GENDER ANALYSIS OF MICRO AND SMALL-SCALE DRIED FISH BUSINESS IN AYEYARWADY REGION, MYANMAR

by

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Gender and Development Studies

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AUTHOR'S DECLARATION

I, Myo Zaw Aung, certify that this thesis, "Gender Analysis of Micro and Small-Scale Dried Fish Business in Ayeyarwady Region, Myanmar," was done with the support of professor Kyoko Kusakabe and turned in as part of the requirements for the "Gender and Development Studies" degree at the Asian Institutes of Technology.

I confirm that this work is original and has not been submitted for any other degree or award. Any sources of information have been appropriately acknowledged through citation. All data and findings presented in this thesis are accurate and reliable to the best of my knowledge.

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ABSTRACT

The fisheries sector is a crucial aspect of Myanmar's economy and nutrition, employing approximately 3.2 million people in the Delta region. This study focuses on the Ayeyarwady region, which is the most populous state in Myanmar and a significant producer of dried fish products. Using qualitative research methods, the study examines how gender and intersectionality influence the management of micro and small-size shrimp paste production businesses in the region. The study found that women tend to operate smaller businesses than men and face more significant challenges due to limited access to financial capital and social norms that restrict their participation in fishing activities. The pandemic has further worsened the situation for women, limiting their access to stable markets. In contrast, men-led businesses produced more on average, resulting in a higher estimated monthly income. Decision-making within households regarding shrimp paste businesses was typically shared by both the wife and husband, with varying levels of leadership depending on the activity. Women held significant decision-making power, particularly related to food management, household asset purchases, large household expenses, managing credit and savings, and healthcare expenditures. Shrimp-paste-making households engaged in other income-generating activities, prioritizing their income towards loan repayment, food, and investment. While processors located in remote areas adopted a collective approach when purchasing materials and selling their products to minimize transportation costs and leverage their collective bargaining power, most processors did not participate in collective buying and selling activities. The potential benefits of the collective market approach did not have a specific impact on the socio-economic development of small-scale fishers as they did not fully adopt or participate in the approach. This study's findings could aid development agencies and government departments in designing projects and formulating policies that support the sustainable growth of these businesses.

Keywords: shrimp paste, gender, intersectionality, livelihood capital, Myanmar

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LIST OF ABBREVIATIONS

ARFDA	Ayeyarwady Region Fisher Development Association
ARFN	Ayeyarwady Region Fishery Network
BBC	The British Broadcasting Corporation
CARE	Health Care Organization
CBFM	community-based fisheries management
DFID	Department for International Development
DOF	Department of Fisheries
FAO	the Food and Agriculture Organization
FDA	the Fisher Development Association
FGD	Focus Group Discussion
GAD	the General Administration Department
GEN	the Gender Equality Network
GII	the Gender Inequality Index
HH	Household
IDI	In-depth Interviews
IFAD	The International Fund for Agricultural Development
ILO	International Labour Organization
KII	Key Informant Interview
LGBTQ	Lesbian, Gay, Bisexual, Transgendered, and Questioning
MFF	Myanmar Fishery Federation
MIMU	The Myanmar Information Management Units
MITV	Multimedia Interactive Television
MMK	Myanmar Kyat
MOALI	Ministry of Agriculture, Livestock, and Irrigation
MOU	the memorandum of understanding
MSME	Micro, Small, and Medium Enterprise
NAG	Network Activities Group
NGO	non-governmental organizations
NRC	National Registration Card
SDG	Sustainable Development Goals
SME	Small and Medium Enterprise
UK	United Kingdom

UN	United Nations
UNDP	United Nations Development Program
WB	The World Bank
WCS	Wild Conservation Society
WHO	World Health Organization

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CHAPTER 1
BACKGROUND OF THE STUDY

1.1 Introduction

Myanmar is a country in Southeast Asia, and its fishing grounds are huge and spread out over a large area. Myanmar's continental shelf is a big area that covers 228,781 square kilometers. The actual fishing area is even bigger, covering about 486,000 square kilometers. Myanmar's 2,832-kilometer-long continental coastline is made up of many different areas, such as the Tanintharyi, Ayeyarwady, Bago, Mon, and Rakhine states. In addition, Myanmar's inland water area, consisting of ponds, rivers, lakes, and reservoirs, measures approximately 8.1 million hectares (Mar, 2017).

Myanmar's fisheries sector plays a crucial role in both the nutritional and economic aspects of the country. According to several studies (Gareth et al., 2012; Baran et al., 2017; Mar, 2017), fish is the primary source of animal protein for a large portion of the population, who typically consume rice and fish for most of their daily meals. As of 2016, the average annual fish consumption per person in Myanmar ranged from 21–68 kg, with dried fish consumption estimated at around 15 kg per capita (Lin et al., 2022).

Also, the fishery sector provides around 3.2 million people work full-time or part-time in the Delta region (Baran et al., 2017). The sector includes both freshwater and marine fisheries. Baran et al. (2017) and Mar (2017) say that 57% of workers are in freshwater fisheries and 43% are in marine fisheries. Overall, Myanmar's fishing industry is an important way for many people to make a living and a key part of the country's economy.

Several studies (Gareth et al., 2012; Mar, 2017) explain that Myanmar's fisheries industry is made up of two main sectors and three sub-sectors. The two main sectors are marine and freshwater fisheries, while the three sub-sectors are marine, inland, and aquaculture.

The marine fishery can be further categorized into offshore and inshore fishing, while the freshwater fishery comprises leasable, open, and aquaculture sub-sectors. The Ayeyarwady region, according to Mar (2017), has both types of fisheries, marine, and

freshwater, providing a diverse range of opportunities for the fishing industry in this area.

The region of Ayeyarwady is between the Andaman Sea and the Bay of Bengal. Pathein is the capital of it. The area has a total area of 35,964 square kilometers and is made up of 26 townships. It shares borders with the Rakhine, Bago, and Yangon regions. With an estimated population of 6.32 million, Ayeyarwady is the most populous state in Myanmar, with a population density of 176 individuals per square kilometer. The rural population in the region accounts for 88%, while the urban population makes up the remaining 12% (MIMU, 2022).

Gareth et al. (2012) say that the Ayeyarwady region is the main place where fish are grown in Myanmar. MITV (2022) says that the local market in this region has a considerable demand for dried fish products, with many locals employed in the fish paste and dried fish businesses. Although dried fish products are exported to local and international markets, including the Yangon market, there is no specific policy or institutional support aimed at enhancing the profitability of small-scale fish product businesses with value addition, which is crucial for the rural poor. The Department of Fisheries (DOF) should prioritize promoting such businesses.

The Ayeyarwady region is a significant producer of dried fish in Myanmar. The region comprises 26 townships, except Kyangin Township, where aquaculture ponds, freshwater, and marine water are used to produce fish and shrimp. According to the General Administration Department (GAD) (2019), there were 7,197 aquaculture ponds in Ayeyarwady, with 85% of them being fish ponds and 15% being shrimp ponds. The total area of the ponds was 311,735 hectares, with fish ponds accounting for 98% of the total production of 86,341,751 kilograms, while shrimp only contributed 1%.

The GAD said that there were 2,318 leases in Ayeyarwady in 2019. Sixty-nine percent of these leases were for fish production and 31 percent were for shrimp production. The total fishing grounds covered an area of 12,446 acres, with 59% of this area designated for fish production and 41% designated for shrimp production. In 2019, the total production of marine and freshwater fisheries in Ayeyarwady was approximately 2,285,887 tons, with shrimp production contributing only 1%.

The Thabaung, Ngapudaw, and Labutta Townships made significant contributions to fish capture, producing a combined total of 1,982,000 tons. Meanwhile, the Pyapon, Labutta, and Bogale Townships made significant contributions to shrimp capture, producing a combined total of 30,843 tons. It is important to note that the data includes both freshwater and marine fish.

According to data from the GAD in 2019, the major towns contributing to aquaculture fish in Myanmar were Bogale, Wakema, and Zalun, which produced 56,649,607 kg, 7,078,752 kg, and 7,000,371 kg, respectively. In contrast, the major towns contributing to aquaculture shrimp were Pyapon, Dedaye, and Labutta, which produced 751,327 kg, 84,912 kg, and 41,819 kg, respectively.

Myanmar's dried fish exports are mainly directed to India and China. China is the largest importer, purchasing about 60% of Myanmar's marine fish, while Thailand and India purchase between 10% and 20%. The remaining fish is consumed locally, as reported by Chan in 2018 (Chan, 2018).

In terms of dried fish products, Danubyu and Tharbaung primarily sell their products to Zalun Township and export them to the Yangon market. Meanwhile, Pantanaw and Labutta Township mainly sell their products within their communities, with Labutta also exporting to marketplaces in Pathein and Yangon. Zalun Township's dried fish products, on the other hand, are sold in Kyaiklatt Township, which is a large market for ready-to-eat dried fish in the Ayeyarwaddy region, according to data from the NAG in 2019 (NAG, 2019).

When it comes to marine products, Pyapon Town is renowned for shrimp and fish paste, dried Bombay duck, fish sauce, dried shrimp, and fermented shrimp (Apyogyi). Labutta (Ayeyartaw and Zin Ywe) and Bogale Town are well-known for their shrimp paste, while Ahmar Town is famous for its shrimp paste, dried Bombay duck, fish paste, fish sauce, and dried shrimp. In terms of freshwater products, dried snakehead fish is a specialty of Hinthada and Yegyi towns, while Kyaiklat town is known for its instant dried snakehead fish, according to data from MIMU in 2022 (MIMU, 2022). Most of these products are produced by micro and small-scale enterprises run by both men and women.

1.2 Statement of the Problem

Fisheries are essential to Myanmar's culture and economy. The fishing sector is critical to Myanmar's nutrition and livelihood (Gareth et al., 2012; Baran et al., 2017; Mar, 2017). Moreover, the fishing industry employs 3.2 million people, primarily in the Delta area (Baran et al., 2017), as full-time and part-time workers, where 57% are engaged in freshwater fisheries and 43% in marine fisheries (Baran et al., 2017; Mar, 2017).

In addition, the dried fish sector allows opportunities for women and pro-poor communities (Venkatalakshmi et al., 2015; Kusakabe, 2016; Madam et al., 2018; Simasiku et al., 2018; Cole et al., 2018; Ben Belton et al., 2019; Mitu et al., 2021). Several studies, however, have discovered issues of gender inequality in the fishing and dried fish sectors.

The lack of policy and law, high gender inequality, the COVID-19 pandemic, and the political situation impact the livelihood of the dried fish sector. First, there are plenty of fish processors in Ayeyarwady, but there is no official data for the number of dried fish MSMEs and annual production. Moreover, the dried fish enterprise has no specific policy or law. It means that government departments require evidence to promote the dried fish business. The gender-sensitive finding is critical because dried fish provides job opportunities for women and pro-poor communities.

Second, Myanmar has a high level of gender inequality, as reported by Crisp and Clementi (2020). In the Gender Inequality Index (GII), which includes 189 countries, Myanmar is ranked 148th. Women's participation rate in the labor force is also relatively low, with 83% for men and 55% for women. Additionally, women hold only 32% of senior and intermediate management positions and 10% of legislative seats.

These factors suggest that there is likely to be gender inequality between men's and women's-led dried fish enterprises, with different management systems and constraints. However, according to the results of the pilot study, men are not more likely to own larger enterprises than women, and women have less access to online markets and networks.

Singh et al. (2014), Osarenren & Ojor (2014), Venkatalakshmi et al. (2015), Simasiku et al. (2018), and Mitu et al. (2021) have all written about how hard it is for women-led dried fish processors to get access to education and programs that build their skills. Additionally, Cole et al. (2018), Mitu et al. (2021), and Osarenren & Ojor (2014) found that most women producers lack access to natural resources such as land, while Venkatalakshmi et al. (2015) highlighted the lack of access to credit for women. Moreover, women processors were not covered by a government training program, according to Mitu et al. (2021).

In contrast, women are more actively involved in the post-harvest sector of the fishery than men. Women take the lead in post-harvest-related businesses such as fish processing, dried fish selling, and dried fish trading, as reported by Venkatalakshmi et al. (2015), Kusakabe (2016), Madam et al. (2018), Simasiku et al. (2018), Cole et al. (2018), Ben Belton et al. (2019), and Mitu et al. (2021). Although women are more involved in the dried fish enterprise, they face obstacles in operating larger enterprises due to limited access to technology, finances, and unequal opportunities, resulting in their income contribution to the total household being lower than that of men. However, there is a lack of systematic research on gender inequality in the dried fish sector in Myanmar.

Amidst the COVID-19 pandemic, particularly in its first, second, and third waves, fishermen were prohibited from fishing at night, which may have led to an increase in fishing resources, as per local news. This, in turn, has affected the dried fish processors' access to fresh fish. Furthermore, due to COVID-19 restrictions, the marketing channel for dried fish processors has shifted to the online market, which could pose a challenge for them.

Finally, local news reports suggest that the ongoing political crisis could have adverse effects on fishing resources in Myanmar. Before the crisis, various development agencies such as the Network Activities Group (NAG), FAO, and Wild Conservation Society (WCS) had implemented a fishery co-management system to increase fishing resources. This included patrolling to curb illegal fishing practices, the implementation of conservation zones, and the maintenance of mangrove forests.

However, since the political crisis, the fishery department has allowed illegal fishing practices, such as overfishing through boat fishing in the inshore area, fishing in fishery conservation zones, and a lack of patrolling practices, leading to a decrease in fishing resources. This situation poses challenges for processor groups who are facing difficulties accessing fresh fish. Additionally, the new government's termination of the Ayeyarwady freshwater fishing law could negatively impact the fishing community, as the law previously allowed the promotion of pro-poor communities' fishing rights.

It is also worth noting that there is a lack of gender-sensitive studies to identify the effectiveness of dried fish, challenges, and potential opportunities to support the government and development agencies in Myanmar.

1.3 The rationale of the study

This study is motivated by the need to promote gender equality, which is the objective of SDG 5. Empowering women and girls have been shown to contribute significantly to long-term development. Therefore, this research aims to make a meaningful contribution toward achieving SDG 5.

The study also seeks to provide valuable insights to policymakers, particularly the Department of Fisheries, and help them make informed decisions. Specifically, the research will identify the support requirements, critical impediments, and potential market channels for the dried fish industry. Additionally, the study will examine the challenges and gender gap in micro and small-scale businesses. The results of this research will be useful to development agencies and government departments in designing projects and formulating policies that support these businesses.

Overall, this study's primary objective is to contribute to the attainment of SDG 5 while also providing insights that can inform policymaking and support the growth of the dried fish industry, especially for micro and small-scale businesses.

1.4 Research Questions

How do gender and other intersectional factors influence the management of micro- and small-size shrimp paste production enterprises in the Ayeyarwady region of Myanmar?

1. How are women and men involved in different shrimp paste business activities?
2. What challenges do different shrimp-paste businesses face, and what factors, including intersectionality, shape these challenges?
3. How are women and men involved in decision-making in different sizes of shrimp paste business activities?
4. What benefits do women and men receive from the shrimp paste business?
5. What support would enable women to benefit better (both financially and socially) from the shrimp-paste business?

1.5 Objectives of the Study

1.5.1 Overall objective:

The study aims to analyze how gender and other intersectional factors influence the management of micro- and small-size shrimp paste production enterprises in the Ayeyarwady region of Myanmar.

1.5.2 Specific objectives:

1. To understand the involvement of women and men in different sizes of shrimp paste business activities.
2. To analyze the challenges faced by these businesses and identify the factors that influence these challenges, including intersectionality.
3. To explore the involvement of women and men in decision-making in different sizes of shrimp paste business activities.
4. To identify the benefits that women and men receive from the shrimp paste business.
5. To identify ways to enable women to benefit more (both financially and socially) from the dried fish business.

1.6 Scope and Limitation

The study focuses on micro and small fish processors in the Ayeyarwady region, even though there are four different types of fish processors in the area (Gareth et al., 2012): large, medium, small, and micro. This means that the study will not cover large- and medium-scale processors. The dried fish business is a traditional practice in Myanmar and is conducted by a pro-poor community in the study area. While some micro, small, and medium enterprises produce high-quality products for markets in Yangon and overseas (Gareth et al., 2012), the study will only focus on small-scale and micro businesses.

The study specifically focuses on micro- and small-scale shrimp paste processors, which is why it excludes other dried fish products and individuals involved in the dried fish value chain, such as fishermen who do not process, merchants, and others. The study has a narrow focus on processors and cannot cover a broader scope. Various government departments, including DOF and the Myanmar Police Force, as well as stakeholders involved in the fishery and dried fish sectors, such as fish collectors, farmers, traders, the Fisher Development Association (FDA), and input suppliers, are included. However, these stakeholders are not encompassed in the study.

Even though public services are important for the economic growth of the dried fish business, the study will not look at services and plans that are funded by the government. This is due to the social-political crisis and the COVID-19 pandemic, which make it impossible to arrange meetings with government officials. As a result, most government departments, including the Department of Fisheries (DOF), are non-operational.

Due to ongoing civil wars caused by political crises before the period of data collection, the formation of groups was prohibited by local authorities in the Ayeyarwady region. As a result, the research team was unable to spend enough time in the selected villages during the study.

CHAPTER 2
LITERATURE REVIEW

In this chapter, previous literature is used to explore the relationship between gender and enterprise. The study aims to assess the impact of various intersectional factors, including gender, on business size and profit margins. A detailed discussion of gender-related literature is included, covering topics such as the performance of enterprises concerning gender, gender-based constraints in the enterprise, gender inequality in the dried fish industry, the relationship between gender and enterprise size, the role of gender in sustainable livelihood and development, intersectionality, the gender context in Myanmar, and a conceptual framework.

2.1 Gender and performance of enterprise

Gender's effect on business performance and profit is a complex issue that has been studied by various researchers. Fairlie and Robb (2008) found that women-led businesses are less successful than those led by men, primarily because of factors such as start-up capital, skills, and working experience. Similarly, Khalife and Chalouhi (2013) reported that women-owned enterprises generate lower income than men-owned enterprises due to differences in education and business experience. Rosa and Sylla (2016) also found that Women-led small and medium-sized enterprises (SMEs) were less profitable than Men-led SMEs.

However, Mandiringana et al. (2018) argue that gender differences have no significant impact on enterprise performance and that performance is more influenced by the characteristics of the business and its owner. These characteristics include motivation, literacy, capacity, experience, and working hours for the owner, while the location of the business and capital could be considered business characteristics.

In contrast to the aforementioned studies, Janvier (2012) suggested that women-run businesses could be more profitable in terms of annual profits than those run by men. Overall, it can be concluded that gender has varying effects on business performance and profitability and that the characteristics of the owner and the business play a significant role in determining the success of the enterprise.

2.2 Gender-based constraints in enterprise

Gender-based constraints in enterprise refer to the barriers that women entrepreneurs face in starting, operating, and growing their businesses due to their gender. These constraints can be categorized into social, cultural, economic, and legal barriers that limit women's access to resources and opportunities.

For instance, traditional gender roles that define women's roles as caretakers and men's roles as breadwinners often lead to women having less access to financial resources and business networks, which affect their enterprise's growth and profitability (World Bank, 2019). Similarly, gender-based discrimination in accessing credit, land, and property rights can limit women entrepreneurs' access to critical resources for their business operations (Welter & Smallbone, 2011).

Moreover, women entrepreneurs may also face cultural biases that undermine their confidence and competence in running their businesses, thus hindering their performance and success (Dawson & Daniel, 2010). Legal and regulatory barriers, such as discriminatory policies, can also limit women's entrepreneurship opportunities.

Overall, gender-based constraints in enterprises represent a significant challenge for women entrepreneurs worldwide, requiring targeted policies and interventions to mitigate their effects and promote women's entrepreneurship.

2.3 Gender inequality in dried fish enterprise

Studies found that gender inequality is prevalent in the dried fish enterprise, where women are more dominant despite facing significant challenges. Women are involved in various roles in dried fish production, including as sellers of smoked fish, traders of dried fish, and fish processors (Lakshmi & Dineshbabu, 2011; Syampaku & Mafimisebi, 2013; Osarenren & Ojor, 2014; Venkatalakshmi et al., 2015; Kusakabe, 2016; Madam et al., 2018; Simasiku et al., 2018; Cole et al., 2018; Ben Belton et al., 2019; Mitu et al., 2021).

Several researchers have identified gender-based constraints that affect women in dried fish enterprises. Most women lacked access to education, technical skill training, and

government support compared to men (Singh et al., 2014; Venkatalakshmi et al., 2015; Osarenren & Ojor, 2014; Simasiku et al., 2018; Firdaus & Andrikasmi, 2021; Mitu et al., 2021). Additionally, in Myanmar, government departments provide training only to men, leaving women out (Gareth et al., 2012).

Moreover, women in dried fish enterprises face challenges in accessing credit sources (Venkatalakshmi et al., 2015; Gareth et al., 2012). Access to loans is crucial in starting and expanding a business, but most women lack land ownership (Osarenren & Ojor, 2014; Cole et al., 2018), making it difficult to secure collateral for loans. Women who own dried fish enterprises also have to balance their business activities with domestic duties, including cooking, collecting firewood and water, caring for children and the elderly, washing clothes, and cleaning the house (Venkatalakshmi et al., 2015).

2.4 Gender and size of the enterprise

According to the Legislature (2016), Women-led businesses are often smaller than those led by men due to several factors. Firstly, women are more likely to operate in service sectors such as healthcare, education, and personal or retail services, while men are more likely to run manufacturing or construction businesses (Legislature, 2016). This can impact the size of the businesses since service businesses often have lower profit margins and require fewer employees.

Secondly, women tend to rely on self-finance for start-up capital, while men are more likely to obtain capital through external financing sources such as loans from money lenders or credit from microfinance institutes (Legislature, 2016). This can limit the amount of capital available for investment in a Women-led business and constrain its growth potential.

Additionally, women entrepreneurs may have different goals for their businesses than men, with some expecting to make less money and hire fewer people (Legislature, 2016). This could be due to societal expectations and the belief that women are not expected to be the primary breadwinners of the household. Women also tend to start smaller businesses that are less likely to grow, which can contribute to lower earnings and smaller workforces.

Furthermore, women may have less time than men to devote to their businesses because they have to care for their families. About half of the women who work for the business are part-time, and about a third of them run home-based businesses (Legislature, 2016). Women may also have smaller networks of peers, mentors, and role models, which can limit their access to resources and opportunities for growth (Legislature, 2016).

Similarly, an empirical study has revealed that women-owned businesses are typically smaller than those owned by men due to three primary issues: the type of business, entrepreneurial intentions, and start-up challenges. Firstly, women and men tend to launch different types of businesses, with women being more inclined to start personal services or retail trade ventures than those in the manufacturing or high-technology sectors. Additionally, some businesses can be difficult to initiate without the necessary educational background, particularly those that rely heavily on technology. Since women are less likely to have studied engineering or science, they may lack the education required to establish businesses that necessitate technical expertise (Veena & Nagaraja, 2013).

Second, men and women business owners approach new opportunities in different ways. Social networks are a valuable source of information for identifying business prospects. For instance, men entrepreneurs tend to identify opportunities through discussions with bankers and investors, as they have more connections with these individuals. In contrast, women have limited options due to differences in social networks. Moreover, the approach taken by men and women toward data collection and problem resolution differs. Women are recognized for obtaining knowledge from a wider range of sources than their men counterparts. Conversely, men tend to learn more from their failures (Veena & Nagaraja, 2013).

Finally, women entrepreneurs encounter more challenges in initiating their ventures than their men counterparts, primarily due to social norms, a scarcity of women role models, and greater family responsibilities. Women confront additional obstacles in managing enterprises due to the social status accorded to them, resulting in a lack of support from their spouses, families, and friends. Furthermore, the scarcity of women role models erodes women's confidence in starting businesses. Finally, women typically

have more household and childcare duties, which can make it difficult for them to simultaneously establish a business and care for their families (Veena & Nagaraja, 2013).

Additionally, Hadary (2010) identifies four primary reasons for the smaller size of women-owned businesses compared to those owned by men, namely "goals, access to capital, access to markets, and access to networks." The first reason stems from gender-based disparities in entrepreneurial motivations. Research indicates that men tend to launch businesses to become the "boss" and expand them to their maximum potential, while women establish ventures to challenge themselves personally and achieve work-life balance. Thus, women prefer to manage every aspect of their business directly, limiting the firm's size (Hadary, 2010; Legislature, 2016).

Second, when starting a business, women generally have less access to financial resources than men, making it more likely that they will start low-cost ventures in retail or personal services. Women often view debt as a negative thing to be avoided, and their businesses often rely on earnings rather than external capital for growth, which can limit expansion. While building relationships is a strength for many women, they often lack connections with bankers and may have limited knowledge of financial products and services, which can prevent them from seeking out more advanced banking options (Hadary, 2010; Venkatalakshmi et al., 2015; Gareth et al., 2012; Legislature, 2016; Veena & Nagaraja, 2013).

Third, ILO (2006) says that access to market opportunities is a key part of the success of any business. However, research has shown that women face more significant barriers to accessing market opportunities compared to men (Kusakabe, 2016). The business-to-business and business-to-government sectors offer significant growth prospects, but many women business owners believe that there is a pervasive bias against women-owned businesses in lucrative corporate procurement projects, making it more challenging for them to secure contracts. Unfortunately, the data confirms that women-owned businesses do not receive a fair share of these opportunities (Hadary, 2010).

Also, according to Hadary (2010), women-focused business-owner organizations in charge of the government and corporate procurement have noted that women-owned businesses are increasingly being left out as corporations resort to "bundling" practices, which involve purchasing from a limited number of established vendors.

Lastly, networks are essential for gaining entrepreneurial and industry knowledge (Legislature, 2016; Veena & Nagaraja, 2013), generating business leads, and accessing financial services, procurement, and local decision-makers. Research has shown that many women lack authentic connections to industry associations, chambers of commerce, venture capital firms, and other vital networks. According to Hadary (2010), women attempting to enter different networks are frequently overlooked and excluded from discussions and transactions.

Overall, research indicates that Women-led businesses are often smaller than those led by men due to several factors, including the type of business, entrepreneurial intentions, start-up challenges, access to capital, access to markets, access to networks, and social expectations. Women are more likely to operate in service sectors, rely on self-finance for start-up capital, have different goals for their businesses, have less time to devote to their businesses due to family responsibilities, and have smaller networks of peers, mentors, and role models. Addressing these factors can help promote the growth and success of Women-led businesses.

2.5 Gender in Sustainable Livelihood, and Development

Gender is an essential factor in both sustainable livelihood and development, as it impacts access to resources, decision-making processes, and overall well-being.

