October 21, 2023; observation, October 25, 2023; observation, December 6, 2023). In Higashiizu, a fisherman [120805] clarified that the cost of another buffet canteen is only 2000 yen per person for the ‘all-you-can-eat’ food. There are some discounts or extra services due to some reasons in different ports, such as bad weather, as the JSSF fishers do not catch fish during rainy days, and the restaurant of Tagonorua is an example of this situation. According to a local FCA staff member, *“The price changes slightly depending on the season and weather. For example, miso soup is free on rainy days. If raw Shirasu cannot be caught, boiled Shirasu is free and upgraded to a large portion to attract more customers.”* The upgraded meal is compensation for not providing customers with the freshest seafood during the rainy days. Thus, the costs of seafood and adjusted compensation are appropriate enough as a pull factor in some Shizuoka JSSF communities.

As a result, the small number of tourists, diversity of species, aesthetic beauty, and reasonable costs in JSSFs’ Umigyo activities are the factors that attract visitors. Still, the distance and convenience to these communities are a challenge, which will be mentioned in Section 4.3.3.

4.3.3 Current Shortages and Proposed Solutions

There are many weaknesses of Umigyo Tourism in Shizuoka at present that need to be improved. The first one is the fear among few people regarding the ocean and the coastal

areas after the 3.11 Earthquake, which is mentioned in Section 4.2.3. The second weakness is the relatively low destination popularity of some communities with the need for more promotion. According to a participant in FG 20240116, *"As a student at Tokai University, some students in the marine-related departments realized these activities after the professors took them to do the fielding in SSF communities. However, I heard that few students at Tokyo Marine University, which has similar marine-related departments, know that, so the promotion is still not enough even for the students in the related industry."* Thus, Umigyo Tourism still has a low reputation in Shizuoka. The third weakness is the continuous sluggish marine leisure market for Japanese domestic people. A specialist [121501] further explained, *"This consistent decrease in Japan is because the Japanese economy has not completely recovered from its bubble economy even though decades have passed."* The fourth weakness is that most JSSF communities do not have fisher-owned accommodations in Shizuoka [121801]. The nonexistent fisher-owned hotels or guesthouses are also mentioned by Mochimune [102103], Tagonoura [102501], Yui [120603], and Higashiizu [120804]. Finally, there are complaints about the inconvenient public transport to these ports. The distances between the closest tram station to these 4 ports are from around 500 meters to 1,500 meters (observation, October 21, 2023; observation, October 25, 2023; observation, October 6, 2023; observation, December 9, 2023). A tourist in FG 20241601 in his opinion said that, *"The traffic to each SSF community is not convenient enough because it would take a long time for people to attend there, especially for travelers who do not drive. Luckily, Shizuoka's traffic to the destinations is better than that in most other prefectures I visited."*

These five weaknesses mentioned cannot be resolved completely and quickly, but there are some measures to alleviate them. First, the tsunami prevention system may reduce the emotional pressure about tsunamis from the coastal areas to some degree. At first, there is a high slope leading up from the steps, which is used for evacuation in case of tsunami

(observation, November 8, 2023). Specialist [011601] described, “That in the Tokai Region, it is the only one in Japan. As the alert can tell the local people the upcoming tsunami a few seconds earlier, it gains time for a higher probability of escaping.” In addition to the alarming system in the larger region, some ports have reliable precaution facilities to defend against tsunamis. Take Mochimune as an example; an FCA staff [102102] said, “Tsunami-proof automatic doors were built to protect indoor areas during three-time slots, with the cost of 70, 80, and 90 million Japanese yen, respectively, due to the continuous rising prices in Japan.”

In addition, some innovations in promotion have emerged recently. There are some representative humanistic activities listed in Section 4.3.1, and an Official [121801] claimed that the new Umigyo policy in 2022 will lead to more similar events held in SSF Ports to attract tourists. All the tourists in FG 20240116 and a marine specialist [122601] ensured the strong spread of power through social platforms after participants joined the events and shared their photos and impressions.

Regarding the limited spending power of domestic people for marine leisure, foreigners are more concerned as an alternative. A specialist [121501] showed a consistent increase in the marine leisure industry in China and America. Research has found that natural disasters notably damage the tourism destination image, but there is a reduction in the negative influence over time (Wu & Shimizu, 2020). In particular, research displayed that 2.5 years after the Fukushima disaster in Japan, the majority of Taiwanese people are still willing to travel to Japan, though the lingering anxiety among potential visitors leads them to change their travel behavior, such as an increasing number of search for information regarding the destination or the local food (Handler, 2016). An FCA official [102501] witnessed a Canadian tourist buying a Sashimi rice bowl in that JSSF canteen. There are also some existing marine activities targeting these foreigners. For example, Official [121801] pointed out, *"Izu's southern area attracts some tourists from Hong Kong and the West because of its*

diving activities." At the same time, there are transportation services that take tourists to Shizuoka as well as translators. According to a professor in the tourism field [112801], It is unique that some foreigners come by large vessels rather than airlines, which cover from 2000 to 3000 people on each vessel, and the number of these large vessels from their countries to Japan was planned to be 117 within the whole of 2024. Japan has a well-developed translation service as it is optional for foreign tourists to pay for translators in all areas of Japan. The current official strategy for attracting foreigners is to post promotional videos in both Japanese and English with corresponding subtitles on video platforms, especially YouTube [121801].

When it comes to the shortage of fisher-owned accommodations, nearby hotels can treat the Umigyo tourists well. According to a prefectural official [121801], *"There are many hotels not far away from the ports. For example, Mochimune and Yui are close to Shimizu and have a lot of hotels. Although fishers do not operate their own hotels, these nearby hotels give female SSF community members the chance to work and to gain money."* As a consequence, nearby hotels of some ports can handle the tourists' accommodations and the seasonal jobs for women from SSF households well.

Finally, the bicycles and parking areas somewhat mitigate the traffic problem. An FCA official [102501] saw many local people riding bicycles to come to the JSSF canteen. In regards to this, Steele (2012) clarifies that Japan is one of the world's best bicycle nations with low-cost bicycles' utility, convenience, and has sustainable contribution. Despite Japan's high popularity of cyclists, private cars are still a common transportation method in this developed country, and the space for parking is sometimes a concern for drivers. Fortunately, there are at least 8 parking spaces for tourists in Mochimune and over 20 in Yui (observation, October 21, 2023; observation, October 6, 2023). A Higashiizu officer [120801] also showed the sufficient space and convenient parking processes, *"There is more than one*

parking lot here. Each parking lot will have electronic signs showing whether there are vacancies in this parking lot and which parking lots have vacancies. Payment is simple; just scan the QR code.”

Table 4.3 visually exhibits the weaknesses and possible solutions.

Table 4.3. The Proposed Solutions to Current Weaknesses.

Current Weaknesses	Corresponding Proposed Solutions
Fear of the ocean [FG 20231130]	Evacuation Areas + Continuous enhancement of technology for Tsunami prevention [011601]
Low destination popularity [FG 20240116]	The launch of the Umigyo Policy with more official promotions [121801]
Continuous sluggish marine leisure for Japanese tourists [121501]	Promote via international channels and attract more foreign marine tourists [121501]
Lack of Fisher-owned Accommodations [121801]	Collaboration with surrounding hotels [121801]
Inconvenience of public transportation to some ports [FG 20241601]	Popularity of bicycles [102501] and the intelligent parking lot [120801]

4.3.4 Umigyo Tourism in The Study Sites

Based on Section 4.3.1.2.1 and 4.3.1.2.2, socialization in nature (network and beauty), physical health (marine activities and fresh food), education (knowledge and contact with fishers), and the escape from routine life are the main demands (unusual leisure experience). This section explains how the existing Umigyo Tourism products match the pull factors by distinguishing the similarities and differences in the place of origin among the five ports as well as their details, shown in Table 4.4 with text explanations in the rest of Section 4.3.

Table 4.4 Diversity of Leisure Activities in JSSF Communities.

	Mochimune (Central Shizuoka)	Yui (Central Shizuoka)	Tagonoura (Central Shizuoka)	Higashiizu (Inatori)	Higashi Matsushima (Miyagi)

Matched Demand Characteristics (Niche Market)	Food/Education	Food/ Student Education/ Natural Beauty/ Unusual Leisure	Food/ Natural Beauty/Education	Socialization and Natural Beauty/Food/Education	Socialization and Natural Beauty /Food/ Education/ Unusual Leisure
Popular Target Species	Shirasu; Tuna	Shirasu; Sakura Shrimp; Tuna	Shirasu; Tuna	Kimne fish and Tenkusa; Tuna/ Lobsters	Oysters and Nori
Outstanding Product Characteristics	Shirasu Restaurants: School Trip	Sakura Shrimp Restaurants/ Cooking Class/ Marine Cruise	Shirasu Canteen (Certificate)/Marine Cruise/Marine courses	Buffet canteen/ Marine Cruise/Recreational Fishing/Morning Market	Restaurants/ Guesthouses/ Marine Cruise/ Workshops
Activities Not Open to The General Public Yet	Marine Cruise	/	/	/	Rock Fishing
Special Promotion	Brand Effect (Processing Factory/Branding)	Brand Effect (Branding); Art (Learning outcomes)	Brand Effect (GI Certificate)	Online Videos	Workshop Outreach; famous people's photos; Green Destination 2022 Award
Development Stage	Developing	Developed but recovering	Developing	Developed and under adjustment	Developed but recovering

Note. The data are from observation, semi-structured interviews with fishers, FCAs, and academic specialists in five study sites, and a focus group with officials.

4.3.4.1 Healthy Seafood in Restaurants/Canteens

Among all the five JSSF ports, they all match the demand for healthy food by fisher-run restaurants as well as the education by the outsiders' port visit. However, the operation forms and extents vary a little among these products/services.

Section 4.3.1 about seafood costs shows the existence of fisher-operated restaurants and their relatively low food prices. The canteens in Mochimune, Tagonoura, Yui, and Higashiizu are located closely in the JSSF ports at a corner of each port (observation, October 21, 2023; observation, October 25, 2023; observation, December 6, 2023; December 8, 2023). These canteens are defined as a part of Pescatourism since the local fishers are the main force or even the owners. Tagonoura FCA explained, "*The main practitioners are local residents and fishermen's families, and the Tagonoura canteen is also only open during lunchtime for 3 hours per day.*" During the opening seasons, Fisher [102104] mentioned that fishers run the

Donburi House, directly operated by the local FCA, which is operated six days per week from 11 am to 2 pm except every Thursday and rainy days. A similar canteen also appeared in Yui as the local FCA [120603] pointed out the local people are proud of 浜のかきあげや (Hama no Kakiageya) with an over 20-year history, although it is open from 10 am to 3 pm for three days each week after the COVID. In contrast, a fisher in Higashiizu [120805] said the operation of the buffet is normally at night every Friday, whilst the restaurant staff [120102] in Higashi Matsushima displayed both lunch period (11 am to 2 pm) and dinner period (3:30 pm to 9 pm) every day of a fisher-operated restaurant called Chanko Haginoi, which has a peak season in November and December. In terms of the dining atmosphere, though there are essential desks, chairs, and chopsticks, those in Mochimune and Yui are in the open air with only umbrellas (observation, October 21, 2023; observation, November 8, 2023), and the those in Tagonoura are semi-open air with roofs (observation, October 25, 2023; observation, December 8, 2023), but the one in Higashi Matsushima is indoor is with washrooms on each floor and even with some private rooms for groups of eaters that can close the door to protect privacy [120102].

In addition to the operators and the space of having food, though there are several species in each port, the unique target species with extraordinary freshness, as the shop signs of each JSSF community, are different due to the distinctive geographic locations of these ports (exhibited in Figure 4.5). Mochimune, Yui, and Tagonoura are located close to Shimizu, and an official in the field of marine in Shizuoka [112801] said that Shimizu's tuna fishery production ranks first in Japan.



Figure 4.5 Appearance of Various Fish Species in Different Study Sites

Mochimune, Yui and Tagonoura are also famous for their しらす (Shirasu). According to a Mochimune fisher [102103], Shirasu, a kind of small whitebait, was first caught in Shizuoka. FCA staff [102102] claimed 54 out of 65 local boats are dedicated to catching Shirasu. Regarding the quality of Shirasu in Mochimune, a fisherman [120702] claimed that its location at the entry point of Suruga Bay results in rich nutrition. A Fish Processor in

Mochimune [102101] also praised and recommended the Shirasu in Tagonoura, saying *“Shirasu can be caught in about twenty prefectures in Japan and is famous in Shizuoka, Hyogo, Aichi and Miyazaki prefecture. Shizuoka’s is of better quality and more delicious than Kanagawa’s, and Shirasu from Shizuoka Prefecture is the most delicious in Tagonoura.”* The FCA in Tagonoura [102501] was proud of the firm. The fish processor in Mochimune [102101] and the FCA staff [102501] ensured that the raw, boiled, or sun-dried Shirasu, which is put on top of the Don (rice bowl), are the most popular cooking styles.

Compared with Shirasu, 桜エビ (Sakura Shrimp) is a more representative species in Yui. The local Yui FCA [120603] first said, *“Shirasu fishing business and Sakura Shrimp business, which are both 40, are dominant locally, but Sakura Shrimp always occupies over 75% of the economic value of all fish types in Yui.”* According to a local fisherman [120601], *“There are more than 80 boats in Yui, and 1400 boxes of fish and shrimps can be caught daily, while each box weighs around 15 kg.”* The Yui FCA staff [120603] then highlighted its value, *“Sakura Shrimp is rarer and more valuable because only Suruga Bay in Japan and the ocean in Taiwan have this variety. Taiwan’s Sakura Shrimp only has about 90 light emitters, but the Japanese one, which was first discovered in 1894 in Japan, has about 180, so it’s sweeter.”* Yui even used a large Sakura Shrimp sign as its landmark (Observation, December 8, 2022), and the yearly Sakura Shrimp Festival, which started in 1994 in Yui, even attracted roughly 60,000 visitors in 2012.

Japanese Bluefish, Japanese lobsters, Akodai, and tuna are the target species in Higashiizu [120802], but Kinme is more special for the public to distinguish this port. The fisher who also ran a marine cruise [120803] said that the yearly earnings from lobsters still make up at least 80%. Regarding the other two species, a local official underlined that Kinme and tuna are made for weddings, Shichi-Go-San (celebration of children into middle childhood), and coming-of-age ceremonies, especially Two Itanori Kenme fish together in a

dish represent celebration because they symbolize harmony. Regarding Kinme, Izu FCA [120208] said, “*Kinme fish are normally in the deep sea 250 m below the water, and ideally, each boat can catch 40 kg of Kinme fish.*” There are different types of Kinme recipes. According to a fisherman [120805] and Official [120801], Kinme fish are made as sushi, freshly baked fish, sashimi, Shabu-Shabu, fish braised in soy sauce, semi-dried fish, salted fish, kamees, and soup.

In terms of Higashi Matsushima in Miyagi Prefecture, Officials in FG 20231130 listed crab, shrimp, salmon, and sardines as common fish species, but what stands out is nori seaweed and oysters as successful aquaculture. They noticed that Higashi Matsushima has a fantastic environment to grow rich and plump oysters in Miyagi. In addition to the popular nori, an official in FG 20231130, a fisher [120101] noticed that a local nori aquaculture fisher received an Excellence Award from an imperial family due to the excellent quality of nori grown by him. A fisherman who owned a canteen [120102] explained the Chef’s special, Nori Udon. This dish features soba noodles with soba noodle juice in a container. It includes tempura mixed with wasabi and sweet and sour Nori sauce. The soba noodles are soaked in the noodles juice, while the tempura is a mix of fish, green peppers, shrimp, and crab meat. In terms of the oysters, the restaurant owner liked to cook cold salad oysters to make them taste like milk, while a local guidebook (Commerce and Tourism Division, Higashi-Matsushima City, 2023) lists shell-grilled, baked, earthen pot pudding, and hot port styles in different seafood restaurants.

These study sites have their own special methods of promotion, as the branding of the special species is more common. Shirasu is a brand in Tagonoura, Mochimune, and Yui, Sakura Shrimp became a unique brand in Yui [120601], and Kinme became a brand that attracts most tourists in Higashiizu [120801] because these species seldom exist in other areas. There are corresponding slogans for these species, which are used commonly in the

JSSF communities with the corresponding species. In terms of aquaculture, the approved fame of nori, proven by the award, makes local nori a special brand.

The restaurants operated by fishers can raise their reputation by satisfying tourists' demand for seafood freshness. Regional branding can deepen the love and interaction of the local region (Li & Namikawa, 2020), which is achieved by the fresh taste of food in these study sites. The fish caught by fishers were cooked on the same day (Observation, December 1, 2023), which was the same for all restaurants in other study sites on non-rainy days. More specifically, it was a race against time to deliver fresh fish as soon as possible. In Mochimune, a FCA staff member [102102] explained, *“Freshness is the most important, and the newly caught ones are transported to the port by transport ships. Three boats cooperated, two trawling boats and one transporting the fish, so the freshly caught fish were immediately auctioned and transported to the factory.”* As a result, both fishers [102104 and 120702] highlighted that the freshness has made Shirasu a famous brand in the whole of Japan. Likewise, in Tagonoura, the local FCA [102501] displayed its location at the foot of Mount Fuji with cold-iced water and a short distance to the fishing ground from the firm to complete the trawling and return to the port within only 45 minutes. According to Participants 102103 and 102501, ice is used by fishers to preserve the freshness, but Tagonorua only uses one tugboat to reduce the trawling time, which is shorter than that in Mochimune with two trawling boats. Thus, Tagonoura even received a GI Certificate, which proves its high food quality in Japan [102501].

4.3.4.2 Education Activities in Study sites

Umigyo Tourism is strongly related to marine education. The schemes of the experiential learning programs for schools (elementary, middle, and high school) were introduced in around 2002, while the implementation was in 2006, and the long-term stay for elementary schools has been held since 2008 (Li & Namikawa, 2020). There are meetings with close

contact with fishers to learn about their lifestyles (Tokyo Fisheries Promotion Foundation & Umi, Hito, Kurashi Forum, 2019). In the same way, students can sometimes acquire extraordinary knowledge in JSSF communities in Japan, such as seminars on food poisoning in Kaifu-gun (Li & Namikawa, 2020). Specialist [011601] also confirmed, *"It is widespread for most SSF communities to operate and guide the school visits near their ports."* This section describes the different activities in the communities and on the ocean in these study sites.

There are different innovative styles of indoor-education activities in various ports. Tagonoura can represent an ordinary Umigyo education style. FCA in Tagonoura [102501] showed that the state, county, and city governments provide subsidies for this community to operate tourist groups and operate ocean learning courses for primary school students and teachers there. Yui has more innovation in its teaching style, such as its Fish Cooking Class (Figure 4.6). A fisherman teaching it [120602] described the steps and facilities, *"There are four workstations with sinks, each of which can accommodate about eight people. Fishers first demonstrate how to use a knife to scrape fish scales and cut fish's heads before cutting fish meat alongside the fishbone. After chopping the fish into small pieces, participants can finally process the sashimi by themselves and process some slices of Japanese silver fish before frying them with flour. Of course, fishers bring support for the learners when they cannot handle the fish well. Then, participants can eat their fish with rice and miso soup. There are seasonings, including soy sauce, scallions, and ginger."* According to Yui FCA [120603], *"Before the 3.11 Earthquake, there was a popular indoor Cooking Class for children as an experiential learning. It actively collaborated with schools for children's marine education from late May/June to September/ early October every year. Its growth was from only 487 students from 5 schools in Hachioji City in 2005 to its peak at 3,249 students from 12 schools in Hachioji City and 14 schools in Yokohama City in 2010."* After the 3.11

Earthquake, a Shizuoka fishery official [112801] mentioned the long-term pause of its operation of experiential learning. However, Yui Fisher [120601 and 120602] devised a rehabilitation strategy to restart their cooperation with schools for cooking classes in 2023. These classes, which were operating at a low motivation level, needed time to recover. They were postponed due to Covid-19, which also reduced the frequency of the canteen's operation. Fortunately, a Yui cooking class operator [120602] noted that the popularity of this educational class has been remembered by nearby ports as an iconic project to this day.

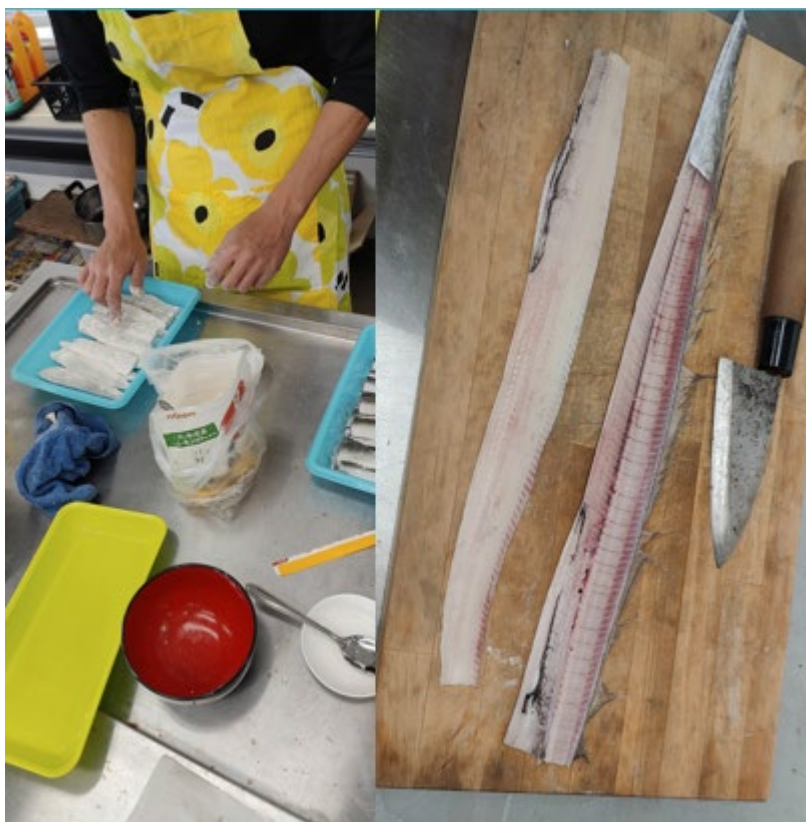


Figure 4.6 Cooking Class

Some active fishers even temporarily leave their communities to contact students or learners. A specialist [120401] gave an example of fishers' education outreach, *"Another case is the Osakana Study Group in Hichijo Island, Tokyo, which promotes fish food to schools. It teaches women processing and lets them process. It also outreaches its business to other places to have food courses, which popularized the value and stories of the fish."* A similar one, as a workshop form, originates in a JSSF port in Higashi Matsushima. A local fisher

[120101] described the content of the workshops, which is 5 to 100 people per session and 20 times a year during each off-season:

- Step 1: Personal experience of how fishers grow their inspirations and techniques, especially how a Nori fisher joined this industry at 18 years old and obtained the excellence award from Imperial House of Japan at 28 years old.
- Step 2: The challenges and how they overcame them by their values, such as the fake local labels of the products and the rehabilitation period after the 3.11 Earthquake.
- Step 3: The disagreement with the modern food-security solution and SSF's importance, especially when JSFF operates an environment-oriented business, but the intervention of big corporations with profit orientation increases production drastically to harm to nature).
- Step 4: Time is given to customers to answer questions and share their insights.

There are also some outdoor experiential activities in some communities. Marine cruises and fishing are popular activities, while some communities have their special versions of these activities (exhibited in Figure 4.7). Among all these five study sites, Higashi Matsushima has the most diversity of outdoor marine activities, such as fishing, harvesting, and boating. According to Commerce and Tourism Division, Higashi-Matsushima City (2023), the 7 recommended activities include (i) Boat Handlining Experience (around 2 hours/4-person capacity/¥1,500), (ii) Boat Fishing Experience (under 3 hours/4-person capacity/¥4,000 including bait fees), (iii) Gillnet Fishing Experience (around 1 hours/4-person capacity/¥3,000), (iv) Basket Fishing Experience (around 1 hours/4-person capacity/¥2,500), (v) Ocean Cruise Experience (around 1 hour/unlimited participants/¥1,500), (vi) Sea Kayak Experience (around 1 hours/1-person capacity/¥2,000), and (vii) Dragnet Fishing

Experience (around 1.5 hours/over-40-person capacity/¥ 50,000), and all of them are open during the whole year except the Sea Kayak Experience (only open from April to October) and Dragnet Fishing Experience (only open from May to September). In addition to these activities for the public, some local fishers also design some small-scale activities with their acquaintances, such as rock fishing. For example, a fisher [120102] explained that the fishing method is still by a fishing rod per person, but the difference is that he drives a boat to take tourists 5 to 10 minutes away from the coast to a zone with rocks so that the participants can catch fish species which habitat in deeper water than the coast, and they can eat the fishes that they have caught at the same day.

Among the outdoor activities above, marine cruising is the most popular leisure event for the public in other study sites. Watching the coastal scenery and feeling the breeze are ordinary marine cruise activities. Tagonoura shows the marine cruise with the basic services, as a local FCA described, “*The Scuba cruise is charged 700 yen for adults and 300 yen for children and is conducted during festivals, but it is only for sightseeing without fishing experience.*” There are more services and higher prices in Higashiizu when a fisher [120803] listed the activities on the 12-person maximum boat with 3,500 yen per capita charged per person:

- Receiving fries from fishers to throw them to the sky to feed the seagulls.
- Observing a spectacle which is two rocks (Hasamishi) located away from the coast.
- Listening to European, American or Japanese songs from three speakers.
- Eating fish cakes and jelly.
- Drinking juice.
- Watching fireworks on the boat during festivals.
- Worshiping gods and nature by sprinkling wine and rice into the sea.
- Sitting on the front seat of the boat to challenge oneself.

In other words, Higashiizu has both a lively atmosphere and diverse activities. Obviously, there are other Umigyo Tourism activities as well. However, a Higashiizu fisher showed, *“There are 4-5 boats for recreational fishing, but recreational fishing often makes fishers tired because of the long work time, especially after fishers spend too much time fishing first.”* The Izu FCA [120802] pointed out that some fishermen come back from the sea at around 4 and 5 am. Thus, they need a time balance between fishing and other recreational activities to avoid being too tired.

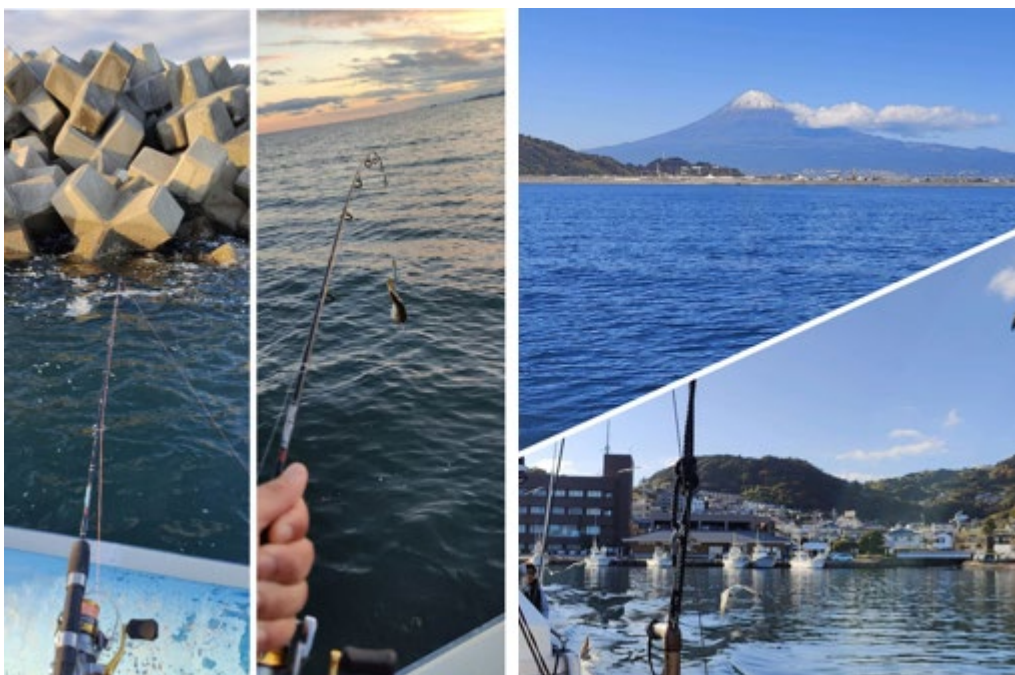


Figure 4.7 Rock Fishing and Marine Cruises

In addition to the leisure-oriented marine cruise, a marine specialist [112801] pointed out some marine cruises as accessories for marine education, such as the fishing ecotourism that attracts primary school and middle school kids from Tokyo and Yokohama to Yui. A fisher [120601] pointed out that the major activity is still sightseeing by feeling like sailing a fishing boat and enjoying the beautiful scenery around. The local FCA [120603] added, *“Mainly 5th-grade elementary school students gained an interest in fishing through fishing experiences through the marine cruise.”* Some similar marine cruises are not open to the public in other JSSF communities at present. For example, in Mochimune, a fisherman [120207] said,

“Although there is a marine cruise activity that shows passengers how fisher's do fishing, it is only open for researchers now.” Thus, the marine cruise in Mochimune and the rocking fishing for only acquaintances in Higashi Matsushima (mentioned in 4.3.4.2) can be categorized as a trial operation stage but have not been open to public visitors yet. To some degree, the Umigyo activities in Yui just restored from the trial operation because the total price of cooking class and marine cruise for researchers and government staff during the trial operation was only 2000 yen/person [120603], fishers and FCA are thinking about future strategies to restart the previous cooking class and marine cruise in 2023 after the impacts of the 3.11 Earthquake [120602].

