USAID
FROM THE AMERICAN PEOPLE

SEAFDEC

Gender Analysis of the Fisheries Sector

BITUNG, INDONESIA

The USAID Oceans and Fisheries Partnership (USAID Oceans)
2018

Submission Date: June 2018

Contract Number: AID-486-C-15-00001
Contract Period: May 15, 2015 to May 13, 2020
COR Name: Cristina Vélez Srinivasan

Submitted by:

Faculty of Fisheries and Marine Science,
Sam Ratulangi University
Manado, Indonesia

This document was produced by the Faculty of Fisheries and Marine Science, Sam Ratulangi University for the USAID Oceans and Fisheries Partnership, a United States Agency for International Development/Regional Development Mission for Asia (USAID/RDMA) funded Activity.

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

CDT	Catch Documentation and Traceability
CDTS	Catch Documentation and Traceability System
CT	Coral Triangle
CTI-CFF	Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security
EAFM	Ecosystem Approach to Fisheries Management
FMA	Fisheries Management Area
GRVCA	Gender Responsive Value Chain Analysis
GT	Gross Tons
IFAD	International Fund for Agricultural Development
ISCW	Integrated Stakeholder Consultation Workshop
IUU	Illegal, Unreported and Unregulated (fishing)
MMAF	Ministry of Marine Affairs and Fisheries
NGO	Non-governmental Organization
PPP	Public-Private Partnership
SEAFDEC	Southeast Asian Fisheries Development Center
SFMP	Sustainable Fisheries Management Plan
SEAFDEC	Southeast Asian Fisheries Development Center
USAID	United States Agency for International Development
USAID/RDMA	United States Agency for International Development/Regional Development Mission for Asia
USAID Oceans	USAID Oceans and Fisheries Partnership Activity
FFMS	Faculty of Fisheries and Marine Science
UNSRAT	Sam Ratulangi University

EXECUTIVE SUMMARY

In 2015, the USAID/Regional Development Mission for Asia's (RDMA) Oceans and Fisheries Partnership (USAID Oceans) was launched to strengthen regional cooperation to combat illegal, unreported and unregulated (IUU) fishing and promote sustainable fisheries, in order to conserve marine biodiversity in the Asia-Pacific region. The objectives of USAID Oceans program are to: (i) develop a financially sustainable regional catch documentation and traceability system (CDTS) to combat IUU fishing and seafood fraud in areas where sustainable fisheries management plans (SFMP) are being applied; (ii) expand use of the CDTS to priority biodiversity areas in the Asia Pacific region; (iii) strengthen human and institutional capacity of regional organizations to conserve marine biodiversity through SFMPs, including actions to combat IUU fishing and seafood fraud; and (iv) enhance public-private partnerships (PPPs) to conserve biodiversity, promote sustainable fisheries management, and combat IUU fishing and seafood fraud.

To support the program's objectives, USAID Oceans subcontracted Sam Ratulangi University (UNSRAT) to conduct a gender analysis of fisheries for the USAID Oceans' learning site of Bitung, Indonesia. Bitung is the center of fisheries in North Sulawesi and in the Eastern Indonesia region, with tuna being its prime fishery product. UNSRAT conducted the research from December 2016 through March 2018 (fieldwork December 2016 to July 2017), to provide recommendations to USAID Oceans for integrating gender aspects into its activities. Thus, the study identified gender differentials in fisheries roles and interactions, as well as gender issues and needs along the value chain. With the empirical evidence generated from the study, USAID Oceans can address these gender differentials and its ensuing concerns, particularly in its CDT and fisheries management activities, in order to promote women's economic empowerment and gender equality. Through this study, UNSRAT has identified strategic interventions to empower and build the capacity of women along the tuna fisheries value chains, and to strengthen women's involvement to promote sustainable fisheries management in Bitung and the relevant surrounding areas.

Through literature reviews, in field data collection, and the conduct of a value chain-mapping workshop, UNSRAT established several gender differentials that follow USAID's gender dimensions framework. UNSRAT's research confirmed that both men and women have roles in Bitung's fisheries sector, however, community members continue to reinforce gender roles through beliefs and perceptions that women are not suitable for fishing because of perceived physical limitations or their responsibility to take care of their household. As such, men largely control access to physical resources including ships, fishing gear and industrial-scale processing units, while women only gain access to small-scale processing units and local marketing activities. Men perform heavier physical tasks like fishing at sea and transporting fish, while women are more involved in fish processing and marketing. Men were found to be more knowledgeable in fishing activities, while women have more knowledge in fish processing and marketing activities. Access to capital and information resources, especially for small-scale ventures, are most often dominated by women. Time spent by women and men in the tuna value chain is relatively equal. Women spend more time than men in fish processing activities, but outdoor activities along the value chain are relatively comparable between men and women. Men and women have equal legal rights and status in all activities of the tuna value chain. Empowerment and decision making varies across the value chain, but on average are relatively equal and reasonable.