Gender inequalities can limit the potential for sustainable livelihood and development by hindering access to resources such as land, water, and forests. Women, in particular, often have limited access to these resources due to cultural and social norms, which can negatively impact their ability to engage in income-generating activities and contribute to environmental degradation (Agarwal, 2014). For example, in many countries, women's limited access to land has contributed to lower agricultural productivity and income (FAO, 2011).

Gender also plays a critical role in shaping the impacts of environmental changes and disasters on sustainable livelihoods and development. Women are often more vulnerable to the impacts of climate change, such as droughts, floods, and food shortages, due to their social and economic roles and responsibilities (UN Women, 2018). Addressing gender inequalities in sustainable livelihood and development is crucial for achieving sustainable development goals and promoting the well-being of individuals and communities.

Integrating a gender perspective into policies and programs is essential for addressing these challenges. This involves creating programs that support women's economic empowerment, such as providing access to credit, training, and market opportunities, as well as involving women in decision-making processes and ensuring that their voices are heard (UNDP, 2019).

In conclusion, gender is a critical factor in sustainable livelihood and development, and addressing gender inequalities is crucial for achieving sustainable development goals and promoting the well-being of individuals and communities.

2.5.1 Gender and sustainable livelihood

Gender equality is essential for sustainable development, as recognized in Sustainable Development Goal 5 (United Nations, 2015). Achieving gender equality can positively impact sustainable livelihoods, as it can help ensure that women have equal access to the five capitals necessary for promoting sustainable livelihoods and development.

Research has shown that women often have limited access to the five capitals, making them more vulnerable to poverty and environmental degradation (FAO, 2011). For example, women may have limited access to education and healthcare (human capital), financial resources (financial capital), and land and natural resources (natural capital) due to cultural and social norms.

Promoting gender equality can help address these challenges by increasing women's access to the five capitals. This can involve creating programs that support women's

education and skills development, providing access to credit and financial services, and promoting women's participation in decision-making processes related to the management of natural resources (UNDP, 2019).

By ensuring that women have equal access to the five capitals, we can promote sustainable livelihoods and contribute to sustainable development.

2.5.1.1 What is livelihood?

According to Chambers and Conway (1992), a "livelihood" is a means of making a living through the use of skills, assets, and activities. For a way of life to be sustainable, it must have the ability to cope with stress and shocks, recover quickly from them, maintain and improve its skills and assets, and provide opportunities for future generations to lead sustainable lives. Additionally, a sustainable way of life should support other ways of living both locally and globally in the short and long term.

This definition emphasizes the importance of long-term sustainability and resilience in the face of various challenges. By maintaining and improving their skills and assets and providing opportunities for future generations, communities can promote sustainable livelihoods and development.

2.5.1.2 What is vulnerability context?

In the context of livelihood frameworks, vulnerability refers to the degree to which a household or community is susceptible to economic, social, or environmental shocks or stresses that can negatively impact their ability to maintain their livelihoods. Understanding the vulnerability context is crucial for designing effective interventions and policies to support sustainable livelihoods and development (Ellis, 1998).

The vulnerability context can vary depending on a variety of factors, such as geography, climate, political and economic structures, and cultural and social norms. For example, households in rural areas may be more vulnerable to environmental shocks such as droughts or floods, while those in urban areas may be more vulnerable to economic shocks such as job losses.

The livelihood framework also recognizes that vulnerability is not static and can change over time. For example, households may become more or less vulnerable due to changes in their access to resources, exposure to risks, or changes in the broader economic, social, or political context (Devereux and Maxwell, 2001).

By understanding the vulnerability context, policymakers and practitioners can develop more targeted and effective interventions to support sustainable livelihoods and development, particularly for the most vulnerable populations.

The vulnerability context in Myanmar is complex, as the country is currently experiencing the impacts of multiple crises. The COVID-19 pandemic has disrupted livelihoods and caused economic hardship for many households, while political instability and unrest have further compounded the situation. Additionally, the country is facing an economic crisis that has led to currency depreciation, inflation, and shortages of essential goods (UN Women, 2021).

In such a context, women are often more vulnerable to the negative impacts of crises than men. For example, women may face greater barriers to accessing healthcare, education, and economic opportunities and may be more likely to experience violence and discrimination (Oxfam, 2020). Moreover, women often bear a disproportionate burden of caring for family members and maintaining households, which can be further exacerbated during times of crisis (UN Women, 2021).

Thus, policymakers and practitioners need to consider the differential impacts of crises on women and men and take steps to address gender inequalities in their response efforts. This could include measures to ensure women's access to essential services and economic opportunities, as well as efforts to address gender-based violence and discrimination.

Meagher et al. (2021) suggest that war has a gendered nature and burden, which impacts health systems and disproportionately affects women. Women are often impacted by the destruction of health facilities, economic harm, and forced displacement, and their gendered roles within the household may limit their participation in formal employment, reinforcing gendered norms about women's roles. As a result, women may

have a lower social standing and less autonomy to make health decisions, and they may face barriers to accessing healthcare due to out-of-pocket costs.

Moreover, during conflict and crises, women and girls bear a feminized burden of care, leading to increased mortality and long-term health problems. Children and women are particularly vulnerable to the social and economic instability caused by war and rely heavily on a functional healthcare system. Unfortunately, countries plagued by war tend to have higher rates of maternal mortality, and fewer people can access preventative healthcare (Meagher et al., 2021).

Therefore, it is important to recognize and address the gendered impacts of war on health systems and prioritize the needs of women and children in response efforts. This could include measures to ensure access to healthcare and support for caregivers, as well as efforts to address gender inequalities and promote women's empowerment in conflict and crisis settings.

2.5.1.3 What is access to livelihood capital?

According to Carney et al. (1999), livelihoods comprise a range of activities, assets, and access to resources that people use to sustain their lives and improve their well-being. These activities and assets are often categorized as the five livelihood capitals, which are human, social, natural, physical, and financial.

Access to these livelihood capitals is critical for achieving sustainable livelihoods. However, different groups may have differential access to these capitals based on factors such as gender, ethnicity, and socioeconomic status (Ellis, 2000). Therefore, understanding how access to these capitals is distributed and how to enhance access for those who are most vulnerable is an essential component of livelihood and development programming.

For instance, women may have limited access to physical and financial capital due to cultural norms that restrict their mobility and opportunities for income generation (FAO, 2013). Additionally, marginalized communities may lack access to natural resources due to land grabbing or resource depletion, affecting their ability to sustain their livelihoods. Therefore, understanding how access to these capitals is distributed is

crucial for designing effective interventions that promote sustainable livelihoods for all individuals and communities.

Overall, the concept of access to livelihood capital is a key component of the livelihood framework and provides a useful framework for understanding the multidimensional nature of poverty and the interventions needed to address it.

In terms of gender and access to livelihood capital, Gender has a significant impact on access to livelihood capital in the fishery sector, as women often face gender-based barriers that limit their ability to access and utilize various types of capital. The livelihood framework identifies five types of capital: human, social, natural, physical, and financial, each of which can be impacted by gender.

Human Capital: Women often have limited access to education and training opportunities, which limits their ability to acquire skills and knowledge to engage in fishery-related activities (Badjeck et al., 2010). This, in turn, limits their ability to access other types of capital, including financial and social capital.

Social Capital: Women often have limited access to networks and relationships that can provide access to information and resources (Béné, 2006). Women's social roles and responsibilities also limit their ability to participate in community organizations and decision-making processes that can influence their access to livelihood capital.

Natural Capital: Women often have limited access to fishing resources and equipment due to gender-based discrimination and unequal access to resources such as land and water (Béné, 2006). Women also face significant challenges in accessing credit and financial capital, which limits their ability to invest in physical capital such as boats and fishing gear (Badjeck et al., 2010).

Physical Capital: Women often have limited access to physical capital, such as fishing gear and boats, which can limit their ability to engage in fishing activities (Béné, 2006).

Financial Capital: Women often have limited access to credit and other financial services, which limits their ability to invest in physical capital, such as boats and fishing gear, or to engage in non-fishing livelihood activities (Badjeck et al., 2010).

Overall, gender-based barriers can limit women's participation in the fishing sector and limit their access to livelihood capital. Addressing these barriers and promoting gender equity is essential for promoting sustainable livelihoods and reducing poverty in fishing communities.

2.5.1.4 What is human capital?

In the livelihood framework, "human capital" refers to the knowledge, skills, and abilities of individuals that contribute to their ability to earn a livelihood (Ellis, 2000). Human capital is a crucial element in sustainable livelihoods because it enables individuals to access other forms of capital, such as financial and physical capital, and to participate effectively in the economy (Sabates-Wheeler & Devereux, 2007).

Human capital is also important in the context of poverty reduction, as it provides individuals with the ability to improve their own lives and those of their communities (World Bank, 2001). This can include investments in education, health, and skills training, which can improve individuals' income-earning potential and contribute to broader social and economic development goals.

Research has shown that women face more significant challenges in accessing human capital than men. Specifically, studies on dried fish enterprises have revealed a range of gender inequalities, with women often lacking education, technical skills training, and government support compared to men (Singh et al., 2014; Venkatalakshmi et al., 2015; Osarenren & Ojor, 2014; Simasiku et al., 2018; Firdaus & Andrikasmi, 2021; Mitu et al., 2021). Also, women are more likely to face barriers to education and training, leading to lower levels of human capital investment than men (World Bank, 2012). In Myanmar, government departments, particularly the fisheries department, have been found to offer training opportunities exclusively to men, leaving women without access to these important resources (Gareth et al., 2012).

The purpose of incorporating a gender-sensitive approach to human capital into the fisher's livelihood framework is to better comprehend the varying responsibilities and requirements of men and women members of the fishing community.

Women fishers often face barriers to accessing education and training opportunities, which can limit their ability to develop the knowledge and skills needed to participate in decision-making processes, adopt new technologies and techniques, and adapt to changing environmental conditions. This can also limit their ability to take on leadership roles in the fishing community (Ellis, 2000).

A gender-sensitive approach to human capital would seek to address these barriers and ensure that men and women have equal opportunities to access education and training programs. This might involve initiatives such as providing training and education programs specifically targeted at women fishers, providing scholarships or financial support to enable women to access training and education programs, and promoting the participation of women in leadership roles in the fishing community.

In addition, a gender-sensitive approach to human capital would recognize the important contributions that women make to the fishing industry and seek to enhance their participation and access to resources (Béné, 2006). This might involve initiatives such as providing women with equal access to credit and financing, promoting women's participation in cooperatives and other collective action initiatives, and addressing discriminatory social norms and practices that limit women's participation in the fishing industry.

Overall, a gender-sensitive approach to human capital is important in the livelihood framework for fishers as it can help to promote equitable and sustainable development of human resources, improve the livelihoods of women fishers, and enhance the resilience of fishing communities (Badjeck et al., 2010).

2.5.1.5 What is social capital?

Social capital refers to the networks, relationships, and institutions that people can draw on to improve their livelihoods. These resources can provide people with access to information, support, and opportunities for collaboration and collective action. Social capital can be divided into two categories: bonding and bridging social capital. Bonding social capital refers to ties within a homogenous group, such as a family or community, while bridging social capital refers to connections across diverse groups, such as different ethnic or religious groups (Pretty & Ward, 2001).

In the livelihood framework, social capital is an essential element that influences people's access to livelihood resources and their ability to cope with shocks and stressors. For example, strong social networks can provide social support during crises, while social connections to people in positions of power or authority can improve access to resources and opportunities (Adger et al., 2005).

Research has shown that having both vertical and horizontal networks and connections can increase trust and facilitate collaboration among people. Moreover, individuals with such networks are more likely to have easy access to larger institutions, such as political or civic bodies. Joining more formalized groups can also provide benefits, as members are required to follow established rules, norms, and sanctions, and relationships are based on trust, mutual benefit, and exchanges. This can lead to lower transaction costs and the development of informal safety nets for the poor (DFID, 1999).

However, despite the benefits of social networks for business owners, research has found that men and women have different experiences. Veena and Nagaraja (2013) discovered that men entrepreneurs have more business opportunities than their women counterparts due to their social networks. Men are more likely to have connections with bankers and investors, which makes it easier for them to identify and pursue new business prospects. In contrast, women have fewer options due to their distinct social networks, which may limit their access to potential business opportunities.

To gain a better understanding of the distinct responsibilities and needs of men and women members of the fishing community, a gender-sensitive approach to social capital is integrated into the fishers' livelihood framework.

Social capital refers to the networks, norms, and trust that exist within a community and that facilitate collective action and cooperation (Pretty & Ward, 2001). In the fishing industry, social capital can be particularly important for issues such as the management of common pool resources, conflict resolution, and access to information and resources (Cinner et al., 2018).

Women fishers often have different social networks and may face barriers to accessing and participating in formal and informal social networks in the fishing community. This can limit their ability to access information, participate in decision-making processes, and build social capital.

A gender-sensitive approach to social capital would seek to address these barriers and ensure that men and women have equal opportunities to access and participate in social networks (Williams et al., 2015). This might involve initiatives such as promoting the participation of women in community-based organizations and cooperatives, providing training and education programs targeted at women fishers, and addressing discriminatory social norms and practices that limit women's participation in the fishing industry.

In addition, a gender-sensitive approach to social capital would recognize the important contributions that women make to the fishing industry and seek to enhance their participation and representation in decision-making processes (FAO, 2015). This might involve initiatives such as promoting the participation of women in fisheries management organizations, addressing gender biases in decision-making processes, and supporting the development of women's leadership skills in the fishing community.

Overall, a gender-sensitive approach to social capital is important in the livelihood framework for fishers as it can help to promote equitable and sustainable social networks, improve the livelihoods of women fishers, and enhance the resilience of fishing communities (Pomeroy et al., 2015).

2.5.1.6 What is natural capital?

In the livelihood framework, "natural capital" refers to the stock of renewable and non-renewable natural resources that people can access and use to support their livelihoods

(DIFD, 1999). It includes resources such as land, water, forests, fisheries, and minerals, which provide the basis for various economic activities and support the functioning of ecosystems.

According to DIFD, natural capital plays a critical role in sustaining livelihoods, particularly for people in rural areas who rely heavily on natural resources for their survival. The availability and quality of natural resources can affect people's access to food, water, energy, and other essential goods and services and can also impact their health and well-being.

Women's access to natural capital in the dried fish sector is limited due to their lack of land ownership, which is a prerequisite for creating infrastructure and yards for enterprises (Khalife and Chalouhi, 2013; Osarenren & Ojor, 2014; Cole et al., 2018). Land ownership is also a crucial factor in obtaining loans, as most lenders require collateral such as land certificates and properties to issue loans.

During the COVID-19 pandemic, the prohibition of nighttime fishing in Myanmar may have led to an increase in fishing resources. However, the political crisis in the country has had a significant impact on the fishing industry. The implementation of a fishery co-management system by the Network Activities Group (NAG), the Food and Agriculture Organization (FAO), and the Wild Conservation Society (WCS) has been disrupted due to the political turmoil.

The fishery co-management system, which includes a patrolling system to monitor illegal fishing practices, implement conservation zones, and protect mangrove forests, has contributed to the enhancement of fishing resources. However, the department of fisheries has permitted illegal fishing practices, such as boat fishing in the near-shore zone, fishing in fisheries conservation zones, and the absence of patrolling procedures, leading to overfishing and a potential decline in fishing resources.

Furthermore, the cancellation of the Ayeyarwady freshwater fishing law by the new government personnel may also affect the livelihoods of fishermen, particularly those from pro-poverty communities. The lack of access to fresh fish due to the decline in fishing resources presents challenges for fish processors.

The incorporation of a gender-sensitive approach to natural capital within the fisher's livelihood framework aims to enhance the understanding of the diverse responsibilities and needs of men and women members within the fishing community.

Fisherwomen, for instance, often have different access to and uses of natural resources compared to men. In many fishing communities, women are responsible for collecting shellfish and other marine resources from the intertidal zone, which are often not considered in fisheries management. In addition, women are often excluded from decision-making processes related to the management of natural resources, which can limit their ability to protect their interests and livelihoods (Brody et al., 2015).

A gender-sensitive approach to natural capital would take into account the different roles and responsibilities of men and women in fishing communities and ensure that the management of natural resources is inclusive and equitable. For example, this might involve consulting with women fishers to better understand their needs and priorities and involving them in decision-making processes related to the management of natural resources (Brody et al., 2015).

In addition, a gender-sensitive approach to natural capital would recognize the important contributions that women make to the fishing industry and seek to enhance their participation and access to resources. This might involve initiatives such as providing training and education programs for women fishers or promoting women's participation in fisheries management organizations (Brody et al., 2015).

Overall, a gender-sensitive approach to natural capital is important in the livelihood framework for fishers as it can help to promote equitable and sustainable management of natural resources, improve the livelihoods of women fishers, and enhance the resilience of fishing communities.

2.5.1.7 What is physical capital?

In the livelihood framework, "physical capital" refers to the tangible assets that are used in the production process, such as equipment, tools, and infrastructure (Ellis, 2000). Physical capital is essential for economic growth and is often a key determinant of productivity in rural areas. It also includes access to basic services such as clean water,

sanitation, and electricity, which are critical for meeting basic human needs and improving quality of life (FAO, 2016).

For example, in a study conducted by Carswell (2017), physical capital was found to be an important factor in determining the livelihoods of small-scale farmers in Ghana. Farmers who had access to agricultural inputs such as improved seeds, fertilizers, and irrigation systems were found to have higher productivity and income levels compared to those without access.

Furthermore, a study by Adesina and Zinnah (1993) in Nigeria found that access to physical capital, such as transportation infrastructure and storage facilities, was a critical factor in determining the success of agricultural enterprises. They found that farmers who had access to good transportation infrastructure and storage facilities were able to transport their products to markets more easily and avoid spoilage, which resulted in higher profits.

In summary, physical capital is an important aspect of the livelihood framework, as it plays a critical role in determining the productivity and income levels of rural households, particularly those engaged in agriculture. (Ellis, 2000; FAO, 2016; Carswell, 2017; Adesina & Zinnah, 1993).

According to a study by Shrestha and Alavalapati (2011), owning physical assets, such as land and buildings, is critical to the success of small and medium-sized enterprises (SMEs). SMEs owned by women in developing countries face various obstacles, including limited access to physical capital. For instance, women who manage dried fish businesses face numerous obstacles, including transportation issues, a lack of access to information technology, and limited access to fresh and dried fish storage facilities (Syampaku & Mafimisebi, 2013; Singh et al., 2014; Osarenren & Ojor, 2014; Simasiku et al., 2018; Cole et al., 2018; Ike-Obasi & Ogubunka, 2019; Kubra et al., 2020).

In Myanmar, most women do not own land or buildings to create infrastructure and yards for their businesses (Osarenren & Ojor, 2014; Cole et al., 2018). Land ownership

is linked to obtaining loans because most lenders require collateral, such as land certificates and properties, to provide loans.

Women who run dried fish businesses in Myanmar face additional challenges, such as balancing domestic responsibilities with business management. These responsibilities include cooking meals, collecting firewood and water for domestic and drinking use, caring for children and the elderly, washing clothes, and cleaning the house (Venkatalakshmi et al., 2015). This additional workload exacerbates women's transportation problems, as they have less time to travel to markets or manage their businesses.

By considering the different needs and roles of men and women members of the fishing community, using a gender-sensitive approach to physical capital in the fisher's livelihood framework can help improve understanding and support for all members.

Physical capital refers to the assets, equipment, and infrastructure that are necessary for fishing activities, such as boats, fishing gear, processing facilities, and storage facilities. Fisherwomen often have different physical capital needs and may face barriers to accessing and owning physical capital.

A gender-sensitive approach to physical capital would seek to address these barriers and ensure that men and women have equal opportunities to access and own physical capital. This might involve initiatives such as providing training and education programs targeted at women fishers to help them develop the knowledge and skills needed to operate and maintain fishing equipment, promoting the participation of women in value chain development initiatives, and addressing discriminatory practices that limit women's access to and ownership of physical capital.

In addition, a gender-sensitive approach to physical capital would recognize the important contributions that women make to the fishing industry and seek to enhance their access to and ownership of physical capital. This might involve initiatives such as promoting the development of microenterprises that cater to the specific needs of women fishers, providing financial support or credit to women to enable them to

purchase physical capital, and addressing gender biases in inheritance and property ownership laws that limit women's ownership of physical assets.

Overall, a gender-sensitive approach to physical capital is important in the livelihood framework for fishers as it can help to promote equitable and sustainable access to physical resources, improve the livelihoods of women fishers, and enhance the resilience of fishing communities (Béné, 2015).

2.5.1.8 What is financial capital?

In the livelihood framework, "financial capital" refers to the monetary resources that are available to an individual or household to invest in livelihood activities and to meet basic needs such as food, shelter, and healthcare (DFID, 1999). Financial capital can be acquired through various means, including income from employment or self-employment, savings, and access to credit and other financial services (Ellis & Mdoe, 2003).

According to Ellis and Mdoe (2003), financial capital is one of the five main components of the sustainable livelihood framework, along with human, natural, physical, and social capital. These different forms of capital interact and influence each other, and a lack of financial capital can limit the ability of individuals and households to invest in other forms of capital and improve their livelihoods.

In the context of the livelihood framework, financial capital is seen as a means to an end rather than an end in itself, and its importance lies in its ability to support the pursuit of sustainable livelihoods (DFID, 1999).

The acquisition of financial capital can be achieved through two main approaches: available stocks and regular inflows of money. Available stocks refer to savings, which can be kept in cash, bank deposits, or assets that can be quickly sold, such as livestock or jewelry. These assets can be used as a means of generating income or as a safety net in times of financial stress. Additionally, individuals can obtain financial capital from lending institutions, such as banks or microfinance organizations (DFID, 1999).

On the other hand, regular inflows of money include pensions, government payments, and remittances. The reliability of these inflows is essential to increasing financial capital, particularly in low-income households (DFID, 1999).

Regarding financial capital and entrepreneurship, self-funding is a common source of start-up capital for women. Men, on the other hand, are more likely to seek external sources of funding, such as loans from moneylenders or credit from microfinance institutions (Legislature, 2016). Despite this, women often face greater barriers to accessing finance and credit facilities than men (ILO, 2006; Venkatalakshmi et al., 2015; Gareth et al., 2012). Access to loan facilities is critical for launching and expanding a business, particularly for women entrepreneurs.

Taking into account the diverse needs and roles of men and women members within the fishing community and using a gender-sensitive approach to financial capital in the fisher's livelihood framework can improve overall understanding and support for everyone.

Women fishers often face barriers to accessing financial services and credit, which can limit their ability to invest in their livelihoods and improve their economic opportunities.

A gender-sensitive approach to financial capital would seek to address these barriers and ensure that men and women have equal access to financial services and credit (Gopal et al., 2017). This might involve initiatives such as promoting the participation of women in microfinance programs, providing financial literacy and training programs targeted at women fishermen, and addressing discriminatory lending practices that limit women's access to credit (FAO, 2015).

In addition, a gender-sensitive approach to financial capital would recognize the important contributions that women make to the fishing industry and seek to enhance their economic opportunities. This might involve initiatives such as promoting the participation of women in value chain development initiatives, supporting women's entrepreneurship and business development, and addressing discriminatory social norms and practices that limit women's economic participation (Gopal et al., 2017).

Overall, a gender-sensitive approach to financial capital is important in the livelihood framework for fishers as it can help to promote equitable and sustainable access to financial resources, improve the livelihoods of women fishers, and enhance the resilience of fishing communities (FAO, 2015).

2.5.1.9 What are transformation structures and processes?

In the livelihood framework, transformation structures and processes refer to the broader social, economic, and political context in which individuals and households operate and how they interact with the natural environment (DFID, 1999). Access to resources, opportunities, and the ability to pursue sustainable livelihoods can all be influenced by these structures and processes.

Transformational structures can include institutional arrangements, policies, and laws that govern access to resources, such as land tenure systems or regulations on resource use. These structures can influence the ability of individuals and households to use natural resources sustainably and can impact the distribution of benefits from resource use (Adger et al., 2005).

Transformation processes refer to the mechanisms that drive change, including technological change, globalization, and climate change. These processes can create opportunities or challenges for livelihoods, and they can have differential impacts on different groups within society (DFID, 1999).

The importance of transformation structures and processes lies in their potential to either facilitate or constrain the pursuit of sustainable livelihoods. Transformations that enable greater access to resources and opportunities can support livelihood improvements, while those that restrict access or undermine sustainability can limit the ability of individuals and households to improve their livelihoods (DFID, 1999).

The Ayeyarwady region's fishing industry faces significant challenges due to political instability and institutional limitations. While the Department of Fisheries (DoF), Myanmar Fishery Federation (MFF), and Ayeyarwady Region Fishery Network (ARFN) are essential in enhancing the fishery sector, the Freshwater Fishery Law

(2018) is critical in establishing fishing rights for fishermen. Unfortunately, the current political climate has rendered these institutions inoperable, and the Fishery Law has been canceled, directly impacting the fishing industry's sustainability.

The fishing industry's situation is further compounded by travel restrictions, conflicts (civil war), and the memorandum of understanding (MOU) between military governments, which limit development agencies' ability to support the fishing community. Despite these challenges, there are opportunities to improve the fishing industry's sustainability, such as the implementation of community-based fisheries management (CBFM) and improving value chain development.

In conclusion, political instability and institutional limitations in the Ayeyarwady region have severely impacted the fishing industry, leading to sustainability challenges. Nevertheless, there are opportunities to improve the industry's sustainability through community-based fisheries management and value chain development.

2.5.1.10 What are livelihood strategies?

Livelihood strategies in the livelihood framework refer to the diverse ways in which individuals and households access and utilize various assets to pursue their livelihood objectives (Ellis, 2000). These strategies are shaped by a range of factors, including natural resource availability, market opportunities, institutional arrangements, and social networks.

Livelihood strategies can be categorized into various types, including agricultural-based, non-agricultural-based, and mixed strategies that combine elements of both (Scoones, 1998). Agricultural-based strategies involve activities such as crop production, livestock rearing, and fisheries, while non-agricultural-based strategies include activities such as wage labor, small business enterprises, and remittances from migrant family members.

The choice of livelihood strategies depends on the availability of resources and the opportunities for income generation, as well as the household's risk tolerance and its social and cultural norms (Ellis, 2000). The combination of assets that households use

to pursue their livelihoods can vary depending on their location, gender, age, and other socioeconomic factors (Scoones, 1998).

Understanding livelihood strategies is essential for promoting sustainable livelihoods because it enables policymakers and development practitioners to identify and address the constraints that households face in pursuing their livelihood objectives. For example, interventions that aim to enhance access to markets, improve resource management, or strengthen social networks can enable households to diversify their livelihood strategies and improve their well-being (Ellis, 2000).