There are also some concerns about the equipment used during outdoor activities. There are seats on each recreation boat to allow passengers to sit down, although there are also paths for visitors to walk through in study sites with marine cruises (observation; December 1, 2023; observation, December 6, 2023; observation, December 8, 2023) Firstly, many fishers ensured [102103 & 121801 & 120803] that there are no toilets on the recreational boats in most ports except in Higashiizu. Besides, fishers sometimes provide visitors with the necessary equipment to overcome different conditions. For example, a fisherman in Higashi Matsushima [120803] said that it is extremely cold, with a temperature under 0 degrees from time to time, so he often lends down jackets to visitors without charge. Meanwhile, although there are no specialized security considerations for indoor activities [120101], there are certificates and equipment for safety concerns on the boat. In terms of the boats, both fishers [102103] and officials [121801] highlighted the existence of recreational boat licenses for the fishing boats offered by FCAs in corresponding communities. The license ensures that these boats match the standard of the operating marine cruises, while some communities gain more certificates to prove their high safety levels, such as a Yui FCA, which has gained a Marine Ecolabel as proof of both hygiene and safety [120603]. A fisher in Mochimune [102102] also

said that it is common for each fishing boat to equip GPS to record the route of fishing boats. Officials in FG20231130 added traveller insurance and a life jacket for each participant in the marine cruise.

4.3.4.3 Other Leisure Activities in JSSF Communities

In addition to different activities, there are also some accommodation and regional product market concerns (shown in Figure 4.8). Accommodation is an essential part of Pescatourism. Admittedly, Section 4.3.3 has explained the shortage of fisher-run hotels in Shizuoka so that Umigyo Tourism relies on the nearby hotels. The officials [121801] and fishers [102103 & 120804 & 120603] in study sites in Shizuoka also confirmed this condition. However, officials in FG 20231130 said Higashi Matsushima in Miyagi Prefecture fishers used to focus on fishing tourism and ran a hundred guest houses with restaurant and accommodation services, but unfortunately the 3.11 Earthquake reduced the number to only ten guest houses. More precisely, a fisherman said the tsunami did not cause much damage to Tsukihama Beach, thanks to its high position, which is why the guesthouses with three or four floors were almost intact, and the parking lot looked like it could accommodate a dozen cars and always expanded in the summer. A local tourism guidebook displays that the capacity of most guesthouses is around 26 people, but two of them are with 68 people; the accommodation payment without meals is from 3,500 yen to 4,000 yen, and the accommodation payment without meals is from 6,500 yen to 8,500 yen (Tourism Promotion Division, Miyagi Prefectural Government, 2022).

Fishers have a lot of chances to operate booths during different holidays and events. There are some other leisure activities similar to the representative humanistic activities in Shizuoka JSSF Communities mentioned in Section 4.3.1. In particular, a fisher [102103] showed that the temple fair in Mochimune attracted 15,000 tourists from the end of April to the beginning of May in 2023. A similar Sakura Shrimp Festival on a yearly basis was also

mentioned in Section 4.3.4.1. In contrast, the morning markets in Higashiizu bring local fishers more frequent chances to run their booths. According to Higashiizu Fisher [120804], *"There are morning markets running on Saturday and Sunday mainly for the tourists in a large indoor area."* The local FCA [120802] also explained that the time is set in the morning due to the fish's freshness. In addition to fish, products also include local vegetables and fruit, wild vegetables and plums, Daifuku, flowers, food, and so on (observation, December 9, 2023).



Figure 4.8 Guesthouses and Morning Market

4.4 Differences Between Umigyo Tourism in Japan and Pescatourism in Italy

In this section, there are comparisons between Umigyo Tourism in Japan with Pescotourism. However, the forms of Pescatourism vary in different countries. For example, according to (Piasecki, 2016), the passenger carrying capacity on each vessel in Cyprus can be up to 50, which is much over 12 in Italy; Spain regards the shipment without stimulating activities after jumping into the water; Greece allows passengers to do fishing on board; the emphasis on the activities on land due to the compulsory costly and serious boarding regulations, attributed to the previous boarding accident. As a result, due to the variant and

adapted versions of Pescatourism in other countries, this sector compares Umigyo Tourism with only the traditional Italian Pescatourism form (Seen in Table 4.5).

Table 4.5 Existing Differences between Umigyo Tourism and Pescatourism

Differences	Factors	Umigyo Tourism	Pescatourism
Development Process	Origin of Concept	Business carried out by fishers in the community (Li & Lou, 2018)	Marine boarding activities held by fishers (Piasecki, 2016; Saba, 2013)
	Current Prior Focus	- Enhance the charm of SSF to the public - Prevent more young successors from quitting SSFs [120802/ 120804/ 102103/ 120101/ 121801]	- Alternative income for fishers (Piasecki, 2016; Gravagnuolo & Angrisano, 2013) - Prevent young successors from being kicked out of SSFs (Saba, 2013)
	Drivers	Fishers and fishermen cooperatives associations, without consortia [011601]	Fishers, fishermen cooperatives, and consortia (Piasecki, 2016)
Experience of Outdoor Activities	Stimulation Level	Lower: Popular for sightseeing on marine cruises and fishing (Li & Namikawa, 2020) [120601]	Higher: Famous for swimming and even scuba-diving from the boats (Lai et al., 2016; Saba, 2013)
	Food Services	- In canteens/restaurants [102103/ 102501/ 120803/ 120102/ 120602] - Japanese recipes with soy sauce, wasabi, and red ginger [FG 20231130 & 102501]	- With kitchens on boats (Lai et al., 2016; Piasecki, 2016) - Italian recipes with juices and sauces (Pérez-Lloréns et al., 2021)
	Facilities	- Rare toilets on fishers' boats→ Shorter marine cruises [102103/ 120102] - Rare fisher-operated guesthouses [121801]	- Equipped with toilets on fishers' boats→ Longer marine cruises - More fisher-operated guesthouses (Piasecki, 2016)
Marine Education Methods	Target Market	Local/non-local adults+ Students from schools [FG 20240116/ 102521]	Nonlocal middle - aged adults (Lai et al., 2016)
	Existence of Indoor education	As a complement to outdoor experiential education [120101] (Li & Namikawa, 2020)	Not mentioned - Rare or not existence of indoor education (Muñoz, 2018; Saba, 2013)

		Students' artworks in the public areas as a promotion channel [102521]	
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4.4.1 Development Process

The Pescatourism and Umigyo tourism originated from distinctive starting points, which the insights of the boarding on the SSF fishing boats can reflect. Pescatourism first appeared in 1982 (Goto & Takayoshi, 2017). Research explained that traditional Pacatourism focused on boarding activities on boats before fishermen's households expanded to more activities held by them in the fishing communities, such as the village visits and guesthouses (Piasecki, 2016; Saba, 2013). Meanwhile, the fishing activity held by the artisanal fishers is the top priority (Eddine & Mohamed, 2023). In other words, activities other than boarding are the derivative projects of Pescatourism. However, Umigyo tourism in Japan is one of the components of Umigyo. Lou (2013/2022) said that Umigyo was first proposed as a term in 1985, and Li and Lou (2018) defined Umigyo as including a series of economic activities to satisfy the needs of marine and coastal use through every kind of regional marine-related resource. According to Li and Lou (2018) and Participant [121501], Umigyo tourism originated from the initiative of businesses in the SSF communities, like village visits, and boarding a boat is only one of these activities. More precisely, Participant [121501] said, *"Previously, fishing was regarded as the main business, while the other businesses were all regarded as the side business. In contrast, Umigyo put the fishing and other businesses together without categorizing them into main or side businesses."* Thus, the activities originate from the JSSF community, and boarding is complementary to other activities in Japan rather than a compulsory activity all the time.

Moreover, the current purposes of Pescatourism and Umigyo tourism differ due to the different social conditions. Italy's focus is on the alternative income channel through social cohesion and economic vitality of the local cultural heritage when there are declining living

resources (Piasecki, 2016; Gravagnuolo & Angrisano, 2013). Although some research (Saba, 2013) points to the maintenance of successors as one of the outcomes, its purpose was to prevent the young generations from being kicked out of the sector. In other words, the SSF was charming for the young fishers, and some of them are passionate about staying in the fishery-related industry even though the fishing industry faces challenges, so Pescatourism is to create more positions for a large number of fishers. Compared with Italy, the lack of successors in SSF communities in Japan is the prior problem over the economic problem for fishing tourism. Four out of five study sites strongly insist that the successor problem is the most severe as more young generations escape from the sector. The fishers in these communities [120802/120804/102103/120101] and the Shizuoka Prefectural [121801] demonstrated the priority of Umigyo tourism was an alternative project to retain the young successors who did not want to inherit due to the lack of SSF's charm in Japan. Thus, when both types of tourism realize the mutual benefits of the environmental, economic, and social outcomes, the priority is the economy for Pescatourism and the social perspective for Umigyo Tourism. The primary goal of Pescatourism was social cohesion and economy when most of the young successors still remained, while the main emphasis of Umigyo tourism was the maintenance of SSF successors from the outflow.

Thirdly, the drivers behind these two similar kinds of tourism are not completely the same. According to Piasecki (2016), the main groups that carry out Pescatourism activities are sometimes fishers, fishermen cooperatives, and consortia. Compared with the consortia (financial groups) in Italy, Umigyo Tourism is more non-profit as a professor [011601] denied its existence and highlighted the fishers, FCAs and governments as the main drivers. As a result, fishers and FCAs in Japan have a high autonomy in carrying out activities without concerns about capital intervention.

4.4.2 Operation of Activities

The locations and behaviours of activities are different mainly because of the different development processes between these two tourism theories. The diversity and stimulation levels of activities differ between Pescatourism and Umigyo Tourism.

To start with, Pescatourism includes more diverse physical activities than Umigyo Tourism, although scuba diving and swimming are popular recreational activities in both countries. Research listed fishing activities, swimming, and even scuba-diving from the boats as popular activities during Pescatourism (Lai et al., 2016; Saba, 2013). More specifically, these activities are often operated in the open sea, which can only be reached by boats (Lai et al., 2016), and tourists can use fishing rods with a fisher's guide to practice fishing techniques (Piasecki, 2016). In contrast, Fishers in Yui [120601] and a guidebook in Higashi Matsushima (Commerce and Tourism Division, Higashi-Matsushima City, 2023) in Japan mentioned the fishing services as the only physical activities on SSF recreational fishing boats. The activities of the marine cruises in Tagonoura and Higashiizu Town were milder, which were only for sightseeing without fishing experience [102501] and feeding the seabirds and praying [120803], respectively. Scuba diving existed in Japan but never from boats, as research found that the jumping-off points for diving were freight docks in Nagisahaku, Japan (Li & Namikawa, 2020). Likewise, a fisherman [120201] pointed out that swimming in the ocean often started from the beaches by themselves, for instance, on a beach close to the Nobiru tram station in Miyagi. As a result, Pescatourism in Italy brings tourists more abundant activities with practicality on boats, whilst Umigyo tourism in Japan only allows boats as a sightseeing tool for tourists with fishing activities at most.

In addition to physical activities, food services are not the same. The research illustrated that the fishers use special food services to cook the freshly caught fish in the restaurants that are situated on the fishing boats for tourists immediately in Italy (Lai et al., 2016; Piasecki, 2016). However, fishers in all the study sites [102103/ 102501/ 120803/120102/120602]

showed no kitchens on artisanal boats, but there are fisher-operated canteens or restaurants. Without the duration of having food on a boat during the Umigyo Tourism, the cases of the marine cruises were half an hour in Yui (observation, November 6, 2023), 40 minutes in Higashiizu [120803], and 1 hour or more in Higashi Matsushima (Commerce and Tourism Division, Higashi-Matsushima City, 2023), which are normally much shorter than the one-day Pescatourism trip with the cooking process (Lai et al., 2016). At the same time, there are noticeably different ways of processing food due to different recipes. Research regarded traditional recipes used to prepare fish for lunch as a significant food experience during Pescatourism, which processed seafood with juices and sauces, especially olives (oil), wheat (bread) and grapes (wine), vegetables and fruits (dried and fresh), nuts, milk, and cheese (Lai et al., 2016; Piasecki, 2016; Pérez-Lloréns et al., 2021). In contrast, Umigyo restaurants in Japan followed its Japanese recipe style, including sashimi with soy sauce, wasabi, and red ginger [FG 20231130] and don, which was a rice bowl with sashimi above rice [102501]. Although there is an Italian version called Pesce crudo, the method is different because the condiments used are extra-virgin olive oil, grapefruit, sea salt/salt, garlic cloves, lemon, and tangerines (Becci, 2014), which is different from what Japanese culinary approach which emphasizes the pursuit of the taste of the food itself [FG 20231130]. Consequently, the food's location, the duration of the marine cruise, and the recipes are dramatically different.

Last but not least, there are more restraints on Umigyo Tourism activities than on ideal Pescatourism. When it comes to the lack of facilities in addition to the kitchen on the boats, fishermen in Mochimune and Higashi Matsushima [102103 and 120102] both claimed that there were no toilets on their boats, which could embarrass some tourists. However, a fisher in Higashiizu [120803] said his boat does have a toilet. Thus, most Umigyo marine cruises in Japan could only run for a shorter time per time. Another issue with the community facilities is the lack of accommodations owned by fishers. Research showed that in Italy, fishermen's

houses are used by tourists to stay overnight (Piasecki, 2016). In contrast, an official [121801] said most SSF communities in Shizuoka lack these facilities. Only participants [120201 and FG 20231130] in Higashi Matsushima in Miyagi mentioned adequate guesthouses as a main tourism feature in Miyagi. Therefore, the lack of toilets on boats and the shortage of fisher-operated guesthouses in most communities impact tourists' full experience in Umigyo Tourism.

4.4.3 Environmental Education Methods

Firstly, the design of activities highly depends on the target market. Lai et al. (2016) exhibited the demographic characteristics of predominant Pescatourism consumers: Middle-aged adults from 26 to 45 years old traveling from other provinces, medium-high education level, and the preferable traveling period was half a month to a month. Compared with Pescatourism's focus on the well-educated adult market, a part of the tourist group corresponded to the youth in Umigyo Tourism. Section 4.3.4.2 mentioned that elementary, middle, and high schools are a noticeable target market of Umigyo Tourism in JSSF communities for marine learning programs, and the primary schools and middle school students' different aspects of education and contact with local fishers were exhibited. Meanwhile, Japanese participants in the FG 20240116 described how their education system cared about contact with nature in Japan, while Lai et al. (2016) showed that tourists under 25 Pescatourism in Italy only occupy 16.2% of all tourists. Meanwhile, an interviewee in Tagonoura [102521] said around 60% of Umigyo tourists are from the local community. Thus, Japanese Umigyo Tourism has built tight cooperation with accessible underage students from one class to another instead of relying on the adults' consumption from other prefectures.

Furthermore, Umigyo Tourism normally spends a long time operating indoor education. Pescatourism regards fishing on board as a main experiential activity to arouse fishers'

interest in local cultural and natural resources (Muñoz, 2018; Saba, 2013). In research that measures Pescatourism customer satisfaction (Lai et al., 2016), no indoor education program was mentioned as an indicator. Compared with Pescatourism's emphasis on the physical experiential to achieve its educational aim, Umigyo Tourism combines it with indoor education in their communities, especially when students are a considerable target market. Based on a fishers' experience [120101], *"The mere experience on the boats is more likely to make tourists feel interested and excited, while the education effort is very limited. Thus, it is important to operate indoor classes as a supplement."* In Japan, Fishers became instructors and leaders of workshops in experiential learning programs (Li & Namikawa, 2020). In Section 4.3.4.2, the education classes for students carried out by fishers are listed, especially the outstanding cooking classes in Yui and the workshops in Higashi Matsushima. There are other samples in Japan, such as the fisher-held seminars on food poisoning in Kaifu-gun in Tokushima (Li & Namikawa, 2020). It is worth mentioning that all indoor education not only accepts students; as Fisher [120101] said, the Higashi Matsushima workshop also welcomes people of all age groups to listen and show opinions. Consequently, Umigyo Tourism focuses on indoor classes for the public to supplement experiential education for a better learning effort, especially for students.

Thirdly, Umigyo Tourism's high emphasis on students' indoor education leads it to apply more promotion methods than Pescatourism. According to both the research about Pescatourism (Lai et al., 2016; Gravagnuolo & Angrisano, 2013) and Japan's Fishers [120803/102501], tourists [all participants in FG 20240116], an official [120801], and a marine specialist [122601], the regular promotional methods of both tourists include local advertisements, internet/social platforms, friends/word of mouth, travel agencies, and coastal events. However, the presentation method of word of mouth and advertisements is more related to the student's artwork in Japan. As the essence of Umigyo is more related to

education, a participant in Tagonoura [102521] demonstrated that “*its education-related promotion includes not only slogans and public service announcements in public but also students’ painting of what they learnt from the indoor education about the community and marine lives.*” Outstanding artworks drawn by students were selected as grand prizes (Figure 4.9), which can reflect the successful education outcome to attract more students to come. Equivalently, the same exhibition form of students’ artworks as public service announcements is on the trams which pass by the JSSF communities in Shizuoka Prefecture (observation, October 25, 2023). In addition to the different details of the same promotion methods, there have already been some outreach activities held by fishers in Japan to promote their communities outside of their SSF communities. Specialists [120401 and 011601] claimed that some fishers even go to schools to get an education to let students become familiar with them at first. For instance, a group of female fishers on Hichijo Island, known as the Osakana Study Group, promotes fish as a food source to inland schools and runs courses that highlight the value and stories to students. Similarly, a fisher [120101] in Higashi Matsushima highlighted the existence of a Nori fisher who uses his own money to operate his workshops during the off seasons of the nori aquaculture, which is about the value of nature and the protection of the marine and SSF communities, in all over Japan and even in some places in Denmark. Therefore, Umigyo Tourism highlights the ocean learning outcomes through the learners’ arts to reflect the high effectiveness, and some fishers are voluntary enough to leave their communities for other areas during off-seasons.



Figure 4.9 Artworks Designed by Students Who Have Experienced Umigyo Education

4.5 Discussion of Pescatourism's Growth and Market Characteristics

There is a research gap in the latest form of Pescatourism in Japan, especially the forms of the activities carried out, the challenges and supports of its market, and any differences with Pescatourism. Japan has its own marine industry called Umigyo, so this section focuses on its operation and market size. Lou (2013/2022) mentioned the shortage of research on the role of activating community industries in fishing villages and pointed out the trading places, demand characteristics, flow system, and product characteristics as the characteristics of the regional market. Thus, this section describes each characteristic that exhibits the form of

Umigyo Tourism, accompanied by the historical development of tourism held by fishers and a comparison with the Italian version of Pescatourism.

4.5.1 Trading Places and Development Stages

Tourism with a similar form of Pescatourism appears in Japan with a long history and in the form of political aid. The present existence of a community-based SSF tourism in Japan, similar to Pescatourism activities, is Umigyo Tourism. Although the economic activities are carried out by community fishers within each local community, the spectator form of marine tourism is confirmed as Pescatourism (Li & Lou, 2018; Piasecki, 2016). Piasecki et al. (2016) already confirm Japan's spectator form of marine tourism as Pescatourism. In Section 4.2, Umigyo Tourism as a Japanese term has been further proved to be a synonym of Pescatourism. This is supported by the similar activities provided by fishers, encompassing themes such as stay, play, buy, eat, and learn, as well as the essence of using marine-related resources to boost the economy, environment, and culture. Section 4.2 describes the evolutions operated by fishers, highlighting their key milestones and influences over the past 1300 years up to the present. Research exhibits the coastal tourism programs with the establishment of infrastructures in various communities, such as the Umigyo being a formalized term in 1985, economic shocks around 1990, a decrease of many pure marine leisures operated by fishers after 1990, and the 3.11 Earthquake resulting in people's trauma regarding the ocean in 2011 (Lou, 2013/2022). Interviews add the loss of SSF property in the 3.11 Earthquake with the long-lasting rehabilitation in Miyagi and more people's phobia of the ocean, the COVID-19 delaying the program operations from 2020 to 2022, and Umigyo's formal legislation with more official support and promotions since 2022. Currently, with the solid foundation of equipment and policies during the historical development, most sites have shown their successful transformation from purely recreational tourism to educational

tourism. Undeniably, research points out the spectator form of fishers' fishing activity as Japan's most common coastal activity (Piasecki et al., 2016). However, humanistic activities and sports events can represent popular Umigyo Tourism activities, especially the stimulating diving services and fishing experiences in addition to the common fishermen's shops and sightseeing in Japan.

During the continuous growth of coastal tourism in Japan, with several existing challenges, there are many corresponding solutions for expansion and harm alleviation. Firstly, Section 4.2.3 mentions people's mental fear of the ocean and the coastal areas, while the developing tsunami prevention system that will probably reduce future property and life loss can reduce this phobia to some degree. Secondly, research clarifies that the tourism boom in Japan brought a negligible increase in general ecotourism (Uzama & Walter, 2018); there is still a low popularity of destinations in some communities [FG 20240116], but the legislation of Umigyo in 2022 targeted to JSSF communities is expected to result in more official promotions [121801]. Furthermore, although previous research claimed that foreign tourists are rarely the targets in the marine leisure market in Japan (Funck, 2006), this research displays the stronger promotion to foreigners and the more common foreign participants currently. As Japanese tourists spend less money on marine leisure, there are more actions to attract foreign marine tourists, such as the two-language-subtitle promotion videos on YouTube. Fourthly, the surrounding hotels around the coastal communities temporarily mitigate the lack of fisher-owned accommodations to some extent, which is common in four study sites except Higashi Matsushima. Finally, when there are complaints about the inconvenience of public transportation to some ports, the bicycles and the more intelligent parking lot can allow tourists to come with their own transportation to attend these communities.

4.5.2 Demand Characteristics of Umigyo Market

The targeted consumer groups mainly include local customers and travelers. FCA officials [102501] saw many local residents in the same city or county as customers in the JSSF canteen, and an FCA member [120802] highlighted the best freshness of food for the local eaters. In addition, in Section 4.4.3, the student groups from different schools are proven to be long-term travelers, and their education efforts can also represent a promotion channel for the education activities of future students. Compared with Pescatourism's target group as adults (Lai et al., 2016), Umigyo Tourism maintains a stable relationship with school students. At the same time, there are also adult travelers pursuing activities in the coastal areas, especially fishing, marine cruises, boating, food and accommodation in fishers' region (called Nagisahaku before the legislation of Umigyo), and diving.

The food and leisure markets are niche markets in the study sites. In Section 4.3.1, the push factors listed by Jones & Nguyen (2021) also match the Japanese market demand, including enjoyment of nature with family or friends, physical health, discovering and learning, and escaping from daily lives. More precisely, Japanese tourists enjoy enhancing networks and taking photos with acquaintances in the natural areas, building better physical health via coastal exercises and fresh food, learning more about nature and workers in related fields, and escaping from routine and tiring life through leisure activities. Meanwhile, there are several pull factors to attract tourists to the coastal communities, including a smaller flow of people, a diversity of fish species, fruits, and vegetables for sightseeing and food, beautiful mountain and sea views, and a relatively low cost of the whole experience. These JSSF destination characteristics can meet most tourists' various demands.

The enjoyment of socialization and natural beauty can happen when doing the rest of these activities, which is achievable in all five communities. When addressing concerns such as emotional phobias about the ocean, the low popularity of JSSF destinations and activities,

the reduced consumption contribution of Japanese tourists in marine leisure, the lack of fisher-owned accommodations for tourists and the inconvenience of public transportation to certain ports, and several corresponding methods have been recognised and implemented to mitigate these issues. These methods include continuous enhancement of technology and evacuation areas for Tsunami prevention to reduce the fear to tsunami, legislation of Umigyo in 2022 with more official supports of utilizing local resources, actions taken to attract foreign travelers, receive help from surrounding hotels, and a large number of bicyclists and updated parking lot system. In general, targeted measures are being taken to overcome the existing shortages and enhance the promotion and implementation of Umigyo Tourism.

4.5.3 Product Characteristics

Different regional items and services are matching the demands at various time points for different tourism purposes, beyond the spectator-based tourism. In addition to short-term humanistic events and festivals, there are also various ongoing activities held within fishers' energy capacity. Various communities have specific seasons with unique seafood species, especially Shirasu, Sakura Shrimp, Kinme, and Nori. More specifically, in Section 4.3.4.1, the opening season of some local canteens, with local fish species, overlaps with the fishing seasons. As the canteens are located right at the ports in the semi-open air, customers can see the coastal beauty while enjoying the freshness of the seafood. In terms of the students as tourists, research has shown the existence of marine education activities carried out by JSSF fishers in Bizen City and Otsuchi (Sakurai et al., 2019; Sakurai et al., 2016), and Section 4.3.4.2 proves this marine education's universality and diversity in Japan due to the popular natural education. The indoor education period is often staggered from the fishing season to maintain some fishers in the fishery industry during the closed fishing season. Moreover, the boarding activities and community tour guides, including experiential learning for students and leisure activities on recreation boats, take advantage of the spectator form activity that

fishers are good at (Piasecki et al., 2016) and give the customers sufficient time and chances to talk with the fishers who operate the activities. According to fisher [120702], only Mochimune, among the five study sites, does not operate marine cruises for the public. However, there are marine cruises for researchers and rock fishing for fishers' acquaintances, reflecting fishers' experience and skills in holding marine and fishing tours, which might be applied in future public marine activities. Similarly, tourists are flexible in exploring the shops opened by fishers around the coastal areas, such as the morning market and booths during festivals, so that customers can communicate with these fishers for souvenirs. Overall, while there are educational activities in all the study sites, Shizuoka, Yui and Higashiizu have more innovations in these activities, with more diverse activities for the public. Tagonoura and Mochimune are more famous for their fisher-operated canteens. Remarkably, despite Higashi Matsushima in Miyagi offering a full range of facilities and educational activities, the 3.11 Earthquake set it back from a developed stage back to a rehabilitation stage, with severe loss of facilities.

In general, compared with the people looking for marine leisure with food, marine activities, and souvenirs, students can expect more fisher-operated indoor education experience, representing fishers' innovation. For example, according to a Yui fisherman, the instruction from fishermen and hands-on fish-handling experience for students in the cooking class results in students' cooking craft. At the same time, according to some fishers, fishers hold several workshops with schools and even adult groups outside of their region to reach and attract them to their coastal communities in the future. As the students' education efforts are transferred to visible paintings or texts [102521], Umigyo Tourism's expansion and innovation targeted to the student group is more stable than Pescatourism's predominant adult market in Italy.

4.5.4 Differences between Umigyo Tourism and Pescatourism

There are several differences between the two forms of tourism, including its original concept, facilities and process, and target groups and activities. Firstly, Umigyo distinguished itself from Pescatourism with its previously original activities held on boats instead of the SSF villages (Li & Lou, 2018; Piasecki, 2016). Umigyo Tourism aims to retain the young people in the JSSFs as they leave this industry, while Pescatourism aims to prevent them from being pushed out of their SSFs. Pescatourism has a higher economic concern because of the consortia as drivers, but the consortia do not appear in Umigyo in Japan.

The operation and activity diversity of Umigyo Tourism are different. Compared with Pescatourism, which attracts adult leisure travelers, Umigyo Tourism has a more stable source of customers because of the strong collaboration with some schools, especially when some JSSF communities (e.g. Yui) gradually expanded their relationship. Pescatourism's higher stimulation level of activities can be attributed to its original full focus on the boarding activities with consortia's investment for economic efforts, while Umigyo Tourism's maintenance on the community activities without consortia's financial involvement leads to a better indoor education atmosphere with less input in leisure activities. Thus, the time spent on the ships is shorter in Japan as education and light food sessions more often occur on the shore. Notably, the lack of facilities on most ships, such as toilets and kitchens, is a cause of the shorter boarding duration. Regarding the facilities, fisher-held accommodation is more prevalent in Italian Pescatourism for tourists to experience the fishers' lifestyle, which is very limited in Japan for Umigyo.

4.6 Conclusion and Chapter Summary

In this chapter, the degree of Pescatourism's existence in study sites in Shizuoka and Miyagi, Japan, is described. In Section 4.2, Umigyo Tourism as a Japanese term has been proved as a synonym of Pescatourism, and its development from 1300 years ago to the present has been explained. The progress of Umigyo Tourism is steady, with more support

received. The market size of Pescatourism, the performance of Umigyo in the general Shizuoka Prefecture, the pull and push factors of tourists for coastal tourism, and the current relatively useful solutions for the existing weaknesses of Umigyo Tourism are shown in Section 4.3.1, 4.3.2, and 4.3.3. Then, Section 4.3.4 exhibits the different hospitalities in various JSSF communities. Finally, in Section 4.4, the differences between Umigyo Tourism and Pescatourism are shown.

Chapter 5

Vulnerabilities in Shizuoka and Miyagi and Mitigation Responses through Pescatourism

5.1 Introduction

Chapter 4 discussed the current extent of Pescatourism in Japan and narrowed it to the scale in Miyagi and Shizuoka Prefecture, Japan, through Pescatourism's history, its market scale in the coastal fishing areas, and the Japanese features that are different from the Italian version. Now, this chapter will pay attention to the second and third objectives of this research (Box 5.1), which are to understand key points of the effectiveness of applying Umigyo Tourism, as a similar form of Pescatourism, in coastal Japan. This work is built on the understanding that Umigyo tourism, identical to Pescatourism, brings fishers an alternative income to merely traditional fishery when the decreasing fishing resources lead to more vulnerability to SSF communities in Japan. The goal of conducting the interviews and focus groups with fishery households is to gain an understanding of the context of vulnerability, livelihood problems, and ecotourism efforts from the participant's point of view.

Objective 2: To assess the existing vulnerabilities of SSFs in the study site.

- i. What are the current socioeconomic and ecological challenges of Japan's SSF communities?
- ii. How and to what extent the current vulnerabilities harm the livelihood of the SSF fishers?

Objective 3: To examine the potential role of Pescatourism to address the vulnerability.

- i) To what degree is Pescatourism a sustainable economic alternative to traditional fishing?

ii) Through what methods does Pescatourism potentially protect cultural heritage, enhance the local social identity, and maintain the number of fisher successors in the study sites?

Box 5.1 Review of the second and third research objectives.

5.2 Vulnerabilities of JSSFs in Shizuoka and Miyagi

This section focuses on the trend, shocks, and seasonality from biophysical, economic, social, technological and governance perspectives for SSF fishers. According to a Shizuoka Marine Official [121801], the general vulnerability context includes a worse marine coastal environment, an aging population, and sluggish aquatic product consumption. Similarly, the aspects of livelihood are economic, social, environmental, and institutional. There are some other well-known types of vulnerability as well. For example, Mabon and Kawabe (2023) note that extreme events caused by climate change, combined with socio-economic deprivation such as ageing or declining populations and a high reliance on resources, lead to unequal and non-sustainable development in coastal regions. Thus, research shows that the Japan Fisheries Agency initiated a reduction of the number of fishing vessels in 1995 for the sustainable use of fishery resources (Yagi & Managi, 2011). As the degree of vulnerability is likely to change as time passes and new problems will occur, it is meaningful to analyze the current vulnerability concerns. According to the Department for International Development (1999), the common indicators of vulnerability include seasonality (of prices, production, health, and employment opportunities), shocks (human health shocks, natural shocks, economic shocks, conflict, and crop/livestock health shocks), and trends (population trends, resource trends, national/international economic trends, trends in governance, and technological trends). Section 5.2 describes the impacts on livelihood right after the description of the phenomena of vulnerability, which is exhibited in Table 5.1.

Table 5.1 Existing Themes of Vulnerability in SSF Fishing in Japan.

Indicators of Vulnerability Context		
Seasonality	Shocks	Trends
• Long closed fishing season→ employment opportunities	Human Health Shocks • Natural Disasters • Virus	Population Trends • Long-term aging population • Brain drainage
	Natural Shocks (To be confirmed) • Pollutants • More predators • Lower Nutrition	Resource Trends • Global Warming • Degraded ecological environment and reduced volume of some species
Bad weathers → none products	Economic Shocks • Bubble economy that is hard to recover from • COVID • Higher oil price	National Economic Trends • Long-term stagnation after bubble economy
	Conflict • With LSFs due to fish resources • With outsider tourism agents due to the pollutant and space problems	Trends in Governance (including politics) Reduce investment in the primary industry: • Petty-Clerk Theorem • Buyback programs

Adapted from (Department for International Development, 1999)

5.2.1 Seasonality

Seasonality means the expectable changes that occur at regular intervals, and this part describes the regular conditions in which fishers cannot go fishing to gain money. There are existing seasonality problems that influence the fish product and employment opportunities.

There are closed seasons of fishing in all the study sites for different target species. Regarding the representative fish species, according to a Shizuoka FCA [112801], fishing for Shirasu and Sakura Ebi is now only allowed in spring and winter for resource protection. FCA in Tagonoura [102501] clarified that the policies for the length of the closed fishing season can reach 5 months each year to protect the fish species, and fisheries are willing to

obey them due to the long-term development. An off-season also happens in the aquaculture due to the climate, as a fisher in Higashi Matsushima [120101] said there is no nori aquaculture from May to August every year due to the inappropriate temperature. Therefore, a fisherman [120804] believed that the local people are more inspired to start alternative businesses to increase their income in order to overcome the unemployment conditions during the closed fishing season for Kinme in Higashiizu.

Although JSSF fishers can go fishing during the days out of the closed seasons of fishing, they cannot go fishing during days with bad weather. More precisely, FCA in Tagonoura [102501] explained that fishers do not go fishing in the morning during rainy days. Thereby, a fisherman [102104] said there is no trade between fishers and buyers from restaurants during rainy days. In other words, when fishermen only rely on fishing for a living, many fishing opportunities during the fishing season will be wasted on rainy days.

5.2.2 Shocks

Shocks, which can be serious enough to force people to abandon their assets, can ruin assets directly (Department for International Development, 1999). Section 5.2.2 describes these sudden impacts from various perspectives, including human health shocks, natural shocks, fish health shocks, economic shocks, and conflicts.

Regarding human health shocks, natural disasters in Japan sometimes let JSSF fishers' efforts go to waste. Because of Japan's geographical location, there have already been some natural risks in the surrounding sea area. The most visible problems are the frequent times of earthquakes, as well as storms, heavy rain, floods, tides, tsunamis, typhoons, hurricanes, and volcanic eruptions (Matsubayashi et al., 2013; Li & Namikawa, 2020). According to Wu and Shimizu (2020), Japan has suffered from a long history of active crustal movement due to its geographical location at the junction of the Pacific Ocean and the Eurasian plate. Thus, the marine location with abundant resources also encounters frequent natural disasters. In 4.2.3.2,

the severity of the 3.11 Earthquake is explained, followed by its damage on the death cases and destroyed buildings in Miyagi. The Great East Earthquake in 2011 forced some residents, particularly the younger generation, to remove to different parts of Japan (Sakurai et al., 2016). Due to the loss of the facilities and the original aquacultural zones, after the cancellation of fishing activities for a short term, a Higashi Matsushima fisher [120101] said that three nori aquaculture fishers worked as a team for three years to reshape the aquaculture industry. Thus, it takes years for fishers to work hard on the post-disaster reconstruction, and there will still be similar unpredictable natural disasters that will disturb the ordinary operation of fishing for JSSF communities.

Another recent well-known shock is the global pandemic, Covid-19. Shimizu (2023) pointed out the 74,000 COVID-19 death cases in Japan during the three years till May 8, 2023, while Section 4.2.3.4 describes the progress of COVID-19 in Japan as well as the State of Emergency of the self-constraint. A Shizuoka FCA official [112801] confirmed that the phenomenon of COVID-19 made the operation of SSF unstable in most ports. Therefore, the impacts on both the health and trade of fish were of harm to the income of fishers.

At the same time, the natural shocks are remarkable in Japan. Except for the natural disaster in Section 5.2.2, there are some natural shocks harmful to fish catching. A Shizuoka official [112801] pointed out that the notable changes in sea currents influence local fishing stability. Firstly, according to Hirose et al. (2017), the Japan Sea has witnessed that sudden currents frequently damage coastal set-net fisheries, especially when strong meteorological disturbances, such as extratropical cyclones, make these warm sea currents more unstable. Not only do the strong currents sometimes harm the normal fishing work by set-net, but they also lead to the change of catch volume of fish. Izu FCA in Higashiizu [120802] said, “*Due to the warm currents called Kunoshio, there is an obvious decrease in local Kinme fish and Japanese lobster volume.*” According to Gallagher et al. (2015), the Kuroshio Current, a

major warm western boundary current in the western North Pacific, leads warm subtropical waters to flow from the Indo-Pacific Warm Pool to Japan, but the last century experienced a shift northward by 0.5° of the position of the Kuroshio Extension. The change of habitats caused by Kuroshio is verified by officials in Higashi Matsushima [FG 20231130], “*The Japanese spiny lobster, which has never been seen locally, has been discovered and caught in large numbers in 2023. It is speculated that two waves of currents meeting in Sendai brought this lobster over, one of which came from the direction of Shizuoka.*” Therefore, the shock of the frequent sea tides is reflected in the interruption of fishing activities and the instability of the catch of marine species.

Besides, some specific fish species are facing health shocks. Shirasu Catch Volume has dropped a lot these years [120702]. Among all the special species described in Section 4.3.4.1, Shirasu from Suruga Bay suffers the most from health problems. Undeniably, the sea currents leading to immigration, which was described in Section 5.2.2, is one of the possible reasons for the lower Shirasu catch. However, the negative change in the growing environment also plays a significant role. Tagonoura FCA [102501] pointed out three possible points that need research in the future: 1) the volcanic ash from Mount Fuji destroying the ecological environment of Shirasu; 2) the massive reproduction of jellyfish causing too many Shirasu to be eaten; 3) the water may be too clean, resulting in nutritional deficiencies. More precisely, regarding the harm of jellyfish, according to the fish processor in Mochimune [120201], Shirasu is at the bottom of the food chain as prey, so they have to run to deep or turbid places. In addition to the immigration of Shirasu caused by sea currents, the drastic changes in the surrounding environment, the higher number of predators, and the lack of nutrition likely worsened their health. Moreover, modern Japan witnessed some economic shocks. The JSSF industry was also a victim group that was negatively affected by the domestic burst of the "bubble economy" in 1991, shown in Section 4.2.3. Although this

shock occurred over 30 years ago in Japan, a fishery expert [121501] stated that there has yet to be a full recovery from its bubble economy over these decades. More specifically, according to Fukao (2013), compared with the 1970–1990 period, there was a decrease by 1.0, 1.0, and 1.1 percentage points in the annual contribution of capital accumulation, labour input growth, and total factor productivity (TFP) during the 1990–2007 period, respectively, while the gradual recovery of the TFP growth until 2007 only reached two-thirds of that during the 1970–1990 period. The annual economy's growth rate over the 30-year period, only 1%, has been low since its high-growth period finished in the 1990s (Yagi et al., 2022). As a result, the stagnation as an effect of the economic shock in 1991 has lasted for a long time until now.

In contrast to merely financial reasons, there are dozens of causes of economic shocks, such as wars and disasters. For example, Taganoura FCA was unable to cover all the fuel fees for fishers' cruise ships due to the continuously increasing fees [102501]. Section 4.2.3 shows the negative impacts on JSSF from the oil crisis from the 1970s to the 1980s, and this crisis is not rare. Recent news describes that Japan's high reliance on the Middle East, with 95% imported oil from there, made its oil price extremely high, reflected by several oil crises triggered by the Yom Kippur War in 1973 as well as the recent Russia's war in Ukraine and the Israel-Hamas conflict, to increase by roughly 6% on Oct. 13 (Doi & Izawa, 2023). As a result, Japan is vulnerable to some international economic shocks, especially related to its imported energy. Similarly, as COVID-19 was a global pandemic, there was a decreased pace of capital accumulation in Japan (Yagi et al., 2022).

Finally, conflicts sometimes occur between different stakeholders for the fish resources; as Li and Lou (2018) point out, the JSSF communities have a high reliance on the resources, but there are common conflicts between the resource itself and the space of accessing

resources with other stakeholder groups. There are further descriptions of the noticeable conflicts (seen in Figure 5.1) nowadays in the study sites.

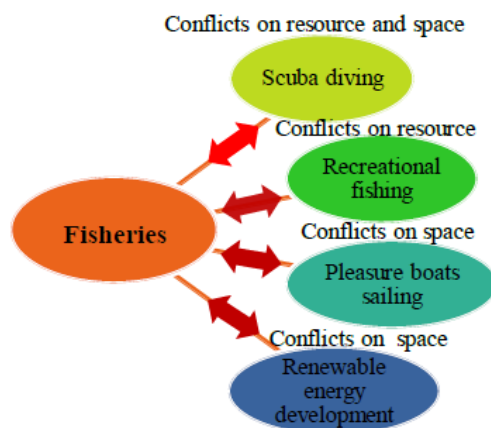


Figure 5.1: Common Conflicts in Coastal Japan (Source: Li & Lou 2018).

One of the most noticeable conflicts is between the SSFs and LSFs. A Shizuoka official [121801] confirmed the large fish catch volume of LSF results in a lower fish catch volume of SSF. A fisherman [120804] explained, *"As LSF catches too many fish, there are fewer fish swimming to the coastal areas for the SSF. There has been negotiation for this problem for several years, but it has not been solved yet."* The overfishing also reflects the connivance of anthropocentric profit-oriented businesses. At the same time, there are some complaints about LSF mistakenly catching some non-target species. For example, The Japanese Red List of threatened species regards Kuril harbor seal in Japan as Near Threatened, but large-scale coastal salmon set net fisheries sometimes mistakenly catch some seals in the fish bags, especially many yearling seals (Kuramoto et al., 2021). As a result, LSFs' inappropriate behaviors lead to SSF's lower catch volume and harm to other marine species. Coastal environments, especially vulnerable ecosystems like coral reefs and seagrass beds, directly suffer from the pressure from various anthropogenic activities that decrease their resilience and ability to support fisheries (Teh et al., 2020).

There are some cases where conflicts happen between JSSF and outsider tourism activities. The tourists' use of their pleasure boats interrupts the fishermen's fishing space.

According to Li and Lou (2018), as fishery entirely relies on fishery resources, there are conflicts of space for pleasure boats and sailing. Research shows some pleasure boats, which are different from fishers' recreational boats and are often not managed by JSSF FCAs, and thus sometimes cause conflict about the activity regions (Li, 2022). Officials in FG 20231130 also showed, *"The biggest problem at that time was that not only did the fishermen make less profits due to over-reliance on tourism agents, but the tourism became more business-like rather than the original purpose of nature tourism."* Although there is still an equality principle in the current Japanese fisheries governance system, the problem of the injustice of recreational boat intrusion in SSF communities is still ignored (Li, 2022). Besides, there are also some environmental protections caused by outsiders. Li and Lou (2018) also display Japanese JSSF communities' high expectations of environmental conservation. However, both officials from FG 20231130 pointed out that more plastic wastes appeared in coastal lands and in water, primarily due to the activities of outside tourism operators. Besides, there exists unsolved tourism-related conflicts with non-tourists until now, because of the decline of the fish stock. As Li (2022) points out, Inatori fishers suspect that the increasing number of unlicensed recreational boats (e.g. motorboats, yachts, and other personal watercraft) owners are considerably harming the Kinme fish population. In short, many unorganized and undisciplined outsiders sometimes cause conflicts with local fishers.

5.2.3 Trend

Compared with shocks, trends are more predictable and move in a direction for a longer duration (Department for International Development, 1999). Section 5.2.3 shows the JSSF governance trend, the natural trend, and the domestic population trend with the brain drainage trend.

In terms of the governance trend, the current policy pays very little attention to growing the fishing business in Japan. Research has confirmed that the Petty-Clerk Theorem in Japan,

which displays that the status of the primary industry declines when the country's economy grows, is proven by the dropping proportion of people employed in the fishing industry to the total workforce since the 1970s (Lou, 2013/2022). There are buyback programs that help the many inefficient fisheries exit the industry; however, when the buyback programs operate effectively, it is negative for the employment in the fisheries and local communities because of a close relationship between the number of vessels and the number of fishermen (Yagi & Managi, 2011). In other words, the buyback programs probably reduce the motivation of young generations from fishery households to be employed in the JSSF industry. As a result, the lower concern of the primary industry and the buyback programs symbolize the loss of political resilience of JSSF's traditional fishing industry as well as the gradual loss of fishing craft and culture.

The natural trend also makes the traditional JSSF business more challenging. The existence of global warming, as a long-term problem for the whole world, is an environmental trend in coastal Japan. Firstly, global warming also damages the growth environment of marine life. The increasing coral mortality as a result of climate change keeps increasing the negative impacts on fishing livelihoods, such as the degradation of nearshore ecosystems that forces small-scale coastal fishers to move to nearshore fishing grounds (Teh et al., 2020). Meanwhile, global warming has caused increasingly larger typhoons these years, harming both human and marine species' lives (Li & Namikawa, 2020). Moreover, the change in sea temperature influences fish's habitats. According to Takayanagi (2020), the increased average sea surface temperature in Japan during the last 100 years is 1.11 °C, which is 0.54 °C higher than the global average level, which has notably increased the number of warm-water fish but has removed two-thirds of the fish species northward. There are visible impacts as a result of global warming in Japan as a whole. For example, there is an expansion of the spawning area to the north and delays in the spawning season of Japanese

common squid. There was an increase in number but a smaller body size to Pacific saur, more limited carrying capacity and distribution area and loss of migration routes to chum salmon (Takayanagi, 2020). At the same time, according to Japan Meteorological Agency (2023), the Southern part of the sea, where Higashiizu is located, is 0.13 degrees lower than the sea surface temperature around Japan, and the Sea off Sanriku, which is close to Higashi Matsushima, is 0.38 degrees lower than that, but that in the Sea off Shikoku and Tokai, on the west of the Southern part of the sea, is 0.11 degrees higher. Thus, the sea temperature that varies drastically in different locations in Japan with global warming changes animal habits in many ways.

Some visible trends of the loss of resources can be noticed. There are several examples of fluctuation of fish production in some places [120101], including the increased sardines but decreased salmon [FG 20231130], a lower number of Sakura Shrimps as well as the desertification of the seabed with many seagrasses on the seafloor [112801]. Similarly, the volume of Kinme fish gradually reduced in Higashiizu [120802], from an average of 85.2 tons between 2010 and 2019 to only 39.8 tons in 2019 (Li, 2022). A FCA member [102501] mentioned that the trend of lower fish volume is expected to continue because there are no signs of recovery of most fish species, including Shirasu and Sakura Shrimp. Thus, the lower fish stock with the subsequent lower earnings from fishing represents the loss of natural and financial resilience.

Furthermore, the social trend of the ageing population and brain drainage from coastal areas cannot be ignored. This aging population phenomenon is also a nationwide problem as a consequence of long-term stagnation. The birth rate continues to drop in Japan (Yagi et al., 2022). According to Nakatani (2019), the traditional social environment and family values were ruined by a long-term economic recession after the burst of the economic bubble and with globalization, which was opposite to the traditional lifelong full-time employment, and

the proportion of those over 65 is expected to grow from 27.7% of the total population in 2017 to 38.4% in 2065. Thus, it is expected that some industries will lose some capital. In terms of fisheries, research has shown that Japan decreased the number of fishers by 46.6% from 1990 to 2010 due to the economic growth resulting in the reduction of the position of primary industry in the national economy, including the decrease of fisheries' size (Lou, 2013/2022).

In addition to the trend of an aging population, the outflow of young generations has worsened the fisheries industry. A fisher [120101] displayed a well-known stereotype of fisher life in Japan, which is the tiring, poor working environment with a lower salary. A fisher [102103] explained, *"Today's fishermen do not want their children to inherit the fishing industry because they feel there is no future, especially due to the low wage."* A Shizuoka Official [121801] showed more precise and recent data that the number of fishers continuously decreased from 22,654 in 1963 to only 4,814 in 2018 in Shizuoka and from 62,993 in 1963 to 15,170 in 2018 in Japan, and around half of the fishers in Shizuoka Prefecture are over 59 years old at present. At the same time, Nakatani (2019) highlights the fear in 1991 when the economic bubble burst, which led to many failures to find full-fledged employment or regular jobs with appropriate income. Thus, a fisherman in Mochimune [120702] sighed, *"As more fishers are pessimistic about the future economies, they do not recommend their children to be fishers in the future."* One of the fishermen in Higashiizu [120804] also said, *"I have a son who has been to a big city, Tokyo. When he said he didn't want to be a fisherman, I didn't force him to be a fisherman. If he isn't successful in the future, my fishing business will always welcome him."* Generally, even though most young generations from fisher households can directly inherit the ready-made boats [120804], the trend of a fast decline in fishers is an urgent problem that still happens, especially when the

current fishery industry cannot bring fishers high income. Therefore, the continuous drainage of successors due to the loss of confidence threatens the existence of fishing communities.

5.3 Threats to Livelihood in JSSFs in Shizuoka and Miyagi

This section shows the recognized threats to livelihood related to the causes mentioned in Section 5.2. Department for International Development (1999) exhibits five capitals as indicators: Human Capital (Health/education/ training infrastructure and personnel), Social Capital (external links of local groups, management in the internal functioning of groups, and the degree of open and reliable policy environment), Natural Capital (conserved resources and biodiversity, the provision of services/inputs for fisheries, and the market development to increase the value of fisheries produce), Physical Capital (service provision such as transport, and infrastructure provision), and Financial Capital (the development of/ access to financial services organizations, and the trend of support to develop marketing). Nayak and Berkes (2019) further describe how the existing vulnerabilities link with community well-being and resilience, which analyze these 5 capitals via the material, relational, and subjective levels. The threats to JSSF's livelihood can be seen in Table 5.2, followed by further explanations.

Table 5.2 Threat to JSSF Livelihood.

Absence of Wellbeing	Lack of Access to Capitals	Loss of Resilience	Areas of Vulnerability in Miyagi and Shizuoka SSF Sector	Resulting Vulnerabilities in Miyagi and Shizuoka SSF Sector

Material	Natural Financial Physical	Lack of fish stock and earnings to maintain the JSSF fishing revenue. Lack of political support for traditional fishing. Lack of motivation being JSSF successors to maintain the fishing craft and culture.	● Ecological Problems with Seasonality ● Economic Crisis ● Human Health Shock (natural disasters)	● Decline in quantity of food – potential food insecurity ● Shrinkage in fish diversity ● Decrease of primary income ● Fragile Aquaculture ● Unknown price elasticity of demand ● Forced merger of some FCAs
Relational	Human Social	The continuous drainage of successors threatens the existence of fishing communities.	● Aging population ● Conflict Crisis ● Insufficient policy support ● Human Health Shock	● Successor Shortage ● Increase of complaints to LSFs ● Migration – family members decide to live separately ● Frustration of wasted efforts due to natural disasters ● Lack of local staff and services in FCAs ● Less provision of services/inputs to JSSF fishing ● Less connection between the public and fishing communities
Subjective	Human Social		Individual and community level	● Demise of SSF households - Loss of customary skill sets and knowledge ● Collapse of local seafood restaurants and processing plant

Adapted from Nayak and Berkes (2019).

***Note.** Data are from literature and semi-structured interviews answered by JSSF fishers, officials, FCA members, seafood processors, and restaurant owners.*

5.3.1 Reduction of Material-Level Capitals

The vulnerability context has led to a reduction in tangible capital in the material aspect. According to Nayak and Berkes (2019), material well-being includes natural, financial, and physical capital. The fishers' livelihood faces risks of the increasing value of fisheries produced because of the reduction of natural capital. A Shizuoka official [112801] highlighted, "*The peak of fishery production in Shizuoka was in 1983, but it has slowly declined since then.*" Sections 5.2.3 and 5.2.2 show that global warming harms the coastal biodiversity, and some sea currents change the fish habitats so that fishers can catch fewer target species. Likewise, Section 5.2.3 also shows the indulgence of LSF's anthropocentric fish catch that not only reduces SSF's fish resources but also harms the coastal ecosystem, and Section 5.2.2 explains the reduction of fish due to the unhealthy growth environment.

For an appropriate earning from fishing, the price escalation of fisheries products is applied in some JSSF communities, but the price elasticity of demand is risky in the future. For example, Mochimune people worry about the buyers' capacity of the Shirasu price in the future in Shizuoka. A local processor [120701] explained, "*The price of Shirasu is the highest in the whole of Japan. When Aichi Prefecture sells it for 1000 yen/kg, the price in Shizuoka is 4500 yen/kg.*" A local fisherman [120702] explained, "*Shirasu Catch Volume has dropped a lot these years, so the price of it is much higher than before. However, the higher price is not a sustainable method because he fears that more buyers will feel it is too expensive to keep buying it.*" Although a seafood processor [120701] illustrated that there are still many local people willing to buy it due to their habit of eating Shirasu until now, it is unknown how long the price increase can be sustained simply by relying on the locals' love. In short, it is unknown how long it will take for those loyal fish customers to lose enthusiasm for higher-priced fish.

A mere fishing activity is unlikely to be better for developing marketing and financial services organizations in JSSF. According to Li and Lou (2018), economically, there was a decrease in average fishery dependence and an increase in non-fishery income for Japan's fisheries households from 1978 to 2008. The seasonality (Section 5.2.1) leads to a shorter frequency of going fishing as it stops fishers from earning income from fishing for several months, and the governance problem (Section 5.2.3) with LSF and outsiders for the access of sufficient fish resources and spaces also threatens JSSF's fish catch and ordinary operation.

Nowadays, a Shizuoka official [121801] confirmed that there is a lower value of a single coastal resource, so the family-based fishing industry suffers from the worse fisheries industry and worse earnings. Thus, the cases of economic disasters in Section 5.2.2.4 cannot be ignored. Admittedly, a fisherman [120101] pointed out, "*As Japan is a developed country, fishers are not poor.*" However, according to a fisherman and an FCA member [102103 and 102501], not only the price of boats and engines but also the oil price for the fishing boats has become higher. The increasing costs of catching fish and the worse value of fish products make fishers' net income look worse.

Aquaculture, an alternative income source, also faces challenges due to vulnerabilities. There was a Blue Revolution that rapidly grew industrial aquaculture by increasing fish farms to be more ecologically friendly (Ynacay-Nye et al., 2023). However, a Higashiizu fisher [120804] pointed out some cases of failures of aquaculture as an income alternative. Some failure cases are caused by the change in water temperature [120804], and some are caused by natural disasters. For example, some SSF fishers have even lost parts of the coast for aquaculture activities after the 3.11 disaster. According to an aquacultural fisher in Miyagi [120101], it took three years for three young fishers to rebuild the local nori aquaculture from scratch with governmental subsidy support. In other words, severe natural disasters can bring high costs and a long industry stagnation to JSSF aquaculture. Thus, both natural

vulnerabilities related to global warming (Section 5.2.2 & 5.2.3) and human health shocks related to natural disasters (Section 5.2.2) should be considered threats to the traditional JSSF business.

A fisher [120804] witnessed the current weakness of financial livelihood because the local FCA also faces a revenue decrease. In 2005, the debt of a total of 378 cooperatives was as high as 47 billion yen (MAFF, 2008). Thus, according to Delaney (2015), since 2013, over half the number of cooperatives has been merged into prefectural FCAs. The official [121801] also gave an example: “*The current FCA in Mochimune is a result of the merger of several nearby depressed FCAs a few years ago.*” Therefore, both fishers and FCAs are facing a hard time due to the fishing recession.

5.3.2 The Shortage of Relational Well-being

The current vulnerability also leads to some relational-level crises, which Nayak and Berkes (2019) describe as the human and social capital in the multi-stakeholder system. Firstly, JSSF fishing lacks a charm for youth because of talent loss, so JSSFs face a survival crisis. Undeniably, one of the five study sites is at the stage of economic worries when they still have sufficient young staff nowadays. The attitude of the FCA in Tagonoura [102501] was that the problem of the successors of this community is not as big as the economic problem, but the degree of economic benefits may impact future successor maintenance. However, the common phenomenon without sufficient solutions to fishing is a higher worry about the successors, and the other four study sites out of five are facing urgent successor problems. Research has found the accumulated problems not solved in time, including fish reselling driving up fish prices in the 1970s, the dilemma of decreasing sardine numbers, labour shortages, and a sharp increase in imported seafood in the 1980s, and shrinking domestic market and low fish prices since 2000s (Li & Lou, 2018). Thus, an FCA staff in Higashiizu [120802] explained that the current successors have to run other businesses than a

mere fishing business. Fishers in Higashi Matsushima in Miyagi [120101] have noticed the successor shortage in most communities. Similarly, the local FCA staff [120802] noticed Higashiizu is facing an emergent successor crisis, saying, *"There are a total of 40 Kinme fishing boats, but only 3 of them have successors at present. There have already been 3 boats as disposals. If there are no successors for some boats in the future after older fishermen retire, more boats will be disposed of."* Therefore, as the inadequate policy support for the fishing market for decades has caused less provision of services/inputs to JSSF fishing, there is likely to be an increasing waste of fisheries' infrastructures and facilities when there are few successors.