In conclusion, livelihood strategies are critical to understanding how households access and utilize various assets to pursue their livelihood objectives. The choice of strategies depends on a range of factors, including resource availability, market opportunities, and social norms. By understanding livelihood strategies, policymakers and development practitioners can support households in pursuing sustainable livelihoods.

One example of livelihood strategies in the fishing sector is the diversification of income sources among fishing households. This strategy is crucial in the face of the increasing variability of fishery resources and markets. Fishing households may engage in other income-generating activities, such as farming, small-scale trading, and crafts-making, to supplement their income from fishing (Fabinyi et al., 2011).

Another strategy is the use of alternative fishing methods and gear. This strategy is useful in cases where traditional fishing methods and gear become less effective due to changes in the environment or regulations. For example, some fishing households in the Philippines have shifted from using active fishing gear, such as nets and lines, to passive gear, such as fish traps and fish aggregating devices, to reduce the bycatch of non-target species (Berninsone et al., 2022).

A third strategy is the formation of collective enterprises, such as cooperatives and community-based organizations, to enhance the bargaining power of fishing households in the market and to facilitate access to credit and other support services (Jentoft et al., 2018). For example, fishing cooperatives in India have been successful

in obtaining government support for infrastructure development, such as landing centers and ice plants, which has improved their productivity and profitability.

In conclusion, livelihood strategies in the fishery sector involve diversifying income sources, using alternative fishing methods and gear, and forming collective enterprises. These strategies are essential for building resilience in the face of environmental and market variability and improving the well-being of fishing households.

2.5.1.11 What are livelihood outcomes?

Livelihood outcomes are the results or impacts of people's livelihood strategies and activities, which can be positive or negative. According to DFID, livelihood outcomes can be categorized into five main types: (1) assets and resources, (2) income and expenditure, (3) food and nutrition, (4) health and well-being, and (5) vulnerability and risk management (DFID, 1999).

Business size can also have a significant impact on livelihood outcomes. Research suggests that larger businesses may have a greater capacity to generate income and provide employment opportunities, which can improve livelihood outcomes for workers and their families (Kim et al., 2019). Large businesses may also have more resources to invest in training, technology, and infrastructure, which can increase productivity and enhance the quality of products or services.

However, the relationship between business size and livelihood outcomes is not always straightforward. In some cases, smaller businesses may be more accessible to people with limited resources or education and may provide more flexibility and autonomy for workers (Schiffer & Weder, 2001). Small businesses may also have a closer connection to local communities and be better able to respond to their needs and preferences.

Furthermore, the impact of business size on livelihood outcomes may also depend on other contextual factors, such as the sector, location, and regulatory environment. For example, in certain industries, smaller businesses may be at a disadvantage due to economies of scale or regulatory barriers (Mandiringana et al., 2018)).

In summary, business size can have a complex and context-dependent impact on livelihood outcomes. While larger businesses may have advantages in terms of generating income and providing employment opportunities, smaller businesses may have other advantages in terms of accessibility, flexibility, and community engagement.

Gender is an important factor that can significantly impact livelihood outcomes in the fishery sector. Women and men often have different roles, responsibilities, and access to resources in fishing communities, which can result in different outcomes for their livelihoods.

Research has shown that women in fishing communities often face significant gender-based constraints in accessing resources such as credit, training, and fishing gear (WorldFish, n.d.). This can limit their ability to participate in fishing activities and generate income from fishing-related activities. As a result, women in fishing communities may have lower income and asset levels than men, which can impact their overall livelihood outcomes.

Furthermore, gender norms and stereotypes can also affect the types of livelihood activities that women and men engage in. In many fishing communities, fishing is considered a men-dominated activity, while women are often engaged in processing and selling fish. This can result in gendered divisions of labor and different levels of participation and control over resources and decision-making in the fishery sector.

To address these gender-based disparities and improve livelihood outcomes for women in the fishery sector, interventions that specifically target women's access to resources and decision-making power are needed. These can include programs that provide training and support for women fishers, as well as initiatives that aim to increase women's participation in decision-making forums and improve their access to credit and other resources.

2.6 Intersectionality

Intersectionality is a concept that recognizes the interconnected nature of social identities and how they intersect to create unique experiences of discrimination and

disadvantage. The term was coined by legal scholar Kimberlé Crenshaw (1989) to describe the experiences of black women who faced discrimination not only based on their race or gender but at the intersection of both identities.

Intersectionality has become an important concept in the field of sustainable development, as it highlights how multiple forms of inequality and oppression can interact to create barriers to achieving sustainable development goals. For example, intersectionality can help to explain why certain groups, such as Indigenous women or LGBTQ+ youth, may experience unique challenges in accessing education, healthcare, or economic opportunities due to the intersecting effects of racism, sexism, homophobia, or other forms of discrimination (Khalikova et al., 2021).

Furthermore, intersectionality can also help inform more inclusive and effective sustainable development policies and programs. By recognizing how different identities and experiences intersect, policymakers and practitioners can develop more targeted and responsive strategies that address the specific needs and challenges of marginalized groups. This can include initiatives that aim to promote gender equality, reduce inequalities based on race or ethnicity, or protect the rights of Indigenous peoples (UNDP, 2020).

In summary, intersectionality is a concept that highlights the complex and interconnected nature of social identities and how they impact people's experiences of discrimination and disadvantage. By recognizing and addressing these intersections, sustainable development efforts can become more inclusive, equitable, and effective.

Myanmar's diverse population, with its 135 officially recognized ethnic groups, multiple religions, and varying age groups and genders, highlights the relevance of intersectionality. The reason is that the Ayeyarwady Region is home to Burma, Sagaw Karens, Po Karens, Chins, Rakhines, and Shans, while Labutta Township is home to Burma (82.86%), Karen (16.96%), and Rakhine (0.02%). Ayeyarwaddy's predominant inhabitants are Burmese and Karens.

According to the 2014 Census, Ayeyarwaddy is home to 6.05 million people, of which 52% are women. In Ayeyarwaddy, 43% of the population is between 10-29 years old,

46% is between 30-59 years old, and 11% is over 60. Besides, 92.1% of the people are Buddhists, 6.3% are Christians, 1.4% are Muslims, and 0.1% are Hindus. In Labutta Township, 90.3% of the people are Buddhists, 9.5% are Christians, 0.32 percent are Hindus, and 0.31 percent are Muslims.

Discrimination and disadvantage may compound and intersect, creating unique challenges for individuals with intersecting identities. For example, women from ethnic minority groups may face compounded sexism and racism, leading to obstacles in accessing education, healthcare, or economic opportunities. Similarly, members of religious minorities may experience discrimination based on both their religious identity and their ethnic or gender identity.

To address the specific needs and challenges of marginalized groups, policymakers and practitioners in Myanmar can take an intersectional approach. This involves developing targeted and responsive strategies to promote gender equality, protect the rights of ethnic and religious minorities, and reduce inequalities based on age or other factors. By recognizing and addressing the intersecting forms of oppression faced by individuals in Myanmar, sustainable development efforts can become more inclusive, equitable, and effective.

Regarding intersectionality and access to livelihood capital, the concept of intersectionality refers to the interconnected nature of social identities, such as race, gender, class, and sexuality, and how these identities overlap and interact with one another to shape an individual's experiences and opportunities in society (Crenshaw, 1989). When considering access to livelihood capital within the livelihood framework, intersectionality can have a significant impact on an individual's ability to access and control these resources.

Livelihood capital refers to the different types of resources or assets that individuals and communities possess and can be used to sustain their livelihoods. These include financial, human, social, natural, and physical capital (Carney, 1998). Intersectionality impacts access to these livelihood capitals in several ways:

Financial Capital: Individuals who belong to marginalized groups often have limited access to financial resources due to systemic inequalities (Kumar, 2011). This can be due to factors such as lower pay, discrimination, and lack of access to credit and loans. For example, women, people of color, and people with disabilities may face additional barriers to accessing financial capital, making it harder for them to start businesses or invest in their livelihoods.

Human Capital: Human capital refers to an individual's skills, knowledge, and abilities. Access to education and training opportunities can be impacted by intersecting social identities (Cole, 2009). For example, women and people of color may face discrimination in education and employment opportunities, limiting their ability to build their human capital.

Social Capital: Social networks and connections can provide valuable resources for livelihoods, such as access to information, opportunities, and resources. However, marginalized groups may face exclusion from these social networks due to discrimination or a lack of representation (Scoones, 2009). For example, people with disabilities may face social exclusion and barriers to accessing social capital.

Natural Capital: Natural resources, such as land and water, is essential for many livelihoods. However, marginalized communities may have limited access to these resources due to factors such as land dispossession, environmental degradation, and a lack of legal protection (Springer et al., 2021). For example, Indigenous communities often face systemic barriers to accessing and controlling natural resources.

Physical Capital: Physical capital refers to the infrastructure and assets that individuals and communities possess, such as housing, tools, and equipment. However, marginalized groups may face additional barriers to accessing physical capital, such as a lack of access to transportation, unsafe working conditions, and inadequate housing (Carrasco & Lucas, 2019). Carrasco & Lucas

In conclusion, intersectionality can have a significant impact on access to livelihood capitals in the livelihood framework. It is important to consider how intersecting social identities shape an individual's experiences and opportunities to ensure that policies and

programs are designed to address the specific barriers faced by marginalized communities. Understanding the impact of intersectionality on access to livelihood capital can work towards creating more equitable and inclusive livelihood opportunities for all.

2.7 Gender context in Myanmar

Myanmar is a country with a high gender inequality index, 149th out of 191 countries (UNDP, 2021). Gender equality in Myanmar requires a complicated balancing of cultural and historical standards, as well as current consequences, and has not been recognized as a concern. The concept of Myanmar as a country with equal chances for men and women was established during colonial times and has remained the official discourse during military administration, a position that is continuously replicated today. In Burmese culture, traditional roles for men and women are deeply rooted and often unquestioned (GEN, 2015; Crisp & Clementi, 2020).

Myanmar's high levels of gender disparity have been recognized since its borders were opened in 2010. According to statistics, men and women have equal access to education. Conversely, women have lower labor-force participation rates, resulting in diminished long-term political and economic empowerment (Crisp & Clementi, 2020). It can be concluded that the two main reasons for gender inequality are religious and cultural norms and the education system. These factors lead to gender inequality in the division of labor, health, and decision-making.

According to the Gender Equality Network (GEN), culture is the leading cause of gender inequality, which is rooted in "culture" and tied to religion. There are phrases like "rude" and "polite" in Myanmar. The word "polite" should be the foundation of culture. However, this politeness will differ depending on the nation and people. Being Buddhists, we model our politeness after the "five commandments of Buddha." We also have numerous ethical standards for parents, students, children, and teachers. Based on these criteria, society—including clothing codes, social mores, language, works of art, and technological advancements—is seen as having a culture (GEN, 2015).

Hackett et al. (2016) stated that women believe in religion more than men. On the other hand, women are frequently blamed for the loss of cultural values because they are perceived as the "carriers of culture" by society. In official sources, Myanmar culture is frequently compared to Buddhist Burmese culture (GEN, 2015). Therefore, the gender inequality gap is higher in Myanmar due to religion.

Gender norms influence opinions about where women and men can be, what they can do, and when they can do it to be considered "good" and "acceptable," which significantly impacts men's and women's employment and economic options. Men's and women's work domains are frequently seen as competing with one another. They consist of physically demanding work versus light or easy work, indoor work versus outdoor work, and productive work versus reproductive work (GEN, 2015).

The idea that a woman lacks a man's power, boldness, and resilience is used as a standard for comparison. Most people assume that women should prioritize their reproductive health. The idea that women look after family members are related to the fact that they give birth. Women's domestic duties are frequently referred to as a duty, a need, and an outgrowth of men's opposing positions in the workforce (GEN, 2015).

Regarding gender norms, the educational system has emerged as one of the most vital socialization forces. Both teachers and educational materials are used to accomplish this. The education system supports gender norms that show boys and men as hardworking, outwardly focused, breadwinners, production-oriented, clever, and in charge of the country's affairs. The opposing traits are attributed to girls, who are quiet and well-behaved, focused on reproduction, family-oriented, and humble. As a result, vocational education prepares boys and girls for men and women labor markets that are just as different (GEN, 2015).

Even though women have access to education, a study found that there are still two key things that keep women from getting the same opportunities as men. First, because the education system is not good enough, it actively takes power away from women students. Second, how people think about gender and education keeps old roles in place (Crisp & Clementi, 2020).

Different perspectives on gender roles are encouraged as soon as kids start school. Gender bias is present in the syllabus itself. For instance, feminine pictures appeared alongside verbs like “cook,” “clean,” and “eat” in a kindergarten English workbook. Traditionally, men were portrayed as engaging in manly activities like farming and sports. Young children begin to associate certain behaviors and ideas with a specific gender. Children’s worldviews are formed due to early exposure to this stereotyping. Gender stereotyping in the curriculum was widespread across all age groups, regarding the Gender and Development Institute and the Norwegian Refugee Centre (Crisp & Clementi, 2020).

According to a survey, women in Myanmar are frequently prohibited from attending school and are encouraged to stay at home and marry. As they age, they cannot participate in political decisions and do not know their fundamental rights (Angeles et al., 2019).

Regarding the general context of gender division of labor in Myanmar, the idea of gender relations derives from the concept of “hpon.” The concept of hon is fundamental to the idea of men's superiority. “Hon is assumed to be a natural and abstract quality that gives higher authority and status to men” (p. 34). The physical power needed to do men’s occupations is sometimes cited as the cause of the idea that men’s employment is more valuable than women’s employment. The fact that women’s labor is undervalued demonstrates that housework does not increase one’s status or income (GEN, 2015).

The fact that women are more involved in paid work should not be interpreted as a sign of greater equality because many are concerned about unsafe and unfavorable working conditions, rigid barriers to promotion or progress, and the dual burden of household and outside work. Social norms that reproduce unequal treatment of men’s and women’s labor include identifying women as dependents on family registration cards. The unfair wage system that favors men is one of the most overt physical manifestations of the unequal value placed on men’s and women’s labor (GEN, 2015).

Opportunities for work and a living for men and women are closely correlated with gender norms. In contemporary Burmese society, women still have a limited role. In

Myanmar, women continue to lack economic power and are underpaid and underrepresented in the workforce and at all levels of government. Men make up 83% of the labor force, compared to only 55% of women. Only 10% of parliamentary seats and 32% of senior and intermediate management posts are held by women (Crisp & Clementi, 2020).

Men and women usually do different kinds of work: hard work versus easy or light work, indoor versus outdoor work, and productive versus reproductive work. Regarding gender relations, it is essential to know about the men's household head and breadwinner norms. Regarding power, influence, and pay, men's work is seen as more valuable than women's work. The unequal value of men's and women's work shows up in social and practical ways like men being paid more than women and women being listed as dependents on family registration cards (Crisp & Clementi, 2020).

Regarding gender division of labor in the fishery sector, women serve a variety of roles in small-scale fisheries. For example, they work as informal caregivers, network managers, employees in non-fishery sectors to augment home income, and participants in fish worker movements and fishers' organizations (Angeles et al., 2019).

Women play a variety of different, comprehensive, and varied roles. Women are responsible for raising children, maintaining the household, cooking, and housework. They are also in charge of paying for all home expenses out of the portion of the husband's income that will be given to them. Besides, they are responsible for donating to charities and monasteries, the education and upbringing of the children, their clothes, and their cleanliness. Women can typically spend any additional revenue they may have from other sources, such as sales from their retail stores, their sewing business, or their daily wage. They are in charge of "gardening," which often refers to small backyard gardens, but they also work alongside men in betel nut, rubber, and paddy field plantations (Angeles et al., 2019).

In terms of the community level, Angeles et al. (2019) found that most of the time, men are responsible for the leading roles, while women are in charge of organizing and facilitating. For instance, they support monastic and church activities, community development organizations, religious festivals, local markets, and others.

Women's productive jobs, including fixing nets, running small market stalls, or managing retail stores, are viewed as supporting men's ability to make money. Women typically do not ride in boats. Instead, they participate in pre and post-harvest tasks like marketing the fish catch, producing fish paste, and gathering seaweed, shellfish, mussels, and oysters with teenagers or young children. Repair and upkeep of nets and boats are shared responsibilities (Angeles et al., 2019).

The communities view the fishing sector as a men's occupation. Most fishermen who venture out on boats and participate in hazardous maritime activities are men. Men are especially concerned about the ongoing dangers to their safety and ability to support themselves from accidents with commercial trawler fishermen who take too much fish and damage their nets. They are seen as community leaders and heads of households, with the duty of providing for, protecting, and supporting their families. When feasible, fathers teach their sons about traditional capture-fishing techniques. However, girls are not permitted to go fishing. If they do not have a husband, women must do other tasks, such as washing clothes, working for other people, or gardening (Angeles et al., 2019).

Boys and girls work in separate divisions of labor when it comes to earning a living after leaving school to support families or collect sea resources near the coast. For instance, some young adults, especially boys, are compelled to perform complex tasks like spearfishing from boats, diving for fish, or searching for oysters. Girls who work in retail must assist their mothers with household duties and babysit their younger siblings (Angeles et al., 2019).

Regarding Myanmar's general gender-based decision-making pattern, recent years have increased interest in women's engagement in politics and public life, including peace efforts. However, women did not take an active role in most community decisions. The interests of village leaders and ordinary people did not seem to vary significantly, so there was no criticism. (WB, 2012, as cited in GEN, 2015). Therefore, women's issues become "invisible" in decisions about health and safety, domestic abuse, political involvement, and establishing livelihoods because they lack voice and authority (Angeles et al., 2019).

Although women are sometimes referred to as the “home minister” in households, men traditionally make decisions. Instead, people thought that what we would call “religious restrictions” for women were caused by a patriarchal culture in which men are in charge most of the time (GEN, 2015).

Long-standing cultural and theological generalizations about men's sexually essential leadership and decision-making authority are connected to the idea of hpon and limit women from occupying positions of authority in religious, social, and political institutions (Oxfam, ActionAid, and CARE 2011, as cited in GEN, 2015).

Women were viewed as being in charge of ensuring family members’ health, particularly children’s health while making decisions concerning their care. However, women were not always given the freedom to make the final decisions, especially when such decisions had a significant financial impact on the household. The mother, however, is in charge of making health-related decisions and will take the fall if family members are not well (GEN, 2015).

Regarding gender-based decision-making patterns in the fishing sector, men and women want to be involved in decision-making at all levels. However, women frequently experience family and community marginalization. Women have a voice in home decisions on spending habits, children’s education, health and sanitation, and housing issues. However, they do not participate as profoundly or as actively at the community level (Angeles et al., 2019).

Their perception of power appears to come from being viewed as “in charge” of many family affairs. While lacking influence in decisions made at the community level and in the regional and state economic, social, and political spheres, women are frequently “powerful” within the boundaries of their homes. Even though housework is shared, not everyone has the same power and control over resources and decisions (Angeles et al., 2019).

Women put much effort into fishing, but they receive very little compensation. Men go fishing in the sea, and women sell the fish at markets. All of the money spent on liquor is by men. They get impoverished as a result. They will not be poor if the ladies can

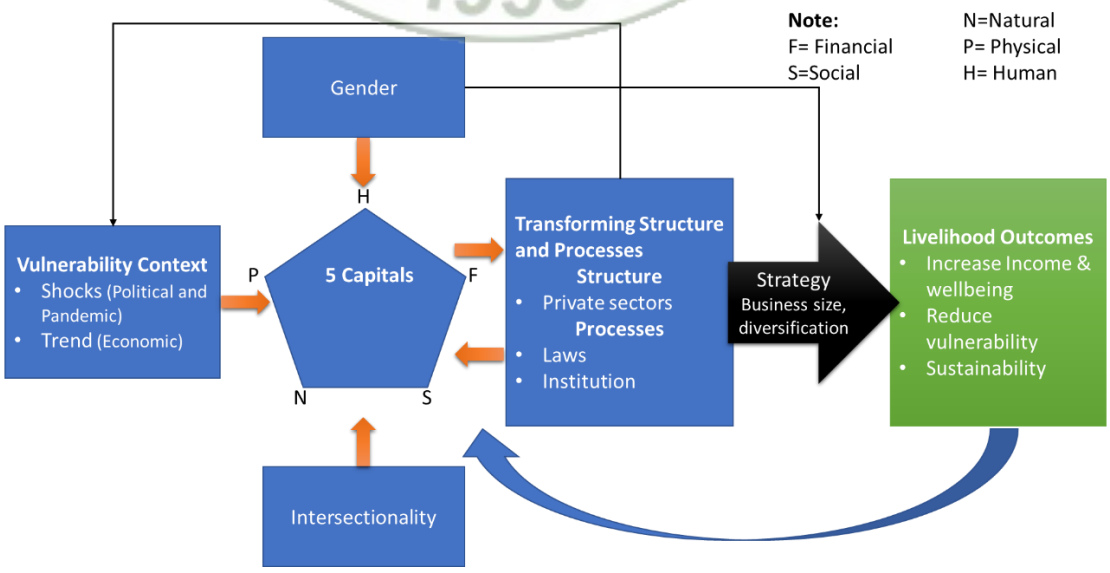
manage money. The ability to make decisions rests with men. Women are also powerless against men and cannot assume decision-making roles (GEN, 2015).

Women typically had little control over decisions outside of the home because their responsibilities frequently supported men's productive roles. At the same time, their reproductive work was time-consuming, labor-intensive, unpaid, and undervalued. This led to a persistent lack of capital and access to loans, worsening hygiene and facilities in places where women traditionally work (like fish markets), and low representation in leadership structures (Angeles et al., 2019).

Overall, Myanmar faces significant challenges in achieving gender equality due to deeply ingrained cultural and historical norms, as well as structural barriers within the education system and labor market. Women in Myanmar face restricted access to education and economic opportunities and are often subject to gender-based violence and discrimination. The persistence of traditional gender roles and norms further perpetuates the gender inequality gap. Addressing these issues will require a multifaceted approach, including cultural and societal change, policy reforms, and investments in education and training programs that promote gender equality and empower women to fully participate in society.

2.8 Conceptual Framework

Figure 1: Conceptual Framework



This conceptual framework aims to gain an understanding of the livelihood outcomes of micro and small shrimp paste businesses in the Ayeyarwady region, Myanmar, through the lens of sustainable livelihoods. Sustainable development is dependent on sustainable livelihoods, and gender equality is an essential consideration in achieving this. Previous research has highlighted the impact of gender differences on sustainable livelihoods.

The framework identifies the key components necessary for achieving high-quality livelihood outcomes, which are access to livelihood capitals and strategies. However, access to these resources and strategies can differ based on gender. Furthermore, the vulnerability context and the transforming structure and processes can also impact livelihood capital. A gender analysis is therefore conducted to understand the differences between micro and small businesses, as well as woman-led and man-led businesses.

The framework also recognizes the importance of intersectionality in understanding how access to livelihood resources and outcomes are shaped. Intersectionality acknowledges that individuals experience multiple forms of privilege and oppression that interact with each other, and a gender analysis alone cannot capture the full complexity of these experiences. Therefore, an intersectional analysis is incorporated into the framework to explore how other forms of social identity intersect with gender and contribute to distinct experiences of marginalization and privilege.

The study employs the sustainable livelihood framework to analyze the impact of vulnerabilities, livelihood capitals, and livelihood outcomes on dried fish processors, with a particular focus on gender inequality and intersectionality. The study aims to investigate how different types of dried fish processors, such as men- and Women-led and micro- and small-scale processors, access livelihood capital and how that impacts their livelihood outcomes.

The study considers the vulnerability context, including the impact of political, COVID-19, and economic crises on the livelihoods of dried fish processors, particularly in terms of gender. It finds that women face greater challenges than men during crises

and that gender is a crucial factor in determining the type of capital accessed by entrepreneurs.

The study identifies financial, social, physical, and human resource capital as crucial factors impacting the size and sustainability of dried fish enterprises, particularly micro and small businesses. Gender is a significant factor in determining the type of capital accessed by entrepreneurs, with women more likely to rely on self-finance and less likely to have access to external sources of capital.

Moreover, the study finds that gender-sensitive factors, such as the type of business operated and access to education, impact the profitability, sustainability, decision-making, and resilience of dried fish processors. The study also explores the structural and processual factors affecting livelihood capital and the value chain process of the shrimp paste industry.

The study's findings provide insights into the livelihood capitals, strategies, and outcomes of the dried fish industry, enabling policymakers and development agencies to make informed decisions to promote gender equality, reduce vulnerabilities, and increase livelihood sustainability.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Type of Research

The study is to determine the gender and other intersectionality factors that impact the size and performance of dried fish MSMEs in the Ayeyarwady region of Myanmar. A qualitative research method was applied to understand the study's objective. Both primary and secondary data were collected to be able to produce quality findings. In-depth interview guidelines, key informant interview guidelines, and focus group discussion guidelines were used to get the primary data. For the secondary data, reports, and publications from the government, articles from research journals, and reports and publications from NGOs were gathered.

3.2 Targeted Area

A sample from Labutta township in the Ayeyarwady region was selected as a sample because Labutta is one of the most productive shrimp production townships in Ayeyarwady. Labutta Township mainly produces shrimp paste (about 20 villages), dried shrimp (about 25 villages), and dried fish (about 11 villages). The research is focused on shrimp paste production businesses. The villages from different locations were selected: Ka Nu Ka Mar, Zin Ywe Gyi, and La Put Ta Loke (South). Ka Nu Ka Mar village is about 35 miles away, Zin Ywe Gyi village is about 15 miles away, and La Put Ta Loke (South) is about five miles away from Laputta town.

3.3 Sample Size and Data Collection Methods

Since the population of the study is unknown, the purposive sampling method was used to choose the people who would take part in the study.

Table 1: Sample size for shrimp paste enterprise

Sr.	Village	Total business	Sample	Business Size		Gender		KII	FGD
				Micro	Small	Men	Women		
1	Ka Nu Ka Mar	37	10	10	0	5	5	1	2
2	Zin Ywe	33	14		14	7	7	1	2

Sr.	Village	Total business	Sample	Business Size		Gender		KII	FGD
				Micro	Small	Men	Women		
3	La Put Ta Loke (South)	15	12	12	0	6	6	1	2
Total		85	36	22	14	18	18	3	6

Source: ARFN (Ayeyarwady Region Fishery Network)

Total of 36 respondents: ten from Ka Nu Ka Mar village, 14 from Zin Ywe Gyi village, and 12 from La Put Ta Loke (South) village were interviewed. A total of 22 micro- and 14 small-sized shrimp paste-making enterprises were selected to compare enterprise size. Moreover, 18 respondents (50%) were selected from women-led enterprises to compare women-led and men-led businesses. In addition, three KII interviews and six FGD interviews were conducted at the targeted villages.