Different study sites are experiencing different levels of successor shortage, which is also caused by Japan's aging population and natural disasters. Bestor and Bestor (2014) point out the rural depopulation in lots of traditional fishing communities since the 1960s, especially after the appearance of increasingly high-tech equipment. More precisely, a Shizuoka Prefecture Fisheries Federation Staff [112801] displayed that the number of JSSF fishers kept dropping for decades in Shizuoka after the peak of fishery production in Shizuoka was in 1983. The frequent natural disasters can discourage fishers a lot, which makes matters worse. According to a fisherman who experienced the 3.11 Earthquake [120101], some aquaculture fishers quit their aquaculture industry after almost everything that was built up over several years was destroyed. Research displays that Japan experienced over 20% of the world's largest earthquakes (Matsubayashi et al., 2013). As a result, under the depopulation condition, when the SSF industry declines with fewer fishers of working age in Japan, many youths reject the inheritance of the family business, and some fishers are unable to withstand the impact of natural disasters.

Furthermore, due to climate change, the decreasing social concern of coastal areas exacerbates the relationship between SSFs and LSFs and reduces the connection between the

public and fishing communities. Research shows that uncertainties caused by climate change lead to financial hardship and cultural loss that erode peoples' sense of security and connection to the sea (Teh et al., 2020). Meanwhile, the worse fish stock intensified the confrontation between SSFs and LSFs, as a fisherman [120804] showed increasing blame on LSF's selfishness without considering food security or fish diversity. On the national scale, the FCAs' condition represents the result of the social trend and social ignorance. Nowadays, the consolidation of FCA encounters management challenges of coastal governance, such as the ageing problems of the old staff, the lack of local staff and services, and the emphasis on economic growth without enough concern for the fishers' livelihood from the social perspective (Delaney, 2015). In other words, the old structure of FCAs is a new challenge for SSF fishers with the long-term aging population in coastal Japan and is a social challenge for its suburban revitalization. Thus, the background of the successor problems is a higher technology society with lower fish products, climate change, and fewer public coastal concerns, leading to fishers' and FCAs' financial problems.

5.3.3 The Shortage of Subjective Well-being

In addition to the harms to the well-being of the general JSSF system, there are also threats to social and human capital at individual and community levels, which Nayak and Berkes (2019) call the absence of subjective well-being. The continuous drainage of the future successors under the successor scarcity probably leads to the demise of some JSSF communities. The worst condition among five communities is in Mochimune, as a local fisher [102103] sighed, "*There is now a possibility that Mochimune may disband in two years because there is no successor.*" For this condition, an SSF-field professor [120401] described, "*Young people don't want to join this business, so there is a risk of losing their culture and traditional food inheritance.*" Thus, the considerable reduction in the number of personnel

remaining and even the demise of fishing villages face the risk of a huge reduction in fishery-related development and the inheritance of knowledge and skills.

The disappearance of most local JSSF households probably leads to the dilemma of other local seafood restaurants and processing plants. Some surrounding restaurants rely so much on JSSF's fish catch. For instance, a Sakura Shrimp restaurant owner in Yui [110801] claimed that its direct sales shop, which is one of the closest to the SSF port, maintained a positive relationship with JSSF fishers to maintain a purchasing relationship. Likewise, the success of local processing plants is also based on JSSF fish catch. According to both processing staff [120701 & 102102], the processing plant in Mochimune is proud of the freshness of Shirasu, thanks to the nearby port for transportation and the quick selling of freshly caught fish. A processing staff [102102] highlighted the two trawling boats catching fish and one transporting the fish to save time for the freshness, while another one [120701] pointed out the determination of differentiating the local Shirasu from other products. Because of the trustworthy relationship, the shorter distance leading to freshness, and the pride of the local species, many local seafood restaurants and processing plants exhibit high dependence on the local JSSF fishers. The restaurant owner in Yui [110801] mentioned that there are over 100 employment positions available for local people. If the JSSFs do not exist anymore, fishery-related businesses will gradually disappear with a higher unemployment rate.

5.4 Responses by Pescatourism for Vulnerability Mitigation

Pescatourism through the Umigyo industry is expected to bring benefits from distinctive perspectives in Japan. As the application of Pescatourism is proven doable for coastal development in Italian countries, this section highlights its up-to-date usefulness degree in Japan. Undeniably, because of Japan's catch limits and degradation of nearshore ecosystems,

the political and environmental contexts reduce the fish stocks in Japan (Yagi & Managi, 2011; Teh et al., 2020). However, according to interviews with a fisherman and an FCA member, JSSF fishers have voluntarily followed these rules about releasing fish smaller than the standard size [120101] and set a serious one-month punishment to violators [120802]. Due to their emotional attachment to their home with coastal resources [120101], and they also complained that LSF catches too many fish [120804]. In other words, SSFs do not need any reduction of the fish catch due to their long-term obeying of the fish-catch rules, and they participate in Pescatourism Tourism when they also complete their regular fishing. This section pays attention to describing details of the study sites: how much extra economic effort Pescatourism can bring, as well as the protection of cultural heritage for the maintenance of fisher successors, intuitively displayed in Figure. 5.2.

There is a sample of revitalization for the post-disaster reconstruction. Higashi Matsushima is a sample of the mutual benefits between the fisher-operated activities and destination management for an international award, "Green Destinations Top 100 in 2022," for its sustainable tourism development (Furuyama, 2023). As a result, Umigyo, similar to Pescatourism, has the potential to obtain social and even international recognition.



Figure. 5.2 Expected Benefits Resulted From Umigyo Tourism. Adapted from Li & Lou (2018); Lou (2013/2022); Nouzari et al. (2020).

5.4.1 Protection of Cultural Heritage for Successor Retention

This section describes current possible solutions for keeping the retention of JSSF successors. Regarding the young successors, a fisher [120804] recognized that they believe the value of their job is a sense of achievement of contacting nature instead of making money. According to Li and Namikawa (2020), JSSF fishers' children are the only potential successors, but the changes in life and work's societal values opt some of them out of SSF. Therefore, the young generations from SSF households are likely to contact the value of nature. According to a fisherman [120101], *"Most fishers have faith that they should not leave the marine problems and issues to the next generation."* Above the concern of nature as a motivator, the government [121801] often highlights JSSF's value as a regional social stronghold, which makes fishers feel their value by showing their social effects. Thus, the strong conviction in marine protection motivates some successors to continue their family business (JSSF) to spread their values to raise public awareness of environmental and marine resource problems.

When cultural inheritance encounters bottlenecks, Pescatourism's presence will show its effect. A fisher [120101] pointed out that more attention should be paid to the fun and cool image of being a fisherman. Umigyo tourism facilitates the diversity of the fishers' work to match the desire. Recreational Umigyo projects, especially the experience village, not only bring self-employed households a considerable extra income from tourists but also enhance residents' recognition of the local culture, tradition, industry, and belief to love their hometowns for cooperation (Lou, 2013/2022). Likewise, in addition to the economic efforts and the value creation of regional resources, the trawling project leads to fishers' sense of accomplishment in their jobs, more active communication within the department, and youth customers' interest in the ocean (Lou, 2013/2022).

5.4.1.1 External Links via Education for Social Cohesion

For more external links via education for social cohesion, Umigyo activities held by fishers are expected to improve the JSSF image and enhance fishermen's reputations with the public. Meta order, which enhances the social-ecological system through images, values, and norms, focuses on the principles and norms of rationality (Nayak, 2022). Li and Lou (2018) have proved the recognition and reputation gained from community people through Umigyo activities. An official [121801] described JSSF as a place that offers a healthy lifestyle and interaction. Research explains that an increase in social connectedness can alleviate the mental adverse effects caused by non-severe natural disasters (Matsubayashi et al., 2013). As a result, Umigyo Tourism, as a bond of connection, is predicted to play a greater role in Japan, where natural disasters are often encountered.

Most forms of external links are for students in ports because a Tagonoura FCA staff [102501] explained that the Japanese government provides some support for access to schools. Yui FCA staff [120603] hoped some of these students would be impressed enough to come to Yui or other JSSF communities again. According to fishers and FCAs, in addition to visiting villages and ocean learning courses for school students and teachers in some fishing villages to feel the community spirit [120501], the special experiential marine cruise teaches students about fish and fishing skills and the cooking classes practice cooking techniques [120601 & 120602 & 120603]. There are several positive feedback to the learning activities from tourists who experienced the learning in JSSF communities. From FG 20240116, one of the interviewees praised that he could feel fishers' intelligence as they come up with different styles of learning activities to attract students' curiosity and become inspired to be a volunteer in the SSF communities to see the progressive enhancement. In regards, another interviewee said he felt the charm and shared the marine learning experience with friends so that they could go to the same port together in the future. Due to the fishing class opening in different seasons, a tourist showed his inspiration to come for the cooking techniques of other fish

species in other seasons. With the success of the current education operation, officials [FG 20231130] acknowledged that today's local fishermen-led tourism had led fishermen to organize a wider variety of education classes to keep its development. The outcomes of the education are shown as awards and advertisements in public transportation, which is described in Section 4.4.3, which can have a dissemination effect on the public recognition of SSFs and their nature-oriented activities for fishers' better image. At the same time, indoor teaching is staggered with the fishing seasons so that fishermen can also engage in non-fishing SSF-related activities during the closed fishing season. For instance, a FCA staff in Yui [120603] claimed that there are two fishing seasons: spring fishing (late March to early June) and autumn fishing (late October to late December), but the fishers' indoor education takes place between May/June and September/ early October every year. Therefore, long-term collaboration with schools has made environmental education in JSSF communities a norm in coastal Japan, and experiential learning in the communities creates potential visitors to visit there to enhance the interaction and alleviate the restriction to business caused by seasonality.

Another phenomenon of the external link is to leave the community to describe the JSSF communities to attract people to travel there. The workshop held by fishers in Higashiizu is an example. Section 4.3.4.2 explains its outreach during the season without aquaculture work, while the on-season is to witness the promotion effect. In particular, the Osakana Study Group, in Hichijo Island, Tokyo, outreaches its business to schools in other places to have food courses, which gives fishers opportunities to popularize the value and stories of the fish [120401]. There is another case for the public that does not concern age in Higashi Matsushima. According to a local fisher [120101], during the on-season, the fisher can't go to other cities, but people who were impressed by his workshop will come to Miyagi because of his long years of marketing, and he has become a famous local Nori fisherman, so he can

then further demonstrate the value of nature when these impressed consumers, who become travellers visiting the community, take a close look at the ocean. According to a fisher [120201], customers who are interested in learning about SSF or Nori normally contact him on social platforms. As audiences are given the chance to share their own insights [120101], tourists [FG 20240116] felt that the discussion with fishers is the gate to better learning about the communities. Once the audiences become acquainted with the fishers running the workshop, further outreach is easier because they can also introduce their friends via verbal introduction [120201]. Consequently, diverse and interesting activities through active interactions will help participants gradually negate their original stereotypes of fishers' living habits and imperceptibly make them understand the local value through more active interaction and activities, which turns fishers from a so-called dead-end job to a meaningful career.

5.4.1.2 Protection of Natural Capital

The natural capital, especially the fish, carries the culture, and the people can recognize it through educational forms as mentioned in Section 5.3.1.1. According to a fisherman [120101], environmental protection, the importance of nature, and recent environmental changes are usually taught in marine education and yearning. Moreover, according to some fishers [120101 & FG 20231201], there are some misconceptions that beauty is limited to picturesque scenes. However, these fishermen explain that true beauty encompasses the richness of fish species. They highlight this by pointing out the nearby coasts, showing that water does not necessarily indicate a rich ocean ecosystem.

Food waste is also a natural resource problem, which can reflect the role of SSF. Fisher [120101] pointed out the serious food security problem, and genetically modified food cannot be a sustainably effective solution because it will cause a larger gap among countries when they have different funding foundations. In contrast, according to a marine specialist

[120401], Umigyo, which aims to use fish resources more efficiently, can reduce waste, such as cooperating with inland schools to sell fish lunch boxes to solve the excess seafood problem as a strategy of promoting the JSSF communities. When it comes to Umigyo Tourism specifically, a Tagonoura FCA [102501] staff highlighted that the canteen was built to handle the extra fish, as there used to be so many fish available that exceeded the demand, and unsold fish would be thrown away. A fisher [120101] highlighted that SSFs are like social entrepreneurship with long-term strategies because the fishers belonging to the community are more likely to love their home and surrounding nature by paying more attention to environmental improvement and setting the rules of the catch limits, compared with LSF, which is profit-oriented with Rich companies' investments leading to a higher environmental cost. In other words, JSSFs' pure love for the ocean makes them more convincing in their role as the representatives of the ocean, calling for environmental protection so as to inherit culture, especially when Umigyo Tourism reduces the waste of fish resources by the domestic self-produced and marketed strategy.

5.4.2 Sustainable Economic Alternative as Substitution of Reliance on Fishing

In addition to Pescatourism's social benefits through mental achievement for fishers and cultural recognition for the public, economically, the decreasing income for fishers is a severe and urgent problem that needs solutions. A fisher [120101] felt, *“Compared with some other jobs, SSF is not rich enough to attract people to choose this job now. However, as Japan is a developed country, fishers are not poor.”* Luckily, research also finds that the growth of the population in urban areas caused by the structural changes in the social environment results in higher use of coastal areas for leisure (Li & Namikawa, 2020). Due to the decreasing fish stock caused by the vulnerability factors in Section 5.2, Pescatourism supports the balance between environmental biodiversity and the economy of fishers. The earnings from Umigyo Tourism are different in different zones and activities. For example, a marine professor

[121501] highlighted, *“When I was a student, I was surprised that fishers in Tsunegami Hanto gained more from their guest houses and recreational fishing than from fishing.”*

The activities of Umigyo as an ecotourism bring more employment positions to the local SSF communities. It is important to have experienced guides or instructors in the ecotourism industry (d’Hauteserre & Funck, 2016). Research has found that the role of tour guiding is to bring tourists a higher awareness of the natural environment in the local community, local culture, positive feelings, gain new skills and encourage participation, but there should be training for the guides' performance, including ecotourism and environmental education goals, interpretation ability, information about ecotour system, and understanding of tourists (Yamada, 2011). Local people can be an important human capital to facilitate the understanding of the local environment and culture, which is explained in section 5.4.1. For example, Sakurai et al. (2019) explained that education collaborates with local fishermen so that students can conduct interviews with local fishermen and fishery science institute staff. Lou (2013/2022) has shown some popular fishery-related ecotourism destinations for primary schools' environmental education, such as the homestay in fishery villages in Nagami Peninsula, Fukuoka Prefecture and the sightseeing fishery in Hiratsuka City, Kanagawa Prefecture. Therefore, it is possible for some fishers to be tour guides. Meanwhile, the ecotourism curriculum for adults also intends to show enhancement in Destination Japan to deliver knowledge to visitors (Uzama & Walter, 2018). Thus, fishers have been concerned as educational resources, and there are channels for their training.

There are some outstanding samples of Umigyo Tourism's efforts for sustainable revitalization. A marine specialist [121501] gave a sample of Himakajima. It is one of the three islands which are called "Aichi Mishima". There was a lack of charms and scattered fisheries, and there were very few accommodations for tourists, so tourists did not want to go to these lifeless islands in the 1950s even though they were only 1 hour away from Nagoya

by bus. The other two islands are suffering from development stagnation and decline due to the lower number of residents and successors. However, the fishers in Himakajima actively got along with Umigyo and its designed activities, and the local FCAs and tourism sector received sufficient support from the government. Consequently, Himakajima has the highest number of population, successors, and young people.

5.4.2.1 Efforts by The Canteens

Canteens carried out by fishers represent a potential business. FCAs in various sites [102501 & 120603 & 102102] recognized many positive effects of the fisher-operated canteens, such as an increase in tourists to the town and the fishing port throughout the year, increased popularity of the local species, a dramatic increase in sales at the nearby direct sales store, and more visitors' awareness of the environment by public transport or on foot. As the definition of Umigyo sees each JSSF community as a whole, these canteens are one of the central figures in revitalizing the communities. There are some cases of perfect economic performance for canteens. According to an FCA member [102501], Tagonoura shows a high economic dependence on the Umigyo canteen, which is 80%, with a considerable sum of business and tourism subsidies, which makes its life pretty good compared to other communities. Another Yui FCA member [120603] pointed out that the recent annual revenue of this window-style restaurant was 2.3 million yen right after COVID-19. Likewise, in Miyagi Prefecture, two fishers who are also seafood canteen owners [FG 20231201] mentioned a Nori Udon Store held by fishers, which has been earning a total of 0.1 billion yen during these years. In addition, there are some social benefits through the brand effect. Fishers [FG 20231201] also pointed out that the use of local Nori, which earned an Emperor Price Award, makes the restaurant more popular. Similarly, the official GI certificate as approval of local seafood quality in Tagonoura makes the local restaurants more recognized by both local residents and travelers from other prefectures [102501]. As a result, the

canteens and sales stores with a nice quality of local species and certificates enhance the local figures and attract more customers due to their high reputation for more income.

5.4.2.2 Leisure Marine Activities

The leisure characteristic sometimes brings direct money to fisher operators. The guesthouse is an example. According to the coastal officials [FG 20231130], the large scale of fishers' participation in the guesthouse business before the 3.11 tsunami in Miyagi, which was over 100, reflected its highly profitable earnings. The expansion of the parking lots for the guesthouses during the summer after that serious disaster depicts its unchanged popularity [120201]. Besides, fishers and FCAs [102501 & 120803] claimed that most leisure-oriented marine cruises are related to direct payments to fishers, such as those in Tagonoura and Higashiizu. However, according to a Higashiizu fisher [120803], although the recreational boat can operate on average 4 times a day, the earnings from marine cruises only occupy no more than 20% of the whole family's earnings, while the rest of it still comes from fishing.

There is increasing governmental funding leading to JSSFs holding activities. A fisher [120101] said that subsidies from the government are another source of income for these fisher operators to ensure their economic conditions. There has already been the existence of support from the government to FCAs much earlier before Umigyo became a formal policy [121501], and the food canteen in the Hachijo Island recently has witnessed more support from The Ministry of Fisheries [122601]. In Yui, the payment to fishers who run the teaching classes and marine cruises is a form of subsidy from FCAs. Similarly, the payment for fishers for operating the village visiting and ocean learning courses in Tagonoura is also a subsidy from the government [102501]. Officials confirm that there will be more subsidies for Umigyo-related businesses due to the new Umigyo policy in 2022 [121801]. Therefore, there is a trend of an increase in subsidies for Umigyo tourism activities.

5.4.3 Motivator of Facility Development

Both service provision and infrastructure provision can reflect the enhancement of physical capital, which is motivated by both social awareness and a tourism-driven economy. The service provision particularly matches the transportation (Department for International Development, 1999). According to a fisherman [121801], in Yaizu, Shizuoka, to better let travelers access the Umigyo Tourism destinations by public transport, the utilization of independently operated transportation lines in the city has been strengthened. In terms of the infrastructure provision, the more popular Umigyo Tourism brings Mochimune the motivation to create a commercial street. An experienced fisher [102103] claimed, “*The current problem is that the current road is too narrow to build new shops, so we can only hope to renovate old houses.*” Similarly, In Yaizu, the fishing gear warehouse has been transformed into a new interactive hub, with a food court on the first floor and a co-working space on the second floor to provide communication opportunities for different beneficiaries; there are plans to build future accommodation facilities [121801].

In addition to the shops and houses, there are also improvements in the use of machines to bring the tourists a better food experience. Particularly in Mochimune, a fish processor [102101] explained that there is a local manufacturing factory with advanced machines to process cleaner boiled Shirasu by removing impurities. A fisher [102102] explained, “*The hand-made craft cannot distinguish leaves from Shirasu after a typhoon, which is something fishermen without machines struggle with.*” Thus, fishers’ time and energy are saved by the machines [102102 & 102103].

5.5 Future Growth of Regional Umigyo Market

It is significant to maintain the positive development trend of the Umigyo Market, especially a high degree of harmony in the Regional Market. According to Çakar and Uzut (2020), this localhood "regenerative tourism" corresponds to the zone marketing. Similarly,

in Section 4.3, this research points out spontaneity, public welfare, sustainability, non-profit, and mission as the key features of the development of the regional market (Lou, 2013/2022), as explained in Chapter 5. Table 5.3 briefly shows the characteristics of the regional Umigyo market in the study sites before providing further explanations.

Table 5.3. The Condition of the Growth of Regional Umigyo Market

Regional Market Development Characteristics	Umigyo Tourism Performance
Spontaneity	In most study sites: ● Strong passion with unity ● Determination to overcome shocks together ● Active role models and leaders in marketing * Mochimune witnesses some disagreements on Umigyo strategies and implementations
Public Welfare	● Goal of enhancing the social awareness of the JSSF communities ● Charitable funding for coastal development ● Governmental subsidies for Umigyo operation
Sustainability	● Government's support for JSSFs' tight and ongoing educational relationship with schools ● Long-term existence of fisher-operated marine leisure ● Continuous official promotion strategies
Non-profit	● Reasonable prices of JSSF services ● Value-oriented aim and event designs
Mission	● JSSF fishers' recognition of the urgency of challenges ● JSSF Fishers' strong awareness of the coastal revitalization as a prior mission

***Note.** Data are from literature, semi-structured interviews with JSSF fishers, officials, FCA members, academic professors, and seafood processors, and focus groups with officials.*

5.5.1 Spontaneity

There are several JSSF communities with several fishers who have a high spontaneity for Umigyo. In Higashi Matsushima, officials [FG 20231130] confirmed its top-tier passion as more fishermen are willing to join the fishing tourism industry and are happier about it than

anywhere else. Their unity helps them successfully resist the unfair distribution of benefits from outsiders. Cave and Dredge (2020) show that the successful initiative of sustainable tourism ensures that economic resilience and culture-feature protections can defend against exogenous shock. They [FG 20231130] also pointed out that they set a uniform price for guesthouses, which was lower than the outsiders, to fight against commercial tourism and force the outsider tourism agencies to leave. In other communities, Tagonoura witnesses high participation of SSF families [102501], and the Umigyo Tourism activities in Higashiizu have become the major motivator of young successors. Regarding Yui as a community in the rehabilitation stage of Umigyo Tourism after disasters, there is an increasing desire to try to restart their previous Umigyo activities with up-to-date strategies, and FCA can hear the voices of their inspirations [120601 & 120603]. Thus, fishers in many communities express their enthusiasm for expanding the Umigyo market's size.

In these JSSF communities, fisher role models exist as leaders of Umigyo projects to work on outreach. According to a professor [121501], *"The expansion of Umigyo requires fishermen's leaders to advocate, promote, and strategize."* The Nori Fisher in Higashi Matsushima [120101], who spends his own costs voluntarily operating this workshop, can be regarded as a selfless role model. Thus, he is famous now, even described in a local tourism guidebook (Commerce and Tourism Division, Higashi-Matsushima City, 2023). In the meantime, the Yui fisher [120602], who designed and operated the cooking classes and inspired the other fishers to restart it after the rehabilitation, is an innovative role model. In addition to the in-person promotion, Tokyo Fisheries Promotion Foundation & Umi, Hito, Kurashi Forum (2019) exhibited a YouTube channel called さばけるチャンネル, which uploaded videos to teach visitors how to cook fish and cook, gaining over 13,000,000 views during the 12 years. With these leaders' high enthusiasm and innovative minds for various

kinds of advocacy and strategies, these communities probably have a bright future for both businesses and reputations.

On the contrary, there is no unity of fishers' opinion toward the Umigyo Business in some communities, especially Mochimune. A seafood processor [120701] witnessed that some people here are not interested in joining Umigyo, so its development will happen slowly until more fishers accept it. Similarly, there is a lack of consensus on FCA's efforts. According to a fisher [102103], some fishermen have solidified their minds and believe that the Fisheries Association is unnecessary, but they are not aware that they would not even be able to make ice to preserve the fishers without the local FCA. In a fisher's [102103] and a processor's [120701] opinions, it may be promoted as time passes because although older fishers prefer competition, younger fishers prefer harmony, justice, and fairness without a strong sense of territoriality.

5.5.2 Public Welfare

In terms of helpful services, the different activities show their effectiveness in enhancing the social awareness of the JSSF communities. Section 5.4.1 describes Umigyo Tourism's public welfare, which includes protecting cultural heritage, improving social cohesion through the education of outsiders, and protecting natural capital for future food security.

Regarding the funding, there are several channels that provide it to the SSF residents. The application of social marketing is a possible method for policymakers to encourage funding because some residents living farther from the coastal area are willing to support a funding system (Sakurai et al., 2016). As a result, there was a charity way for coastal development before Umigyo became a political Act. After the existence of the Umigyo Political Act, Section 5.4.2.2 proves officials' confirmation of more subsidies for Umigyo-related business.

5.5.3 Sustainability

Regarding the extent of sustainability of the Umigyo Tourism business, section 5.4 describes its comprehensive efforts during the recent decade. Section 4.3.4.2 shows the government's long-term support for bringing students to JSSF communities to facilitate its national Nature Education, and section 4.3.4.2 proved its fast-growing trend of sources of students before the severe disaster. Moreover, the success of guesthouses and outdoor activities, mentioned in section 4.3.2.3, proved their success for decades, and the historical case in Aichi Mishima can prove Umigyo-style activities' strong efforts and efficiency to avoid the decline in the suburban areas. However, the future promotion of Umigyo Tourism for a large market is a challenge, especially when fishers [120101] felt the FCAs' weak marketing abilities. Research also claims that it needs to be enhanced by further promoting Umigyo activities and the extension officer system (Li & Lou, 2018). Alike, an official from the Shizuoka Prefecture Fisheries Federation [112801] mentioned the current technical attempt of adding keyword searches in Maps and GPS of every fisher-operated canteen for higher exposure. Consequently, both the history and recent cases show the high degree of sustainability of Umigyo Tourism, but there should be more time and strategies to expand its market.

In addition to school students being a large target group of Umigyo Tourism for education, Japan's concern for adult education has the potential to result in more people yearning for natural tourism destinations. According to Uzama and Walter (2018), there are some formal and reliable institutions for adult education, such as the Open University, which has a cumulative number of 1.07 million students aged from 45 to the 90s. Ecotourism curriculum is recommended to be included to give local people adult education due to its improvement on Destination Japan, which matches with the UN's three pillars of sustainable development and the delivery of knowledge to tourists (Uzama & Walter, 2018). As there is

also no age limitation for the participants in the fishers' workshops and leisure activities, these adults may be potential customers of Umigyo Tourism.

5.5.4 Non-profit

There are some positive signals that fishers put more weight on the social and environmental benefits than merely economic outcomes. In addition to the outdoor activities mentioned in Section 4.3.4.2 showing their reasonable prices, section 5.4.1 explains the high focus on value and social cohesion as the aim, especially when the value-oriented JSSF fishers complain to the profit-oriented LSFs and some outsider tourism agencies about their harm to biodiversity and the environment. A part of the earned money from the JSSF canteens is for the fisher operators' salary to maintain their economic condition.

5.5.5 Mission

It is important to see whether the inspiration of the local SSF fishers matches the goal of community development and find if the operation of Pescatourism keeps following this goal. Umigyo is defined as a series of economic activities carried out by the community people centered on fishermen, which answers diverse needs on marine and coastal use today, utilizing both fishery resources and every kind of regional marine-related resources (Li & Lou, 2018). Thus, Umigyo is probably the most possible method for the SSF viability for Japan, which also matches the global trend of Blue Justice well. At the same time, some JSSF communities face urgent challenges. For example, an experienced fisher [102103] sighed that Mochimune may disband in two years if there is no successor, expressing eagerly, *“Different types of development plans must have alternative opportunities, and we cannot just talk about it on paper; we must not only think about it but also take practical actions to implement it.”* Likely wise, community members [120804 & 120101& 120601& 102501] in all other study sites have a strong awareness of the revitalization as a prior mission. Thereby, due to the worse condition of the fishing industry, fishers have to try different possible industries and

activities in JSSF communities for the mission of revitalization, and Umigyo is the most realistic option.

5.6 Discussion

Although there is some literature about the vulnerabilities in the general JSSFs, there still should be some details of its extent in the specific study sites, and there is a lack of literature about the latest Umigyo Tourism's effect of vulnerability mitigation. This section also finds out if the vulnerability mitigation can be maintained. It is important to maintain the positive development trend of the Umigyo Market, especially with a high degree of harmony in the regional market. According to Çakar and Uzut (2020), this localhood "regenerative tourism" matches the zone marketing. Similarly, in Section 5.5, the research shows the key features of developing the regional market.

5.6.1 Discussion of JSSF's Vulnerabilities and Threats to Livelihood

This chapter has helped to create a more comprehensive assessment of the vulnerability of JSSF, its subsequential threats to livelihoods, and the Umigyo's effort to alleviate the vulnerabilities. These areas will allow for the issues to be explicit to certain scales or contexts to explain the urgent problems in JSSFs and the necessity of considering Umigyo Tourism. Beyond a general understanding of the vulnerable context of JSSFs, many classification analyses are applied to find the connection between different factors. This includes (1) the shocks, trends, and seasonality in the vulnerability context, (2) affected resilience, and (3) threatened livelihood.

Among Islam and Chuenpagdee (2022)'s SSFs' vulnerability factors, which are biophysical, economic, social, technological, and governance fields, only technological weakness is not found in JSSFs. Several sources in the vulnerability context are causing the traditional JSSF business to earn less, with a trend of a shortage of JSSF successors. Firstly,

the fishing schedule is seasonal in Japan. It is universal to set a long closed-fishing season for coastal Japan, while the temperature also limits the aquaculture period every year. There are also many shocks in Japan. In terms of the national scale, Japan witnessed or is witnessing health shocks with severe natural disasters and pandemics, economic shocks with long-term stagnation, worse population trends with more aging workers, resource trends suffering from more serious global warming and degraded ecological environment, and the governance trend with less focus on the primary industry. Among them, the self-restraint policies during Covid-19 exacerbated the economic growth for roughly 2 years. In addition, with the regional natural shocks, such as pollutants, more predators, and lower nutrition, the national global warming results in the change of habitats of some fish species and the reduction of fish catch by JSSF fishers.

The seasonality of fishing seasons has a neutral impact on JSSF, as implementing closed-fishing seasons during decades worsens fishers' short-term benefits but improves the long-term biodiversity for fishers' ongoing benefits. The most serious ecological impacts are the ongoing climate change trend that brings more warm currents and a temperature rise, followed by more factors affecting fish health and the loss of regional biodiversity. Socially, the JSSF suffers from negative stereotypes and insufficient support for the primary fishing industry, which makes it a dead-end career in the public's perception. Economically, under the background of the long-lasting bubble-economy harms and oil-price increase, the worse biodiversity leads to a lower income for JSSF households, and the 3.11 Earthquake and COVID-19 have led to periods of income stagnation. Overall, the economic problem impacted by the severe biodiversity shrinkage is the most urgent problem for the lower successor retention rate.

There has been some loss of resilience due to the vulnerabilities above (seen in Figure. 5.3):

1. With the worst economy and environment, the worse domestic condition with a lower fish stock leads to the worse trend of some JSSF households' primary income.
2. When the challenges of JSSF occur, there is no effective political support with sufficient emphasis on reversing the trend of shrinkage in the primary industry.
3. As the motivation to be JSSF successors is lower, fishery-related culture and craft are gradually disappearing in Japan.
4. The current successor-shortage trend has reached a point where it threatens the survival of some fishing villages.

With the loss of resilience as a result of the vulnerability context, the livelihoods of the JSSF fishers and community development worsened, reaching the urgent extent of the vanishment of some JSSF communities. Nayak and Berkes (2019) classified well-being into material, relational, and subjective levels, followed by the corresponding threatened livelihood. Due to the impacted material well-being, including the weaker natural, financial, and physical capitals, there is a lower quantity of food with food potential risks, shrinkage in fish diversity, decreased primary income, failure of some aquaculture cases, unsustainable inflation of some fish species, and the forced merger of some FCAs. The influence of rational well-being, with the worst human and social capitals, leads to successor shortage as the young people go to big cities, frustration due to the severe natural disasters, shortage of local staff and services in FCAs, and JSSF communities' weaker connection between the public. Finally, the current degree of subjective well-being has led to the demise of SSF households due to more cases of JSSF disbanding, with the subsequential possibility of declining local fisheries-related businesses.



Figure. 5.3. Relation of Vulnerability Factors in JSSF.

5.6.2 Discussion of Umigyo's Responses to Vulnerability Mitigation

The response by Umigyo Tourism to vulnerability mitigation can appear in different aspects. According to Li and Lou (2018), the purpose of Umigyo is to satisfy the several

needs of marine and coastal use after fishers in the community hold a series of economic activities. Luckily, there have already been some positive changes after the Umigyo legislation to utilize Industry, Innovation, and Infrastructure (SDG 9) to create Sustainable Cities and Communities (SDG 11). Most JSSF fishers believe they should not pass the marine issues on to the next generations. The greater attention to Umigyo Tourism for social benefits for JSSF communities, especially after Umigyo became a formal policy in 2022, shows its signal of resulting in higher social recognition of JSSF and more children's involvement in (1) environmental education for social cohesion with the access and relationship to more schools and potential education groups to attract them to the JSSF communities, (2) the reduction of food waste and the appeal to protect the marine environment for the richness of the ocean for the nature and food security, and (3) the renovation of the community infrastructures and innovation of diverse coastal activities, including newly renovated infrastructures and machines, with a more attractive destination image for extra income.

Moreover, without affecting the fishing industry, Umigyo has gained more financial resources from food and accommodation services and marine activities via both the earning and governmental Umigyo-support subsidies. Operation of some educational activities during the closed-fishing seasons can allow these fishermen to stay in the fisheries field for a long period every year with more stable earnings. When it comes to the successor maintenance for the cultural heritage, the interesting and diverse activities, including the spread of culture and crafts, can change people's stereotypes of the JSSFs towards an interesting job, and a more substantial income from them can let more young generations from SSF households see a more promising future of inheriting their family business. Without more students getting involved in marine education by fishers, the SSF cultures and marine knowledge can be educated and promoted to the public through students' learning efforts. Meanwhile, closer

contact between the public and fishers due to the diversity of activities can enhance the local social identity and cohesion.

5.6.3 Discussion of the Growth of the Regional Umigyo Market

As Umigyo Tourism's long-term effort cannot be seen at present because it was legislated two years ago, it is adequate to analyze the current performance of the Umigyo market based on the feature of development to see its potential for future growth for the long-term protection of cultural heritage and economic growth. Lou (2013/2022) lists the key features: spontaneity, public welfare, sustainability, non-profit, and mission. Generally, Umigyo Tourism is estimated to grow better in the future due to (1) its positive regional community-based market with fishers' spontaneity, including the existence of role models and the enthusiasm for the common mission of maintaining the JSSF business in 4 out of 5 study sites, (2) Japan's active public welfare, including the social charity for the general coastal area revitalization and continuous governmental subsidy supports for Umigyo-related business, (3) sustainable plans with the long-term customer base and established event projects, (4) non-profit business for nature-oriented values with reasonable prices and a priority of value to attract more visitors and returned customers, and (5) the strong sense of mission for JSSF fishers' sense of urgency in executing innovation in every study site. Interestingly, different communities work their innovations via various channels, such as fighting price wars with outsiders as fishers set the uniform price, the fishers' outreach, and online promotion videos. Electronic technology and mass media development also play a significant role in Umigyo tourism marketing, including promoting YouTube channels to global tourists and updating GPS apps to promote JSSF tourism shops.

There are still some shortages in the current Umigyo market growth in one or more communities. At first, some JSSF communities, such as Mochimune, are unwilling to accept

Umigyo and have a negative attitude toward the local FCA, reflecting the disunity. Moreover, the inadequacy of the FCAs' weak marketing abilities is likely to hinder Umigyo's sustainability, though there are some initiatives of the extension officer system and technical attempts to boost promotion. In addition, although some JSSF communities have strong inspiration, they are still in the rehabilitation stage of Umigyo activities because of the long-term threats caused by the 3.11 Earthquake, such as Yui. These current challenges are common in JSSFs but are improved gradually.

5.7 Conclusions and Chapter Summary

In this section, how traditional SSF fishing is suffering the most from the lack of successors as a result of environmental and economic problems is described first. Following that are the losses of resilience and impacted well-being. Afterwards, there are Pescatourism's efforts for vulnerability mitigation, with improvements in cultural heritage and successor retention, as well as the efforts of JSSF income and community designs. Finally, a description of the evaluation of the future growth of the regional Umigyo market based on the extent of spontaneity, public welfare, sustainability, non-profit, and mission is provided.

Chapter 6

What Governance Arrangements Can Drive JSSF towards Viability?

6.1 Introduction

The literature review described conflicts in the operation of Umigyo activities in Chapter 5. This section will focus on the fourth objective of this research (Box 6.1), which is the existing duties of different stakeholder groups and their cooperation. The objective is to understand the latest governance arrangements and how they lead to the viability of SSFs in Japan. This work was built on the understanding of the power dynamics, gains and losses of different stakeholder groups, and the extent of interaction among these groups of Umigyo in Japan. The goal of conducting the interviews and focus groups with tourists and officials and an extra survey with fishery households was to gain an understanding of how the current governance arrangements, with both collaboration and conflicts, contribute to the progress toward SSF viability from different points of view.

Objective 4: To analyze how the fisheries governance arrangements facilitate Pescatourism as a driver of viable SSFs.

- i. What is the current power dynamic in Pescatourism?
- ii. Who are the stakeholders, and what are their costs and benefits in implementing Pescatourism?
- iii. What are the degrees of stakeholders satisfaction and interaction resulting from Peascatourism?

Box 6.1 Review of the fourth research objective.

The existing literature in Chapter 4 has shown the common stakeholders, their brief duties and costs, other existing community-specific stakeholder groups, and the existing corporations among them in the whole of Japan and Shizuoka, which brings a foundation to understanding the system of Umigyo operation. It can facilitate the inquiry of interactive

governance, policies, and degree of satisfaction in Japan. Meanwhile, the Pescatourism projects reported outside Shizuoka can let me explore the possible or potential stakeholder conflicts.

6.2 Umigyo Tourism Governance Arrangements and Power Dynamics

There has already been a political foundation of governance arrangements for Umigyo, leading to consensus and stakeholder interaction. Research has found that the conditions for the success of community business for ocean leisure are the regional consensus among stakeholders, the explicit recognition and management awareness of the regional resources (such as fish species, culture, and scenes), the value creation of the existing resources, the operational capacity with the talented, and the cooperation among stakeholders for supports of both soft and hard power (Lou, 2013/2022). There are some national regulation policies as a guide for community businesses during history, while there was a recent turning point in the degree of attention to the governance normalization called 日本六級産業化政策(Japan's six-level industrialization policy). An official [121801] explained that the sixth industry is identified as the multiplication of the primary, secondary and tertiary industries (1*2*3) by combining the fishery, product processing, and direct sales and services together. According to Lou (2013/2022), Japan's six-level industrialization policy, which was published on December 3, 2012, enhances the utilization of aquatic products for the interconnection of producers and consumers and collaborates the local entrepreneurs and producers (fishers) to maximize the efforts of self-employment decisions. In addition to the fisheries trade in the Umigyo, research also points out that the emphasis on local ecological knowledge is also a part of sustainable fisheries governance (Ynacay-Nye, Hisano, & Suryawan, 2023). Consequently, there are some updated governance arrangements for the operation of Umigyo

in coastal Japan, representing that a relatively mature stakeholder relationship exists and that greater attention is paid to the fishery's cultural heritage.

Some prefectural-level arrangements now complement Japan's six-level industrialization policy with the Umigyo legislation. According to a prefectural official [121801], the national policies can be implemented by each prefecture's governance plans, such as the Shizuoka Prefecture Fisheries Promotion Basic Plan, which (1) builds a new distribution system to expand the demand for marine products and fosters fisheries employees, with more focus on aquaculture techniques, and (2) develops a new construction of resource management for marine diversity and environmental protection with a higher research input. Shizuoka also follows the Umigyo guidance. Section 4.2.1 has shown the definition of Umigyo, and a specialist [121501] explains the Umigyo policies: direct money for fishers and FCAs, especially when Umigyo leads FCAs to run their own business, such as direct-sale stores and restaurants, for directly making money; more cooperations between fisheries successors and regional successors for mutual benefits to maintain the community development instead of conflicts; improvement through the self-sufficiency of food resources and the growth of the general marine industry. A marine specialist [121501] looked forward to the future to expect Umigyo tourism's destination image of the SSF communities to be 3U: Utsukushi, Umai, and Ureshi (beauty, delicious food, and happiness). Thus, there is a continuous attempt to pursue the viability of SSF communities in Japan via a regional distribution system with more research on technology and resource construction, while Umigyo also expects a tourism destination image with the encouragement of fishers for their fishery-related business, a collaboration between fishers and other regional stakeholders, and self-sufficiency of food resources.

Several stakeholder groups are involved in the operation of Umigyo Tourism. Mozumder et al. (2020) explained power dynamics as relationships between different individuals or

groups for participation and decision-making in management and drew the power relations among stakeholders before listing the categorized kinds of stakeholders based on their importance and influence. The institutions and rules, as the second order, reflect the degree of structural dysfunction and distributive inequities (Nayak, 2022). Lou (2013/2022) also regards cooperation with the private sector as a method of promoting fishing villages. In this section, after the most important stakeholders are described, the power relations found in the literature will be demonstrated in graphs, followed by the supplement offered by participants about the potential relations and roles of the common stakeholders, as well as insights about the less important stakeholders.

6.2.1 Roles of Common Stakeholders

There have already been some collaborations in ecosystem-based governance for coasts and marine in Japan, and the stakeholders still play vital roles. Fishers with FCA memberships, the prefectural governments, and local FCAs appear in every JSSF community with heavy duties of Umigyo development, so they are called common stakeholders in this section. Both the official agent and professor pointed out the co-management governance in Shizuoka [121801 & 011601]. Delaney (2015) confirms the successful co-management in Japan with governmental and political support to enhance the capabilities of local fishers and communities. Adaptive co-management is the concept that accompanies interactive governance because Armitage et al. (2009) explain that the mediation of conflicts results from the focus on linking and learning from different identities. Likewise, Jentoft and Bavinck (2014) insist that empowering weaker parties boosts constructive interaction in co-management. This section explains the interactions among the government (national and prefectural level), FCA in each community, and fishers for the fishery activities, not just the Umigyo Tourism (Exhibited Figure 6.1).

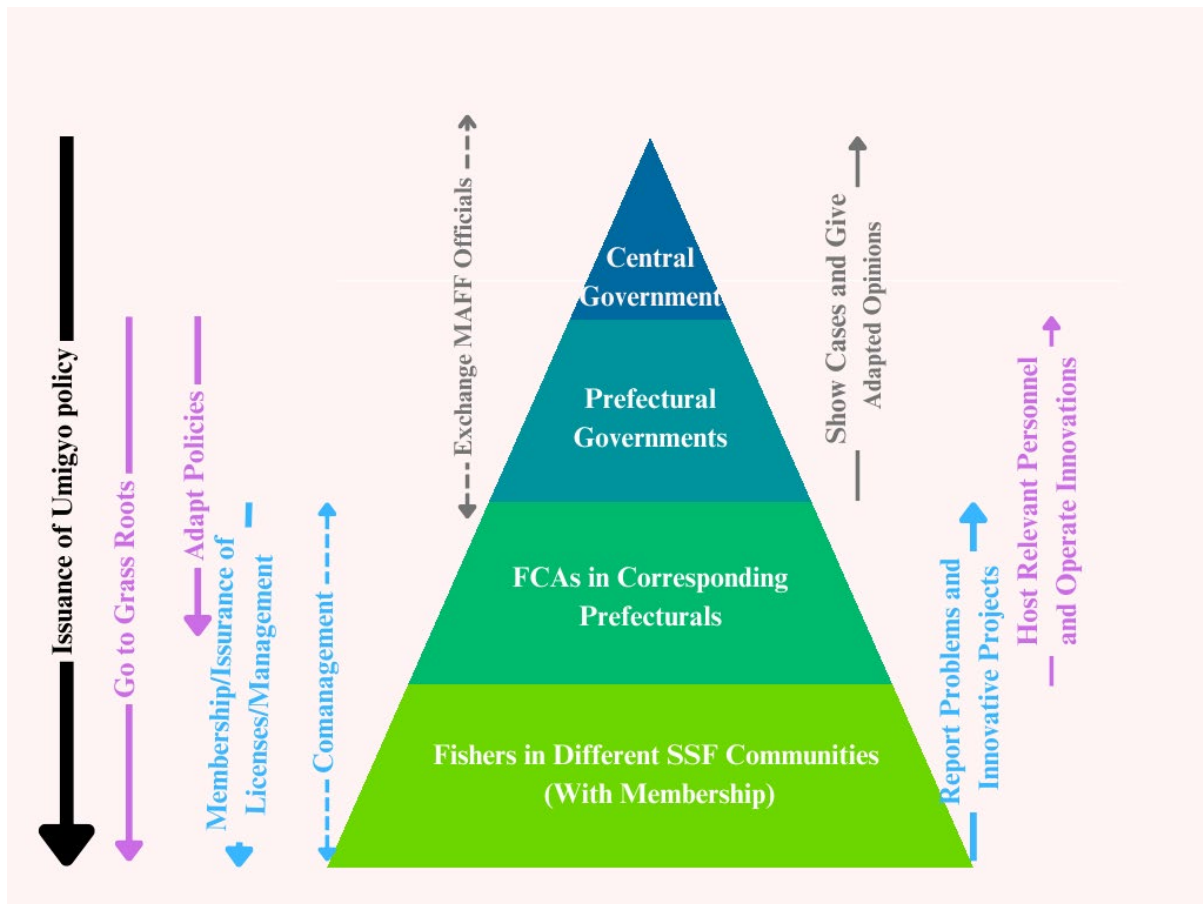


Figure 6.1. Hierarchical Style of Management among Common Stakeholder Groups.

Note. Data are from semi-structured interviews answered by prefectural officials, FCA staff, fishers, and marine academic specialists.

In terms of the issuance of new policies and regulations, a Shizuoka official [121801] explained, “*The Ministry of Agriculture, Forestry and Fisheries (MAFF) in the national government sets and administers the policies for the Prefectures, while the prefectures adapt the policies and deliver them to the FCAs so that FCAs can follow the Umigyo policies.*”

According to Li and Namikawa (2020), JSSF’s top-down hierarchy is the authority from the national government to the prefecture government to the FCAs. One example of the adjustment is the size restriction of the caught fish. An environmentally friendly rule set by FCA is to release fish shorter than 28 cm, but this rule is a bit more serious than the Shizuoka rule since it is more based on the local species and realistic conditions [120802]. Co-

management needs a set of punishments for those who do not follow the rules, and the Higashiizu FCA staff [120802] said, "*When a boat of fishers forbids this rule, they won't be allowed to go fishing for one month.*" In order to ensure the central government and prefecture government are on the same page, the official [121801] also points out that some officials at the national level are assigned to the grassroots level for a period of time at the prefectural level to better contact and understand the nearby JSSF communities. FCAs are in the middle between the prefecture-level government, as research explains that it assigns FCAs the right to the resource, and the local fishers, who are entitled as members by the local FCA to use their rights to resources in the area of the local FCA (Delaney, 2015). A majority of economic earnings for FCAs still rely on the handling fee to help fishers sell fish [121501].

In contrast to the top-down direction, the fishers with membership can give opinions to their corresponding FCA. According to a fisherman [120804], although he heard that FCAs in some other countries are money-making bureaucracies without concerns or even interactions with SSF fishers, this kind of complaint never happens in Japan. For example, according to a fisher in Mochimune [120702], pleasure boats are also under the governance of FCA; after fishers reported a pleasure boat accidentally cut an SSF boat's net in the Shirasu-catching zone, SSF soon made a rule: when SSF is doing its catch of Shirasu, pleasure boats cannot enter the Shirasu-fishing zone until SSF boats fish their catch. A marine professor [011601] who has built relationships with the nearby JSSF communities claimed that FCA staff often host some guide to university professors and students, prefectural and local government officials, and other relevant specialists, and sometimes display Projects they are proud of, such as the canteen in Tagonoura and the marine cruise and cooking classes in Yui. The official [121801] said the official staff in the grass-roots projects would record the cases he visited at the prefectural level, such as Yui, and report how the Umigyo policies match the specific cases to the central government.

As Japan has the potential and foundation to develop more Umigyo projects, it is meaningful to list the stakeholders in other Umigyo projects in other cities as a possible guide for the Umigyo development in Shizuoka and Miyagi. This section discusses the new missions and the corresponding benefits/efforts and costs of different common stakeholder groups currently (Seen in Table 6.1), as Umigyo brings more diversity to fishing as a so-called original and essential job.

Table 6.1: Common Stakeholders' Roles in Umigyo Tourism

Operators/ Stakeholders	Ideal Responsibilities	Efforts of the Stakeholders	Costs
Fishermen under the FCAs	B&B Activities - Bring Fish-Food-Menu Service (seasonal food) - Set nets fishery/trawls /gillnets for fishing - Guide community visits [102501] Marine Cruises - Drive artisanal boats - Become captains or guide - Professional fisher guide [102103] - Pay attention to safeguard - Farm aquatic products for self-produced and sold - Pursue co-exist with marine recreation Indoor Classes - Become instructors for marine knowledge and fishing culture - Teach cooking skills [120601/120602/ 120603] - Description of the fishers' lives and the marine nature [120101/120603] Souvenir Selling - Morning Market - Booth in fishing festivals, temple fairs, and events [102103 & 121801] - Fisher-operated restaurants	- Develop the marine leisure sector and tertiary industry - Have a symbiosis spirit and regional affection for the hometown with both the fishery and tourism industry - Extra income - A lively atmosphere for a higher customer experience [FG 20240116] - Higher visibility for fishers' restaurants on social media [FG 20231201]	- Security: SSF Boats/Life Vests/Insurance [FG 20231130 Officials+literature] - Vessel Inspection (Marine Ecolabel) [121801] - A large part of Fuel Costs [102501] - Energy and time [120804]

Fishery Cooperative Association (FCAs)	Marketing ● Attract Primary schools for education ● Trade aquatic products with hotels Logistical Support ● Collect information and patrol for safety ● Renovate hardware facilities ● Cultivate fishery successors Fight for Local Fishers' Rights ● Respond to fishers' feedback [120702] ● Ask the village government to report the start and end progress of project development ● Pursue the decrease of environmental harms caused by domestic wastewater discharged from hotels and soil drainage ● Protest against private beaches for more leading by fisheries practitioners	● Bind stakeholders to alleviate conflicts on resources and space ● Convene and reach a consensus with other grassroots departments ● Encourage fishers to join the tourism industry casually	● Energy and time for strategies, conversation, and outreach.
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Tourism Associations (a continuous decreasing of its power)	• Improve management resource • Solicit customers • Develop Sightseeing Projects • Improving the life-saving system and activities • Give instructions to surf shops • Come up with Ingredients deployment for shops and hotels • Promotion of SSF communities [Official 121801]	• Organize tourists with officials for the reception and payment • Negotiate the trade of commodities from hotels to shops • Negotiate the trade between fishers and hotels • Develop more recreational projects connected with fishery • Get share after leading tourists to experience fishing and sightseeing	• The staff as human resources • Time
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Prefectural Officials	Political Functions • Receive orders from the central official+Develop adapted revitalization strategies + convey policies to FCAs [Official 121801] • Improving the life-saving system and activities • Bring administrative support for infrastructure construction • Promote the sixth Industrialization Act • Allocate subsidy Coordinator Among Stakeholders • System planning and development • Unify consensus with non-profit organizations • Build small-scale hotels to use its earnings as funds for revitalizing fisheries in the region • Develop talent succession leaders Tourism Development • Develop appropriate tourism destinations [FG 20231130] • External publicity through mass media • Conduct Coastal Events [Official 121801]	• Organize tourists with tourist associations for the reception and payment • Make policies for harmony among stakeholders	• Fundings for the essential equipment, such as hotels and roads • Time for training fishers, decision making and research
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***Note:** Data are from literature (Lou, 2013/2022; Uzama & Walter, 2018; Li & Namikawa, 2020), semi-structured interviews answered by FCAs, JSSF fishers, and prefectural marine officials, and focus groups answered by marine officials, tourists who experienced Umigyo Tourism, and fishers who run restaurants.*

6.2.1.1 Fishers

SSF fishers in Japan have a relatively high empowerment without being expressed. Japanese fishers represent the most effective and efficient side of coastal governance (Li & Lou, 2018). Fishers represent a crucial body of coastal governance due to their on-the-spot experiences, role as implementers of Umigyo activities, monitoring activities, active engagement in coastal governance, and little cost on building new organizations for coastal governance, while their knowledge of aquatic resources brings various coastal stakeholders a contact point for participation (Li & Lou, 2018; Li & Namikawa, 2020). There has been a legal guarantee of FCAs to ensure the fishing rights to coastal areas since 1948 in Japan's Fisheries Law, which is responsible for access to resources and income to strive for economically valuable rights for SSF households (Delaney, 2015). Similarly, Japan's fishery rights system protects SSF fishers' voluntary governance and fundamental rights by limiting the entry of external capital into coastal fisheries (Li & Namikawa, 2020). Nowadays, the exposure rate of fishers is relatively high due to the high level of empowerment of fishers in Japan. According to a fisher [120804], *"The TV channels called NHK have programmes that hear fishers' voices and promote local fisheries and tourism. To some degree, these fisher participants are so famous."* As NHK is a public broadcaster in Japan and some fishers are role models to the public, fishers' reputation is relatively high without oppression. As a result, JSSF fishers have a relatively high authority to operate activities and protect their rights.

In terms of Umigyo Tourism, fishers, as operators and creative designers, show their innovation and concern about safety. The B&B (food and accommodation), the outdoor activities on boats, the indoor education, and the selling of souvenirs are described in Chapter 4. Fishers, who can be instructors and leaders of workshops in experiential learning programs, get paid by the program operator (Li & Namikawa, 2020). According to the Umigyo tourists [FG 20240116], the lively atmosphere, as a result of the fishers' enthusiasm,

is successfully conveyed to tourists, and some of the tourists become friends with the fisher, even though they were joining the program for the first time. Similarly, fishermen with restaurants [FG 20231201] witnessed tourism's effort to attract many people from other prefectures to come for the local specialty, making their restaurants more well-known. In addition to the operator role, fishers can also be planners and deciders of activities.

Guesthouse businesses are initiated and decided by Miyagi fishers themselves [officials, FG 20231130], and fishers discuss whether or not to go fishing on the day, landing targets, fishing locations, and fishing times, and to issue commands and orders during operations, as well as become the decision makers of whether they can start or restart some marine activities, such as the experiential education activities after the 3.11 Earthquake in Yui [120601]. Similarly, a fisher [120101] informed, *"Fishers, instead of the government, set the rules of the catch limits. It is a sort of co-management, so fishers voluntarily follow these rules."* Although fishers can gain some money after participation in the tertiary industry, they are responsible for some costs. For example, regarding security concerns, they should take care of vessel inspections [121801], life vests, and insurance (Li & Namikawa, 2020).

Moreover, fishers nowadays need to pay for some fuel, and a FCA staff [102501] explained, *"FCA used to cover the price of cruise ship fuel, but after the increase in Fuel prices, cruise ship activities were left to the fishermen themselves, so they had to bear part of the fuel price themselves."* In addition to the financial concerns, a Higashiizu fisher [120804] said the fishers are likely to feel tired operating the tourism business, emphasizing "especially after fishers spend too much time fishing first during the fishing seasons."

6.2.1.2 FCAs

There are FCAs at different places in Japan. According to Lou (2013/2022), fishing cooperative associations (FCAs) are currently the backbone of Shizuoka's fishing community's business organizations. Their role as self-help social enterprises is significant in

alleviating social conflicts, enhancing market functions, and providing administrative benefits. FCAs are also vital for their ability to facilitate connections with other regional organizations and officials, ensuring strong succession and risk management and building a spirit of mutual support for resource reintegration. Delaney (2015) also says the beginning of FCA consolidation was in the 1970s. Although fishers are facing a fallen condition of the traditional SSF, Umigyo tourism can help them maintain their image and existence to the public. According to Li and Lou (2018), the Umigyo activities give fishermen a positive reputation for becoming a key body of coastal governance in Japan.

Regarding the FCAs' efforts and missions in Umigyo Tourism, they play a major role in the management of fishers for their benefit. Logistical support through the necessary supplies for fishers is a basic membership benefit after fishers pay the money to be members (Li & Namikawa, 2020). A common example is its offered ice with containers that preserve freshness [102103 & 120805], which is also used in tourism activities when tourists are allowed to watch fishers catching fish [121801]. Similarly to indoor education, a fisher interviewee as a class instructor [120602] ensured that the FCA also brings opportunities for classroom teaching and learning. Consequently, fishers are more likely to participate in Umigyo Tourism when they see the material support. Meanwhile, FCAs also have a heavy-duty of marketing the Umigyo Tourism activities, but some fishers feel insufficient publicity due to their weak promotional skills [120101 & 120601]. At the same time, the activities are only decided by FCAs instead of the government [121801]. FCAs also protect their members' rights, especially in conflicts. FCAs in the co-management system, with frequent contact with the government, assist in communications and conflicts for the pursuit of equity and fairness (Delaney, 2015). In particular, a fisher [120804] said that FCAs have fought for SSF's rights for years when LSF's overfishing harmed the overall fish catch of the SSFs.