A women-led business is one in which women take on significant leadership roles and are primarily responsible for managing the business. Although shrimp paste production in the research area involves the participation of both men and women, women are considered leaders when they assume more responsibility for the business than men. In these businesses, women are responsible for handling 75% of the pre-processing activities and all of the post-processing activities. Additionally, women handle 56% of the processing tasks, while men handle the remaining 44%. It is important to recognize and support women-led businesses as they contribute to economic growth and development while breaking gender stereotypes and promoting gender equality.

The selection process for businesses led by women and men consisted of three sequential steps. Initially, the researcher provided an overview of the study to the village administrators, indicating that it would compare businesses led by women and men. Specifically, a woman was defined as the primary responsible for operating the business, which was subdivided into three categories: pre-processing, processing, and post-processing. Subsequently, the village administrators invited some owners of shrimp-paste businesses and presented information about businesses led by women. The administrators and processors then generated a list of activities, ranging from pre-processing to post-processing, and determined which businesses were led by women

and which were led by men. Ultimately, businesses led by women were invited to participate in the study.

According to the Ministry of Cooperatives (2013), a micro-enterprise can be considered with less than ten workers' involvement in the business. On the other hand, a small enterprise can be considered a 1-million-kyat investment with less than a 25-horsepower installation and anywhere from 10 to 50 workers utilized in the business. However, this criterion is for overall management. It is not suitable for individual businesses like the fishing industry.

Therefore, the researcher adjusted the criteria with the input of respondents. A micro-business can be considered with less than ten fishing nets, a small boat, and family workers, while a small business can be considered with over ten fishing nets, one or more big boats, and one or more workers.

3.3.1 Primary Data

The study used key informants, in-depth interviews, and focus group discussions as data collection tools for primary data because the objective of primary data sources is to collect original, first-hand information directly from the source or through direct observation, to answer a research question or address a specific problem (Creswell, 2014).

3.3.2 Key Informant Interview

The objective of a key informant interview is to gather in-depth and contextual information about a specific topic or issue from individuals who have specialized knowledge or experience in that area. The goal of the interview is to gain insights into the subject matter that cannot be obtained through other means, such as surveys or secondary research (Creswell, 2014).

Therefore, the study used structured key informant interview guidelines. The person who knows about the total number of micro- and small-scale dried fish processors and the collective activities of the processors in the selected village participated in the interview. One KII interview was conducted in each village, and the entire interview

was three. The data is utilized to determine how gender differences influence business size. For example, women are likely to own smaller businesses, or there is no gender difference between men and women. The interview was the first interview for the primary data.

3.3.3 In-Depth Interview

According to Creswell (2014), the objective of an in-depth interview is to gather detailed information about a particular topic, issue, or experience from the perspective of the interviewee. Moreover, an in-depth interview is intended to gain a deeper understanding of the interviewee's perspectives and identify common themes or patterns in their responses".

Therefore, the study conducted in-depth interviews with the micro- and small-scale dried fish processors using a semi-structured questionnaire. A total of 36 respondents participated in the interview. Half of the respondents were women. Since the study is to determine the business of shrimp paste production in Labutta Township, Ayeyarwady region, the person who runs the shrimp paste business was interviewed (Table 1).

The interviews determine access to five capitals contributing to the livelihood outcomes of shrimp paste businesses. The five capitals are financial, social, physical, human, and natural capital. Under financial capital, sources of capital investment for their firms, such as self-finance, loans, and credit, were considered. Access to a social network, participation in the association, restrictions of social norms, the impact of intermediaries, and access to government services were evaluated in terms of social capital.

The business types, access to market channels, and assets were described regarding physical capital. Concerning human resource capital, the education level of the business owner, his or her abilities and skills, taking risks, keeping records, and the business's goals, in terms of natural capital, access to fishing resources, land, and assets were considered.

3.3.4 Focus Group Discussion

As stated by Creswell (2014), the objective of a focus group discussion (FGD) is to gather qualitative data through a guided group discussion. This method is used to explore participants' attitudes, opinions, beliefs, and perceptions toward a particular topic or concept. The main objective of FGDs is to obtain detailed insights and an in-depth understanding of the participants' perspectives and experiences.

Therefore, the study used semi-structured interview guidelines for focus group discussions. About five respondents who make shrimp paste and are involved in collective activities were invited to participate in each discussion. One woman and one man focus group were conducted in each village. The discussion covers the overall crisis impact on the shrimp paste business, the labor division of the shrimp paste value chain, access to fresh shrimp (increase or decrease), collective production, collective purchasing of inputs, and collective selling of the products of the owners' experiences.

3.3.5 Secondary Data

The objective of secondary data sources is to gather the information that has already been collected by others for a specific purpose or research project. This information can come from various sources, such as academic articles, government reports, industry reports, books, and other published materials (Jones, 2018).

Therefore, the study reviewed secondary data from different places, like journal articles, reports from non-governmental organizations (NGOs), and government departments, to support or disprove research hypotheses and to provide a comprehensive understanding of the research topic.

3.4 Data Analysis Plan

Despite relying primarily on qualitative research methods, this study incorporates both quantitative and qualitative data. As such, a combination of data analysis techniques was utilized to examine the research questions, including descriptive statistics for the quantitative data and categorization for the qualitative data.

3.4.1 Data Preparation

Import and clean quantitative data (in Excel) collected from in-depth interviews, including variables such as village tract name, village name, size of business, gender, age, years of experience, education of the respondents, number of nets, price per unit of a fishing net, number of boats, price per unit of a boat, sources of capital, member of a family, a month of shrimp paste production, livelihood diversification, and expenditure.

Transcribe and code qualitative data collected from in-depth interviews, focus group discussions, and key informant interviews, including variables such as division of labor in pre-processing phase, processing phase, and post-processing phase of shrimp-paste business, access to livelihood capitals, vulnerability context, transformation structures and processes, livelihood strategies, and outcomes.

3.4.2 Data Analysis

Conducting descriptive statistics (frequencies, percentages, and means) on the quantitative data helped identify patterns and trends in the shrimp paste production enterprises regarding gender and other intersectional factors.

Thematic analysis was used to analyze the qualitative data and identify common themes and patterns related to the research questions and hypotheses. Based on the conceptual framework, for example, categorized thematic areas, such as gender division of labor in shrimp paste processing, access to livelihood capitals with gender-sensitive and intersectionality approach, the impact of vulnerability and structures and processes, livelihood strategies, livelihood outcomes, and decision-making pattern.

Compare and contrast the findings from the qualitative and quantitative data used to identify similarities and differences in the experiences of women and men in the shrimp paste business.

3.4.3 Data Interpretation

The data interpretation producer followed three steps.

1. Interpret the findings from the data analysis in light of the research questions and hypotheses.
2. Analyze the results and draw conclusions related to the influence of gender and intersectionality on the management of micro- and small-size shrimp paste production enterprises in the Ayeyarwady region, Myanmar.
3. Interpret and discuss the implications of the findings for policy and practice, including identifying opportunities for supporting women to benefit better from the dried fish business.

3.4.4 Reporting

Reporting producers are to 1) write up the results of the data analysis clearly and concisely, including tables, graphs, and visualizations to present the findings; 2) present the findings in a format that is accessible to a wide range of stakeholders, including policymakers, practitioners, and researchers; and 3) discuss the limitations of the study and potential areas for future research.

The researcher, on the other hand, analyzed based on the research objectives to contribute to the research objectives (Table 2).

The data table 2 outlines the research objectives, tools used, and analysis plan for a study on the involvement of women and men in shrimp paste business activities in the Ayeyarwady region of Myanmar. The study used key informant interviews (KII), in-depth interviews (IDI), and focus group discussions (FGD) to gather data.

The first objective is to understand the involvement of women and men in different types of shrimp paste business activities using KII. The analysis plan involves determining which gender is more involved in which business size based on the total number of processors within villages.

The second objective is to analyze the challenges of the business and influence factors using IDI and FGD. The analysis plan involves analyzing different types of challenges for different genders and business sizes based on access to livelihood capitals, including access to finance, information, policy or law, services, fresh fish, inputs, education,

gender norms, property ownership, and cohesion in the community. The study will compare the degree of challenges for each capital to determine which types of challenges impact livelihood outcomes and highlight gender-based challenges, including intersectionality.

The third objective is to explore women and men involved in decision-making in different shrimp paste business activities using IDI and FGD. The analysis plan involves analyzing decision-making habits within the household, including access to fresh fish, choosing inputs, school selection, health care, choosing markets, price setting, food management, access to loans, repayment method, selection of shrimp paste technique, business extension, mobility, and participation in community development. The study will compare women-led and men-led businesses, as well as micro- and small businesses, to determine who made what type of decision.

The fourth objective is to identify the benefits for women and men from the shrimp paste business using IDI and FGD. The analysis plan involves identifying how the business provides benefits to processors, such as being the primary income source for their families, and how they utilize those benefits, such as for food, health care, education, and social affairs.

The fifth goal is to determine which women benefit more from the dried fish business when FGD is used. The analysis plan involves analyzing collaborative activities within the village and determining member and women's benefits, including increasing bargaining power for price setting, reducing transportation charges, improving relationships, and receiving cash in advance.

Overall, the study aims to identify the constraints and challenges facing the shrimp paste business in the Ayeyarwady region of Myanmar and provide recommendations for improving the livelihoods of those involved, particularly women.

Table 2: Data Analysis Plan for each objective

Objective	Tools	Analysis Plan
To understand the involvement of women and	KII	The total number of processors within villages will be analyzed. Based on the

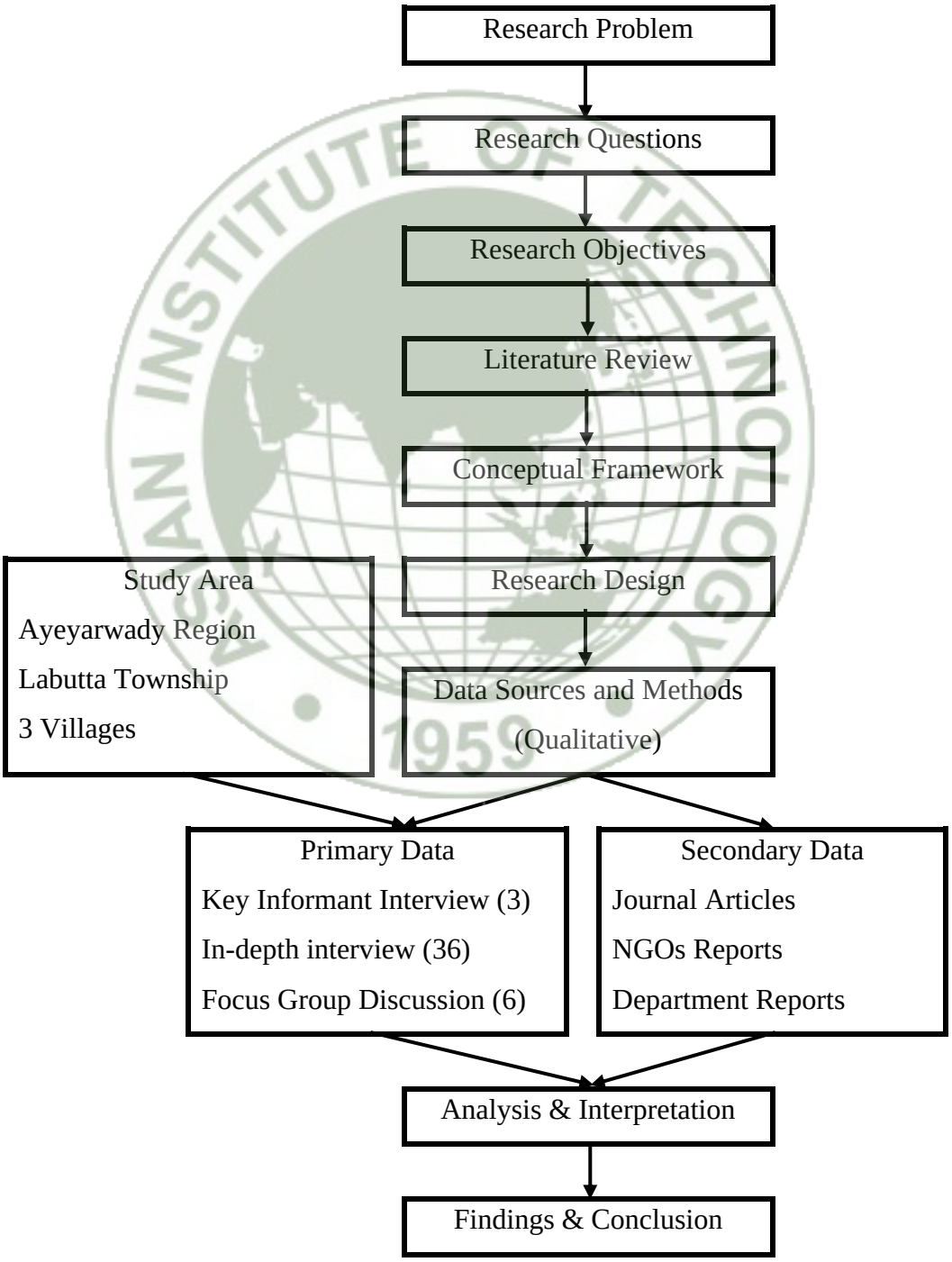
Objective	Tools	Analysis Plan
men in different sizes of shrimp paste business activities		analysis, who (men or women) is more involved in which business (micro or small) will be determined?
To analyze the challenges of their business and influence factors, including intersectionality for these challenges	IDI & FGD	Different types of challenges of different genders and business sizes will be analyzed based on access to the livelihood capital of the respondents. For example, different challenges are access to finance, information, policy/law, services (Goer; NGOs, private), fresh fish, inputs, education, gender norms (double burden), property ownership, and cohesion in the community. Within the livelihood capitals, each capital will be compared to understand the degree of challenges. What types of challenges impact their livelihood outcomes will be determined. Gender-based challenges, including intersectionality, will be highlighted.
To explore women and men involved in decision-making in different sizes of shrimp paste business activities	IDI and FGD	Within the household, decision-making habits will be analyzed. For instance, access to fresh fish, choosing inputs, school selection, health care, choosing markets, price setting, food management, access to loan, repayment method, selection shrimp paste technique (manual or industry), business extension, mobility (who send products to market), and participation in community development. Then, women-led and men-led businesses will be compared, while micro and small businesses will be compared based on who made what type of decision.
To identify the benefits for women and men from the shrimp paste business	IDI and FGD	How the business provides benefits for the processors will be identified. For example, shrimp paste production is the primary income source of their family or not. When they receive the benefits, how do they utilize them? For instance, they use their income for food, health care, education, and social affairs.
To know the better benefit of women from the dried fish business	FGD	Collective activities that are done within the village will be analyzed. The member's and women's benefits will be determined by increasing bargaining power for price setting, reducing transportation charges, improving relationships, and receiving cash in advance because they can export a quantity of product to collectors. Therefore,

Objective	Tools	Analysis Plan
		they might negotiate prices, ask collectors to collect the product at the village to reduce transportation costs, and get cash in advance. Constraints and challenges will be identified.

3.5 Research Design

Figure 3 provides information on the research design. This study includes nine steps: identifying the research problem, developing research questions, creating research objectives, reviewing the literature, developing a conceptual framework, designing research, identifying data sources and research methods, determining sample size and respondents, analyzing and interpreting the collected data, and writing the findings and conclusion.

Figure 2: Research Design



CHAPTER 4
PROFILE OF THE STUDY AREA AND RESPONDENTS

This chapter presents two main topics: the profile of the study area and the profile of the respondents. Providing a study area profile is to provide a detailed description of the geographic location or area under study, including its physical, social, economic, and demographic characteristics. Also, providing a profile of respondents to describe the demographic, socioeconomic, and other relevant characteristics of the individuals or groups who participated in the study. This information is used to understand the sample of respondents and to help readers of the study determine the extent to which the findings can be generalized to other populations.

4.1 Profile of the Study Area

The research was carried out in the Labutta township of the Ayeyarwady region in Myanmar. Labutta Township is a coastal township located in the Ayeyarwady Region of Myanmar. Labutta township is situated at 15 degrees 40 minutes 30 seconds north latitude and 16 degrees 23 minutes east longitude (94 degrees 33 minutes and 95 degrees 9 minutes), spanning across an area of 1099 square miles. The township comprises one township, three towns, 17 wards, 65 village tracts, and 505 villages, with a total population of 332,360 individuals, of which 49% are women. Among them, 135,498 individuals are above 18 years old, of which 49% are women, while 196,862 individuals are below 18 years old, with 49% of them being women (GAD, 2019).

The socio-economic status of the township is largely influenced by its geographical location and proximity to the sea. Fishing and agriculture are the main sources of income for the people living in the township. The local community is primarily engaged in agriculture, livestock rearing, salt production, and fisheries. The township produces a variety of agricultural products, such as rice, paddy, dried fish, salt, coconut, and betel nuts, which are exported to Yangon and the central dry zone. In 2019, the fishery sector in Labutta produced 51,047 metric tons of fishery products, of which 23% were shrimp (GAD, 2019).

However, Labutta Township has faced many challenges in recent years, including natural disasters such as Cyclone Nargis in 2008, which caused significant damage to infrastructure and the local economy (UNDP, 2008). Poverty and lack of access to basic services such as healthcare and education are also common issues in the township. Despite these challenges, efforts are being made to improve the socio-economic status of Labutta Township, including investments in infrastructure, education, and healthcare.

The research encompassed three village tracts and three villages, namely Ka Nu Ka Mar village with a population of 245, Zin Ywe Gyi village with a population of 650, and La Put Ta Loke (South) with a population of 895. Women-headed households were absent in Ka Nu Ka Mar village, while the other two villages had 20 women-headed households each (Table 3).

Table 3: Household and population of studied villages

Sr.	Tract	Village	Population			Household Headed		
			Men	Women	Total	Men	Women	Total
1	Hlwa Zar	Ka Nu Ka Mar	120	125	245	57	0	57
2	Tha Pyu Kone	Zin Ywe Gyi	316	334	650	162	20	182
3	La Put Ta Loke	La Put Ta Loke (South)	398	497	895	205	20	225
		Total	834	956	1790	424	40	464

4.1.1 Studied Location

To reach Ka Nu Ka Mar village, a boat was used, which took approximately two hours for a one-way journey. Zin Ywe Gyi and La Put Ta Loke (South) villages were accessed by car, taking around an hour and 15 minutes, respectively, for Zin Ywe Gyi and only 15 minutes for La Put Ta Loke (South).

Figure 3: Studied Location (Adapted MIMU, 2010)

4.1.2 Livelihood categories

The villages under study comprise 149 fishing households, 144 farming households, and 151 laborer households (Table 4). Among these, Ka Nu Ka Mar village consists of 37 fishing households, with all of them (100%) engaged in the production of shrimp paste. In La Put Ta Loke (South), 36 households are engaged in fishing, out of which only 33% are involved in the shrimp paste business. Similarly, in Zin Ywe Gyi village, there are 76 fishing households, out of which 43% are engaged in shrimp paste production. Additionally, in all the households, apart from shrimp paste, dried fish and shrimp are also produced, as they are often caught in the nets while collecting tiny shrimp for shrimp paste.

Table 4: Livelihood categories and shrimp paste business of studied villages

Sr.	Tract	Village	Livelihood Category			Shrimp Paste Business		
			Farmer	Labor	Fisher	# of Business	% of Business	Remark
1	Hlwa Zar	Ka Nu Ka Mar	7	13	37	37	100%	All businesses make dried shrimp and fish.
2	Tha Pyu Kone	Zin Ywe (Zin Ywe Gyi)	19	87	76	33	43%	
3	La Put Ta Loke	La Put Ta Loke (South)	118	51	36	12	33%	
		Total	144	151	149	82	59%	

4.1.3 Women's participation in micro and small business

According to the KII interviews with village administrators, it was observed that businesses led by women are generally smaller in size than those led by men. This is supported by the data presented in Table 5, which shows that women-led businesses constitute only 12% of small enterprises but account for 39% of microenterprises in shrimp paste production. It was also observed that women are more involved in microbusinesses than in small enterprises.

Obtaining data on the number of shrimp-paste businesses led by women was challenging, as there was a prevalent belief that fishing and related activities are predominantly men's occupations. However, it was observed that women participate in shrimp paste processing activities more than their husbands, by over 50%. Further information on women's involvement in the shrimp paste business can be found in the labor division section.

In the area under study, the prevailing community belief is that fishing is not a suitable activity for women. As a result, there are no women who lead to go fishing in the villages. This gender norm is one of the key factors contributing to the underrepresentation of women in the shrimp paste industry. Women do not participate in fishing for several reasons. Firstly, they lack the experience needed to select fishing grounds and catch fish. Secondly, fishing is a labor-intensive activity that requires fishers to work day and night during the fishing season, which runs from late September to early May. Lastly, fishers may face hazardous weather conditions such as storms and cyclones while out at sea.

Table 5: Women's participation in micro and small business

Sr.	Tract	Village	Micro Business			Small Business		
			Men-led	Women-led	Total	Men-led	Women-led	Total
1	Hlwa Zar	Ka Nu Ka Mar	22	12	34	1	2	3
2	Tha Pyu Kone	Zin Ywe Gyi	2	1	3	28	2	30
3	La Put Ta Loke	La Put Ta Loke (South)	6	6	12	0	0	0
		Total	30 (61%)	19 (39%)	49	29 (88%)	4 (12%)	33

4.2 Profile of Respondents

This study included four types of respondents: woman-led microbusinesses, man-led microbusinesses, woman-led small businesses, and man-led small businesses producing shrimp paste in Labutta township, Ayeyarwady region, Delta.

4.2.1 Type and profile of the business

The table provides a comparison between micro and small businesses in the shrimp paste production industry based on several key factors.

In terms of initial investment, micro businesses tend to have lower costs for boats, fishing nets, and engines compared to small businesses. For example, microbusinesses have an average boat cost of USD 500, while small businesses have an average boat cost of USD 1,500. Similarly, microbusinesses have an average fishing net cost of USD 375, while small businesses have an average fishing net cost of USD 1,260.

Regarding labor, most businesses in the industry are owned by families, but small businesses tend to hire more outside labor compared to micro businesses.

There is also a difference in the ownership of grinding machines. While a few small businesses own grinding machines, none of the microbusinesses surveyed owned one.

In terms of experience and education, most business owners in the industry have less than six years of experience and primary education. However, small business owners tend to have more experience and a secondary education compared to microbusiness owners.

Finally, the table provides information on the average, maximum, and minimum production per month for both micro and small businesses. Small businesses have a significantly higher average, maximum, and minimum production per month compared to micro businesses.

Overall, the data suggests that small businesses in the shrimp paste production industry tend to have higher costs, utilize more external labor, and have higher production levels compared to micro-businesses.

Table 6: Different between micro and small businesses of shrimp paste production

Category	Micro	Small	Remark
Boat cost (USD)	500	1500	
Fishing Net cost (USD)	375	1260	5 for micro 18 for small
Engine for boat (USD)	125	250	
Labor	Family	Hire	Most owner
Grinding machine	No-one owned	A few owned	
Experiences (Years)	<6	>6	Most owner
Education Level	Primary	Secondary	Most owner
Average production per month (kg)	630.31	2482.05	One viss equals 1.63293 kg.
Maximum production per month (kg)	979.76	11430.51	
Minimum production per month (kg)	326.59	979.76	
Fishing season	From late September to early May (Nov to Jan is peak season)		

4.2.1.1 Micro Business of Shrimp Paste Production

A microbusiness in the shrimp paste production industry requires an initial investment of approximately USD 1,000, which includes a boat cost of USD 500, five fishing nets costing USD 375, and a boat motor costing USD 125. Only family members are employed in the microbusiness, and they do not own a grinding machine.

In terms of experience and education, the majority of microbusiness owners have less than six years of experience and primary education.

On average, microbusinesses can produce 630 kg of shrimp paste each month, with a maximum monthly production of 980 kg and a minimum of 327 kg.

4.2.1.2 Small Business of Shrimp Paste Production

Starting a small business in the shrimp paste production industry requires an initial investment of approximately USD 3,100, which includes the cost of one or two boats USD 1,500, 18 fishing nets USD 1,250, and one or two boat engines USD 350. Small

businesses operate with one or more hired employees, and few business owners possess a grinding machine.

In terms of experience and education, all small-business entrepreneurs have more than six years of experience, and half of them have completed secondary school.

On average, a small business can produce 2,483 kg of shrimp paste every month, with a maximum monthly production quantity of 11,431 kg and a minimum monthly production amount of 980 kg.

4.2.1.3 Woman-led Shrimp Paste Production

Shrimp paste production in the research area involves both men and women, with almost all businesses having both genders involved. Women are considered a leader of the shrimp paste business when they are more responsible for their business than men. In these businesses, women handle 75% and men do 25% on average of the activities in pre-processing, 56% (44% is man's involvement) of the activities in processing, and all of the activities in post-processing. A women small business owner shared her experience of becoming the leader of their shrimp paste business. She openly stated that;

> *"I am a daughter of a rich family. My husband was a worker in my family. When we got married, I became the leader of my household and this business because I have better social relationships and can manage our lives better than my husband. He does work when I ask him." (Women, Age 38, Zin Ywe Gyi Village)*

4.2.1.4 Man-led Shrimp Paste Production

As indicated above, practically all shrimp paste production is done by both men and women. Overall, men are mainly responsible for fishing, logging on and off, and salting. In man-led businesses, men participate more than women in pre-processing, processing, and post-processing.

The gender division of labor differs significantly between women-led and men-led businesses, with women generally taking on more diverse and comprehensive roles in the business. In contrast, men tend to dominate specific stages of production and management. This is particularly evident in the shrimp paste processing industry, where

women are typically responsible for pre-processing, post-processing, domestic chores, and household finances, while men focus on catching shrimp and salting them during processing.

4.2.2 Age and experiences of the respondents

Table 7 shows the distribution of respondents by gender and age range. There was a total of 36 respondents, with 18 Men-led and 18 Women-led businesses. The respondents were divided into three age ranges: "Bet 28-34", "Bet 35-59", and "Over 60".

In the "Bet 28-34" age range, both Men-led and Women-led groups had 3 respondents, accounting for 17% of their respective total. In the "Bet 35-59" age range, the Women-led group had more respondents (14 compared to 13) and accounted for a higher percentage (78% compared to 72%). In the "Over 60" age range, the Men-led group had more respondents (2 compared to 1) and accounted for a higher percentage (11% compared to 6%).

Overall, the majority of respondents (75%) were in the "Bet 35-59" age range, with a higher proportion of Women-led businesses in this range. The smallest group of respondents (8%) were over 60 years old.

Table 7: Aged of the respondents by gender

Gender by Aged of the respondents	Bet 28-34	Bet 35-59	Over 60	Total
Men-led	3 (17%)	13 (72%)	2 (11%)	18
Women-led	3 (17%)	14 (78%)	1 (6%)	18
Grand Total	6 (17%)	27 (75%)	3 (8%)	36

Table 8 shows the distribution of respondents by gender and experience level in their micro- and small-scale shrimp paste businesses. The experience levels are divided into three categories: "Under 06", "Bet 07-15", and "Over 15".

Out of 18 Men-led businesses, 5 respondents had less than 6 years of experience (28%), 6 had between 7 and 15 years of experience (33%), and 7 had more than 15 years of experience (39%). For Women-led businesses, 4 had less than 6 years of experience (22%), 8 had between 7 and 15 years of experience (44%), and 6 had more than 15 years of experience (33%).

Overall, 9 respondents had less than 6 years of experience (25%), 14 had between 7 and 15 years of experience (39%), and 13 had more than 15 years of experience (36%). Men-led businesses had a higher proportion of respondents with more than 15 years of experience, while Women-led businesses had a higher proportion of respondents with between 7 and 15 years of experience. The total number of respondents was 36, with 18 Men-led and 18 Women-led businesses.

Table 8: Experiences of the respondents by gender

Gender by experiences	1) Under 06	2) Bet 07-15	3) Over 15	Grand Total
Men-led	5 (28%)	6 (33%)	7 (39%)	18
Women-led	4 (22%)	8 (44%)	6 (33%)	18
Grand Total	9 (25%)	14 (39%)	13 (36%)	36

4.2.3 Education of the respondents

Table 9 presents data on education by gender in the studied area. Out of a total of 36 respondents, 18 are women and 18 are men. 28% of women and 19% of men have completed primary education. 17% of women and 28% of men have secondary education. Only 6% of women and 3% of men have a high school education. Overall, 47% of the respondents have primary education, 44% have secondary education, and 9% have a high school education.

The majority of women respondents have passed primary education, while most men respondents have passed secondary education.

Table 9: Education level of the respondents by gender

Education by Gender	Primary Education	Secondary Education	High School Education	Grand Total
Women-led	10 (28%)	6 (17%)	2 (6%)	18
Men-led	7 (19%)	10 (28%)	1 (3%)	18
Grand Total	17 (47%)	16 (44%)	3 (9%)	36

Table 10 shows the education levels of respondents categorized by their business size. Of the micro-business owners, 50% have completed primary education, 41% have completed secondary education, and 9% have completed high school. In comparison, among small business owners, 43% have completed primary education, 50% have completed secondary education, and 7% have completed high school. Overall, out of

all respondents, 47% have completed primary education, 44% have completed secondary education, and 9% have completed high school.

Microbusiness owners have mostly completed primary education, whereas half of the owners of small businesses have completed secondary education.

Table 10: Education level of the respondents by business size

Education by business size	Primary	Secondary	High School	Grand Total
Micro	11 (50%)	9 (41%)	2 (9%)	22 (100%)
Small	6 (43%)	7 (50%)	1 (7%)	14 (100%)
Grand Total	17 (47%)	16 (44%)	3 (9%)	36 (100%)

4.2.4 Household size of the respondents

Table 11 shows the distribution of household sizes by gender. Of the total respondents, 31% belonged to households with 2-3 members, 50% with 4-5 members, and 19% with 6-7 members. Both women and men respondents had similar percentages in the 4–5-member household category, with 50% each. However, women respondents had a higher percentage in the 2–3-member household category at 39%, while men respondents had a higher percentage in the 6–7-member household category at 28%. There is no difference between the gender and business size of the respondents.

Table 11: The household size of the respondents by gender

Household Size by gender	Bet 2-3 members	Bet 4-5 members	Bet 6-7 members	Grand Total
Women-led	7 (39%)	9 (50%)	2 (11%)	18
Men-led	4 (22%)	9 (50%)	5 (28%)	18
Grand Total	11 (31%)	18 (50%)	7 (19%)	36

Table 12 provides information on the distribution of households by both household size and business size. The table is broken down into three categories of household size: 2-3 members, 4-5 members, and 6-7 members, as well as two categories of business size: micro and small.

The numbers in parenthesis indicate the percentage of households within each category. For example, in the microbusiness category, 32% of households have 2-3 members, 45% of households have 4-5 members, and 23% of households have 6-7 members.

In the small business category, 29% of households have 2-3 members, 57% of households have 4-5 members, and 14% of households have 6-7 members.

The total row shows the total number of households in each household size category, regardless of business size. For instance, there are 11 households with 2-3 members, 18 households with 4-5 members, and 7 households with 6-7 members.

Overall, the table suggests that small businesses have a higher percentage of households with 4-5 members than micro-businesses, while micro businesses have a slightly higher percentage of households with 2-3 members. However, the difference in household size distribution between the two business categories is not large.

Table 12: Household size of the respondents by business size

Household Size by Business size	Bet 2-3 members	Bet 4-5 members	Bet 6-7 members	Grand Total
Micro	7 (32%)	10 (45%)	5 (23%)	22
Small	4 (29%)	8 (57%)	2 (14%)	14
Grand Total	11 (31%)	18 (50%)	7 (19%)	36

Overall, Table 13 provides important insights into the level of worker participation in micro and small businesses, considering gender and business ownership. The data shows that small businesses have more significant labor participation than micro-businesses, with both men-led and women-led small businesses employing more main workers than their micro counterparts. In addition, men-led businesses tend to have a higher average number of workers than women-led businesses. Specifically, men-led small enterprises hire more than double the number of workers compared to micro-enterprises. It is interesting to note that men-led small enterprises have significantly more hired workers than their women-led counterparts. On the other hand, women-led small enterprises employ fewer family workers than micro businesses. In general, the data highlights that small enterprises have more substantial labor participation, irrespective of gender leadership.

> *"I have learned to navigate the challenges of high prices and low production. Despite having 30 fishing nets, I can only afford to hire six workers this year, compared to 12 in the previous year. My elder son as the leader of the business,*

hired workers to assist with fishing in the sea and managing the grinding machine. Family members just support the business." (Said a man who is a small business owner aged 65, Zin Ywe Gyi Village)

"I run a small business with 15 fishing nets. My husband is unwell, so I hired three workers to help with fishing in the sea while I take care of the inland job." (Said a woman who is a small business owner, age 57, Zin Ywe Gyi Village)

"We operate with only seven fishing nets. My wife and I are the main workers, and we receive support from our elder daughter." (Said a man who is a micro business owner, age 62, La Put Ta Like (South) Village)

"Despite having five family members, our business operates with only three workers as the youngest two are still attending school. My husband and I are the main workers, and our elder son supports his father with fishing." (Said a woman who is a micro-business owner, age 43, La Put Ta Like (South) Village)

The data suggest that men-led businesses tend to have a slightly higher average number of main workers compared to women-led businesses. In micro-enterprises, men-led businesses have an average of 2.09 main workers while women-led businesses have an average of 2.00. In small enterprises, men-led businesses have an average of 1.86 main workers while women-led businesses have an average of 1.86 as well. Overall, the total shows an average of 2.05 main workers in micro-enterprises, 1.86 in small enterprises, and 1.97 on average in both women and men-led businesses.

Regarding the average number of family workers in micro and small enterprises, men-led businesses have a higher average number of family workers than women-led businesses. In micro-enterprises, men-led businesses have an average of 1.36 family workers while women-led businesses have an average of 1.09. In small enterprises, men-led businesses have an average of 1.71 family workers while women-led businesses have an average of 0.86. Overall, the total shows an average of 1.23 family workers in micro-enterprises, 1.29 in small enterprises, and 1.25 on average in both women and men-led businesses.

In terms of the average number of hired workers in micro and small enterprises, men-led small enterprises have a much higher average number of hired workers than women-led small enterprises (2.29 vs. 1.14). In micro-enterprises, both men-led and women-led businesses have no hired workers on average. Overall, the total shows an average of 0.00 hired workers in micro-enterprises, 1.71 in small enterprises, and 0.67 on average in both women and men-led businesses.

Overall, the data tables offer valuable insights into the labor participation trends in micro and small enterprises, taking into account gender and business ownership. The data suggest that men-led businesses have a higher average number of workers than their women-led counterparts, and small enterprises have more workers than micro-enterprises. It is worth noting that men-led small enterprises tend to employ significantly more hired workers compared to women-led small enterprises. The data also highlights that small businesses generally have more significant labor participation than micro-businesses, irrespective of gender leadership.

Table 13: Worker's involvement in different business

Gender	Main Workers (e.g., husband and wife)		
	Micro	Small	Grand Total
Men-led	2.09	1.86	2.00
Women-led	2.00	1.86	1.94
Grand Total	2.05	1.86	1.97
Gender	Family Workers		
	Micro	Small	Grand Total
Men-led	1.36	1.71	1.50
Women-led	1.09	0.86	1.00
Grand Total	1.23	1.29	1.25
Gender	Hired Workers		
	Micro	Small	Grand Total
Men-led	0.00	2.29	0.89
Women-led	0.00	1.14	0.44
Grand Total	0.00	1.71	0.67

4.2.5 Monthly production amount of shrimp paste

Table 14 provides information about the average monthly production, measured in kg, of businesses categorized by business size and gender. The table has two columns representing gender (women and men) and two rows representing business size (micro and small).

The numbers in the table indicate the average monthly production of businesses within each category. For example, in the microbusiness category, the average monthly production for women is 623 kg, and for men it is 638 kg, resulting in an overall average monthly production of 631 kg.

In the small business category, the average monthly production for women is 1,633 kg, while for men it is 3,336 kg, resulting in an overall average monthly production of 2,484 kg.

The total row shows the overall average monthly production regardless of business size and gender. The total average monthly production for women is 1,016 kg, while for men it is 1,687 kg, resulting in an overall average monthly production of 1,352 kg.

The table suggests that, on average, men have a higher monthly production than women in both micro and small businesses. Small businesses have a significantly higher average monthly production compared to micro businesses, regardless of gender.

Table 14: Monthly production amount of shrimp paste in kilogram

Average monthly production of business size by gender (kg)	Women	Men	Grand Total
Micro	623	638	631
Small	1633	3336	2484
Grand Total	1016	1687	1352

In terms of the T-test distribution of monthly production by business size and gender to understand the mean difference, production by business size is significant while production by gender is not significant. SPSS v.16 was used to determine the test.

For the production by business size, the figure shows that the micro group had a lower mean production of 631 kg with a standard deviation of 253, while the small group had a higher mean production of 2,484 kg with a standard deviation of 3,011.

Levene's test was used to determine whether the variances of the two groups are significantly different. The results in the figure indicate that the test was performed assuming equal variances, resulting in an F statistic of 17.051 with a corresponding p-value of 0.00. This means that there is strong evidence to suggest that the variances of the micro and small groups are different.

The t-test for equality of means compares the means of the two groups and determines whether they are significantly different from each other. In this case, the test was performed assuming equal variances, resulting in a t-statistic of -2.895 with a corresponding p-value of 0.01. Since the p-value is less than the significance level of 0.05, we have sufficient evidence to reject the null hypothesis of equal means. This means that there is a significant difference in production between the micro and small groups.

The figure also provides a 95% confidence interval for the difference in means between the two groups. The mean difference is -1,853 with a standard error of 640. The confidence interval ranges from -3154 to -552 when assuming equal variances, and from -3594 to -112 when assuming unequal variances. This means that with 95% confidence, we can say that the true difference in means between the micro and small groups lies somewhere within this range. Since the t-test found a significant difference between the means, we can interpret this confidence interval as evidence of a real difference in production between the two groups.

On the other hand, regarding production by gender, the figure shows that the men group had a higher mean production of 1,688 kg with a standard deviation of 2,798, while the women group had a lower mean production of 1,016 kg with a standard deviation of 820.

Levene's test was used to determine whether the variances of the two groups are significantly different. The results in the figure indicate that the test was performed

assuming equal variances, resulting in an F statistic of 4.226 with a corresponding p-value of 0.05. This means that there is some evidence to suggest that the variances of the men and women groups may be different.

The t-test for equality of means compares the means of the two groups and determines whether they are significantly different from each other. In this case, the test was performed assuming equal variances, resulting in a t-statistic of 0.977 with a corresponding p-value of 0.34. Since the p-value is greater than the significance level of 0.05, we do not have sufficient evidence to reject the null hypothesis of equal means.

The figure also provides a 95% confidence interval for the difference in means between the two groups. The mean difference is 671 with a standard error of 687. The confidence interval ranges from -725 to 2068 when assuming equal variances, and -762 to 2105 when assuming unequal variances. This means that with 95% confidence, we can say that the true difference in means between the men and women groups lies somewhere within this range. However, since the t-test did not find a significant difference between the means, we should interpret this confidence interval with caution.

Figure 4: Group statistics for t-test

	Group Statistics				
	Business	N	Mean (kg)	Std. Deviation	Std. Error Mean
Production by business size	Micro	22	631	253	54
	Small	14	2484	3011	805
Production by gender	Male-led	18	1688	2798	660
	Female-led	18	1016	820	193

Figure 5: Significant results of the t-test

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval	
									Lower	Upper
Production by business size	Equal variances assumed	17.05	0.00	-2.9	34	0.01	-1853.38312	640.20912	-3154.4446	-552.32164
	Equal variances not assumed			-2.3	13.12	0.04	-1853.38312	806.59641	-3594.3466	-112.41961
Production by gender	Equal variances assumed	4.226	0.05	0.977	34	0.34	671.38889	687.32141	-725.41627	2068.1941
	Equal variances not assumed			0.977	19.9	0.34	671.38889	687.32141	-762.7985	2105.5763

4.2.6 Livelihood diversification and expenditures prioritization

The households engaged in the shrimp-paste business also participate in other income-generating activities such as pig and chicken farming, small-scale businesses (e.g., grocery or sewing machine shops), agriculture, fishery (e.g., crab, hilsa, shrimp, and dried fish), and casual labor (e.g., wage labor or cycle carry). According to the study, 86% of shrimp-paste households are engaged in at least one additional income-generating activity, while all households engaged in small businesses are involved in at least one additional income-generating activity. On the other hand, 77% of households engaged in microbusinesses are involved in additional income-generating activities. The data is presented in a table, which shows the number and percentage of households involved in different numbers of additional income-generating activities. Moreover, Men-led businesses are less likely to require an additional job to generate enough income for the family. On the other hand, Women-led businesses are more likely to require at least one additional job to generate enough income for the family because their production is less compared to man-led businesses.

Table 15: Livelihood diversification

Livelihood Diversification	No additional Job	One additional Job	Two additional Job	Three additional Job	Total
Micro	5 (23%)	6 (27%)	9 (41%)	2 (9%)	22
Men-led	5 (45%)	1 (9%)	5 (45%)	0	11
Women-led	0	5 (45%)	4 (36%)	2 (18%)	11
Small		8 (57%)	5 (36%)	1 (7%)	14
Men-led	0	5 (71%)	2 (29%)	0	7
Women-led	0	3 (43%)	3 (43%)	1 (14%)	7
Grand Total	5 (14%)	14 (39%)	14 (39%)	3 (8%)	36

Shrimp-paste-making households prioritize and allocate their income into three categories. The first priority is to allocate income towards loan repayment, food, and investment costs because they often take out loans to start the business before the fishing season. The second priority is to allocate income toward educational and health expenses. Finally, their third priority is to allocate income toward social and entertainment expenses. Most income of most respondents spends their income on the first priority.

CHAPTER 5
FINDINGS OF THE STUDY

5.1 Fishing Practices

All shrimp paste producers catch shrimp themselves, with the man primarily responsible for going fishing and the woman taking on supporting roles. Raft fishing nets, known as Kyar Phaung, are commonly used to catch shrimp. The study found that micro-business owners tend to fish in rivers, while small business owners tend to fish in the inshore area, where they can use their larger boats, more powerful engines, and greater amounts of fishing gear.

The fishing season typically runs from late September to early May each year (peak season is from November to January), and women generally do not participate in fishing due to the risky weather conditions and the need to fish day and night throughout the season. However, women do play an important role in supporting fishing activities by preparing meals, clothes, and other necessary items for the fishers.

5.2 Division of labor in Shrimp Paste Processing

The objective of understanding the division of labor within households is to comprehend how tasks and responsibilities are allocated among family members and how this allocation impacts family dynamics and well-being. It involves examining the gendered division of labor and the various factors that influence the distribution of tasks within households (Hochschild, 1989; Coltrane, 2000).

Research has shown that traditional gender roles continue to shape the division of labor within households, with women typically taking on a larger share of domestic work and caregiving responsibilities (Bianchi et al., 2012). This unequal distribution of labor can lead to stress and strain on individuals and relationships, as well as potential health and economic consequences (Mattingly & Sayer, 2006).

Understanding the division of labor within households can provide insights into how gender norms and societal expectations impact family life and how individuals and families can work towards more equitable and sustainable household arrangements.

Regarding the division of labor in shrimp paste processing households, in this study, there is no distinction between micro and small businesses. However, there are differences between businesses led by women and men (Table 16).

Labor division can be classified into four categories: pre-processing, processing, and post-processing of shrimp paste business, and other domestic chores tasks. Overall, women tend to have more involvement in the labor division. In the pre-processing phase, which involves nine activities, women tend to have a more significant role. In contrast, men's participation is more pronounced in the thirteen activities involved in the processing phase. Women typically handle three activities in the post-processing phase, along with three activities related to domestic chores.

In the pre-processing phase, women handle two tasks, while men handle one task exclusively. In addition, both men and women participate in six activities; nevertheless, women predominate in four activities.

Fishermen must prepare for the fishing season by acquiring necessary items and seeking capital investment. Women tend to take out loans and sell assets to obtain the required capital investment, while both men and women purchase inputs such as fishing nets, salt, bamboo, fuel, and food. Women also excel at tasks such as preparing fishing nets and hiring workers.

During the fishing season, men are responsible for catching shrimp, which they do twice a day and twice a night. They are also responsible for cleaning and sorting the shrimp using a bamboo sieve, separating tiny shrimp from other fish and larger shrimp. Tiny shrimp are for shrimp paste (see photo record). Women handle tasks such as sorting and cleaning other fish and preparing food for the fishermen.

In the processing phase, both men and women perform thirteen activities, with seven activities dominated by women and six by men. Men are excellent at salting shrimp, whereas women are responsible for storing salted and dehydrated shrimp. Typically, salted shrimp are sun-dried twice/three and ground three/four times. Men are responsible for transporting shrimp to sun-drying locations and factories, while women

are responsible for spreading the shrimp out to dry. The sun-drying process takes two days, and the shrimp are dispersed every hour.

Three activities in the post-processing phase are performed by women, including tasks such as negotiating prices with middlemen, handling money, and paying back loans. In addition, women are responsible for managing household chores, cooking, preparing and supporting students, and maintaining the family's health. Moreover, they are responsible for drying other fish, caring for pigs and chickens raising, and so on.

Table 16: Different by the size of shrimp paste business household

#	Household Level Labor Division	Man (%)	Women (%)
Pre-processing			
1	Looking for capital to start the business before the fishing season	30	70
2	Selling assets for capital to start the business before the fishing season	30	70
3	Purchasing inputs (Nets, Salts, Bamboo, Fuel, etc.)	50	50
4	Net preparation before fishing season	0	100
5	Recruiting and hiring workers	25	75
6	Preparing food for fishermen before going to the fishing ground	0	100
7	Fishing (Four times a day: Two times for day and two times for night)	100	0
8	Landing caught shrimp, cleaning and sorting the shrimp by bamboo sifter (Tiny shrimp and fish and big shrimp)	85	15
9	Sorting other fish (fish and big shrimp) and cleaning	30	70
	Sub-total (Average of pre-processing)	**39**	**61**
Processing			
1	Salting	70	30
2	Keeping salted shrimp in bags	30	70
3	Delivering salted shrimp to sun drying place (First Round)	90	10
4	Spreading the shrimp out to dry (First Round)	36	65
5	Sun drying for two days (Spreading the shrimp about an hour) (First Round)	5	95
6	Keeping dried shrimp in bags (First Round)	30	70
7	Delivering dried shrimp to the factory to grind for half-broken (First Round)	95	5
8	Delivering half-broken dried shrimp to home (First Round)	95	5
9	Delivering half-broken dried shrimp to sun drying place (Second Round)	95	5
10	Spreading the shrimp out to dry (Second Round)	30	70
11	Sun drying for two days (Spreading the shrimp about an hour) (Second Round	5	95
12	Keeping dried shrimp in bags (Second Round)	30	70
13	Delivering dried shrimp to the factory to make shrimp paste (Second and third round grinding)	95	5

#	Household Level Labor Division	Man (%)	Women (%)
	Sub-total (Average of processing)	**53**	**47**
Post-processing			
1	Enquiring prices and contacting middlemen to sell shrimp paste	15	85
2	Managing income	15	85
3	Loan Repayment	0	100
	Sub-total (Average of post-processing)	**10**	**90**
Household duties			
1	Cooking	0	100
2	Preparation and supporting students	0	100
3	Managing family's health and household chores	0	100
	Sub-total (Average of other activities)	**0**	**100**
	Grand Total (Average of sub-totals)	**25**	**75**

Table 17 shows a comparison between businesses led by women and those managed by men. Men predominate in two phases of the man-led business: pre-processing and processing. In contrast, women dominate every aspect of women-led businesses. However, respondents reported that the shrimp paste business is a man's business because women have not done fishing.

The underrepresentation of women in the fishing sector results in limited access to support services from both government and non-government organizations. One study found that the fishery department in Myanmar only provides training to men, excluding women from these opportunities (Gareth et al., 2012). Moreover, when a fisherman registers for a card, the department of fisheries requests the "National Registration Card (NRC) of Fisherman" and "Photos of Fisherman" with a gender focus (MOALI, 2022). This implies that government officials consider fishing to be a men-dominated occupation.

The difference in the gender division of labor between men-led and women-led businesses is that women are highly supported in men-led businesses, while men are not as supportive in women-led businesses. For instance, women who work in men-led businesses are actively involved in the entire process, whereas men who work in women-led businesses are primarily involved in fishing activities.

Table 17: Comparison between woman-led and man-led business

Household Level Labor Division	Man-led		Woman-led	
	Men (%)	**Women (%)**	**Men (%)**	**Women (%)**
Looking for capital to start the business before the fishing season	60	40	0	100
Selling assets for capital to start the business before the fishing season	60	40	0	100
Purchasing inputs (Nets, Salts, Bamboo, Fuel, etc.)	60	40	38	62
Net preparation before fishing season	0	100	0	100
Recruiting and hiring workers	50	50	0	100
Preparing food for fishermen before going to the fishing ground	0	100	0	100
Fishing (Four times a day: Two times for day and two times for night)	100	0	100	0
Landing caught shrimp, cleaning and sorting the shrimp by bamboo sifter (Tiny shrimp and fish and big shrimp)	89	11	81	19
Sorting other fish (fish and big shrimp) and cleaning	50	50	7	93
Sub-total (Average of pre-processing)	**52.11**	**47.89**	**25.11**	**74.89**
Salting	92	8	47	53
Keeping salted shrimp in bags	36	64	19	81
Delivering salted shrimp to sun drying place (First Round)	95	5	88	12
Spreading the shrimp out to dry (First Round)	50	50	23	77
Sun drying for two days (Spreading the shrimp about an hour) (First Round)	5	95	0	100
Keeping dried shrimp in bags (First Round)	35	65	22	78
Delivering dried shrimp to the factory to grind for half-broken (First Round)	100	0	88	12
Delivering half-broken dried shrimp to home (First Round)	97	3	97	3
Delivering half-broken dried shrimp to sun drying place (Second Round)	97	3	89	11
Spreading the shrimp out to dry (Second Round)	37	63	22	78
Sun drying for two days (Spreading the shrimp about an hour) (Second Round	5	95	1	99
Keeping dried shrimp in bags (Second Round)	35	65	19	81
Delivering dried shrimp to the factory to make shrimp paste (Second and third round grinding)	95	5	92	8
Sub-total (Average of processing)	**59.92**	**40.08**	**46.69**	**53.31**
Enquiring prices and contacting middlemen to sell shrimp paste	15	85	14	86
Managing income	30	70	0	100
Sub-total (Average of post-processing)	**22.50**	**77.50**	**7.00**	**93.00**
Grand Total (Average of sub-totals)	**44.84**	**55.16**	**26.27**	**73.73**

5.3 Collective Practices

The objective of the collective market approach in the fishery is to improve the economic and social welfare of small-scale fishers by promoting their collective organization and participation in markets. According to Njaya and Fabusoro (2020), the collective approach can enhance small-scale fishers' access to markets and reduce transaction costs, leading to better prices for their products. This approach can also improve the bargaining power of small-scale fishers, as they can negotiate with buyers as a group.

Moreover, the collective approach can also support the sustainable management of fishery resources by promoting community-based management practices (WorldFish, 2017). By collaborating on resource management, small-scale fishers can help to ensure the long-term viability of fishery resources and the sustainability of their livelihoods (Teh & Sumaila, 2013).

The research found that although most processors do not usually participate in collective buying and selling activities in a collective market scheme, those located in the remote areas of Labutta town often adopt a collective approach when purchasing materials like bamboo and salt and selling their products. The primary aim is to minimize transportation costs linked with procurement and to leverage the group's collective bargaining power to potentially secure better prices for their products. However, the potential benefits of the collective market approach have no specific impact on the socio-economic development of small-scale fishers, as they do not fully adopt or participate in the approach.

There are several reasons why a collective market approach has not been fully adopted. In the case of micro-businesses, business owners' individual free time and income requirements may differ, and they may not have large quantities of products to sell in other markets because they must repay the merchants who provided the loan. On the other hand, some small business households sell their products collectively to collectors who offer maximum prices, often combining their products with those of four or five other interested people. However, they engage in collective marketing only after settling their loans.

The gender of the business owner does not appear to make a difference in this activity, as it is dependent on the individual village. The study included three villages, but one village located near Labutta town did not participate in collective market activities. The other two villages, Zin Ywe (small business category) and Ka Nu Ka Mar (micro-business category) did participate.

5.4 Livelihood Performance

Based on the conceptual framework, the findings of the study will be discussed across four primary areas of inquiry: gender and access to livelihood capital; the impact of context on vulnerability; the impact of transforming structure and process; and the impact of livelihood strategy on the livelihood outcomes of the shrimp-paste business. These areas of discussion will provide a comprehensive understanding of the shrimp-paste business and the factors that affect its success and sustainability.

5.4.1 Gender and access to livelihood capitals

5.4.1.1 Human Capital

According to the study, there were differences between men and women respondents in terms of their education levels. 56% of the women respondents had completed primary education, while 56% of the men respondents had completed secondary education. When it came to business ownership, half of the microbusiness owners had completed primary education, while half of the small-business owners had completed secondary education.