6.2.1.3 Tourism Agencies (with A Decreasing Empowerment)

Tourism agencies are not a common stakeholder group in Umigyo Tourism anymore. The tourism associations used to emphasize the marketing and the improvement of marine projects and activities (Lou, 2013/2022), but their sense of presence and power has dissipated a lot recently as FCAs have taken responsibility for tourism marketing with strategies of plans [112801 & 120601]. At the same time, the tourism agencies' financial orientation and unfair profit allocation to fishers, rather than the original purpose of nature tourism, cannot match fishers' desire, so some tourism agencies quit the coastal tourism business in some JSSF communities, such as most of those in Miyagi [FG 20231130]. However, there are still some tourism agencies left. According to an official in Shizuoka [121801], *"Although Umigyo relies much less on tourism agencies, tourism agencies still remain and play an important role in some areas to cooperate with SSF communities for promotion."* As a consequence, the presence and significance of tourism associations vary across different regions in the JSSF communities in their efforts to develop Umigyo Tourism, with a noticeable declining trend.

6.2.1.4 Government

There are some new innovations after the implementation of Japan's Sixth Industrialization Policy made by Japan's government. The adapted version of Sixth Industrialization activities forms a food system with businesses combining the agriculture, forestry, and fisheries industries, such as direct sales, direct delivery from the SSF households, and a fisher's restaurant (Nakano, 2014). Prefecture governments are the key stakeholders that are deeply involved in the Umigyo Tourism execution for funding support, fisher training, and destination design to respond to the Sixth Industrialization Policy. Some of their political support is through subsidies, such as the post-disaster reconstruction [121801] and the operation of educational and tourism activities in JSSF communities

[102501]. For example, the government offered funding for Nori fishers to let them work together for 3 years to recover their aquaculture after the 3.11 Earthquake in Higashi Matsushima [120201], while the payment for fishers' guide of community visits in Tagonoura is through governmental funding [102501].

At the same time, the government provided training for fishers during the previous Nagisahaku Tourism and Hamakatsu Tourism, which were elements of Umigyo Tourism [120101], and the MAFF departments continue to give training to fishermen in fishing and tourism [FG 20231130]. Moreover, the government's Destination Management Organization (DMO) department also works on tourism attraction planning to attract tourists from other countries, including the Umigyo destination design [FG 20231130]. According to Chang and Katrichis (2016), destination management organizations, which include missions of promotion of destination image, marketing, infrastructure and transport facilities supply chain management, aim to decrease social, cultural and environmental harm by making visitors and locals closer. Research has shown that the high focus on DMOs at local, state, regional, and national levels can be reflected by the Japanese government's new DMO program called 'Registered DMO Candidate Program in Japan,' and the Japanese government, which expects to build an image of a 'tourism-oriented developed nation' set an aim to attract 40 million international tourists by 2020 and 60 million international tourists by 2030 (Nagai et al., 2018). Thus, the government cares about both the beauty and the service staff to enhance the destination image.

6.2.2 Community-Specific Stakeholders

When the common stakeholder group cannot cover all aspects of certain activities, other community-specific stakeholder groups that only appear in some communities can help through cooperation. There are figures with examples of how the stakeholders implement

their interactions, decision-making, and responsibilities in different SSF communities which are not study sites, within the Umigyo Tourism Development before 2011, which are Figure 6.2, Figure 6.3, Figure 6.4, and Figure 6.5 based on the book by Lou (2013/2022):

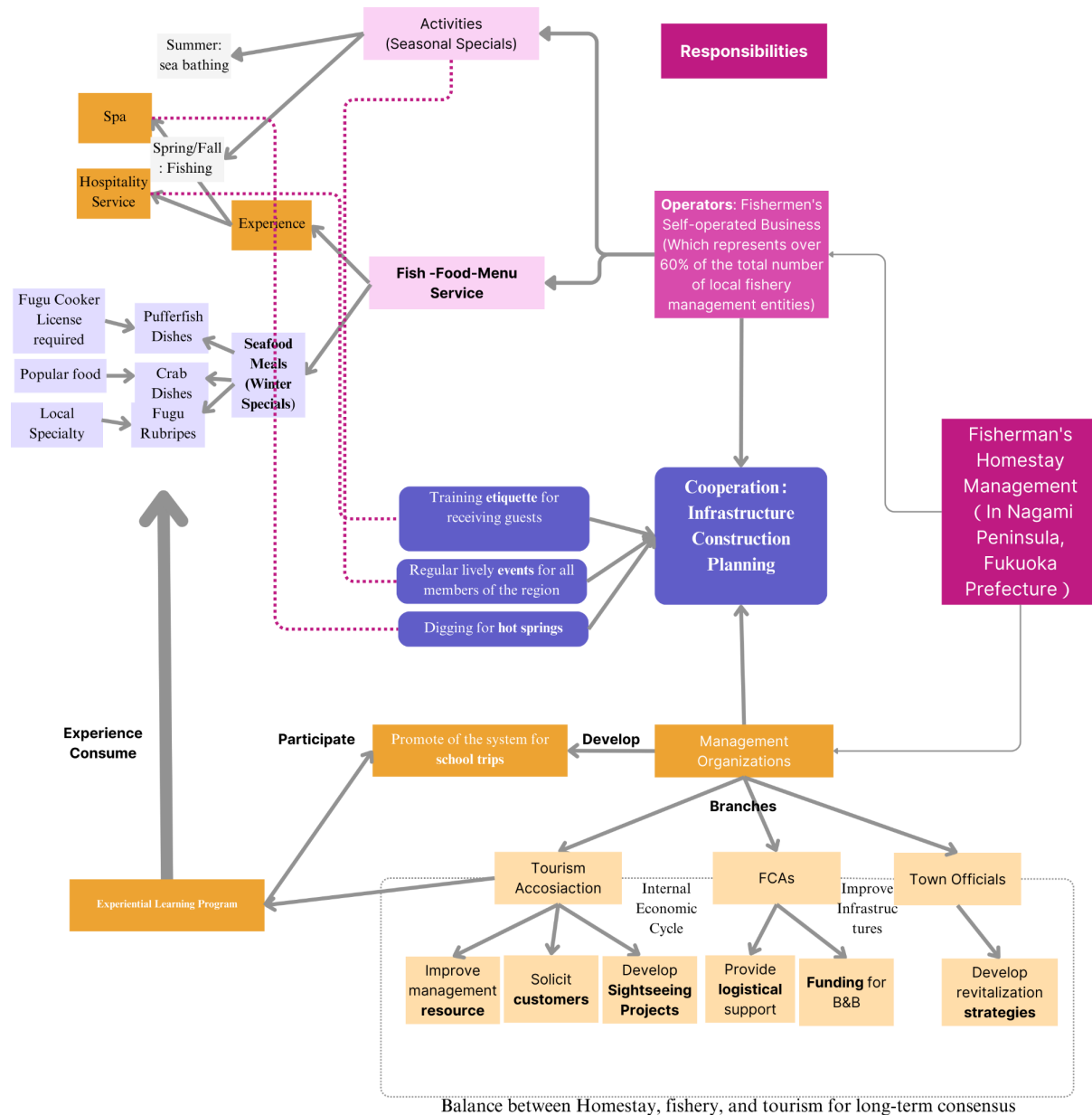


Figure 6.2 Homestay in Nagami Peninsula, Fukuoka Prefecture. Adapted from Lou (2013/2022)

The hospitality services match the collaboration mentioned in Section 6.2.1. Tourism associations and FCAs were management organizations that build practical resource and project foundations with logistical support for preliminary construction and promotion, while

collaboration between FCAs and Officials was more for financial and strategic concerns. Fishers had a large authority role in project planning and execution for Umigyo Tourism activities.

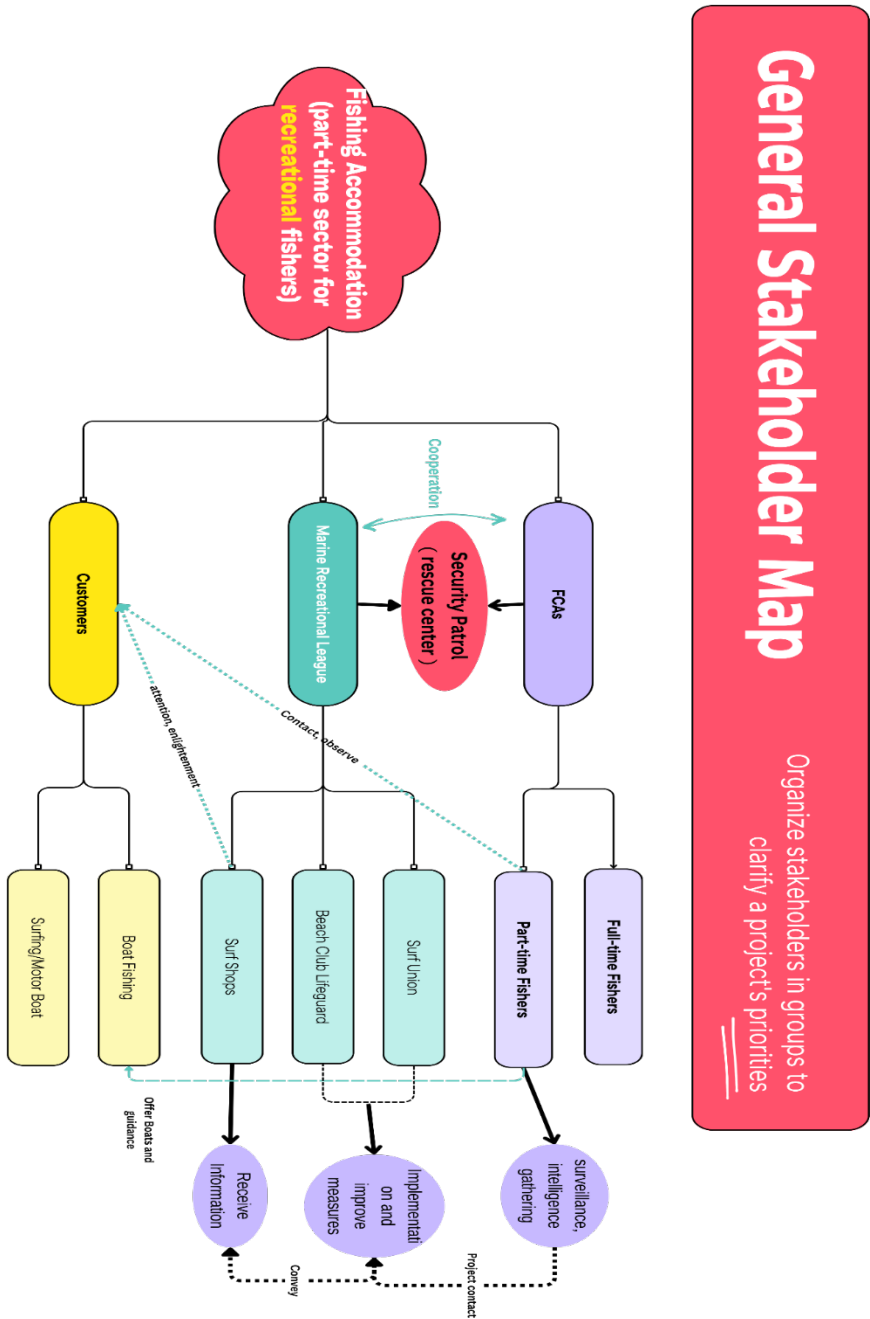


Figure 6.3 Fishing accommodation in Kanagawa. Adapted from Lou (2013/2022)

While governments could issue policies, they were still unable to be comprehensive and consider the specific circumstances of each community. In this condition, some civil groups

were empowered to remedy the local weakness. For example, when some activities have a high stimulation level, the community-specific stakeholder groups considered as the Marine Leisure League make a difference in danger alleviation by taking regular measurements and information exchange.

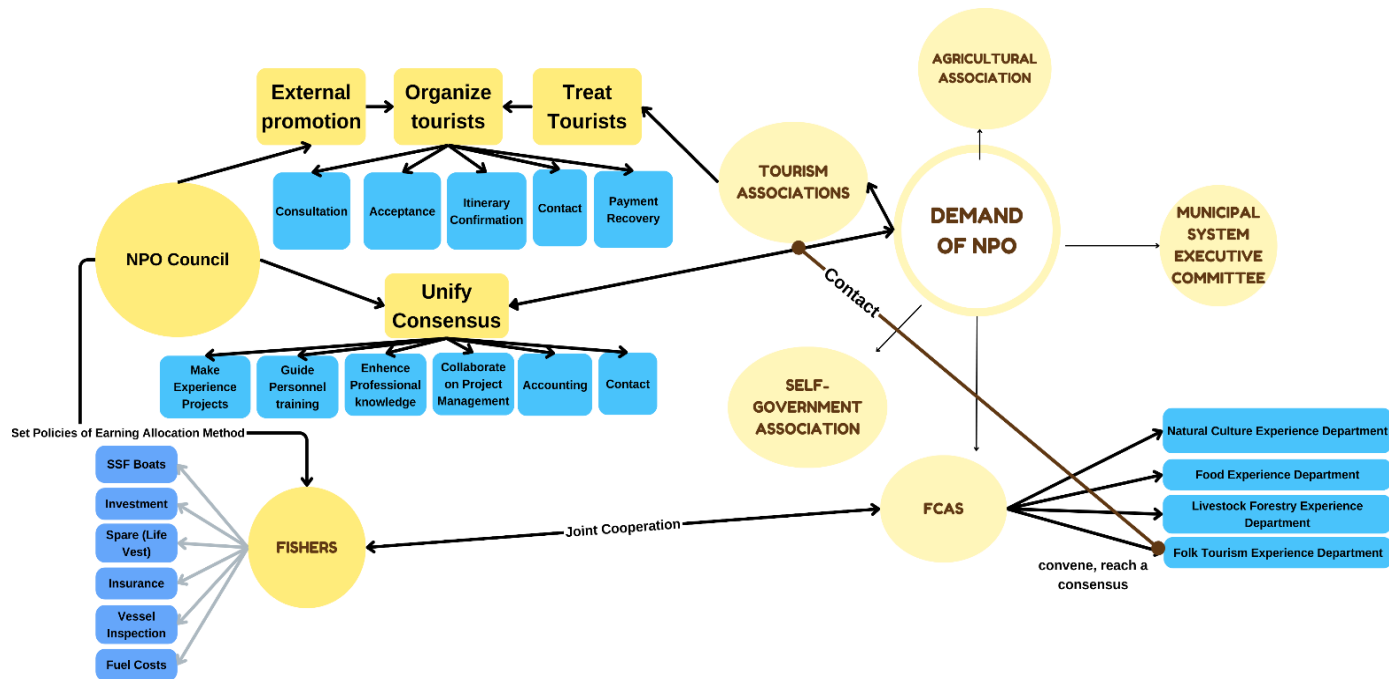


Figure 6.4 Intermediate Support Organization in Iwate Prefecture. Adapted from Lou (2013/2022)

The Experience Village in Iwate prefecture showed the presence of an NPO called Intermediate Support Organization that takes responsibility for incubator, support, and infrastructure management. The Affair Department and Operating Committee under the NPO Council, which were uncommon in most other communities, regulated the needs of various services to other related associations. Meanwhile, fishers, responsible for the costs of their boats and insurance and equipment, maintained their cooperation with local FCAs.

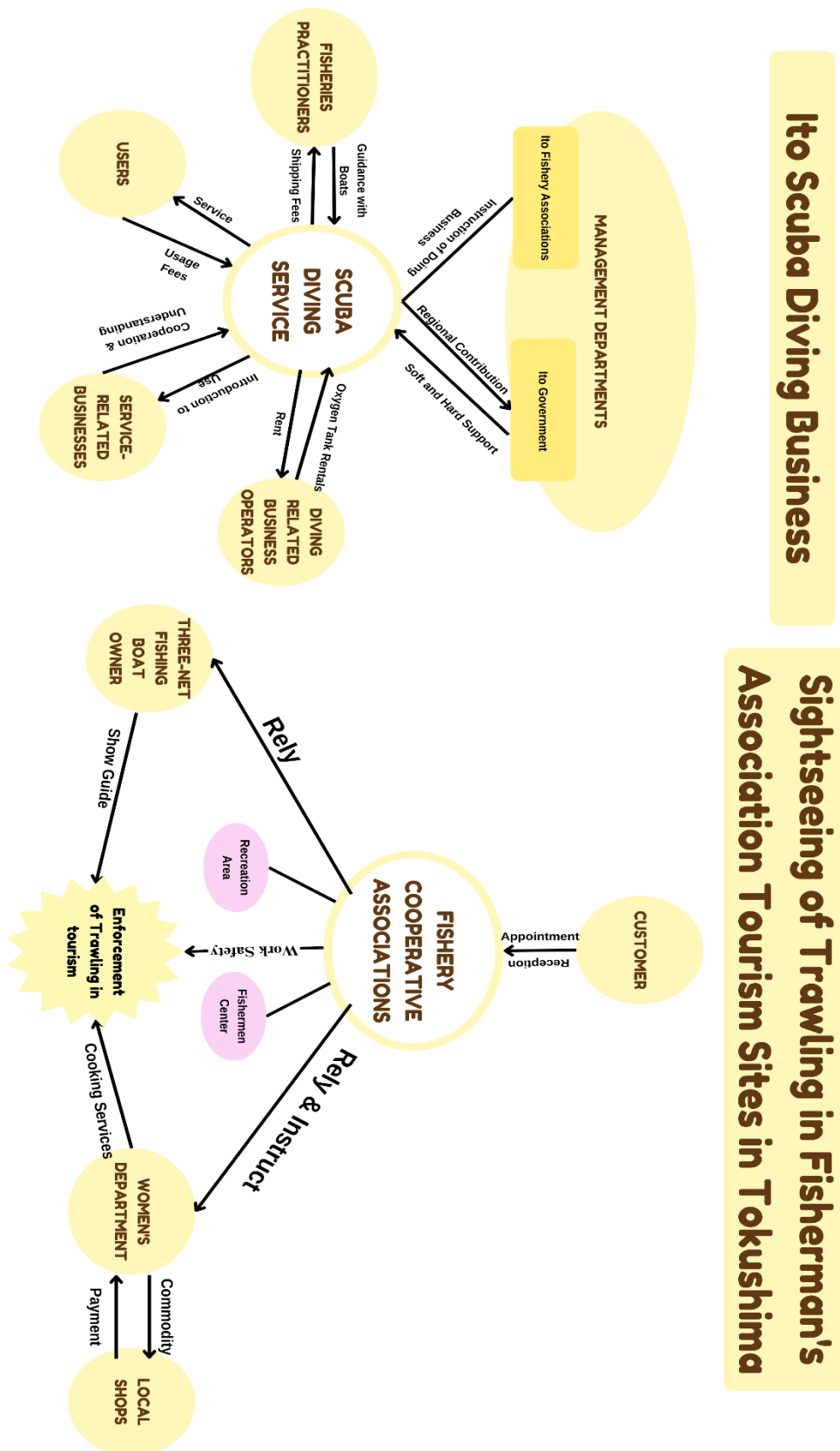


Figure 6.5 Marine recreation in Shizuoka and Tokushima Prefecture. Adapted from Lou (2013/2022).

In terms of activities that stimulate recreation, in addition to the government and FCAs for the administration and management and fishers with their diving boats, there was more participation from service-related businesses/ food shops that offered food and accommodations to customers. The women's group, as a typical representative, was a gradually growing stakeholder group that prepared processed food. Meanwhile, diving-related business operators, such as personal stores, participated in the competition to match users' demand for diving equipment.

As scuba diving and a spectator form of trawling are the most stimulating forms of Umigyo tourism in Shizuoka, Lou (2013/2022) display different stakeholders in Table 6.2:

Table 6.2. Community-Specific Stakeholder Groups in Umigyo Tourism.

Operators	Scuba Diving	Trawling (Spectator)
Diving-related business operators	Equipment rentals	/
Service-related businesses Operators	Welcome and greet	/
Women's Department	/	Cook seafood; Sell seafood to shops
Local Shops	/	Deal with women's department
Tourism Association	Promotion	
Security Team	Monitor for security; Information exchange	
Universities	Research; Deliver talents; Verify the innovations	
Fisheries Higher School	Cultivate talents for fisheries	

Note: Adapted from Lou (2013/2022).

There are some community-specific stakeholder groups that are not present in every community or are not so visible in the JSSF regions, which were briefly mentioned in the figures above. Izu's southern area in Shizuoka is attractive for its diving activities [121801]. Research explains that diving-related business operators gain money from renting diving tools to customers, such as oxygen tanks, while Service-related business operators give tourists a positive impression and experience through warm greetings and services Lou (2013/2022). Thus, the existence of these related business operators better matches tourists' desire for services and equipment to maximize their satisfaction during their activities.

There are noticeable safety issues in some kinds of recreational coastal activities, which the Security Team can mitigate. Funck (2006) showed inappropriate behaviors, such as fish fodder and garbage, depletion of stocks through overfishing by amateur fishermen, illegal mooring and accidents. Although these actions caused minor environmental pollution, they still contribute to the degradation of the marine environment. Lou (2013/2022) also emphasized that: 1) the 1980s witnessed a high frequency of crashes among recreational motor boats and fishing boats due to a lack of knowledge about ocean and sea area terrain, route rules, and other safety factors; 2) the late 1970s witnessed the existence of more surfing tourists, which worsened the crowding of river channels, which led to many cases of fishing boat capsized accidents. Thus, some tourists' negative behaviours and the more crowded areas in the coastal areas were the results of the physical damage and property damage to both tourists and fishers. When the security monitoring from mere fishers is not enough, a professor [011601] pointed out the Marine Security Group in the Iwate Prefecture; in order to maintain the fishers as volunteers for the long term, fishers themselves have a spirit of the revitalization of the community, and FCA sometimes brings them free food after events as gifts. Similarly, there is a department composed of volunteers that monitors safety at the coast's swimming range in Higashi Matsushima [120201].

The women's group focuses on dealing with seafood, which shows its gradually increasing importance on logistical assistance. Research has found that values like feminism link tourism and social enterprise to promote social change (Higgins-Desbiolles & Monga, 2021). According to statistics, ten years ago, there were a total of 364 women's business groups under local FCA's jurisdiction in some JSSF communities [120401]. For female SSF practitioners, there are very few offshore jobs and few land jobs, even though the females are more in food processing, travel planning, and restaurant management [120401]. Lou (2013/2022) mentioned the Women's Department, which cooks seafood and sells it to local

shops. More Precisely, a fisher in Yui [120601] added, *"The women's group is responsible for washing the boxes as the containers of the caught fish. There are more than 80 boats in Yui, and 1400 boxes of fish and shrimps can be caught daily, while each box weighs around 15 kg. Generally, ten boxes are put together to form a group. Women usually use a trolley to deliver the boxes to the washing machine and put each box on the conveyor belt. If there are too many boxes on some days, they often wash the boxes by hand."* Moreover, these women can also design and participate in Umigyo Tourism activities. These women's groups normally rely on FCAs and the governments to promote their activities, and FCAs can give their female members the space to do their business after they pay the money [122601]. However, there are non-members of FCA whose families are related to SSF who have the same idea of fishery-related business to set up spontaneous small women's groups, and these women do these work mainly for happiness rather than money [122601]. These women's groups are not part of the FCAs' work, which are: reducing the waste of fish resources, creating women's working opportunities, promoting food in schools through fish education, and maintaining food inheritance through the spread of their local food recipes [120401]. There is rare funding for women's groups as they do not belong to FCAs [122601]. Since these are usually small businesses, these women usually get their funds by asking their husbands to borrow money from them or to set up the equipment; and or by women themselves pooling money together [122601]. Notably, food processing businesses do not need FCA licenses but do need licenses from other governments, such as the Food Department [120401].

6.3 Interactions Among Stakeholder Groups

Section 6.2 has demonstrated some existing stakeholder groups and their functions, and this section will elaborately explain the details of the interactions.

6.3.1 Conflicts in General Coastal Tourism

Some conflicts are still inevitably happening in coastal tourism between fishers and other stakeholder groups. In terms of the current condition of Japan's fishermen's groups' power in coastal governance, research has demonstrated that they have less enthusiasm and mood since their household income is low. As FCAs' operation deteriorates, the number of FCA members goes down, the FCA scales down, and space conflicts with recreational tourists continue as they continue to rely on the fishing industry (Lou, 2013/2022; Li & Lou, 2018).

As fishery is a traditional industry, whereas tourism is a later-joined tertiary industry, they inevitably encounter some conflicts. Research finds that the population growth in urban areas is caused by structural changes in the social environment, which results in higher use of coastal areas for leisure (Li & Namikawa, 2020). According to Li and Lou (2018), as fishery entirely relies on fishery resources, there are conflicts over space for pleasure boats and sailing, conflicts on resources for recreational fishing, and conflicts on both space and resources for scuba diving and renewable energy development. The governance method to alleviate the conflicts is significant. According to Li (2022), there are some challenges causing the lack of solutions to injustice, including the overlapping of governing authorities between two prefectures, such as Shizuoka and Tokyo, and the insufficient interaction with other stakeholders through 'one side rules and regulations.' If there is not a fair solution, it will probably lead to stigmatization of either of the stakeholder groups. According to Li (2022), as Japan lacks systematic regulations and management of recreational boats, people in marine leisure blame fishers for interrupting their use of the sea as a citizens' right because the sea belongs to everyone, accumulating prejudice against the SSF groups. Thus, the occupation of fish resources, space for operating fishing, and their sequential impacts still lead to some troubles for coastal governance.

Some inappropriate forms of recreational tourism also lead to environmental and biodiversity problems. Tourists may not be aware of minor environmental pollution as a result of their inappropriate behaviours. According to Funck (2006), fishers witness fish fodder and garbage depletion of stocks through over-fishing by tourists (amateur fishermen). Similarly, Fishers' resistance to recreational travellers makes them suspect that non-fisher recreational boat owners are considerably harming the Kinme fish population in Higashiizu (Li, 2022). The problem also happened in other areas. According to the officials in Higashi Matsushima [FG 20231130], ocean tourism was carried out by outsiders who did not care about its environmental problems, such as a lot of plastic waste. On a lake scale, Yoshiyama et al. (2016) point out an example of the 1970s, which witnessed uncontrolled recreational overfishing, leading to a lower Miyabe charr stock in Shikaoi Town. Thus, without appropriate management of marine leisure, tourism can also lead to the scramble for fishery space and resources as well as biodiversity problems.

6.3.2 Collaborative Interaction Between Stakeholders

Undeniably, some governmental departments can participate in some management. For example, according to Teh et al. (2020), when the MAFF promotes its Nagisahaku as a seaside tourist destination with overnight stays in a fishing community, its investment enhances small boat safety at sea. However, there were some organizations among different stakeholder groups through the establishment of associations for the execution of the governance. According to Lou (2013/2022), the cooperation between organizations from different stakeholder groups can result in new mutual-benefited organizations or alliances, including these outstanding samples:

In Hiratsuka City

The cooperation for conflict mitigation and mutual benefits are between the factors in the fishery associations and those in the marine recreational groups:

- 1) The designated emergency shelter in Hiratsuka city has been built by fishers in the fishery association (founders), local active safeguards, surfers, and folk marinas;
- 2) The marine rescue department in Hiratsuka City is constituted of fishers in regional marinas, the lifeguard section of the shipwreck club, and the local surf shops.

In Iwate

An intermediate support organization (as an incubator and essential equipment management) that provides talent, capital, and intelligence resources for non-profit organizations comprises the FCAs, agricultural cooperative association, local council, residents' association, and municipal system executive committee organization.

The supported organizations are non-profit organizations (NPOs) that remedy the failure of the market and government and lead to collaboration among different stakeholder groups to attract public attention.

In addition to the form of organizations, there are some other ongoing collaborations between JSSFs and other institutes, which are shown in Figure 6.6 and explained below, followed by detailed explanations:

Stakeholder Interaction

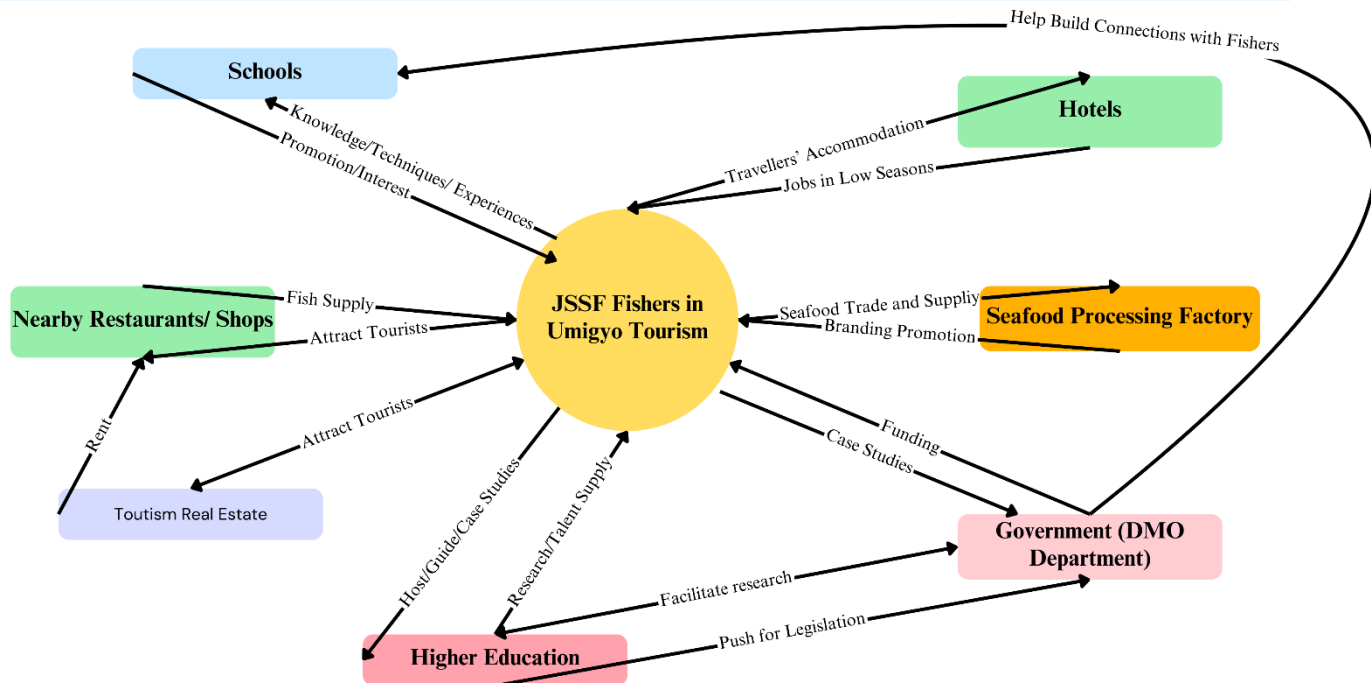


Figure 6.6. JSSFs' Cooperation with Stakeholder Groups.

Note: Data are from observation, literature, semi-structured interviews answered by FCAs, JSSF fishers, marine academic specialists, restaurant and seafood manufacturing staff, and prefectural marine officials, and focus groups answered by marine officials, and tourists who experienced Umigyo Tourism.

6.3.2.1 Cooperation Between JSSF and Primary/Middle Schools

The cooperation between fishers and primary/middle schools mentioned in 5.4.1.1 is a phenomenon in the whole of Japan. Some governmental actions promoting ecotourism in Japan match Umigyo projects for marine education, which requires collaboration between different stakeholder groups. Research says Japan's possible ecotourism is due to its dense population, highly developed tourism market, and focus on environmental education (d'Hauterres & Funck, 2016). There are some remarkable maritime education activities,

including a formal marine education program at Hinase Junior High School in Bizen City (Sakurai et al., 2019) and an environmental education program for elementary and high school students in the Sanriku region (Sakurai et al., 2016). Correspondingly, a marine specialist [122601] and all the tourists [FG 20240116] agreed that social media is an effective promotion method for these young people who experience education and activities to invite more people to come nowadays. Similarly, there are initiatives to include ecotourism curriculums in Japan's adult education to match the UN's sustainable development (Uzama & Walter, 2018). As a result of stakeholder cooperation, marine education has increased tourist interest in Umigyo.

6.3.2.2 Cooperation for DMO (Fishers and local real estate companies)

There are still some collaborations between fishers and tourism-related organizations in the same communities. The establishment of a popular tourism destination normally needs efforts from both fishers and other local shops because not all local property and real estate belong to fishers. For example, there is a travel real estate company called CSA in Mochimune. The CSA Company, located nearby, rents the space of facade rooms to merchants, such as the hot springs, café, and food shops (observation, October 21, 2023). Local FCA staff [102102] pointed out FCA's positive attitude toward the tourism company because of the mutual benefits, especially since the tourism company is the landowner of the space for FCA-operated restaurants. Based on the experience of a marine-related professor [011601], the fishers get along with the nearby shops well, such as the café and the hot spring, as their special food and services are different from the marine theory, which can improve the diversity of the coastal activities to make the destination more popular. As a result, the local fishers and nearby shops can complement each other as allies to attract more tourists for mutual benefits.

6.3.2.3 Cooperation for Future Talents (Fisher Higher School and Universities)

The JSSF's cooperation with higher education institutions brings students with knowledge to the JSSF communities to facilitate their revitalization. Universities are "behind-the-scenes heroes" of Umigyo Development; as a famous professor [121501] pointed out, researchers have continuously researched it since 1985, which facilitated its legislation. In terms of the universities' efforts for fishers, a marine-related professor [011601] said, *"Some of the students from the marine-related departments will bring these communities the Umigyo knowledge of business and marketing to help them, although some students will work in other fields after graduation."* The previous alumni, who have already worked in the JSSF-related institutions, sometimes return to the universities to share their experiences with the current students. For example, a staff member in the Shizuoka Prefecture Fisheries Federation [112801] realized the current university courses are too broad and talk about the wide Japanese scale rather than Shizuoka's fisheries, so he joined the lectures to let students understand the fisheries in Shizuoka Prefecture.

In addition to the universities that focus more on research, an official [121801] pointed out that there is a Fisheries Higher School, like a college with a one-year course to cultivate fishing techniques, which contributes around 20 students for their careers in different ports in Shizuoka every year; as the Shizuoka government offers the academic aid of the Fisheries Higher School, the working range for these students is also Shizuoka. Thus, the JSSF-related institution's assistants, with either funding or experience, improve the quality and enthusiasm of the students in higher education institutions to bring their talents to the communities after graduation.

6.3.2.4 Cooperation Among Fishers

Fishers normally get along with each other for space and knowledge sharing in the study sites. When fishing, both officials [FG 20231130] agreed that there are almost no conflicts for the overlapping regions of trap, fixed nets, aquaculture, and gillnet within a JSSF community in Miyagi. For example, a Mochimune fisher [102103] was proud that fishermen have good relationships and are willing to share and help each other by telling other local fishermen when they find fish. In addition, young fishers can learn techniques from their elders. An aquaculture fisher [120101] explained that the accumulation of experience in Nori aquaculture was expected to be slow to take several years as Nori's farm is a one-year farm, but he gained so much experience and skills from some older fishers to grow his technique faster. In terms of Umigyo tourism in the JSSF communities, the fisher-held Umigyo activities do not lead to conflicts with other fishers' fishing activities; as an experienced professor [011601] said, "*Until now, there has never been a conflict between SSF fishing and [fisher-operated] recreational fishing boats.*" Thus, there is frequent communication and contact among fishers in the same community to support each other.

There are several cases in which different ports are willing to collaborate, leading to information exchange and building a good relationship with the network [Professor 011601]. In particular, Shin-Monato and Yui are two close SSF ports that catch shrimps. According to a marine social scientist [011601], Shin-Monato can catch white shrimps in its zone, while Yui only catches red shrimps. The frequent collaboration between Yui and Shin-Monato to catch Sakura shrimps builds a tight relationship among fishers, even though they are under different FCAs [120601 & 011601].

In addition to the exchange of resources, the current governance arrangements allow different scales of interaction for the exchange of insights and innovation among fishers. According to a fisherman [120804], "*There are meetings among local young fishers twice per year to exchange their information and ideas. When all fishers have meetings, young fishers*

also participate. There are also national-scale meetings in Tokyo every year to let domestic fishers, including young fishers, share their feelings and challenges.” Other fishery-related organizations and institutions also hold other conferences. For example, according to the Tokyo Fisheries Promotion Foundation & Umi, Hito, Kurashi Forum (2020), the forum held approximately 15 annual meetings focused on gender equity, with over 100 participants attending the 2019 conference in Matsuyama. Thus, JSSF fishers have the motivation and chances to build networks with other fishers through fishing collaboration and meetings, which is especially helpful for young successors’ growth and enthusiasm.

6.3.2.5 Fishers’ Cooperation with Hotels

Fishers’ relationship with hotels is cooperation rather than competition. Section 4.2.3 has described the existence of hotels close to some JSSF communities that do not have fisher-operated accommodations, which can solve tourists’ concerns about overnight trips. Meanwhile, it mentioned seasonal jobs for women from SSF households. Thus, they have mutual benefits during both on and off seasons.

6.3.2.6 Fishers’ Cooperation with Manufacturers for Branding

The seafood processing factories have a tight and vital relationship with fishers, and the one in Mochimune is an outstanding example. Even at the early age of the Sixth Industrialization, it was recommended that its efforts be enhanced through educational programs with manuals on processing and sale to better align human resources with food processors (Nakano, 2014). The global trend, the idea to differentiate the product from other products, and the desire to make customers taste the clean food and feel the duty of a high hygiene level inspired the business of processing Shirasu in Mochimune [120701]. According to Fisher [102103], *"The machine operators in the factory are external employees, not fishermen. Therefore, the effort required by fishermen during the processing step will be*

greatly reduced. When fishermen realize this win-win approach, they express their gratitude to these partners and hope to continue this relationship." The staff in the factory are also members of Mochimune, even though they are not fishers. The machine sellers were conscientious and socially responsible for selling machines to processing factories at very low prices so that they could grow fast [102101]. The existence of the processing factory brings Mochimune's Shirasu brand to some big cities, such as Tokyo and Hokkaido, and the raw material management on paper for traceability, which is detailed enough for food safety to trace which boat, which day, and which zone of the Ocean did the fish come from and can also bring a sense of security for the customers [120701]. A processor [120701] explained that nowadays" *Most used sales channels for the products are 7.11 because the certified products are in a well-known chain store, which makes people rest assured.*" As a result, the fast growth of the processing factory and the community's positive attitude have raised the whole community's reputation through high-quality seafood.

The former supply relationship between fishermen and restaurants can be maintained and made closer through Umigyo's innovation. The local restaurants which purchase the caught fish can be categorized as the stakeholder groups due to their mutual benefits from the growing number of tourists attracted by Umigyo Tourism. Admittedly, the fishers are the operators of Umigyo Tourism which is an element of Umigyo. However, some restaurants are owned by local residents, so they are the common stakeholders for Umigyo. For example, there is a Sakura Shrimp restaurant with a 30-year history and seafood cuisine restaurants that owns a processing factory, restaurant, and sales shop that is helping to bring over 100 employment positions for local people and has a good and strong relationship with local fishers, which they have been maintaining for almost 30 years [110801]. Similarly, some FCAs hold their seafood restaurant and direct sale stores as another income channel, so they also play the role of fish buyers for local fishers [102104]. As fish buyers, they buy the fish in

the morning for freshness, right after fishers finish catching fish and return to the port [120802]. Thus, restaurants better outreach the branding of local seafood. Since Umigyo Tourism is expected to maintain the fishing industry in each JSSF community, it will lead to the maintenance of nearby restaurants and massive jobs for local people.

6.4 Stakeholders' Satisfaction Degrees

When top-down governance pressure exists, collaborative governance delegates more responsibilities to stakeholders who have more practical knowledge than managers or politicians to perform actions better and deal with cumbersome conflicts (Bellanger et al., 2020). A conceptualized evaluation criteria developed by Nouzari et al. (2020) displays indicators of the degree of stakeholders' satisfaction from the equality, influence, reasonable debate, and transparency perspectives during involvement under interactive governance for a project. Some of the indicators in Table 6.3 support this research on the efforts of the Pescatourism governance to enhance fishers' satisfaction levels.

TABLE 6.3. Criteria of Interactive Governance Applied in Similar Research, Based on Interactive Governance

Criteria of interactive governance	Conceptualised evaluation criteria
Equality	• Number of meetings • Equal opportunity to provide input • Possibilities during meetings to provide input
Influence	• Providing input in the early stages of the process (problem definition and solution exploration phase) • Taking ideas, arguments, interests, concerns and expectations seriously
Reasonable debate	• Possibilities to provide input for conceptual dike variants • Focus on the substance of problems, solutions and conceptual documents during meetings (for example dike variants)
Transparency	• Receiving information in understandable language • Receiving information about what has been done with the provided input of stakeholders • Periodically receiving information about progress made (updates about conversations with other stakeholders and possible dike variants) • Discussing expectations, interests and concerns

Source: Cited from Nouzari et al. (2020: pg.5)

Based on these indicators, the efforts of the interactive governance for the Pescatourism operation can be analyzed in the following sections: (1) equity, (2) influence, (3) reasonable debate, and (4) transparency. This section discusses the degree of these four sections during stakeholders' interactions.

6.4.1 Equity

Some results show Umigyo Tourism's enhancement of interactive governance, and Section 6.3 shows some frequent interactions among different stakeholder groups. The government is active in the exchange of information in this co-management governance. The government's attitude is to promote Umigyo to as many JSSF communities as they can, so they apply some support of funding and events for publicity [121801]. The Prefecture government can share Umigyo's latest adjusted policies and guidelines with the FCAs to

ensure they are easy to understand, including the costs and benefits of the policy [011601]. In terms of FCA's contact with other stakeholder groups, its support for the challenges faced by the SSFs continues even as the focus gradually shifts towards Umigyo Tourism. In particular, Section 6.2.1.2.2 mentioned the LSF's harm to the JSSF communities. In regards to this, a fisher [120804] mentioned that when LSF harms the fish catch of the SSFs, FCAs fight for SSF's rights, which lasts for several years. Thus, the meetings about fishers' basic rights never stop. Moreover, the Umigyo growth has increased due to the implementation of the Umigyo Policy.

Fishers' positive attitudes towards the government's visit lead to more chances of meetings. a Mochimune fisher [102103] said, "*Staff from the Japan Fisheries Agency and the government will choose Shizuoka Prefecture as the inspection location when they go to the grassroots level because people here welcome them.*" Therefore, the government's high enthusiasm and actions of promoting Umigyo and the fishers' friendly attitudes to these staff facilitate the transparency between JSSF communities and the government.

6.4.2 Influence

As the government treats Umigyo as a serious and innovative policy for JSSFs, the staff listens to fishers' insights carefully through the FCAs' hosts. The government has already been doing practical work to enhance the Pescatourism. Sections 4.3.1 and 4.3.3 explained the government's support for this operation through both promotion and funding. In addition to these events, the government is still taking the fishers' arguments seriously and continuously. Previously, during natural disasters, although the Japanese government's top-down programs were about strengthening fishing communities against the disaster, they could not effectively reflect the needs and perceptions of residents regarding the reconstruction of the community (Sakurai et al., 2016). However, the official Japanese agents going to the

prefecture-level government [121801] can gradually remedy and facilitate the exchange of information between the grassroots and the central government. The local and prefecture government officials can go there by themselves, but they can also appoint marine-related professors to experience the cooking class and marine cruise better to get involved with the fishers as well as hear knowledge from a never-thought-out angle [011601]. Then, these findings of innovations and concerns can be reported to the central government [121801]. Of course, officials pay for their experience of innovative activities [011601]. As a result, the government has maintained a serious attitude toward the FCAs' and fishers' ideas to enhance its support for Umigyo.

6.4.3 Reasonable Debate

The existence of Umigyo amplifies the power of fishermen to input thoughts for their values. The rights and responsibilities determined through negotiation and the subsequent agreements are estimated to decrease conflicts (Bellanger et al., 2020). As there are almost no financial groups existing in Umigyo Tourism [011601], the high empowerment of the JSSF groups can maintain its value-oriented characteristics. In other words, without the intervention of too much financial focus, fishers' nature-oriented value can be maintained so that they can better input their thoughts. As Section 6.2.1.1 describes, the official staff do fieldwork at the grassroots level to hear about fishers' insights, innovations, and worries so they can be reported to the upper level more fluently and clearly.

When it comes to the focus on the substance of the problems and solutions, Lou (2013/2022) show that the Petty-Clark Theorem, which focuses on the status of the primary industry in the national economy, will be reduced with the development of the economy, and Umigyo that utilizes the marine resources is an ideal solution. There has been a consensus on the Umigyo as a potential solution so that the Umigyo Could become a Political Act. Sections

6.2 and 6.3 show that the official institutions are working hard to follow the Umigyo political act, and there are plenty of examples showing different stakeholder groups' collaborations for the same mission.

6.4.4 Transparency

The information exchange between stakeholders is efficient. In terms of the FCAs and fishers, most FCAs are located close to the fishing ports, normally within 100 meters, so that these two stakeholders can have enough convenience and chances for interaction (observation, October 21, 2023; observation, October 25, 2023; observation, December 6, 2023). Consequently, FCA staff can know fishers' current conditions immediately, such as Higashhize FCA's understanding of the current problem of successors and the number of young fishers who participate in Umigyo activities [120802]. Moreover, some fishing activities happen in the FCA centers so that FCAs can often hear fishers' voices, such as the education rooms lent to fishers in FCAs, as mentioned in Section 6.2.1.2.2. When the Yui fishers wanted to restart their activities after the disasters, FCAs patiently listened to their decisions for the adaption of the Umigyo strategies [120603]. Thus, there is a timely and effective bottom-up delivery of information.

Their high frequency of transparent contact and trades happened earlier before the popularization of Umigyo Tourism. When there was only a fishing business to sell fish to the buyers in FCA centers, a fisher in Mochimune [102102] mentioned the use of an auction board that happened five years ago, as well as a camera that refreshes the price on the auction board every ten minutes. More precisely, a fisherman added, *"FCA helps the buyers bid on Shirasu, and 5% of the fishers' earnings go to FCA. On the big whiteboard, there is each boat's name, the total money of fish sold from the boat, and the buyer's organization's name on each line transparently. The payment can be paid in cash immediately. Noticeably, as Japan is a developed country that makes most people as online users, including fishers,*

online payment is often applied to pay a little bit later than the fish trade." Therefore, clear data, frequent meetings, and facility support ensure transparency between FCAs and fishers.

6.5 Discussion

The previous study analyzes the governance cooperation of each case in coastal Japan, such as those in the book Lou (2013/2022) and articles (Delaney, 2015) with several regional cases. This chapter emphasizes the integration of the general governance arrangements and stakeholder groups' interactions, based on both the literature and data collection from 5 sites, explaining the (1) JSSF-related governance arrangements and Umigyo-related power dynamics, (2) cooperation and stakeholders' costs and benefits during Umigyo, followed by SSF fishers' satisfaction degrees during operating Umigyo Tourism.

6.5.1 JSSF Supporting Governance Arrangements and Umigyo Power Dynamics

Some recent governance arrangements have been implemented in this decade to promote the welfare of JSSF sustainable fisheries. Before implementing Umigyo policies in 2022 to utilize the value of coastal resources, Japan's six-level industrialization policy kept combining the primary industry with secondary and tertiary industries as a solid foundation of the active collaboration between local entrepreneurs and producers. Many communities operate adapted arrangements tailored to their local circumstances, such as the Shizuoka Prefecture Fisheries which promoted basic plans for their fishery employees, technologies, and resource management as an Umigyo policy aid. The current Umigyo policy pays great attention to its tourism branch, emphasizing the design of the destination image with beauty, delicious food, and happiness.

The power dynamics represent a sufficient information exchange between the top policymakers and the grassroots fishers via the prefectural officials and FCAs when holding Umigyo Tourism. Delaney (2015) pointed out the hierarchical and co-management

governance of SSFs in Miyagi and that they are common in Japan. Section 6.2 confirms its consistency in universal Shizuoka and explains how the information exchange works well. The top conveys the policies layer by layer to the bottom, and the bottom's high authority and the official staff who go from the central government to the prefectural levels can record different cases in communities and convey them to the top for future adjustments. Through the top-down approach, the central government issues Umigyo policies to fishers through the prefectural governments and FCAs, with the local prefectural governments adapting the policies to the local JSSFs. FCAs manage fisheries, while the prefectural government staff go to the ports to check the efforts of the FCAs' management and Umigyo's operation. Noticeably, some prefectural officials are exchanged from the central government for a period to experience the practical conditions. Admittedly, Bellanger et al. (2020) display the high transaction costs without sufficient negotiation among the parties and economic incentives as the top-down regulations' weaknesses. However, the frequent contact between FCAs and governmental officials leads to more understanding, which plays a vital role in the existing bottom-up regulation. Regarding the bottom-up direction, fishers can report the problems and the innovative Umigyo ideas to the local FCAs, and FCAs support the innovations to make them come true, which gets the efforts recorded and analyzed by the Prefectural officials. Finally, the central government can make future adoption of the policies more practical based on these cases.

Nowadays, fishers and FCAs mainly cost more energy and time to operate and innovate more Umigyo activities with promotion, and the prefectural governments are more responsible for Umigyo construction and funding, while the tourism associations mainly focus on promotion. Fishers, FCAs, and prefectural officials are the common stakeholder groups in each JSSF community, and each of them has its own costs and benefits when operating Umigyo Tourism. The fishers operating the Umigyo activities are all FCA

members who pay the yearly membership fees. They operate B&B, marine cruises, marine education as instructors, and booths as souvenir sellers. Except for renting space for restaurants, fishers normally rely on their current properties without other investments. The effort is to develop the marine leisure sector with extra money and a lively atmosphere. Nevertheless, the costs for these fishers include not only more time and energy for operating activities but also the payment of security, vessel inspection, and fossil fuels.

FCAs are the manager institutes of JSSFs, which receive fishers' membership fees to offer services in Umigyo, including marketing and networking, logistical support of activities and events, and rights protection for JSSF fishers against conflicts of interest. The obvious effort can be to build a better relationship with other stakeholders through cooperation with other stakeholder groups at the grassroots level and attract more fishers to join the tourism business. However, it means more energy and time spent on strategies, conversations among stakeholders, and outreach to make the Umigyo market more stable.

In terms of the government, each prefectural government brings more political support to the grassroots than the central government. It plays a political role as the policy maker and funding giver, the coordinator among the local stakeholders for coastal revitalization, and the tourism destination developer. The effort is a signal of coastal revitalization, including a better destination image and harmony among stakeholder groups. There are still some costs, especially the money as subsidies and the time for training fishers, decision making, and research.

Undeniably, the tourism associations in most communities represented a common stakeholder group before the legislation of Umigyo. The previous research confirmed that they played both management and promotion roles via outreach, lifesaving concerns, project designs, customer services, and advice to shops and hotels (Lou, 2013/2022). However, trade negotiations among stakeholders have mostly been replaced by FCAs and prefectural

governments. The less reliance on the tourism associations after the Umigyo legislation has led to their lower empowerment, although some still remain in coastal areas for promotion.

There are several civil society organizations facilitating marine tourism. Sometimes, the cooperation appears in the form of community-specific stakeholder groups. In particular, there is a Marine Leisure League for danger alleviation, the Intermediate Support Organization for incubator, support, and infrastructure management, the women's groups for food preparation, and diving-related business operators for equipment rental. Noticeably, the voluntary shore rescue group is able to sustain itself due to the strong spontaneity of these community members and small grants in the form of gifts from the local FCA. Meanwhile, the women's groups are playing a more significant role because their waste reduction, workshop operation creation of women's working opportunities, and traditional food inheritance match Umigyo Tourism's value of culture and business protection and nature education outreach.

6.5.2 Interactions and Fishers' Satisfaction during Umigyo Tourism

The current Umigyo governance arrangements result in more active cooperation between fishers and other stakeholder groups, which mitigates conflicts. According to Jentoft and Bavinck (2014), interaction can boost the governability of fisheries systems. Internally, there is a friendly atmosphere between fishers and other local fishers or those in nearby JSSF communities in Shizuoka. Regarding the external collaborations with JSSFs for mutual benefits, such as (1) domestic primary/middle schools are the ongoing consumer source for marine education; (2) local tourism real estate companies that rent shops to other businesses to support the regional destination management organization serve as the long-term renters for fishers' businesses; (3) higher education institutions include universities with academic resources to bring students the expertise in the marine field and include Fisheries Higher Schools to cultivate future fishery employees; (4) nearby hotels bring accommodations to

Umigyo tourists and give temporary jobs to fishers; (5) nearby seafood processing factories raise the reputation of the local seafood species, are attracting more people to the local seafood restaurants. For each stakeholder group, there is no obvious additional cost because most of them have maintained contact before. Umigyo Tourism is just a small project that has been added to the existing cooperation and research. These interactive relationships match Campbell et al. (2016)'s interactive governance characteristics of several governance actors. These interactions lead to mutual benefits of research outcomes and customers, while these collaborations do not cost anything extra except energy.

Umigyo Tourism leads to relatively satisfying conditions based on a solid foundation of respect for the fishers. Nouzari et al. (2019, 2020) listed the criteria for stakeholders' procedural satisfaction in interactive governance as equality, influence, reasonable debate, and transparency. Firstly, the governments' policies and FCAs' protection of fishers' rights bring more equity for fishers, and Umigyo is a result of the continuous meetings for the collaboration among stakeholders, especially since most study sites welcome the governmental agents to operate inspections and meetings with trust. Additionally, there were already some governmental concerns regarding the continuous practical policies and funding support, and fishers' voices and ideas were better heard by the governmental officials to promote Umigyo to improve fishers' influence. Moreover, a reasonable debate is reflected by the wide recognition of the worse condition of SSF fishing and its solution as nature-oriented Umigyo without consortia's overwhelming financial intervention. Finally, the FCAs' frequent meetings with fishers and the transparent trades for fishers set a high level of transparency among stakeholders, and Umigyo is expected to keep enhancing the existing high transparency. It is worth noting that fishers in the study sites of Shizuoka and Miyagi are welcoming to government agencies, but their attitudes can only be considered representative of Japan as a whole once future research on other prefectures is done.

6.6 Conclusion and Chapter Summary

To sum up, this chapter describes the duties, costs and benefits, and interactions of the stakeholder groups under the JSSF's co-management. FCAs, the prefectural governments, and the fishers with membership in each community are regarded as familiar stakeholders of Umigyo Tourism, while tourism agencies play a less vital role than before. Some remarkable community-specific stakeholders include diving-related business operators, Service-related business operators, women's groups, and marine security groups. Fishers maintain good relationships with not only other local or nearby fishers but also with schools, local tourism real estate institutes, nearby shops, higher education institutes, hotels, and seafood processing factories. There is a relatively high degree of satisfaction among fishers with equity, influence, reasonable debate, and transparency in interactive governance.

Chapter 7

Summary and Conclusions

7.1 Introduction

The vulnerability of SSF fishing provides the opportunity to bring a change through innovative ideas, planning and implementation of tourism activities carried out by SSF fishers to pursue viability. As a country with a rich fishing background, the decline of Japan's small-scale fisheries would reflect the end of its fishing culture, which would be a regret for the whole world. Umigyo Tourism, which is a Japanese style of ecotourism held by fishers to guide visitors to experience fishers' lives, is highly similar to Pescatourism. This thesis described the operation condition of Umigyo Tourism in Japan as a synonym of Pescatourism, the current vulnerabilities of JSSFs and Umigyo Tourism's impacts towards viability, and how Umigyo Tourism motivated the stakeholder groups' interactions. The data collection took place in five study sites in coastal Japan through qualitative interviews and focus groups, while the literature review played a vital role in being familiar with the general situation for inductive coding and understanding the collected data for deductive coding.

This chapter presents a summary of research objectives, methods, key findings and recommendations, and the area for future research. I will also describe some existing research gaps that have the potential for future study and opportunities.

7.2 Objectives and Conceptual Position (Chapters 1 and 2)

Four objectives guided this study which aims to understand the existence of Pescatourism in Japan, the vulnerability factors of the traditional JSSF business, how the

Pescatourism activities turn the existing vulnerability to viability, and the current condition of Pescatourism under the fisheries governance arrangements:

Objective 1 (Chapter 4) was developed to comprehensively understand the current state of Pescatourism-like activities in Japan by exploring (1) the definition and development history of these activities, (2) the Pescatourism market size in Shizuoka and Miyagi, and (3) the differences between these activities compared to the official Italian Pescatourism version. As Umigyo Tourism in Japan matched Pescatourism's operation methods well, Umigyo Tourism became a substitute word for Pescatourism in the later part of the thesis.

Objective 2 (first half part of Chapter 5) showed the current condition of traditional JSSF vulnerabilities by demonstrating its (1) socioeconomic and ecological challenges and (2) the harms from vulnerabilities to the SSF fishers' livelihood. Afterwards, Objective 3 (second half part of Chapter 5) examined the potential role of Umigyo Tourism in alleviating vulnerabilities for viability through (1) its sustainable economic efforts and (2) social and cultural efforts for the protection of cultural heritage and maintenance of successors.

Objective 4 (Chapter 6) was formulated to understand how the fisheries governance arrangements facilitate Umigyo Tourism as a driver of viable SSFs, including the analysis of (1) the current power dynamic in Umigyo Tourism, (2) the stakeholder groups and their costs and benefits in implementing Umigyo Tourism, and (3) Umigyo Tourism's influence on stakeholders' satisfaction and interaction.

As described in Chapter 2, the concepts and theories of the sustainable livelihood framework for tourism, which include institutional arrangement, livelihood outcomes, and vulnerability context, respectively, and interactive governance, were mixed to understand the

research objectives, which are highly relevant to academic discourse in sustainability and tourism with governance concerns for a regional community-based business.

7.3 Methodology and Methods (Chapter 3)

With a pragmatic worldview for the real-world problem, this research only applied qualitative data collection strategies through literature review, observation, interviews, and focus groups after a snowball sampling. There were 26 interviews in 5 study sites in 2 prefectures in Japan, including the JSSF staff, marine academic specialists, and officials. There were another 3 focus groups with SSF staff, officials, and tourists. Both interviews and focus groups with different stakeholders helped this research to collect data from different angles and recognize if there were notable differences between different sources. At the same time, the selection of 5 communities led to finding the similarities and different conditions between the implementation of Umigyo Tourism in various places. Data from these case studies was qualitatively coded using MaxQDA software to discover emerging themes and concepts and gather details of these themes and concepts to address the research objectives.