The study also found that micro-business owners had limited access to livelihood skill development training, while small-business owners had access to training such as livestock breeding. In terms of sanitation facilities, families in microbusinesses typically had non-fly-proof latrines with no facilities (see photo records), whereas families in small businesses had access to fly-proof latrines with facilities. However, micro-business families reported getting sick semiannually, particularly women and children, while small-business families reported getting sick quarterly.

In terms of livelihood skills, Women-led micro-businesses had a monthly production amount of 623 kg, while Men-led micro-businesses had 638 kg. Women-led small businesses produced an average of 1,633 kg per month, while Men-led businesses produced over 3,336 kg per month due to differences in fishing capacity. On average, microbusinesses produced 631 kg per month, while small businesses produced 2,484 kg per month.

5.4.1.2 Financial Capital

Information from the study area shows that both savings and loans are important sources of financial capital for micro- and small-business entrepreneurs in the area. The fact that the savings of micro business owners contribute to less than 50% of their initial investment cost suggests that they may have limited financial resources and face constraints in building up their financial capital. However, the fact that they can contribute some savings highlights their efforts to invest in their livelihoods.

On the other hand, the fact that small-business owners can contribute over 50% of their initial investment cost from their savings suggests that they may have stronger financial capital and may be better positioned to invest in their businesses.

The study also shows that loans are a significant source of financial capital for both micro- and small-business entrepreneurs, with loans contributing over 50% of total investment costs for micro-business entrepreneurs and under 50% for small-business entrepreneurs. This suggests that access to credit is important for these entrepreneurs to be able to make the necessary investments in their businesses.

In addition, women in the study area are responsible for taking loans for both women-led and men-led businesses, while men are responsible for repaying the loans by fishing. This indicates a gendered division of labor and responsibilities within households and businesses.

NGOs provide loans to micro-business owners up to 800,000 MMK (approximately 380 USD) and small-business owners up to 1,800,000 MMK (approximately 860 USD), with a maximum 2.5% interest rate and repayment twice per month. However, some business owners are not in favor of the loan repayment method as it does not support

their business. The reason is, processors are compelled to sell their products at lower prices or, in some cases, take another loan with high-interest rates to repay the original loan on time. Consequently, some business owners who have good relationships with local money lenders prefer to take loans from them, despite the high-interest rates. This is because they have the opportunity to store their products and sell them at a higher price. A small-business owner stated,

> *"I tried negotiating with the staff in charge of our village to get a long-term loan, but they informed me that they cannot change their policy. Therefore, I do not take any loans from development projects as they do not support our business. Currently, I take loans from local money lenders. I repay the loan after selling my products at high-price"* (Man, 65 years old, Zin Ywe Village)

Local money lenders offer loans to micro-business owners up to 1,500,000 MMK (approximately 715 USD) and small-business owners up to 2,000,000 MMK (approximately 950 USD), with a minimum 5% interest rate and repayment each of three or five months.

Most microbusiness families have no savings, while most families save 50,000 MMK (approximately 25 USD) per month, and households led by women have more potential savers.

Due to the need to repay loans at a low price per viss of product, it is challenging to determine the monthly income. The loan price is fixed at 800 MMK (approximately 0.5 USD) per viss, with a current maximum price of 1800 MMK (approximately 1 USD). Most microbusiness families and some small business owners have outstanding loans. As a result, the estimated monthly income of a Women-led and Men-led household in micro-businesses is approximately 166 USD, while that of a Women-led and Men-led household in small businesses is 869 USD, respectively.

Overall, the study highlights the importance of both savings and loans as sources of financial capital for micro- and small-business entrepreneurs and the need for strategies to increase access to credit and support entrepreneurs in building up their financial capital.

In terms of the income of micro and small businesses in a particular market. These businesses take out loans from a merchant at a fixed price and sell their products in the market to repay the loan and make a profit. Micro businesses produce only enough to repay their loan, while small businesses have more opportunities to sell their products in flexible markets for higher prices. The average price per unit of product sold by micro businesses is 900 MMK, while small businesses command an average price of 1200 MMK.

Table 18 shows the monthly income in USD for micro and small businesses broken down by gender. It reveals that Men-led small businesses earn significantly more than Women-led small businesses, with an average monthly income of 1,167 USD compared to 571 USD. In the micro business category, the monthly income is relatively similar between men and Women-led businesses, with an average of 168 USD for Men-led businesses and 164 USD for Women-led businesses.

Overall, the data suggests that small businesses have more opportunities to sell their products for higher prices in flexible markets, which results in a higher average price per unit sold and monthly income compared to micro businesses. There is also a significant gender disparity in the income of small businesses, with Men-led businesses earning more on average than Women-led businesses.

The gender gap in the income of small businesses is mainly due to differences in production and hiring practices. Women-led small businesses typically employ up to three workers, while Men-led small businesses employ up to six workers, resulting in significantly higher production levels for the latter. This higher production level directly impacts the income of Men-led small businesses.

Table 18: Estimated monthly income

Monthly Income (USD)	Women	Men	Grand Total
Micro	164	168	166
Small	571	1167	869

5.4.1.3 Social Capital

The study examined the role of social capital in the community and found that women actively participate in community-based microfinance groups, including UNDP, World Vision, and the Mya Sein Young National Project. For example, the study found that

women have the opportunity to obtain loans from development projects, which was reported by respondents. In contrast, men participate in fishery-related groups, such as fisher development associations. For instance, in La Put Ta Loke (South) village, all members of the fishery group were men. Women have stronger relationships with local merchants and moneylenders than men because they often take out loans from them. Additionally, women have better access to mobile phones because they need to communicate with merchants to stay updated on prices. A detailed discussion can be seen under the division of labor section.

The study also found that small-business households have greater access to training opportunities than micro-businesses, indicating that small-business families have more social capital. In the shrimp-paste-making process, 70% of the tasks are performed by women, while men are responsible for high-risk and physically demanding activities. The study notes that relationships with neighbors are generally positive, as most families in the village are involved in fishing.

5.4.1.4 Physical Capital

In the study, it was found that micro-businesses typically own a small boat (20' on average) for fishing, while small businesses own one or two larger boats (40" on average). Additionally, microbusinesses typically use an average of five fishing nets, while small businesses use an average of 18.

As for entertainment and communication technology, 30% of microbusiness owners and 40% of small-business owners had a television. 70% of micro-business owners had a mobile smartphone, which was frequently used by women to check prices, while 80% of small-business owners had one or two mobile phones for general purposes.

The study also found that most families in microbusinesses lived in small bamboo houses with thatched roofs, bamboo walls, and wooden floors (see photo record). 70% of these houses were old. On the other hand, most families in small businesses lived in medium wooden houses with thatched roofs, wooden walls, and wooden floors. 50% of these houses were old. Quality house is beneficial to store their product. All

processors used solar energy for electricity, and some small business owners provided street lighting in front of their houses.

All families in the study had a dining table, and 50% of small-business owners had a cupboard and chairs. However, almost all business owners did not have a grinding machine for shrimp paste processing, with only one household in the sample owning such a machine, which was a small-business owner.

5.4.1.5 Natural Capital

The study revealed that the majority of shrimp-paste processing households did not own any land, but a few households in the micro business had registered land under the household head's name. A few processors who live in Ka Nu Ka Mar village have land and it has only micro-business owners. Having a land registration certificate was found to be directly related to taking loans from microfinance institutes and banks. All households in the study area had access to water from ponds in the village, and some households purchased water with delivery fees.

In terms of fishery resources, everyone had the right to fish in open fishing grounds without any fees. However, women had not gone fishing due to prevailing social norm s. The community believed that women's role in fishing was to support the fishermen. In tenders and leasehold fishing grounds, fishers had to pay annual fees, taxes, or licensing fees to government officials or tender owners. In these cases, government personnel and tender owners primarily worked with men to provide fishing permits.

Finally, regarding access to mangrove forests, everyone had access to public mangrove forests. However, men were responsible for collecting firewood, while women were responsible for cooking, as per social norms.

5.4.1.6 The overall discussion of access to livelihood capitals on different business

The differences in various indicators between microbusinesses and small businesses are shown in table 19. The indicators are grouped into five categories: access to human, financial, physical, natural, and social capital.

In terms of access to human capital, both micro businesses and small businesses have low levels of literacy, but small businesses have a higher proportion of respondents with secondary education. Only small businesses have access to livestock breeding training, and they also have better sanitation facilities. Small businesses also have a higher frequency of getting sick, which may suggest that they have more stressful and demanding work environments.

When it comes to accessing financial capital, both micro businesses and small businesses struggle to identify their monthly income, and most families have loans that need to be repaid. However, small businesses save more money per month and have access to larger loans compared to micro businesses.

In terms of access to physical capital, small businesses have more significant physical assets, such as bigger boats for fishing, more fishing nets, and better access to electronics like televisions and mobile phones. They also tend to own newer houses.

Regarding natural capital, both micro-businesses and small businesses have equal access to fishery resources and water from ponds, but only micro-businesses have access to public mangrove forests. Additionally, few households in microbusinesses own land with the household head's name, and no fisher owns land in small businesses.

Finally, in terms of access to social capital, both micro businesses and small businesses participate in community development projects. Women participate more in self-help projects in both micro and small businesses, but men are more dominant in the Ayeyarwady Region Fisher Development Association (ARFDA). Both men and women are involved in the whole process, but men are responsible for risky and heavy activities, while women take on more tasks. Both micro and small businesses have no issues with their neighbors.

Overall, this table shows that small businesses generally have more significant resources and access to training and education compared to micro businesses. They also tend to have better health, access to larger loans, and more significant physical assets.

Table 19: Comparison of access to livelihood capital between micro and small businesses

Indicators	Micro-business	Small-business
Access to Human Capital		
Literacy	50% of respondents are in primary education. The rest is secondary (17%) and high school (9%).	50% of total respondents is secondary education. The rest is primary (43%) and high school (7%).
Access to training	No training	Access to livestock breeding training
Having sanitation facilities	Non-fly prove latrine with no facilities	Fly prove latrine with facilities
Frequency of getting sick	Got sick every six months. Children and women are more potential.	Got sick quarterly.
The skill of fish catch/month	Monthly fish production is 386 viss. The Women-led business produces 382 visses per month while the Men-led business produces 391 visses per month.	Monthly fish production is 1,521 viss. Women-led businesses produce 1,000 visses per month while Men-led businesses produce 2043 visses per month.
Access to Financial Capital		
Income per month	Monthly income is difficult to identify because some quantity of product needs to be repaid the loan at a low price. The fixed price for the loan is 800 MMK per viss and the current price is 1800 MMK maximum.	Monthly income is difficult to identify because some quantity of product needs to be repaid the loan at a low price. The fixed price for the loan is 800 MMK per viss and the current price is 1800 MMK maximum.
Saving per month	Most families have loans. Most families have no savings.	Some families have loans. Most families save 50,000 MMK per month. **Women who lead HHs are more potential.**
Yearly access to loans from NGO	Most families take a loan from UNDP. The loan amount is from 5 to 8 lakhs MMK. The loan repayment period is twice per month with a maximum 2.5% of interest rate.	UNDP and Mya Sein Yaung National Project provide a loan. The loan amount is from 10 to 18 lakhs MMK. The loan repayment period is twice per month with a maximum of 2.5% of interest rate.
Yearly access to loans from an informal source	Most families take a loan from a money lender. The loan amount is from 5 to 15 lakhs MMK. The loan repayment period is seasonal with a minimum 5% interest rate.	Most families take a loan from a money lender. The loan amount is from 15 to 20 lakhs MMK. The loan repayment period is from 3 to 5 months with a minimum 5% interest rate.
Access to Physical Capital		

Indicators	Micro-business	Small-business
Access to the fishing boat	All households own a small boat for fishing.	All households own one or two big boats for fishing.
Own fishing nets and their value	A business has 5 fishing nets on average. The average value per net is 150,000 MMK.	A business has 18 fishing nets on average. The average value per net is 140,000 MMK.
Access to Television	30% of the family owns a TV.	40% of families own a TV.
Access to mobile	70% of the family have a phone. **Women use it frequently.**	80% of the family have one or two phones.
Housing status	Most families own bamboo houses: Thatches roofs, bamboo walls, and wood floors. 70% of houses are old.	Most families own wooden houses: Thatches roofs, bamboo walls, and wood floors. 50% of households are old.
Having access to electricity	Most households have solar electricity.	Most households have solar electricity. Some provide street lights in front of the house.
Household assets	Most families have a dining table.	Most families have a dining table. 50% of households have cupboards and chairs.
Having a crushing machine	Not own	A processor owns a grinding machine.
Natural Capital		
Land ownership	Few households own land with a household name.	No fisher owns the land.
Access to water	All households have access to water from ponds.	All households have access to water from ponds.
Access to fishery resource	Everyone accesses fishery resources.	Everyone accesses fishery resources.
Access to mangrove	Everyone accesses public mangrove forests.	No one accesses mangrove forest because all forest has an owner.
Access to Social Capital		
Participated in a local association	Most families participate in UNDP and ARFDA. Women are more dominant in UNDP while men are more dominant in ARFDA.	Most households participate in UNDP and Mya Sein Yaung National Project. Most are women.
Women's participation in work	70% of women are involved in the whole process. But men are responsible for risk and heavy activities.	Both genders involve in the whole process. Men are responsible for risk and heavy activities. But women take on more tasks.
Relationship with neighbors	No issue because most families are fishers.	No issue because most families are fishers.

In the livelihood framework, vulnerability context and transforming structure and process significantly impact access to livelihood capital (Chambers & Conway, 1992). Vulnerability context refers to the social, economic, and environmental conditions that may hinder or facilitate livelihood activities. These contextual factors can determine the availability and accessibility of resources and opportunities for individuals and communities to engage in livelihood activities. For instance, conflict, natural disasters, and economic crises can limit access to resources and markets, resulting in reduced access to livelihood capital (Devereux & Maxwell, 2001).

Transforming structure and process, on the other hand, refer to how social, economic, and political structures and processes influence access to resources, services, and opportunities. These structures and processes can enable or constrain individuals' and communities' abilities to access and control livelihood capital. For example, discriminatory laws and policies, unequal distribution of resources and services, and limited access to credit can limit access to livelihood capital for marginalized groups, such as women and ethnic minorities (Scoones, 1998).

In combination, vulnerability context and transforming structure and process can create complex and dynamic conditions that shape access to livelihood capital. Understanding these contextual factors is crucial for designing effective livelihood interventions that address the underlying structural barriers and support vulnerable individuals and communities to access and control livelihood capital (Ellis, 2000).

In the study area, the intersection of the global pandemic, the military coup of February 1st, 2021, and the recent global economic crisis have created a devastating economic downturn in Myanmar.

The global pandemic resulted in travel restrictions that had a significant impact on fish processors. This led to a decrease in product prices and losses due to an unstable market. The travel restrictions prevented processors from selling their products in the market, and merchants and middlemen were unable to come to the village to buy their products. As a result, the processors' income declined significantly.

To address these issues, some processors tried selling their products in nearby villages, selling to merchants at lower prices, and taking on casual labor from wealthier families. However, due to the focus on basic needs such as food and operating costs, they were unable to prioritize other expenses such as education, clothing, or entertainment. Some households even had to sell their assets, such as gold, paddy, and bicycles, to make ends meet. Local authorities in some villages created market centers with COVID-19 safety guidelines to support the community, allowing merchants and shrimp paste producers to come to the center-point market.

The pandemic had a particularly significant impact on women, who faced increased responsibilities. Due to the unstable market, women were mainly responsible for selling products in nearby villages and had to find merchants to sell their products. Additionally, women often had to make do with low-quality and low-quantity food to meet their daily needs due to their low income. Managing household responsibilities was challenging for housewives during this time. On the other hand, men took on casual labor to supplement the family income.

Following the coup, prices for everything doubled, and although travel restrictions were not as severe as during the COVID-19 pandemic, there were many checkpoints where travelers had to present documents such as their national registration card, household certificate, travel recommendations, and more. Later, both the prices of purchasing items and of selling products increased, but the increase in the cost of purchasing items was greater than the increase in the selling price of products, resulting in lower profits for shrimp paste makers.

Therefore, most families had to prioritize their income. In the study area, women were primarily responsible for managing the family's income. On the other hand, men had difficulty catching fish due to old fishing gear, and the resulting low income made it impossible to purchase new fishing nets, which led to low production.

The global pandemic and political crisis have had a detrimental impact on the fishery sector of the study area, causing a decline in fishery resources and fish production. This decline can be attributed to several factors, including overfishing by commercial

businesses, a lack of protected areas, plastic pollution in the water, unstable weather, the construction of embankments, and the return of migrant workers.

Firstly, commercial fishing businesses have been overfishing in the open seas. After the political coup, they have been easily obtaining fishing licenses from the fishery department and using modern fish-finding equipment to catch fish in the sea. Unfortunately, they often only use high-quality fish and discard the rest, leading to a significant depletion of fishery resources.

Secondly, the termination of freshwater fishery laws has allowed fishermen to catch fish in previously protected fishing grounds, resulting in the further depletion of fish stocks. This lack of regulation has made it easier for fishers to engage in overfishing practices, leading to a decline in fish production.

Thirdly, plastic pollution in the water has increased and has impacted the fishing industry. Fishermen often find large amounts of plastic in their nets, which not only damages the fishing equipment but also negatively affects the quality of the fish caught. Additionally, unstable weather conditions, such as heavy rains, have made it difficult for fishers to catch fish, further decreasing the production of fish.

Fourthly, some farmers have been constructing embankments for natural aquaculture, destroying the ecology of fish and leading to a decline in fishery resources.

Finally, with industries and manufacturing operations being severely affected by the pandemic and political crisis, many migrant workers have returned to their villages and resorted to fishing as their only means of livelihood. This has led to a crowded fishery environment, further contributing to the depletion of fish stocks.

In conclusion, the decline in fishery resources and fish production during the global pandemic and political crisis is a result of multiple factors, including overfishing, a lack of protected areas, plastic pollution, unstable weather conditions, the construction of embankments, and the return of migrant workers. These factors have resulted in a significant reduction in fishery resources and production.

This study found that inadequate engagement with the private sector harms the livelihood outcomes of the shrimp paste processing industry. Private sector loans are provided with the agreement of product payback, resulting in processors receiving an unfair price when repaying their loans. Consequently, micro business owners receive an average of 900 MMK per viss, while small business owners receive 1,200 MMK per viss, despite the market price being 1,500 MMK per viss.

Due to political conflicts, commercial fishing business, termination of freshwater fishery laws, and unfunctional development agencies have contributed to the decline in fishery resources in the Ayeyarwady region. Commercial fishing businesses have been overfishing in the mouths of the seas using modern fish-finding equipment to catch fish in the sea, as they have been easily obtaining fishing licenses from the fishery department after the political coup. Unfortunately, they often only use high-quality fish and discard the rest, leading to a significant depletion of fishery resources.

Moreover, the termination of freshwater fishery laws has allowed fishermen to catch fish in previously protected fishing grounds, resulting in the further depletion of fish stocks. The lack of regulation has made it easier for fishers to engage in overfishing practices, leading to a decline in fish production.

In addition, the development programs and fishery development associations that are established by development agencies have been restricted to protect the livelihood of small-scale fishers. However, this has led to declining fishery resources and socio-economic conditions. As a consequence, many international organizations and donors have suspended or scaled back their assistance programs in Myanmar, citing concerns about the legitimacy of the military government and its human rights record.

As a result of these effects, respondents confirmed that fishery resources decline these years compared to previous years.

5.5 Value Chain Analysis/Market Channel

The objective of gender-sensitive value chain analysis in the fisheries sector is to identify and address the gender-based constraints and opportunities along the entire value chain, from production to consumption, to promote gender equity and women's economic empowerment (FAO, 2013). This type of analysis recognizes the different roles, responsibilities, and access to resources of women and men along the value chain and aims to improve the participation and benefits of women in the sector.

According to the FAO (2013), gender-sensitive value chain analysis involves several steps, including:

1. Identifying gender roles and constraints as they exist along the value chain;
2. Assessing the impact of these constraints on women's participation and benefits;
3. Developing strategies to address the identified constraints and enhance women's participation and benefits;
4. Monitoring and evaluating the effectiveness of the strategies implemented.

Gender-sensitive value chain analysis is crucial in the fisheries sector because women play important roles in fisheries and aquaculture, but their contributions are often overlooked or undervalued (Brugere & Maal 2014). By identifying and addressing gender-based constraints, this type of analysis can lead to more equitable and sustainable fisheries and aquaculture systems.

In this study, input supply, production, first market channels, and second market channels are the most important parts of a value chain analysis. The input supply component can be divided into three subcategories, which are direct input supply for the business, indirect input supply for the business, and loan supply for the capital investment of the business. The production component includes two main products: shrimp paste (80% of production) and fresh shrimp (20% of production). Fresh shrimp means that fishermen do not make shrimp paste and sell their product directly to merchants who are from Korean companies.

The first market channel involves selling these products to merchants in villages or Labutta town. The second market channel can be categorized into two types: 70% of

total production is exported to Yangon, Mandalay, and Kayin States, while the remaining 30% is distributed to local consumers.

Within the input-supply component, the responsibilities of women are primarily focused on two areas. Firstly, they take on the task of procuring loans from a variety of sources, such as merchants, as well as NGOs like UNDP, World Vision, the Mya Sein Young National Project, and local money lenders. Secondly, they play a significant role in purchasing necessary supplies such as salt, food, and fuel for the business. In contrast, men take on the responsibility of fishing to repay the loans, as well as purchasing equipment such as nets, boats, and bamboo due to their greater experience in these areas.

Within the production phase, men typically take on the more physically demanding tasks, including fishing, landing the caught fish, and transporting semi-processed shrimp to the sun-drying area or the factory. Conversely, women are generally responsible for lighter tasks, such as sorting fish, packaging shrimp in bags, sun-drying, inquiring about prices, and communicating with middlemen to sell the products.

During the off-fishing season, many business owners secure advances from merchants through agreements that involve repaying the loan with their future product at a fixed price. Consequently, they are obligated to sell their products to the merchant who provided them with the advance, which often leads to selling their products at a lower price. This circumstance restricts their ability to search for alternative markets that might offer better prices before fulfilling their repayment obligations.

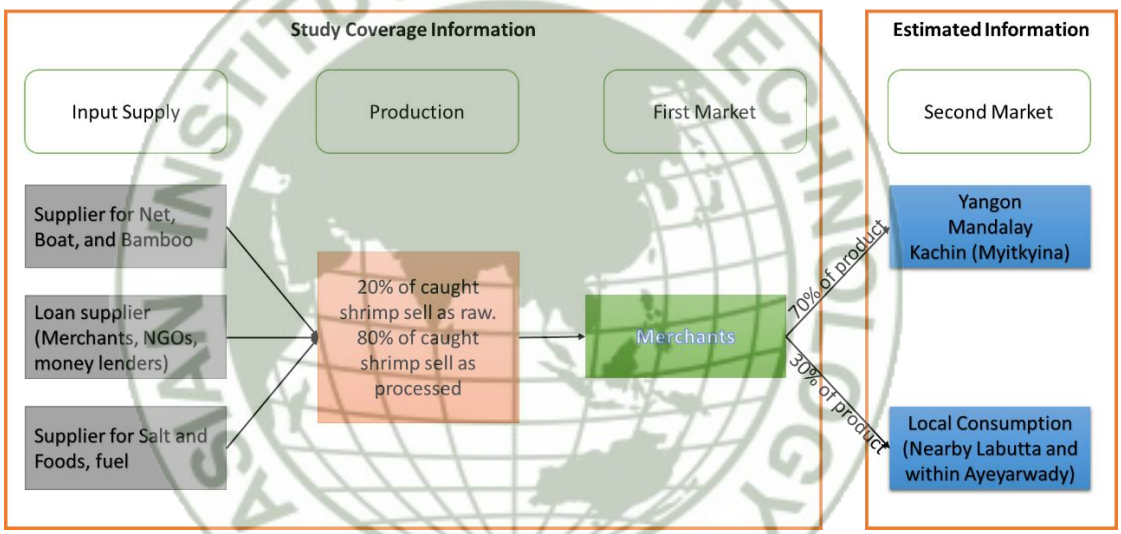
The markets of businesses vary depending on their size, which is primarily influenced by the amount of loan capital. A study revealed that micro-businesses rely on loans for over 50% of their capital, while small businesses rely on loans for less than 50% of their capital. Consequently, micro-business owners tend to sell their products at a fixed price, while small business owners have the flexibility to sell their products at market prices. The average income per viss for micro and small businesses also differs, with the aforementioned study revealing that micro-businesses command an average price of around 900 MMK per viss, while small businesses command an average price of 1,200 MMK per viss. It is noteworthy that some micro-business owners may face

challenges in repaying their loans during certain seasons. Some micro-business owners could not settle their loans completely in a season.

In terms of gender and market opportunities, it is often observed that women-led businesses are largely concentrated in the micro-business category. Consequently, it can be more challenging for women-led businesses to secure better market opportunities.

Information about the secondary market has been gathered through surveys, direct observation, and reading about the market in the past.

Figure 6: Value Chain Analysis/Market Channel



5.5.1 Intersectionality and access to livelihood capital

The study found that women in the study area produce fewer products, which leads to lower incomes and affects their access to financial capital. Women-led micro-businesses produce an average of 623 kg per month, while Men-led micro-businesses produce 638 kg. Similarly, Women-led small businesses produce 1,633 kg, whereas Men-led small businesses produce 3,336 kg.

It was also found that micro-business owners have limited financial resources and face challenges in building up their financial capital, as their savings contribute less than 50% of their initial investment cost. Despite this, their ability to save still shows their efforts to invest in their livelihoods. In contrast, small-business owners have stronger financial capital because they can contribute over 50% of their initial investment cost from their savings.

Table 20 shows the average percentage of capital (loan) in micro and small enterprises, broken down by gender and business ownership. The data suggest that Men-led businesses tend to have a higher average percentage of capital than Women-led businesses. In micro-enterprises, Men-led businesses have an average of 69% of capital while Women-led businesses have an average of 60%. In small enterprises, Men-led businesses have an average of 31% of capital while Women-led businesses have an average of 34%. Overall, the total shows an average of 65% of capital in micro-enterprises, 33% in small enterprises, and 52%.

It is important to note that this data table only provides averages and that individual businesses may have very different amounts of capital depending on their specific circumstances. Nonetheless, this data provides some insight into the overall trends in capital ownership for micro and small enterprises and suggests that Men-led businesses may have more access to capital than Women-led businesses.

Table 20: Loan contribution in their capital

Average of Capital (Loan)	Micro (%)	Small (%)	Total (%)
Men-led	69	31	54
Women-led	60	34	50
Grand Total	65	33	52

Table 21 indicates that when it comes to intersectionality and access to human capital, the majority of Women-led microbusiness owners have completed primary education, whereas the majority of Men-led business owners have completed secondary education.

Table 21: Education level of respondents

Education level	1) Primary	2) Secondary	3) High School	Grand Total
Women-led micro-business	7	3	1	11
Women-led small-business	3	3	1	7
Men-led micro-business	4	6	1	11
Men-led small-business	3	4		7
Grand Total	17	16	3	36

According to a study by Jitesh et al. (2017), fishers with higher levels of education are more likely to engage in sustainable fishing practices and adopt fishing methods that do not harm the environment. They may also have better business skills, which can enable them to invest in new technologies and equipment to increase their productivity and profitability.

Furthermore, higher education levels can provide fishermen with skills to diversify their livelihoods and reduce their dependence on fishing. Additionally, education can lead fishers to be involved in fishery management and policy development, ultimately contributing to the sustainable management of fishery resources and the improvement of fish production. Overall, the relationship between education level and fish production can be positively influenced by education.

Due to lower education levels, the monthly average production of micro-businesses led by women is lower than that of those led by men and small businesses (Table 18).

Table 22 provides information about the average monthly production in kilograms of four types of businesses and their production differences in comparison to Women-led micro-business. The production difference and the percentage difference are also provided.

According to the table, Women-led micro-business has an average monthly production of 623 kg, which serves as a benchmark for comparison with other businesses. Men-led

micro-business has an average production of 638 kg, which is 15 kg higher than Women-led micro-business. This represents a 2% difference in production.

In contrast, Women-led small-business has an average production of 1,633 kg, which is 1,010 kg higher than Women-led micro-business. This is a significant difference, representing a 162% increase in production compared to Women-led micro-business.

Men-led small-business has the highest production with an average of 3,336 kg, which is 2,713 kg higher than Women-led micro-business. This represents a production difference of 435% compared to Women-led micro-business.

Overall, the table shows that Men-led businesses, both micro and small, have significantly higher production than Women-led businesses. Men-led small-businesses have the highest production with a production difference of 2713 kg compared to Women-led micro-business.

Table 22: Monthly production of the businesses (in kilogram)

Type of business	Average Monthly Production (in kg)	Production different from Women-led micro business	% Different
Women-led micro-business	623	0	0%
Men-led micro-business	638	257	2%
Women-led small-business	1633	1251	162%
Men-led small-business	3336	2954	435%

Regarding natural capital, fishing is a common livelihood activity for both men and women, but social norms prevent women from participating in fishing activities. The study did not find any significant intersectionality effects on access to physical and social capital.

5.5.2 Livelihood Outcomes

The findings of the study on livelihood outcomes indicate that different business sizes and gender lead to differences in production and, subsequently, different livelihood outcomes. Micro-businesses led by women produce an average monthly production of

623 kg, resulting in an estimated monthly income of approximately 380,000 MMK (approximately 180 USD), while micro-businesses led by men produce an average monthly production of 638 kg, resulting in an estimated monthly income of approximately 390,000 MMK (approximately 185 USD).

Small businesses led by women produce an average monthly production of 1,633 kg, resulting in an estimated monthly income of around 1,000,000 MMK (approximately 475 USD), while small businesses led by men produce an average monthly production of 3,336 kg, resulting in an estimated monthly income of around 2,000,000 MMK (approximately 950 USD).

The fishing season of shrimp paste production in Ayeyarwady is started from late September to early May and the peak season is from November to January. The profit margin is calculated based on estimated costs and production. Although there is a peak season, monthly production was estimated overall average. The profit margin analysis is divided into four parts (Table 23).

Part A shows the fixed assets required for production, including the cost of the boat, fishing net, and engines. These costs are divided by 5 to get the one-year cost. The life span of these fixed assets is more than five; however, within five years is high quality to utilize for business purposes. For the micro business, the fixed asset cost is 200, which means the total cost is 1,000 USD. For a small business, the fixed asset cost is 620, which means the total cost is 3,100.

Part B shows the variable costs, which include the cost of bamboo, salt, fuel, and grind fees. These costs vary depending on the amount of production. For the micro business, the total variable cost is 330 USD, and for the small business, it is 1,200 USD.

Part C shows the total cash amount sold for each business size. For the micro business, the total cash amount sold is 1,390 USD (386 Viss * 8 months * 900 MMK per viss / 2,000 MMK per USD), while for the small business, it is 7,296 USD (1,520 Viss * 8 months * 1,200 MMK per viss / 2,000 MMK per USD). Based on the loan repayment with fixed prices, the average price of micro and small businesses is different.

Part D shows the net profit, which is calculated by subtracting the total costs (fixed and variable) from the total cash amount sold. For the micro business, the net profit is 8,60, while for the small business, it is 5,496.

Finally, the profit margin is calculated by dividing the net profit by the total cash amount sold and multiplying by 100. For the micro business, the profit margin is 62%, while for the small business, it is 75%.

Overall, this analysis shows that the small business has a higher profit margin compared to the micro business, even though it has higher costs due to higher fixed assets and variable costs.

Table 23: Profit margin analysis of shrimp paste businesses

Particular	Micro (USD)	Small (USD)	Remark
(A) Fix Assets	200	600	Fix Asset costs are divided by 5 to get one year cost.
A Boat	100	300	
Fishing Net	75	250	
Engines for boat	25	50	
(B) Variable Cost	330	1200	
Bamboo	50	100	
Four bags of Salt	40	150	
Fuel	200	800	
Grinding fees	40	150	
(C) Total Sold Cash Amount	1390	7296	
(D) Net Profit {(A+B)-(C)}	860	5496	
Profit Margin (D/C) *100	62%	75%	

When comparing the profit margin of women-led and man-led micro and small businesses based on two tables 24 and 25 below, we can see that the profit margins for women-led micro and man-led micro businesses are similar at 61% and 62%, respectively. However, there is a noticeable difference in profit margins for women-led small and man-led small businesses, with women-led small businesses having a profit margin of 62% and man-led small businesses having a significantly higher profit margin of 81%.

Table 24: Profit margin analysis of women-led businesses

Particular (USD)	Women-led Micro	Women-Led Small	Remark
(A) Fix Assets	200	600	Fix Asset costs are divided by 5
A Boat	100	300	
Fishing Net	75	250	

Engines for boat	25	50	to get one year cost.
(B) Variable Cost	330	1200	
Bamboo	50	100	
Four bags of Salt	40	150	
Fuel	200	800	
Grinding fees	40	150	
(C) Total Sold Cash Amount	1375	4800	
(D) Net Profit {(A+B)-(C)}	845	2980	
Profit Margin (D/C) *100	61%	62%	

Table 25: Profit margin analysis of man-led businesses

Particular (USD)	Man-led Micro	Man-led Small	Remark
(A) Fix Assets	200	600	Fix Asset costs are divided by 5 to get one year cost.
A Boat	100	300	
Fishing Net	75	250	
Engines for boat	25	50	
(B) Variable Cost	330	1200	
Bamboo	50	100	
Four bags of Salt	40	150	
Fuel	200	800	
Grinding fees	40	150	
(C) Total Sold Cash Amount	1407	9806	
(D) Net Profit {(A+B)-(C)}	877	7986	
Profit Margin (D/C) *100	62%	81%	

Regarding diversification, the study found that 86% of households involved in shrimp-paste production engage in additional income-generating activities, including pig and chicken farming, small-scale businesses like grocery or sewing machine shops, agriculture, fishery (such as crab, hilsa, shrimp, and dried fish), and casual labor like wage labor or cycle carry. Similarly, all households involved in small businesses engage in one or more additional income-generating activities, while 77% of households in micro businesses do the same. Women are responsible to take care of most of these additional income-generation activities.

The study identifies various supporting factors that affect livelihood outcomes, including access to livelihood capitals, gender and business size, vulnerability context, and transformation structures and processes. However, the study also notes several challenges that have impacted the livelihood outcomes of shrimp-paste businesses, such as the decline in fishery resources, limited access to livelihood skill programs due to political crises, and the lack of regular credit programs for processors.

In addition, the global pandemic, social-political situation, and economic crisis have led to rising commodity prices, a flaw in maintaining fish stocks due to a lack of policy, and limits on support for fisher folk by fisher development associations. These challenges have led to unstable livelihood outcomes for shrimp-paste businesses and have made it difficult for them to access the necessary livelihood capital.

5.6 Decision-Making Practices

Objective three of this study analyzed the involvement of women and men in decision-making in different sizes of shrimp paste business activities. The study encompassed decision-making related to access to fresh shrimp, input selection, school selection, health care, market selection, price setting, food management, access to loans, loan repayment methods, selection of shrimp paste technique (manual or industrial), business extension, mobility (who sends products to the market), and participation in community development.

According to the participants' responses, both husbands and wives make decisions together for all activities. However, further analysis revealed that decision-making power differs between genders when delving into details.

Men have more decision-making power when it comes to access to fresh shrimp. In both micro and small businesses, access to fresh shrimp is obtained from their production. Men are responsible for fishing, while women are responsible for activities such as sorting caught shrimp and sun-drying. However, men are responsible for selecting the fishing ground and estimating the harvesting time, giving them greater decision-making power in access to fresh shrimp.

Women have more decision-making power in selecting inputs, including taking loans. Input selection involves three main components: main items for businesses such as nets, bamboo, and boats, supporting items for businesses such as salt, food, and fuel, and capital investment inputs such as loans from merchants, NGOs, and money lenders. Women are responsible for choosing supporting items and obtaining capital investment inputs, including taking loans and repaying them. Since access to loans is related to

social relationships and trust, women have significant decision-making power in selecting inputs.

Both genders make decisions on school selection for their children. However, women are responsible for preparing meals, stationery, and school uniforms for their children, while men are responsible for providing the income to pay for their children's school fees.

Women are responsible for family health care. Women in small businesses bear a greater burden than those in micro-businesses since family members in small business households fall ill quarterly, while those in micro-businesses fall ill semi-annually.

Market selection and price setting are directly related to taking loans. Almost 100% of products from micro-businesses and 50% from small businesses must be sold at fixed prices to merchants who provided loans. After loan repayment, women choose new markets and set prices.

Since women are responsible for taking loans and selling products, they make decisions regarding food management, as they have the opportunity to manage household income.

Both genders make decisions regarding the business extension. In the study area, business extension is dependent on access to large loan amounts, which is the responsibility of women. The motivation for business extension is that larger businesses can produce more significant products, which can double their income. Taking loans at fixed prices results in lower income since there is no chance to sell products to flexible markets.

Both genders are allowed to participate in community development activities. Women participate in micro-finance programs, such as UNDP, World Vision, and Mya Sein Young National project, while men participate in fishery groups.

5.7 Research Objectives: A Clear and Concise Explanation

The study has five objectives, namely: 1) understanding the involvement of women and men in shrimp paste businesses of different sizes; 2) analyzing the challenges and

factors that affect the shrimp paste business, including intersectionality; 3) exploring the participation of women and men in decision-making in different sizes of shrimp paste business activities; 4) identifying the benefits for women and men from the shrimp paste business; and 5) determining the primary benefit of the dried fish business for women. Each objective will be discussed in detail to provide a clear and concise explanation.

The first objective is to understand the involvement of women and men in different types of shrimp paste business activities using KII. The study found that women tend to operate smaller businesses than men.

The second objective is to analyze the challenges faced by these businesses and identify the factors that influence these challenges, including intersectionality using IDI and FGD.

The study area shows gender-based constraints that affect the economic, social, and natural capital of both men and women. Women, in particular, face numerous challenges that lead to lower income and limited access to resources. On the other hand, men also have their constraints, particularly in the fishing industry.

Women in the study area have limited access to financial capital due to their lower income, which stems from their lower production quantities. Additionally, social norms limit their access to natural capital, as they cannot participate in fishing activities. The pandemic has also worsened their situation, as they have to sell their products in nearby villages with limited access to stable markets and manage household responsibilities.

Men in the study area have difficulty catching fish due to old fishing gear, which results in low production and income. The lack of financial capital also limits their ability to purchase new fishing nets and improve their production capacity.

Gender-based constraints exist in the study area, with women facing more significant challenges. These constraints affect the economic, social, and natural capital of both men and women. Addressing these constraints is crucial to achieving gender equality and promoting sustainable development in the study area. Providing access to financial

capital, improving education, and challenging social norms are some of the ways to mitigate these constraints.

The third objective is to explore women and men involved in decision-making in different sizes of shrimp paste business activities using IDI and FGD.

According to the respondents, decision-making within the household is typically shared by both the wife and husband, with varying levels of leadership depending on the activity. For instance, men typically take the lead in decisions related to fishing activities, such as selecting fishing grounds and purchasing input items for fishing, with the input of women. On the other hand, decisions related to taking loans, repaying loans, managing income, selecting schools, accessing health care, and choosing markets are made by women with the input of men.

However, Yimer and Tadesse (2015) discovered that household headship significantly influenced decision-making power concerning food management, household asset purchases, and large household expenses. Similarly, Quisumbing and Maluccio (2003) found that women had lower decision-making power than men regarding managing credit and savings and food and healthcare expenditures in Guatemala.

In this study, women were found to be responsible for food management, household asset purchases, large household expenses, managing credit and savings, and healthcare expenditures. Therefore, it could be argued that women hold a significant level of decision-making power within the household.

The fourth objective is to identify the benefits for women and men from the shrimp paste business using IDI and FGD.

The comparison between the productivity and income of microbusinesses and small businesses led by men and women. Micro-businesses led by men produce more on average than those led by women, resulting in a higher estimated monthly income. Similarly, small businesses led by men also produce more on average than those led by women, resulting in a higher estimated monthly income. Specifically, micro-businesses led by men produce an average monthly production of 638 kg, resulting in an estimated

monthly income of approximately 390,000 MMK (approximately 185 USD), while small businesses led by men produce an average monthly production of 3,336 kg, resulting in an estimated monthly income of around 2,000,000 MMK (approximately 950 USD).

Shrimp-paste-making business households also participate in other income-generating activities, including farming, small-scale businesses, agriculture, fishery, and casual labor. The study found that a majority of these households engage in at least one additional income-generating activity. Shrimp-paste-making households prioritize their income towards loan repayment, food, and investment, followed by educational and health expenses, and then social and entertainment expenses.

The fifth goal is to determine which women benefit more from the dried fish business when FGD is used.

Although most processors do not usually participate in collective buying and selling activities in a collective market scheme, those located in the remote areas of Labutta town often adopt a collective approach when purchasing materials like bamboo and salt and selling their products. The primary aim is to minimize transportation costs linked with procurement and to leverage the group's collective bargaining power to potentially secure better prices for their products.

However, the potential benefits of the collective market approach have no specific impact on the socio-economic development of small-scale fishers, as they do not fully adopt or participate in the approach.

CHAPTER 6
CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study aims to investigate the influence of gender and intersectional factors on the management of micro- and small-size shrimp paste production businesses in the Ayeyarwady region of Myanmar. The study aims to provide insights to policymakers, particularly the Department of Fisheries, to aid in informed decision-making. Specifically, the study aims to identify the support requirements, critical impediments, and potential market channels for the dried fish industry. The research also examines the challenges and gender gap in micro and small-scale businesses, providing useful information for development agencies and government departments in designing projects and formulating policies that support these businesses.

The study examines the division of labor within households and how it affects family dynamics and well-being, particularly in the shrimp paste processing industry. Women tend to be involved in pre-processing, post-processing, domestic chores, and managing household finances, while men are primarily responsible for catching shrimp and salting them during processing. In businesses led by men, men dominate in the pre-processing and processing phases, while women dominate every aspect of women-led businesses, although the shrimp paste business is generally perceived as a man's business. Limited access to support services from government and non-government organizations is a consequence of the underrepresentation of women in the fishing sector.

The collective market approach in fisheries aims to improve the economic and social welfare of small-scale fishers by promoting their collective organization and participation in markets. It can enhance their access to markets, reduce transaction costs, and improve their bargaining power. Additionally, it can support the sustainable management of fishery resources by promoting community-based management practices. However, despite potential benefits, the collective market approach has not been fully adopted due to various reasons, including differences in business owners' free time and income requirements, and loan repayment obligations. The study found

that gender does not appear to influence participation in collective market activities, which varied between villages.

Differences in access to human capital were found between men and women respondents, with more men respondents having completed secondary education. Small-business owners had better access to livelihood skill development training and improved sanitation facilities compared to micro-business owners. Women-led micro-businesses had lower monthly production amounts than Men-led micro-businesses due to differences in fishing capacity, while small businesses had higher production amounts than microbusinesses on average.

The study shows that both savings and loans are important sources of financial capital for micro and small business entrepreneurs. Microbusiness owners have limited financial resources, while small business owners may have stronger financial capital. Access to credit is important for entrepreneurs to invest in their businesses. There is a gendered division of labor and responsibilities within households and businesses, with women taking loans and men repaying them. Local money lenders offer loans with higher interest rates but with the opportunity to store products and sell them at a higher price. Small businesses have more opportunities to sell their products for higher prices, resulting in a higher average price per unit sold and monthly income compared to micro businesses. There is a significant gender disparity in the income of small businesses, with Men-led businesses earning more on average due to higher production levels.

The study focused on access to social capital in the community and found that women participate in microfinance groups, while men participate in fishery-related groups. Women have better relationships with local merchants and moneylenders and have better access to mobile phones. Small-business households have greater access to training opportunities than micro-businesses, indicating that small-business families have more social capital. In the shrimp-paste-making process, women are responsible for 70% of the tasks, while men handle high-risk and physically demanding activities. The study notes that relationships with neighbors are generally positive.

The study found that there were differences in physical capital between micro-businesses and small businesses. Micro-businesses typically owned smaller boats and used fewer fishing nets compared to small businesses. Microbusiness owners also had fewer entertainment and communication technology devices, such as televisions and mobile phones. Additionally, most families in microbusinesses lived in small bamboo houses that were relatively old, while families in small businesses lived in medium-sized wooden houses that were also relatively old. Small business owners had a higher likelihood of owning a cupboard and chairs, but almost all business owners did not have a grinding machine for shrimp paste processing.

In terms of natural capital, the study found that most households involved in shrimp-paste processing did not own land, but some micro businesses had registered land. Owning land was found to be linked to taking loans from microfinance institutes and banks. All households had access to water from village ponds, and some purchased water. Women did not go fishing due to social norms. Fishers had to pay fees or taxes to access tenders and leasehold fishing grounds, and men primarily received fishing permits from government officials or tender owners. Everyone had access to public mangrove forests, but men collected firewood while women were responsible for cooking.

The sustainable livelihood framework indicates that vulnerability context and transforming structure and process have a significant impact on access to livelihood capital, which can hinder or facilitate livelihood activities. In the study area, the global pandemic, the military coup of February 1st, 2021, and the recent global economic crisis have created a devastating economic downturn in Myanmar, leading to a decline in fishery resources and fish production. This decline can be attributed to several factors, including overfishing, a lack of protected areas, plastic pollution in the water, unstable weather, the construction of embankments, and the return of migrant workers. Women faced increased responsibilities during this time and were mainly responsible for managing the family's income, while men took on casual labor to supplement the family income. The study emphasizes the need to understand these contextual factors to design effective livelihood interventions that address underlying structural barriers and support vulnerable individuals and communities to access and control livelihood capital.

This study focuses on a value chain analysis of a shrimp paste and fresh shrimp production business, identifying input supply, production, and first and second market channels as key components. Women play a crucial role in procuring loans and purchasing supplies, while men are primarily responsible for fishing and purchasing equipment. During the off-fishing season, businesses secure advances from merchants, limiting their ability to search for alternative markets. Micro-businesses rely on loans for over 50% of their capital and tend to sell their products at a fixed price, while small businesses have more flexibility to sell their products at market prices. Women-led businesses are largely concentrated in the micro-business category, which can make it more challenging for them to secure better market opportunities.

This study examines the intersectionality of gender and access to livelihood capital. It found that women-led micro and small businesses produce fewer products and have limited financial resources compared to men-led businesses. Men-led businesses have a higher average percentage of capital than Women-led businesses. In terms of education level, the majority of Women-led micro-business owners have completed primary education, while the majority of Men-led business owners have completed secondary education. The study also suggests that higher education levels can positively influence fish production and sustainable fishing practices. Men-led businesses have significantly higher production than Women-led businesses. However, the study did not find any significant intersectionality effects on access to physical and social capital. Finally, fishing is a common livelihood activity for both men and women, but social norms prevent women from participating in fishing activities.

The study on livelihood outcomes of shrimp paste business differs based on business size and gender. Small businesses led by men have a higher monthly production and income than those led by women, and the same trend is observed in micro-businesses. The profit margin analysis shows that small businesses have a higher profit margin compared to micro-businesses, despite higher fixed asset and variable costs. The study also found that households involved in shrimp-paste production engage in additional income-generating activities. The study identifies challenges that impact livelihood outcomes, such as the decline in fishery resources, limited access to livelihood skill programs, and the lack of regular credit programs for processors. The global pandemic,

social-political situation, and economic crisis have also led to unstable livelihood outcomes for shrimp-paste businesses.

This study analyzed the involvement of men and women in decision-making within households and businesses in the shrimp paste industry. Both genders make decisions together for all activities, but men have more decision-making power when it comes to access to fresh shrimp, while women have more power in selecting inputs, including taking loans. Women are responsible for family health care and managing household income through food management. Market selection and price setting are related to taking loans, and women make these decisions after loan repayment. Both genders make decisions regarding business extension and participate in community development activities.

The study explores the division of labor within shrimp paste processing households and the collective market approach in fisheries, with men primarily responsible for fishing activities and women playing essential supporting roles, particularly in the pre-processing phase. Traditional gender roles continue to shape the division of labor, with women taking on more domestic work and caregiving responsibilities. The study also identifies evidence of gender discrimination in the industry, with limited access to support services for women. Women-led micro-businesses have limited access to livelihood skill development training and financial capital, resulting in lower production and income compared to Men-led small businesses.

6.2 Recommendations

The study provides important recommendations for policymakers, development agencies, and government departments to support micro- and small-size shrimp paste production businesses in the Ayeyarwady region of Myanmar. The first recommendation is to address the gender gap in access to livelihood skill development training and financial capital, particularly for Women-led micro-businesses. This can be achieved by providing gender-sensitive training programs and increasing access to financial services for women entrepreneurs.

Secondly, the study recommends the need for gender-sensitive value chain analysis to promote gender equity and women's economic empowerment in the fisheries sector. It is essential to address the traditional gender roles that shape the division of labor within shrimp paste processing households and promote women's involvement in decision-making.

Thirdly, the study highlights the challenges faced by the fishery sector in Myanmar due to the impact of the global pandemic, the military coup of February 2021, and the recent economic crisis. The study recommends that policymakers and development agencies provide support to small-scale fishers and fish workers by increasing access to fishing grounds and markets and promoting sustainable fishing practices.

Overall, the study emphasizes the importance of promoting gender equity and women's economic empowerment in the fisheries sector in Myanmar. Policymakers and development agencies must design gender-sensitive policies and interventions that address the challenges faced by women entrepreneurs in the shrimp-paste industry and promote sustainable fishing practices.

Based on the findings of this study, the following are some suggestions for future research:

Political-economic analysis of the shrimp paste business: As political changes can have a significant impact on the business, further research is needed to understand the political economy of the shrimp paste industry in the study area. This could include analyzing the influence of government policies, regulations, and market forces on the industry.

Mechanisms for public-private partnerships: Given the challenges faced by shrimp paste processors, research is needed to identify suitable mechanisms for public-private partnerships that can provide support to the industry. This could involve exploring the roles of government agencies, non-governmental organizations, and the private sector in providing support to processors.

Systematic value chain analysis: To better understand the shrimp paste industry, further research is needed to conduct a systematic value chain analysis. This would involve mapping the different stages of the value chain, identifying key actors, and analyzing the relationships between them.

Potential value-added products: Research could be conducted to identify potential value-added products that could be produced from shrimp paste to promote women's job opportunities and increase the income of business owners.

Collective market approach and exporting: Research could explore the potential benefits of a collective market approach and collective exporting to Yangon and other markets. This could involve analyzing the advantages and challenges of working together as a group to access larger markets.

Capacity needs assessment for women's processors: To support the development of the shrimp paste industry and promote women's participation, research could be conducted to identify the capacity needs of women's processors. This could involve assessing their skills, knowledge, and training needs to improve the quality and profitability of their products.

Investigating the impact of plastic pollution on fishery resources: Future research should focus on understanding the extent to which plastic pollution affects fishery resources, including the food chain and fish populations. This research could involve examining the sources, types, and concentrations of plastic pollutants in different aquatic environments, as well as the ecological, economic, and social impacts of plastic pollution on fishery resources.

Examining the chemical composition of shrimp paste: Further research is needed to understand the chemical contents of shrimp paste, including any potential contaminants and their sources. This research could involve analyzing the quality and safety of shrimp paste from different regions, as well as identifying ways to improve processing methods and reduce the use of harmful chemicals.

Assessing the ecological system's impact on fishery resources: Future research could examine the interactions between different ecological systems and their impact on fishery resources. This research could involve studying the effects of climate change, habitat degradation, and other environmental factors on fish populations, as well as exploring ways to mitigate these impacts and promote sustainable fisheries.

Consumer preferences affecting the shrimp paste industry: a study could investigate the role of visual appearance in consumer preferences for shrimp paste, including factors such as color, texture, and packaging, and the potential implications for product quality and safety. The research could also explore the relationship between consumer preferences for visual appearance and their perceptions of the health benefits of shrimp paste.