7.4 Key Findings: Objective One (Chapter 4)

Chapter 4 explained the degree of the existence of Umigyo Tourism carried out by SSF fishers, similar to Pescatourism, in Shizuoka and Miyagi Prefecture in Japan. It focuses on Umigyo Tourism's long historical development, growing market size, and its differences from traditional Pescatourism. The key findings are exhibited below:

History of Development:

- Umigyo Tourism's elements appeared at least 1,300 years ago, and the term "Umigyo" in 1985 better integrates tourism into fishermen's business. The attention and political

standardization of ecotourism after 2003 and 2008 have enhanced its stable growth, especially after 2022, when Japan witnessed Umigyo becoming a national policy.

- A greater investment in the infrastructure and destination design for the tourism activities operated by fishers in the year 1970 resulted in many successes in the marine recreation business, but there was a declining trend from around 1990. Later, education, as a complementary activity in the 2000s, became a cure for the number of coastal tourists.
- Recently, the 3.11 Earthquake in Japan in 2011 was the most destructive natural disaster that brought a loss of JSSF properties and led to fear of the coastal areas among people, which has reduced the number of coastal visitors. Additionally, COVID-19 caused a stagnation in tourism development for roughly 2 years starting in Spring 2020.

Umigyo Tourism Operation and Market:

- There is still a limited percentage of the SSF communities that have vigorous Umigyo development in general Japan, but those that operate diverse activities based on the facilities in these communities are enthusiastic about promoting Umigyo.
- In Japan, Umigyo Tourism matches the existing push factors: (1) the desire to enjoy nature with family or friends, (2) boosting physical health, (3) discovering and learning, and (4) escaping from daily life; there are existing pull factors of Umigyo activities in JSSF communities: (1) the uncrowded destination, (2) the richness of species, (3) the beauty of scenes, and (4) very reasonable prices of activities.
- The main challenges of Umigyo Tourism are (1) the serious natural disasters, (2) the low popularity of destinations, (3) domestic consumption power for marine leisure, (4) the lack of fisher-operated accommodations, and (5) the inconvenient public

transport. The solutions include (1) evacuation facilities and the growth of forecasting technology, (2) more humanistic activities for publicity, (3) attracting foreign visitors, (4) collaboration with hotels, and (5) the popularization of bicycles and parking lots.

- The development stage of Umigyo Tourism varies in each community, but marine education and food services for local species branding appear in all the study sites.
- The diversity of the Umigyo Tourism operations includes (1) the strategies of education, (2) the existence and forms of marine cruises, fishing, morning market, and guesthouses, (3) unique species, and (4) the strategies and targets of promotion.

Comparison with Pescatourism:

- Umigyo's differences with Pescatourism include (1) their development process (initial definition, the most urgent problems encountered, and drivers), (2) different experiences of outdoor activities (lower stimulation level, food services not on boats, and lack of toilets to maintain a long-time cruise), and (3) the application of indoor education (with students as target market and promotional channels).

In conclusion, Japan has a rich 1,300-year tradition of fisher-operated tourism, which has continuously evolved and expanded. The formal recognition of Japan's Umigyo, akin to what is known internationally as Pescatourism, first appeared in 1985. It focuses on education purposes and has recently enjoyed the formal Umigyo Policy, although its recent operation and expansion suffered from severe natural disasters and pandemics. Umigyo Tourism still has a positive trend of market growth, with sufficient pull and push factors, to attempt to overcome some shortages and continue innovating more diverse activities. Compared with Pescatourism in Italy, Umigyo Tourism's community-oriented concept, without financial groups' involvement, leads to its considerable target market of students with a high emphasis

on indoor marine education, and these students' artwork of their marine education can facilitate the Umigyo promotion to the public.

7.5 Key Findings: Objective Two and Objective Three (Chapter 5)

After describing the existing market of Umigyo Tourism in Japan in Chapter 4; Chapter 5 analyzes the vulnerability of the current JSSF socioeconomic and ecological challenges and harms on fishers' livelihood, followed by exploring how Umigyo Tourism mitigates these harms through sustainable economic strategies and retention of culture and young successors:

Challenges of Traditional Business in JSSFs:

- There are several vulnerability trends in Japan, including population problems (aging population and brain drainage), lower volume of marine resources due to global warming and environmental degradation, an economy that is difficult to recover, and political ignorance of the primary industry.
- Recent shocks relate to human health, serious natural disasters and viruses, natural aspects that harm fish's health, economic perspectives about the bubble economy and growth of oil prices, and conflicts with LSFs and outside tourism agencies.
- Seasonality also impacts the JSSF fishing volume due to the long closed fishing season and the cancellation of fishing during bad weather.

Harms on JSSF Fishers' Livelihood

- The most urgent problem is the lack of young successors, leading to the threats of the existence of some JSSF communities, majorly as a result of the exacerbation of the worse economic benefits and natural conditions to the JSSF fishing business.

- The continuous drop in fish catch volume negatively influenced earnings after 1983, and a fish price increase as a temporary resolution, which seafood customers currently accept in Shizuoka, is not long-lasting for future JSSF business.
- With a higher cost and lower fish volume due to the natural conditions, fishers encounter poor earnings, and some FCAs face debt problems.
- Fishers can recognize the different extents of the lack of successors in various communities, but most fishers do not interfere with their children's decisions about future jobs as they understand the negative economy (future) of the JSSF fishing industry.

Umigyo Tourism's Effectiveness of Vulnerability Mitigation

- The outreach activities for more external collaborations, which attract students to ports and actively promote in schools, boost JSSF's image and contact with the public.
- Education through Umigyo leads more people to better understand environmental protection, marine and SSF culture, and the correct concept of a beautiful ocean.
- The JSSF fishers, who are value-oriented and worry about future food security, start a self-produced and marketed strategy by local canteens and sell lunch boxes to inland schools during the implementation and marketing of Umigyo Tourism.
- The growth of Umigyo Tourism motivates transportation access, the renovation of old houses, and the update of the processing machines.
- The extra Umigyo Tourism earnings can come from fishers' business operations and official Umigyo subsidies. In Japan, there are extra food services held by fishers during the fishing seasons and marine activities are carried out all year, as well as indoor education and its outreaching promotion during the closed fishing season for fishers to maintain being employed with earnings in the fishing industry.

- The future growth of this community-based tourism is positive due to the high characteristics of public welfare, sustainability, non-profit, and the recognition of severe and urgent missions.
- The spontaneity of the involvement of Umigyo is not high in some communities. However, many communities with a high level of spontaneity have innovative activity designs and possibly some fisher role models as the leaders of Umigyo Tourism.

In short, there were already some seasonality and domestic economic shocks to the JSSF industry, and the appearance of human health shocks, natural shocks with climate change, worse fish health to some species, and the continuous conflicts between JSSF fishers and other stakeholders exacerbate the trend of earning from fishing. Most urgently, traditional JSSF is facing demise due to the lack of charm of the fishing business to youth, and the decreasing income even exacerbates the maintenance of some FCAs. Luckily, Umigyo Tourism promotes more social recognition, biodiversity and food security, and regional economic and infrastructure development. It also maintains increasing social recognition and earnings during the closed fishing season. The gradual increase of spontaneity and the strength of other development features reflects the sustainability of Umigyo's expansion.

7.6 Key Findings: Objective Four (Chapter 6)

Chapter 6 emphasizes the governance arrangement level, focusing on the current power dynamic in Umigyo Tourism, other stakeholders and their costs and benefits, and fishers' satisfaction and interaction degrees:

Power Dynamic

- The Umigyo Tourism operation involves various stakeholder groups for decision-making, especially cooperation among governments, FCAs, and fishers, and co-management facilitates the frequent information exchange among them.
- Central government issues the Umigyo policies, and Prefectural government officials go to the grassroots to collect and reflect some implementation cases to the Central government for adaptive opinions, facilitate interaction among stakeholder groups, train fishers, and boost destination designs; there is regular dispatch of some official agents from the central government to the prefectural level for a period.
- FCAs helped the organization of JSSF fishing and Umigyo Tourism, including the facility providers, marketing, and protection of SSF fishers' rights.
- SSF fishers with memberships, who have high authority, are the operators contacting visitors for earnings and the innovators designing and adjusting activities.
- Tourism agencies are empowered with less authority and work mainly on publicity.

Other Stakeholders and Their Costs and Benefits

- There are costs needed for the fishers to spend energy carrying out activities and spending money preparing the fuel and boat facilities. In addition, costs are needed for the FCAs to devote energy and time binding the relationship between fishers and other stakeholders and sometimes pay for the fuel costs, and for the government to subsidize fishers' Umigyo activities and spend time training and adapting Umigyo policies after research.
- The previous coastal tourism environment, space, and safety problems were gradually resolved, and more resources have been tilted toward fishers.
- The internal collaboration degrees among fishers are high in the study sites.

- Cooperation between different stakeholder groups, including primary and middle schools, local travel real estate companies, higher education institutions, nearby hotels, and local processing factories and restaurants, sometimes exists as an alliance for security and better intermediate support.
- Fishers' active collaboration with local real estate companies, manufacturers, and hotels enhances its appeal and popularity among travelers.

Stakeholders' Satisfaction Degrees

- The government's adjusted Umigyo policies through FCAs to fishers and fishers' welcoming attitudes to the government ensure equity in SSFs' Umigyo development.
- Fishers have their influence in Umigyo Tourism with high authority in designing innovative Umigyo activities and the government's practical support and attention.
- Umigyo gives fishers more power to express their values, with the support of most local stakeholders, especially after the government faces the fishing dilemma.
- There was already a high level of transparency foundation before the Umigyo Policy.

To sum up, governments, FCAs, and fishers are the common stakeholder groups in the co-management of Umigyo Tourism, with roles in political, harmonizing, and operating functions, respectively, and frequent information exchange. Some minor stakeholder groups, such as the Security Team and Women's Groups, appear in individual regions and are gaining attention due to the boost of Umigyo Tourism. Although the operation of Umigyo Tourism spends some time, energy, and investment in facilities, the fishers' internal and external collaborations with most local stakeholders are successful due to the considerable mutual social and economic interests. There is a strong foundation of influence and transparency for fishers, and Umigyo Tourism increases their power and equity in reasonable debate.

7.7 Recommendation

These findings can be applied to a real-world context. This research offers detailed evidence in support of governance concerns that prioritize the knowledge of regional tourism businesses and collaborators. The assumption that JSSF communities have a Pescatourism-liked market is correct, which reflects its standardization process during its history, efforts with a trend toward viability, and the high attention of the government and stakeholders' collaborations. The thesis shows some opportunities for future research to keep analyzing details, including:

- 1) The power and efforts of feminism through the organization of Umigyo Tourism, especially more details of the women's groups' benefits and efforts;
- 2) The required time length, strategies, and trauma recovery of tourists for post-disaster reconstruction in the coastal areas to restart Umigyo Tourism;
- 3) The effectiveness of indoor marine education to the future JSSF successor number.
- 4) The continuous analysis of the extent of fishers' support and participation in Umigyo Tourism in different coastal communities and the proportion of the communities with a positive attitude to Umigyo Tourism.

Firstly, the women, as food service providers from women's groups and the instructors with students, play a significant role in the Umigyo operation by directly contacting customers. However, this paper only briefly mentions their behaviors and actions in Umigyo without elaborating on the details of their business strategies and operations of the women's group. Further research by case studies, highly related to Gender Equality (SDG 5), will better explain the female fishers' status in Japan as well as how Umigyo Tourism pushes social progress through what degree of feminism.

Secondly, the shadow left behind by the 3.11 Earthquake has not completely disappeared, and natural disasters are common in Japan, so future research on the recovery needs to be done, considering the Umigyo activities and visitors. As some outdoor Umigyo Tourism activities in some study sites have not restarted their operation and the number of student visitors has not restored to pre-disaster levels, this field of research nowadays cannot be conducted due to the lack of description of the process of the recovery of the coastal tourism market.

Thirdly, the short-term existence of fisher-oriented indoor education activities before the 3.11 Earthquake and the impacts of natural disasters that last to today make it hard to demonstrate its recent improvement in retaining successors truly. When fishers' indoor teaching in the city is restored to its original scale in the future, further research can truly reflect the impact of mature Umigyo Tourism Education on its successors. Thus, future research can be continuously conducted in coastal communities that try to (re)start indoor education or expand the scale, and it is too early to test the efforts of the youth successors.

Fourthly, although the concept of Umigyo has existed since 1985, its formal promotion is still through the policy which just appeared in 2022. The growth in the study sites cannot represent the bigger overall picture of Japan, and some communities still need time to make decisions about whether to follow Umigyo. For example, most fishers in Mochimune still have not gotten involved in Umigyo until the end of the data collection period, even though some fisher leaders continued persuading fishers about Umigyo's potential. Thus, further research should be done on attitude change in communities that do not follow Umigyo. Throughout the years, it has also been meaningful to figure out the trend of the percentage of coastal communities that show positive attitudes and engagement in Umigyo Tourism.

In addition to the recommendations for future research, some improvements can also be made to the sampling strategy. There is likely a better sampling of a more comprehensive age group of tourists who participated in the Umigyo Tourism. During this research, all the tourists recruited were university students in the field of Umigyo because they were most accessible and participated in Umigyo activities for their academic assignments, especially when Umigyo Tourism was not popular enough to let me soon find other participants. This focus group could only represent a certain age group (around 20 years old) in Japan, which offered more opinions oriented to the educational feedback instead of older participants' thoughts about leisure activities. As a result, future research is recommended to find more older Umigyo participants to understand tourists' feelings about leisure activities better.

Overall, as Umigyo Tourism's standardization took place recently, there can be more research on its future anti-disaster methods and the prior successor risks.

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Appendices

APPENDIX A: Semi-structured Interview Guide

There will be different versions of interview questions designed for different stakeholders, including the local SSF households, restaurant staff, eco-tour operators, officials, and environmental specialists.

***Community Member Version (Fishers)**

DEMOGRAPHICS

Overview: I can quote participants' ideas with these identifiers when participants' names are confidential. In order to build a more comprehensive understanding of the fisher communities in Shizuoka, these questions can help me categorize age groups better to understand the fisher's degree of aging problems, find if their longer working experience can lead to more salary or help them have more channels for income and livelihood, explore whether different residence length and education levels lead to a different focus on vulnerability mitigation and decision-making. The final question can help me stratify the questions about attitudes to fishing tourism.

- a. What is your age?
- b. For how long have you been a fisher? Do you have another means of income?
- c. How long have you been living in Shizuoka?
- d. Education
- e. Are you in the tourism industry?

Description of Pescatourism to Interviewees Before Questions about 4 Objectives:

Pescatourism is Italian-style aquatic tourism that lets tourists participate in fishers' work as recreational, educational, and hospitality services. Its activities include casting and pulling in the net, cooking fish for lunch, swimming or scuba-diving in the open sea, and visiting fishing villages or places of interest. A very spectacular form that the tourists watch fishers perform from accompanying vessels is also Pescatourism. It has a similar goal to Japan's Umigyo (海業) which lets fishermen in the community hold a series of economic activities to satisfy the several needs of marine and coastal use nowadays through every kind of regional marine-related resources instead of entirely relying on fisheries resources.

Questions about Research Objectives

Objective 1

● Operation Description

- a. What kind of local organizations or associations are you involved in? (such as family businesses or fishery cooperatives)
- b. How large is your fishery organization?
- c. How many physical resources does your organization own, such as boats?

● Pescatourism's description

- a. Are you currently in the tourism industry?
- b. What do you feel if your city becomes a popular tourism destination?
- c. If the current form of Pescatourism is spectator, do you hope to add more interactive activities, such as casting and pulling in the net and scuba-diving?

If in the tourism industry

● Activities

- a. What activities do you often do in the tourism industry?
- b. When do you work the most time?
- c. How many tourists do you treat per month?
- d. How do you interact with tourists?
- e. What risks or problems did you encounter before?

● **Satisfactory degree of Pescatourism**

- a. Do you have more or less workload compared with merely fishing?
- b. Does it bring you more income? Is it enough for your family?
- c. As tourism may need you to talk with tourists, how do you feel about that conversation atmosphere?

● **High and Low Seasons**

- a. Does the SSF have the same seasonality as Pescatourism in Shizuoka?
- b. When are the high seasons of Pescatourism?
- c. Do you continue fishing in low seasons, and why?

If not in the tourism industry

- How will you react to the existence of Pescatourism?
- a. actively resist the spread of Pescatourism
- b. Do not care
- c. Participate in Pescatourism
- c.1. Is Pescatourism your prior alternative? Why?

Objective 2

- Economic and social trend and shocks
- a. How satisfied do you feel about your household salary?
- b. In your opinion, what are the most serious vulnerability context among trend, shocks, seasonality, and institutions in Shizuoka for SSFs' growth? Why?
- c. How much do you rely on the ecological subsystem for your livelihood? (Ecosystem services: provisioning, cultural, regulatory, and supporting)?

● What do the SSF communities in Shizuoka look like?

- a. How do you feel about the recent trend of the size of SSF?

Objective 3

- a. Do you see any change to your life or community after applying Pescatourism?
If so, is the change noticeable? What is the degree of the change?

Objective 4

- Collaborative capacity
- a. Do you feel that your community works towards collective objectives?

- b. Are there some policies or licenses for the operation of Pescatourism?
- c. How do you feel you are involved and concerned in the local governance in Shizuoka?
- d. What are the factors hindering or enhancing governance responses to social, environmental, and economic changes?

● Stakeholder Group

- b. How often and how does your organization cooperate with other stakeholder groups or exchange resources?
- c. Do you see any changes brought from the stakeholders' consultation of Pescatourism?

We've talked about your opinions about the Pescatourism's operation forms, the sustainability, Pescatourism's role, and the governance. Is there anything else you would like to tell me?

***Community Member Version (Restaurant Staff)**

Demographics

Overview: I can quote participants' ideas with the identifiers from the first two questions when participants' names are confidential. The third question explores whether different residence lengths lead to a different focus on coastal vulnerability mitigation.

- a. What is your age?
- b. For how long have you been a restaurant staff?
- c. How long have you been living in Shizuoka?

Description of Pescatourism to Interviewees Before Questions about 4 Objectives:

Pescatourism is Italian-style aquatic tourism that lets tourists participate in fishers' work as recreational, educational, and hospitality services. Its activities include casting and pulling in the net, cooking fish for lunch, swimming or scuba-diving in the open sea, and visiting fishing villages or places of interest. A very spectacular form that the tourists watch fishers perform from accompanying vessels is also Pescatourism. It has a similar goal to Japan's Umigyo (海業) which lets fishermen in the community hold a series of economic activities to satisfy the several needs of marine and coastal use nowadays through every kind of regional marine-related resources instead of entirely relying on fisheries resources.

Questions about Research Objectives

Objective 1

- Pescatourism's existence
- 1. What is your relationship with Pescatourism? For how long?
- 2. Does Pescatourism bring you direct or indirect benefits?

Objective 2

- Vulnerability Facts (economic and social conditions)
- a. How do you feel about your operating condition related to SSF's vulnerability, such as trend, seasonality, external shocks, or institutions of SSFs?
- b. How much fish do you need for your menus and operation? Is it stable during the recent decade?
- c. What percentage of fish do you buy from SSF?

Objective 3

- Shizuoka's development after Pescatourism's existence
- a. What kind of attitude do you hold about Pescatourism?
- b. How much do you contact SSF fishers when there is a Pescatourism?
- c. Do you feel any aspects of improvement in this community supported by Pescatourism?

Objective 4

- Stakeholder

What do you think about the role you playing in the local governance in Shizuoka?
Does the current local tourism industry bring you more cooperation chances and benefits with
SSF?

We've talked about your opinions about the Pescatourism's operation forms, the
sustainability, Pescatourism's role, and the governance. Is there anything else you would like
to tell me?

***Government Agencies Version**

Demographics

Overview: I can quote participants' ideas with the identifiers of the department and length of service in this occupation and residence when participants' names are confidential. I can see if there are similar goals or conflicts between the two departments, while I can explore whether different residence lengths lead to a different focus on coastal vulnerability mitigation.

- a. How is your position related to the fishery or/and tourism?
- b. How long have you worked as a governmental official in Shizuoka?
- c. How long have you been living in Shizuoka?

Description of Pescatourism to Interviewees Before Questions about 4 Objectives:

Pescatourism is Italian-style aquatic tourism that lets tourists participate in fishers' work as recreational, educational, and hospitality services. Its activities include casting and pulling in the net, cooking fish for lunch, swimming or scuba-diving in the open sea, and visiting fishing villages or places of interest. A very spectacular form that the tourists watch fishers perform from accompanying vessels is also Pescatourism. It has a similar goal to Japan's Umigyo (海業) which lets fishermen in the community hold a series of economic activities to satisfy the several needs of marine and coastal use nowadays through every kind of regional marine-related resources instead of entirely relying on fisheries resources.

Questions about Research Objectives

Objective 1

- Are there any policies and institutions for Pescatourism's operation?
 - a. Is there any safety or cleanliness standards for Pescatourism's operation?
 - b. Do fishers need any certificate or permits for Pescatourism's operation?

Objective 2

- How much focus does the government give to the SSF community?

What are the current major vulnerability for SSFs in Shizuoka, such as trend, seasonality, external shocks, or institutions of SSFs?

What are the environmental fact and trends for SSF in coastal Shizuoka?

What are the economic fact and trends for SSF in coastal Shizuoka?

What are the social fact and trends for SSF in coastal Shizuoka?
- Vulnerability Context
 - a. In your opinion, what are the most serious vulnerability context among trend, shocks, seasonality, and institutions in Shizuoka for SSFs? Why?

Objective 3

- Do you witness that the existence of Pescatourism leads to any changes to the economy, society, or environment?
 - a. How much does the governance match the fishers' demands?

- b. Does the city get better after the existence of Pescatourism?

Objective 4

Do you feel that the existence of Pescatourism tightens different stakeholders?

Do you have any further plans or goals for ecotourism development currently?

How do you define the current coastal governance? Top-down or bottom-up?

We've talked about your opinions about the Pescatourism's operation forms, the sustainability, Pescatourism's role, and the governance. Is there anything else you would like to tell me?

***Environmental Specialists**

Demographics

Overview: I can quote participants' ideas with the identifiers of their study fields, lengths of residence and academic qualifications when participants' names are confidential.

- a. For how long have you studied in the field of environment?
- b. How long have you been living in Shizuoka?
- c. Education background

Description of Pescatourism to Interviewees Before Questions about 4 Objectives:

Pescatourism is Italian-style aquatic tourism that lets tourists participate in fishers' work as recreational, educational, and hospitality services. Its activities include casting and pulling in the net, cooking fish for lunch, swimming or scuba-diving in the open sea, and visiting fishing villages or places of interest. A very spectacular form that the tourists watch fishers perform from accompanying vessels is also Pescatourism. It has a similar goal to Japan's Umigyo (海業) which lets fishermen in the community hold a series of economic activities to satisfy the several needs of marine and coastal use nowadays through every kind of regional marine-related resources instead of entirely relying on fisheries resources.

Questions about Research Objectives

Objective 1

- Pescatourism's description

Do you know Pescatourism in Shizuoka?

How do you feel about Pescatourism's growth trend in Shizuoka?

What do you feel if your city becomes a popular tourism destination?

If in the tourism industry

- Activities

- a. What activities do you know in the Pescatourism?
- b. Have you even joined Pescatourism?

- High and Low Seasons

- a. When are the high seasons of Pescatourism in Shizuoka?

- How do you react to the existence of Pescatourism?

- a. actively resist the spread of Pescatourism
- b. Do not care
- c. Support Pescatourism

Objective 2

- Vulnerability Context

- b. In your opinion, what are the most serious vulnerability context among trend, shocks, seasonality, and institutions in Shizuoka for SSFs? Why?

- Economic and social conditions

- a. Do you know the economic condition for local SSF fishers' livelihood?
- b. How much does local SSF fishers rely on the ecological subsystem for your livelihood? (Ecosystem services: provisioning, cultural, regulatory, and supporting)?

- What do the SSF communities in Shizuoka look like?
 - a. How do you feel about the recent trend of the size of SSF?
 - b. How do you expect the size of Pescatourism?

Objective 3

- a. Do you see any change to artisanal fishers or community after applying Pescatourism? If so, is the change noticeable? What is the degree of the change?
- b. How do you think about the fishing tourism's enhancement on the three pillars of sustainability>

Objective 4

- Collaborative capacity
 - e. Does your community work towards collective objectives?
 - f. Are there some policies or licenses for the operation of Pescatourism?
 - g. How do you feel you are involved and concerned in the local governance in Shizuoka?
 - h. What are the factors hindering or enhancing governance responses to social, environmental, and economic changes?
- Stakeholder Group
 - a. Are you involved in any local organizations or associations? If yes, which ones?
 - b. How often and how does your organization cooperate with other stakeholder groups and SSFs?

We've talked about your opinions about the Pescatourism's operation forms, the sustainability, Pescatourism's role, and the governance. Is there anything else you would like to tell me?

APPENDIX B: Focus Group Interview Guide

Focus Group Guide (Fishers, tourists, and officials)

- How do you look upon the existence of Pescatourism in SSF?
- Are you aware of any challenges associated with the operation of Pescatourism in SSFs?
- What do you feel about Pescatourism's impact on vulnerability and resilience to SSFs and this coastal city?
- After the operation of Pescatourism, do you see any change in the sustainability of this city?
- How do you look upon the relationship between Pescatourism with local governance?
- What is the degree of the local stakeholders' support and cooperation to Pescatourism in SSFs?

Triangulation

- Are these findings from the interviews and questionnaires consistent with what you see?
- Is there anything missing?

APPENDIX C: Ethics Clearance

UNIVERSITY OF WATERLOO

Notification of Ethics Clearance to Conduct Research with Human Participants

Principal Investigator: Prateep Nayak

Student investigator: Yinghao Song

Faculty supervisor: Yinji Li (Tokai University)

File #: 45453

Title: The Feasibility of Applying Pescatourism in Small-scale Fishery in Japan

The Human Research Ethics Board is pleased to inform you this study has been reviewed and given ethics clearance.

Initial Approval Date: 08/29/23 (m/d/y)

University of Waterloo Research Ethics Boards are composed in accordance with, and carry out their functions and operate in a manner consistent with, the institution's guidelines for research with human participants, the Tri-Council Policy Statement for the Ethical Conduct for Research Involving Humans (TCPS2 2022), the Ontario Personal Health Information Protection Act (PHIPA), and all laws and regulations of the province of Ontario (as applicable). Additionally, CREB operates in a manner consistent with the International Conference for Harmonization of Technical Requirements for Pharmaceuticals for Human Use (ICH) Guidance E6(R2): Good Clinical Practice, the International Organization for Standardization of Good Clinical Practices (GCP) as set out by ISO 14155 - Clinical investigation of medical devices for human subjects, Part C, Division 5 of the Food and Drug Regulations, Part 4 of the Natural Health Products Regulations, Part 3 of the Medical Devices Regulations. Both Boards are registered with the U.S. Department of Health and Human Services under the Federal Wide Assurance, FWA00021410, and IRB registration number IRB00002419 (HREB) and IRB00007409 (CREB).

Expiry Date: 08/30/24 (m/d/y)

Multi-year research must be renewed at least once every 12 months unless a more frequent review has otherwise been specified. Studies will only be renewed if the renewal report is received and approved before the expiry date. Failure to submit renewal reports will result in the investigators being notified ethics clearance has been suspended and Research Finance being notified the ethics clearance is no longer valid.

Level of review: Delegated Review

Signed on behalf of the Human Research Ethics Board



Karen Pieters, Manager, Research Ethics, karen.pieters@uwaterloo.ca, 519-888-4567, ext. 41495

This above named study is to be conducted in accordance with the submitted application and the most recently approved versions of all supporting materials.

Documents reviewed and received ethics clearance for use in the study and/or received for information:

file: Recruitment Poster For Interview_Version 2_20230809.pdf

file: Recruitment Poster For Survey_Version 2_20230809.pdf

file: Recruitment Poster For Focus Group_Version 2_20230809.pdf

file: General Interview Feedback Letter Ethic 3_20230818.pdf

file: General Survey Feedback Letter_Ethic 3_20230818 .pdf

file: General Focus Group Feedback Letter_Ethic 3_20230818.pdf

file: Focus Group Design_Version 1_20230706.pdf

file: Semi-structured Interview Guide Design_Version 2__20230811.pdf

file: Survey Design_Version 2_20230811.pdf

file: written_consent_form_version 3_20230818.pdf

file: Information Letter_interview_version 2_20230818.pdf

file: Information Letter_in-person_survey_version 2_20230818.pdf

file: Information Letter_focus_group_Version 2_20230818.pdf

Approved Protocol Version 3 in Research Ethics System

This is an official document. Retain for your files.

You are responsible for obtaining any additional institutional approvals that might be required to complete this study.