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APPENDIX A
PHOTO RECORDS

Fishing Ground

Fishing ground

Fishing Boat

Fishing Nets

Shrimp to be made shrimp paste

Other fish involve in fishing nets

Different type of processed shrimp

Note: 1=before 1st round, 2=After 1st round, 3=After 2nd round, and 4=After 3rd round grinding

After final round grinding

A grinding machines

Ready to grind final round

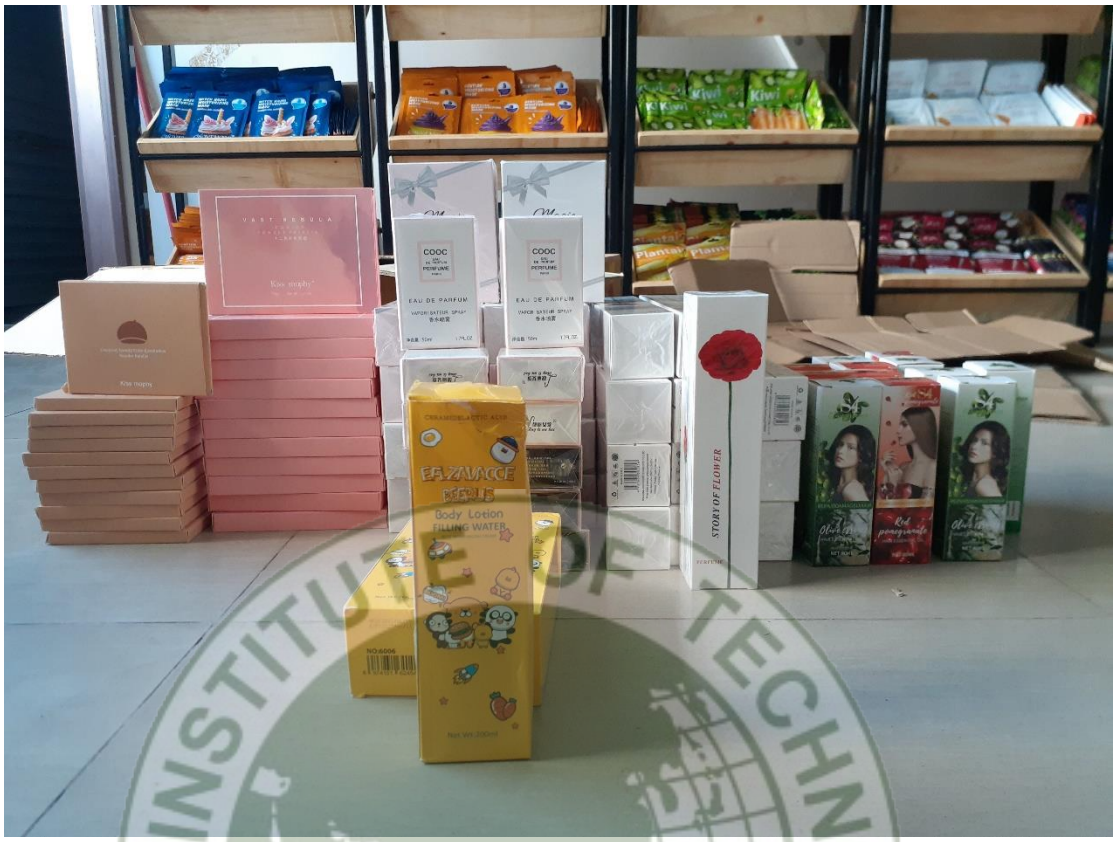
A house of a micro-business family

Access to toilet of a micro-business family

A woman Spreading dried fish, not for shrimp paste

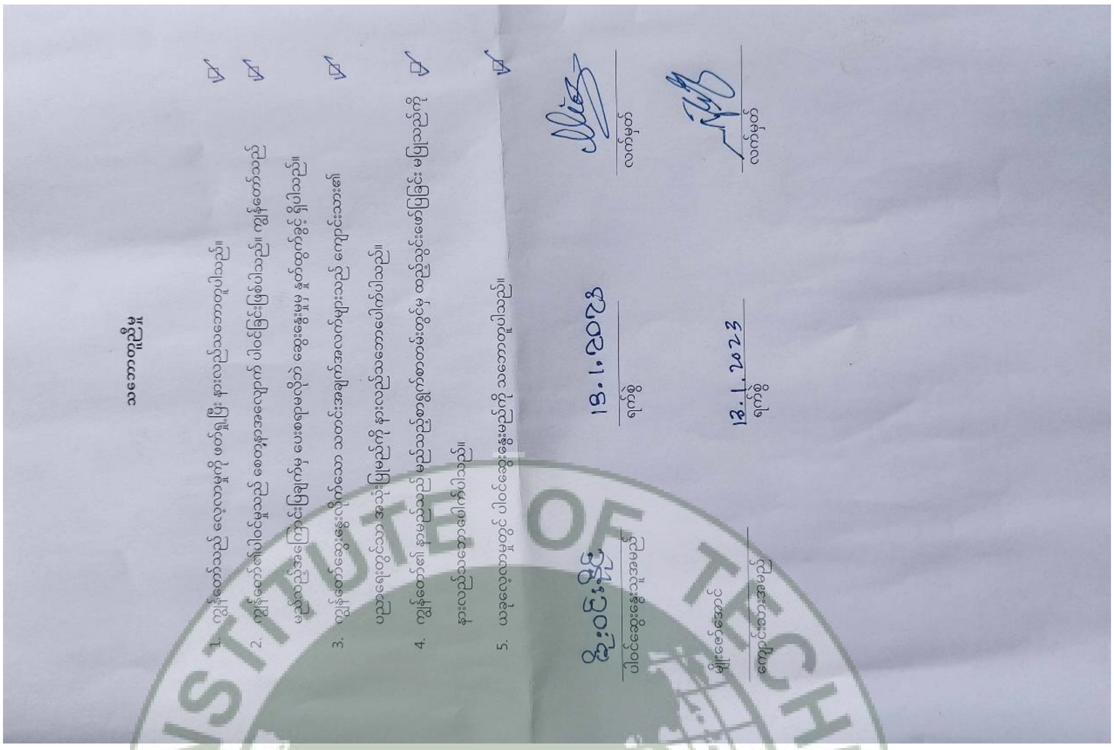
Extra product of shrimp paste business

Gifts for the respondents



Receiving gifts by women respondents

A sample of a consent form



Explanation about consent form to men respondents

APPENDIX B

DATA COLLECTION TOOLS

Key Informant Interview for the village leader

Basic Information

Country	Myanmar
Regional	Ayeyarwady (Delta)
District	Labutta
Township	Labutta
Village Tract	
Village	
Interview Date	
Respondent's Name	
Recorder using status	☐ Yes ☐ No

Demographic Information

1. May I have the demographic data of the village?

Particular	Men/(Headed)	Women/(Headed)	Total
Population			
Household			

Livelihood Information

2. May I know the livelihood categories data of the village?

Type of livelihood	# of household (estimated)
Fisher	
Farmer	
Labour	

Dried Fish Enterprise Information

3. Could you share the dried fish enterprise in the village?

Category	# of enterprise
Shrimp Paste	

Dried Shrimp	
Dried Fish	
Fish Sauce	
Other	

Shrimp Paste Enterprise Information

4. Could you share the shrimp paste enterprise in the village?

Category	# of enterprise	Remark
Total Business		
Women Owned		Women maily run the business.
Men Owned		Men maily run the business.
Micro		<10 workers
Small		1 million MMK, <25 HP, Bet 10-50 workers

Collective Action

5. Is there any collection activity for dried fish production?
6. If yes, who is involved in collective activities?
7. What type of collective action do they do? (Purchasing inputs, selling the product, production)

Local Authority Support

8. Does the local authority support the dried fish production business?
9. If yes, what type of support do they support?

View of women's involvement in the dried fish business

10. What do you think of women's involvement in the dried fish business?
11. How should we promote women's involvement in the dried fish business?

In-depth Interview Guideline for Shrimp Paste Enterprise

Basic Information

Country	Myanmar
Regional	Ayeyarwady (Delta)
District	Labutta
Township	Labutta
Village Tract	
Village	
Interview Date	
Respondent's Name	
Gender of the respondent	☐ Women ☐ Women
Size of business	☐ Micro ☐ Small
Horsepower	☐ No ☐ <25 ☐ >25
Initial investment amount (MMK)	
# of workers	☐ <10 ☐ >10
Recorder using status	☐ Yes ☐ No

General Question

1. Could you tell me about your educational background?
2. Could you tell me about your family?
3. How did you start your business? (Financing, initial idea)
4. If the business is a family business, who does do what activities?
5. How do your family members support your business?
6. Who is responsible for taking of family members? (preparing food, education, health care)
7. What are your other sources of income?

Pre-processing

8. How do you get fresh shrimp?
9. Where did you receive your shrimp paste-making skills?
10. How do you run your business?
11. Can you explain the process of pre-processing? (e.g., washing, cleaning, salting, sun drying, and so on)

12. In this phase, who makes-decision for each activity?
13. Do you face any challenges in pre-processing?

Processing

14. What types of methods do you use for processing? And why?
15. Can you explain the shrimp paste-making process?
16. How do you manage insect infection?
17. In this phase, who makes-decision for each activity?
18. Do you face any challenges in processing?

Post-processing

19. Could you tell me the production quantities per year?
20. How do you store your products, and why?
21. Where do you sell your products, and why?
22. What are the benefits of your business?
23. In this phase, who makes-decision for each activity?
24. Do you face any challenges in post-processing?

The objective of the business

25. What is your aim/purpose for the business?
26. Where do you use your income?
27. Did you extend or will you extend your business? Why?
28. What support do you need to improve your business?

Involvement in Association/Group

29. Could you tell me about your involvement in the association/group?
30. Do you have any challenges and/or benefits involved in the association /group?

Focus Group Discussion Guideline

Basic Information

Country	Myanmar
Regional	Ayeyarwady (Delta)
District	Labutta
Township	Labutta
Village Tract	
Village	
Interview Date	
Place	
Recorder using status	☐ Yes ☐ No

Respondent Information

Sr.	Gender	Age	Experiences (Years)
1			
2			
3			
4			
5			
6			
7			

1. Do you face any challenges due to the current crisis? (transportation, market)
2. How do you cope with these challenges?
3. Are there any changes regarding access to fresh shrimp? Why?
4. Do you have experience with collective production, collective purchasing of inputs, and collective selling of products?
5. How can we promote to improve the shrimp paste business?

CONSENT FORM

Research Title:	GENDER ANALYSIS OF MICRO AND SMALL-SCALE DRIED FISH BUSINESS IN AYEYARWADY REGION, MYANMAR
Name of Student:	Myo Zaw Aung
Subject:	Gender and Development Studies (GDS)
School:	Asian Institute of Technology
Brief Information:	My name is Myo Zaw Aung, a GDS student in AIT, Thailand. My research aims "***to analyze the gender and other intersectional factors influence the management of micro and small-size shrimp paste production enterprises***" in the Ayeyarwady region, Myanmar. I will discuss the experiences of your business. I will utilize your answers for my thesis paper and presentation only. I will not use your name in any documents.

Agreement

1. I confirm that I have read and understand the information for the study. ☐
2. I understand that my participation is voluntary. I am free to withdraw at any time without giving any reason. ☐
3. I understand that any information given by me will be used in future reports, articles, and the thesis by the researcher. ☐
4. I understand that my name will not appear in any reports, articles, or thesis. ☐
5. I agree to take part in the study. ☐

Name of Participant	Date	Signature
Name of Student	Date	Signature

APPENDIX C

RESEARCH ETHICS REVIEW

Asian Institute of Technology

RESEARCH ETHICS
REVIEW COMMITTEE

Postal Address:
P.O. Box 4, Klong Luang
Pathumthani 12120
Thailand

Street Address:
Km. 42, Paholyothin Highway
Klong Luang, Pathumthani 12120
Thailand

(For local calls, dial 02 before the tel./fax nos.)
Tel : +(66-2) 524-6001
Fax: +(66-2) 524-8000
http://www.ait.asia

Ref. No.: RERC 2023/006 **1 February 2023**

RESEARCH ETHICS REVIEW

CERTIFICATION

This is to certify that the research entitled *"Gender Analysis of Micro and Small-Scale Dried Fish Business in Ayeyarwady Region, Myanmar"* to be carried out by Mr Myo Zaw Aung, a master's student in Gender and Development Studies, Department of Development and Sustainability, School of Environment, Resources and Development, under the supervision of Professor Kyoko Kusakabe, is recommended for "Acceptance" and exempted from further review.

RESEARCH ETHICS REVIEW COMMITTEE (RERC)

Prof Avishek Datta	Avishek Datta	01 February 2023
RERC Chair and Reviewer	Signature	Date
Dr Tobias Endress	DocuSigned by: 67BE9FE341364C3...	2/2/2023
RERC Member	Signature	Date
Dr Chaklam Silpasuwanchai	DocuSigned by: 36FFC8E07E574CA...	01/02/2023
RERC Member	Signature	Date
Dr Ekbordin Winijkul	DocuSigned by: D8BEC94EB4844D2...	2/1/2023
RERC Member	Signature	Date

HOW TO COMPLETE THIS FORM

- **COMPLETE** all sections of the form (including the top section of PART B)
- Submit the documents as **WORD** files (PDFs are NOT accepted)
- You **MUST** have your **SURNAME** in the electronic name of any documents you submit
- For students, your **advisor must have approved** your application (see below)

ADVISOR APPROVAL

Your ethics application **MUST** be reviewed, commented on and **APPROVED** by your Advisor **BEFORE** submitting. How to confirm approval?

- The Supervisor attaches an electronic signature to your ethics form

OR

- The Supervisor emails research.ethics@ait.asia to confirm approval of your application

OR

- Your Supervisor confirms approval to you (via email) and you include it in the application materials emailed to research.ethics@ait.asia

WHEN TO SUBMIT?

Deadline: Review is upon request
Please be aware that it usually takes up to 1 month for a decision.

WHO TO SUBMIT TO?

Email: research.ethics@ait.asia

PLEASE BE AWARE THAT FORMS THAT ARE NOT COMPLETED CORRECTLY OR ARRIVE WITHOUT AUTHORISATION FROM YOUR SUPERVISOR WILL BE REJECTED.

After review, if you are asked to resubmit your application follow the guidance in Part B

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PERSON(S) SUBMITTING RESEARCH PROPOSAL

Name(s) of all person(s) submitting research proposal. Including main applicant	Status (degree or position) Students: specify your course	FoS/Group/ School/Centre
Myo Zaw Aung	Gender and Development Studies	SERD, DDS

MAIN APPLICANT INFORMATION

Forename	Myo Zaw
Surname	Aung
Gender	Male
Student ID number *(if applicable)*	122595
Contact email address	st122595@ait.asia , myozawaung09@gmail.com
Date application form submitted	9 December 2022
1st application or resubmission?	1st application

PROJECT INFORMATION

Project or Thesis Title	GENDER ANALYSIS OF MICRO AND SMALL-SCALE DRIED FISH BUSINESS IN AYEYARWADY REGION, MYANMAR

** AIT faculty or research staff applications only:*

* Project Funder	Dried Fish Matters
* Project PI	
* Project Code:	

Students only:

Date of your proposal defense presentation	23 August 2022

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1. OVERVIEW OF THE STUDY and SOURCES OF FUNDING

Describe the purpose of the research/project proposed. Detail the methods to be used and the research questions. If applicable, describe the sources of funding, and any partnerships with third party research institutions and/or consultants (*all sections in this application form should cover any work and activities conducted by third parties for the purpose of this research*). Provide any other relevant background which will allow the reviewers to contextualise your research or project activities.

The research aims "to analyze the gender, and other intersectional factors influence the management of micro and small-size shrimp paste production enterprises" in the Ayeyarwady region, Myanmar. A qualitative research method will be applied. Both primary and secondary data will be collected. For the primary data, the Key Informant Interview (KII), In-depth Interview (IDI), and Focus Group Discussion (FGD) will be used as data collection tools. For the secondary data, government reports and publications, research journal articles, NGOs' reports, and publications will be gathered.

The research funding will be provided by the dried fish matters (DFM) project AIT scholarship. The DFM project is implemented in Bangladesh, India, Sri Lanka, Cambodia, Thailand, and Myanmar, under the supervision of the University of Manitoba (Canada). The overall objective of the project is to collect a diversified group of researchers and practitioners who are knowledgeable about fish, food security, and livelihoods in South and Southeast Asia (DFM, 2020). The specific objectives are;

(1) To develop a regional understanding of the dried fish sector in the Indian Ocean, taking into account historical, social, cultural, economic, and policy variation.
(2) to carry out detailed analyses of the organization, management, and dynamics of each link in the value chain of dried fish in a few locations throughout South and Southeast Asia, taking into account the gendered nature of labor and the various advantages and disadvantages that men, women, and children experience.
(3) to determine how much dried fish contributes to the food and nutrition security of rural and urban populations, particularly the poor.
(4) to identify and promote to appropriate state agencies and civil society organizations the most important policy proposals and development actions to improve the food and nutrition security, food safety, and sustainable and socially just livelihoods of impoverished communities (DFM, 2020).

2. RECRUITMENT/SELECTION PROCEDURES

How will study/project participants or respondents be selected? For example, will participants be selected randomly, deliberately/purposively, or using lists of people provided by other organisations?

The study will be conducted in Labutta Township, Ayeyarwady Region, Myanmar. There are three famous shrimp paste productions in Labutta Township. Therefore, the targeted respondent will be selected in these villages purposively. Thirty respondents for IDI, three interviews for KII, and six interviews for FGD will be chosen.

In terms of the IDI interview, 50% of respondents will be female and 50% of respondents will be micro enterprises because the study will compare male-owned and female-owned businesses and micro and small enterprises.

Regarding KII, the person who knows about the total number of micro and small dried fish processors and the collective activities of the processor in the selected village will participate in the interview.

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2. RECRUITMENT/SELECTION PROCEDURES

For FGD, a male FGD and a female FGD will be conducted in each selected village to understand the crisis impacts, access to fresh fish, and collective activities. The total interview will be six. Five or seven respondents will be invited to participate in the interview.

3. VULNERABLE INDIVIDUALS or GROUPS

Specify whether the research will include children or other potentially vulnerable groups. If so, please explain the necessity of involving these individuals as research participants and what will be done to facilitate their participation and ensure their protection.

The study will not include children or other potentially vulnerable groups.

(Please note this box will expand as much as you need to complete this section).

4. CONFLICT OF INTEREST and PARTICIPANTS IN DEPENDENT RELATIONSHIPS

Is there a potential conflict of interest between researchers and participants that can affect a decision to participate? Is there any sense in which participants might be 'obliged' to participate – for example in the case of project beneficiaries, students, prisoners, or patients – or are volunteers being recruited? If participants in dependent relationships will be included, what will you do to ensure that their participation is voluntary?

Conflict of interest will not happen because there is no relationship between respondents and the researcher.

(Please note this box will expand as much as you need to complete this section).

5. PAYMENTS and INCENTIVES

Will payment, reimbursement or any other incentive, such as a gift or free services, be made to any participant? If so, please specify and state the level of payment to be made and/or the source of the funds/gift/free service to be used. Please explain the justification for offering payment, reimbursement or other incentives.

The researcher planned to pay a gift for all participants. The budget will be spent on the DFM project. Each interview will be consumed about 45 minutes. Therefore, the gift will be used as a reimbursement.

(Please note this box will expand as much as you need to complete this section).

6. CONSENT

Please give details of how consent is to be obtained. Participants must be aware of their entitlement to withdraw consent. If verbal consent is sought, how do you plan to record that consent, and why do you plan to use verbal instead of written consent? If written consent is sought, a copy of the proposed consent form, along with a separate information sheet, written in simple, non-technical language shall accompany this proposal form as an **ATTACHMENT**.

The researcher has created a written consent form. The consent form will be attached.

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6. CONSENT

(Please note this box will expand as much as you need to complete this section).

7. TYPE OF PARTICIPATION/QUESTIONS/DATA

Please give details of what are participants or respondents expected to do, and what types of questions will they be asked **(provide questionnaires or question checklists if possible)**. In addition, indicate whether you will require access to data on participants held by a third party. In cases where participants will be identified from information held by another party (for example, a doctor or school) describe the arrangements you intend to make to gain access to this information.

In-depth interviews, focus group discussions, and key informant interview guidelines were developed.
An in-depth interview will be conducted with the micro and small dried fish processors using a semi-structured questionnaire. A total of 30 respondents will participate in the interview. Half of the respondents will be women.
With semi-structured interview guidelines, focus group discussions will be conducted in targeted villages. Five or seven respondents who make shrimp paste and are involved in collective activities will be invited to participate in each discussion. One female group FGD and one male group FGD will be conducted in each village.
Structured key informant interview guidelines will be used. The person who knows about the total number of micro and small dried fish processors and the collective activities of the processors in the selected village will participate in the interview. One KII interview will be conducted in each village, and the entire interview will be three.
Detailed guidelines are attached as an annex.

(Please note this box will expand as much as you need to complete this section).

8. DEVICES or TECHNOLOGIES USED

Please state whether the participants or respondents will be recorded or videotaped and how. Will the participants consent to the use of these devices? What technologies are used in the data collection and are the data kept using digital devices? Will these devices and technologies ensure confidentiality and keep all data safely from tampering?

A Voice recorder will be used for each interview if the respondents allow it. Unless they allow, the researcher will take notes for these interviews. Each audio file will be uploaded on google drive on the night of interview day.

(Please note this box will expand as much as you need to complete this section).

9. CULTURAL, SOCIAL, GENDER-BASED CHARACTERISTICS

What consideration have you given to the cultural context and sensitivities? How have cultural, social and/or gender-based characteristics influenced the research design, and how might these influence the way you carry out the research and how the research is experienced by participants? For example, might your gender affect your ability to do interviews with or ask certain questions from a person of a different gender; might it affect the responses you get or compromise an interviewee? How might your position/status as a university-based researcher affect such interactions?

The study will be conducted at Laputta Township. Laputta Township has experienced gender concepts because most respondents have participated in a project funded by LIFT. When the

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9. CULTURAL, SOCIAL, GENDER-BASED CHARACTERISTICS

researcher is conducting an interview, he will facilitate the roles and activities of the dried fish processor. He will not compare gender differences during the interview. All interview questions will target all respondents. There is no specific question for a specific gender.

(Please note this box will expand as much as you need to complete this section).

10. CONFIDENTIALITY, PRIVACY and DATA SECURITY

Please state who will have access to the data and what measures which will be adopted to maintain the confidentiality and privacy of the research subject (during and after the research) and to comply with data protection requirements e.g. Is the consultation setting private? Will the data be anonymised? Please also provide information on data storage security measure.

Study results will be accessed by AIT and DFM. The respondents' names will not show any documents or publications. Transcripts and thesis papers will be stored on the student's laptop and online server. After conducting the final defense, all information on the laptop will be uploaded on google drive and deleted all files on the laptop.

(Please note this box will expand as much as you need to complete this section).

11. RISKS/COSTS and BENEFITS TO PARTICIPANTS

What risks, costs or benefits to the participants are entailed in involvement in the study/project? Is there any potential physical, psychological or disclosure danger that can be anticipated? How does the study plan to minimize the risks (immediate or delayed risks can be physical, psychological, social, legal, and economic/loss of assets) and ensure the care and protection of participants?

The current situation in Myanmar is unstable. Two kinds of risks may be faced. First, the researcher may be asked some questions and documents may be checked by authorities on the way to the study township. Second, local authorities may terminate conducting interviews. To protect the first risk, the researcher will print all documents such as guidelines, student certificate, and student ID card. To ensure the second risk, the local research assistant who works for Ayeyarwady Region Fishery Network (ARFN) will be hired during the trip.

(Please note this box will expand as much as you need to complete this section).

12. PROTECTION OF RESEARCHER (THE APPLICANT or OTHER RESEARCHERS)

Please state briefly any precautions being taken to protect your health and safety or the health and safety of other researchers and others associated with the project (as distinct from the participants or the applicant). If there are no other researchers, please indicate.

The researcher planned to hire a van for two ways from Yangon to Laputta Township because if the researcher utilizes public transport, there are a lot of checkpoints to check National Identity Cards and travel documents. All passengers need to walk to pass each checkpoint. Van can reduce these risks. Moreover, the researcher will bring first aid kits including face masks and hand sanitizers. To prevent the COVID-19 pandemic, we will follow all of the rules and regulations, such as keeping social distancing, wearing face masks, and washing hands.
For safety in the study area, we will inform village leaders for data collection.

(Please note this box will expand as much as you need to complete this section).

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13. RESEARCH PERMISSIONS IN HOST COUNTRY and/or FROM ORGANISATIONS

Do you plan to obtain formal permissions to conduct this research either with authorities or organizations involved in the research or affected by this research? Please describe the action you have taken or plan to take and if a formal permit has not been sought, or expected to be sought, please explain why this is not necessary/appropriate (for example, for very short studies it is not always appropriate to apply for formal clearance).
The researcher will inform village authorities about the data collection; however, formal permission will not be obtained. ***(Please note this box will expand as much as you need to complete this section).***

14. MONITORING OF RESEARCH

What procedures are in place for monitoring the research/project (by funding agency, supervisor, community, self, etc.).
This process will not happen for the study. ***(Please note this box will expand as much as you need to complete this section).***

15. ANTICIPATED USE OF RESEARCH DATA ETC

What is the anticipated use of the data, forms of publication and dissemination of findings etc.?
Study findings will be used for this thesis. ***(Please note this box will expand as much as you need to complete this section).***

16. FEEDBACK TO PARTICIPANTS/COMMUNITIES

Will the data or findings of this research/project be made available to participants or communities involved? If so, specify the form and timescale for feedback. What commitments will be made to participants/communities regarding feedback? How will these obligations be verified? If no feedback is planned, explain why this is not necessary or possible.
The study has no feedback session for the respondents. If they are interested in the findings, the researcher will share it. ***(Please note this box will expand as much as you need to complete this section).***

17. DURATION OF PROJECT

The start date should not be within the 2 months after the submission of this application, to allow for clearance to be processed.

Start date	End date
19 December 2022	30 December 2022

18. PROJECT LOCATION(S)

Please state location(s) where the research will be carried out.
Laputta Township, Ayeyarwady Regional, Delta, Myanmar

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APPLICANT INFORMATION

To be completed by the applicant

Forename	Myo Zaw
Surname	Aung
Student ID number *(if applicable)*	122595
FoS/School/Center	SERD
Advisor *(if applicable)*	Dr. Kyoko Kusakabe
Project Title	GENDER ANALYSIS OF MICRO AND SMALL-SCALE DRIED FISH BUSINESS IN AYEYARWADY REGION, MYANMAR

RESUBMISSIONS – IF YOU ARE ASKED TO RESUBMIT YOUR APPLICATION FOLLOWING REVIEW BY THE COMMITTEE PLEASE ALSO ATTACH **A LETTER** WITH YOUR REVISED APPLICATION DETAILING HOW YOU HAVE RESPONDED TO THE COMMITTEE'S COMMENTS. **Students please ensure your advisor has approved your revisions before resubmission.**

REVIEWERS' CHECKLIST (✓)

Risks and inconvenience to participants are minimised and not unreasonable given the research question/ project purpose.	✓
All relevant ethical issues are acknowledged and understood by the researcher.	✓
Procedures for informed consent are sufficient and appropriate	✓

REVIEWERS' RECOMMENDATION (✓)

For initial, expedited or full review

Accept	
Accept with minor modifications (listed in comment box below)	
Request modifications for resubmission	
Reject	
Send for expedited/full review (circle)	
Exempt (present no foreseeable risks)	✓

REVIEWERS' COMMENTS

It has been mentioned that the study would not include any vulnerable individuals or groups indicating no foreseeable risks.

COMMITTEE'S RECOMMENDATION

SIGNATURE (CHAIR OF THE RESEARCH ETHICS REVIEW COMMITTEE)

Signature	Date
Avishek Datta	01 February 2023