Following these findings, this report presents a number of practical recommendations for subsequent actions for key stakeholders in the areas of policy, research and interventions. This report has summarized recommendations into three general categories: women's empowerment, services, and capacity building. Women's empowerment includes strengthening existing groups of women fish processors, the formation of new women groups to establish businesses as fish vendors and fish processors, capital assistance programs for women-owned businesses, and a balanced role between women and men in public decision-making. The services category includes recommendations for the provision of daycare facilities for female workers in fish processing plants, accompaniment programs for women entrepreneurs to conduct business diversification, market expansion, product development, and packaging design. Capacity building recommendations include tailored training to improve women's entrepreneurial, managerial and technical skills, as well as capacity development for women entrepreneurs to gain greater access to raw materials and financial resources.

1. INTRODUCTION

In 2016, USAID Oceans identified Bitung, Indonesia as a program learning site, in which to pilot an electronic Catch Documentation and Traceability (CDT) system and implement activities to support sustainable fisheries management planning through an Ecosystem Approach to Fisheries Management (EAFM). The learning site CDT system is designed to combat illegal, unreported and undocumented (IUU) fishing and seafood fraud, particularly in areas where EAFM is applied. USAID Oceans advocates for the premise that a successful CDT system must account for and incorporate the diverse needs and perspectives of both players and enablers in the fisheries value chain. That is, both public and private stakeholders, including the civil society members that support and enhance the value chain, need to be involved in the EAFM and CDT initiatives.

Integrating and mainstreaming gender in fisheries can have many positive impacts, and as related to USAID Oceans, can greatly improve CDT and sustainable fisheries management planning initiatives. The use of a gender lens in analyzing the fisheries value chain, from the point of catch to the consumer, supports USAID Oceans in ensuring that key interventions in fisheries management integrate gender aspects by systematically identifying key issues relevant to gender inequalities and gender inequities. As such, USAID Oceans subcontracted Sam Ratulangi University (UNSRAT) to conduct a gender analysis along the tuna fisheries value chain of Bitung, Indonesia, in accordance with the USAID gender dimensions framework.

Indonesia is the world's largest archipelagic nation, with 17,504 islands, 104,000 km of coastline and 2.54 million square km of total sea area. The economic potential of sea fishery resources is estimated at USD 82 billion per year, of which about USD 15.1 billion per year is from capture fisheries (Ministry of Marine Affairs and Fisheries, 2014). With such large resources, the fisheries sector becomes one of the greatest potential sectors in Indonesia. In terms of fishery production, Indonesia ranks second after China. Total Indonesian fishery production reached 20.77 million tons in 2013 (including seaweeds); about 6.44 million tons are contributed by marine capture fisheries (FAO, 2014). Commodities with the largest export volume are tuna, eastern little tuna, and skipjack fish (called *tuna-tongkol-cakalang* in Indonesian, or TTC), which reached 206.553 tons, with an export value of USD 692 million (Ministry of Marine Affairs and Fisheries, 2014). The contribution of fisheries is therefore essential to the economic well-being of people in Indonesia, where 1.4 million households depends their livelihood on fisheries, in particular small-scale fisheries (Central Bureau of Statistics, 2013).

Bitung is one of the most significant fishing centers in Eastern Indonesia, particularly for skipjack tunas. The production of capture fisheries of Bitung City in 2013 reached 133.278 tons, of which about 83.55% or 111,360 tons were skipjack. In 2015, the Government of Indonesia placed a moratorium on foreign fishing vessels, and as a result, Indonesia experienced a 65% decline in production. Fisheries is one of the most important economic activities in Bitung city. The marine fisheries sector, which includes both fishing and fish processing is an important source of employment in Bitung, providing livelihoods to an estimated 2,511 households (Bitung Central Agency of Statistics, 2016). There are 53 fish processing plants situated in Bitung city (Bitung Fisheries Agency, 2015), and the potential fishery resources that can be accessed by fishermen of Bitung city are quite large because it includes two fisheries management areas (FMA), i.e., FMA 715 (Gulf of Tomini, Maluku Sea, Halmahera Sea, Seram Sea and Gulf of Berau) and FMA 716 (Sulawesi Sea and Northern waters of Halmahera Island). However, the utilization of the fishery resources is still not optimal.

Most fishing boats based in Bitung city are small tuna fishing boats with capacity ranging from three gross tons (GT) to 10 GT and use handline as fishing gear. In 2013, the number of small tuna fishing boats based in Bitung City reached 766 units (Bitung Marine Affairs and Fishery Services, 2014). This number of boats has rapidly increased in Bitung City during the last decade due to the price increase of tuna as the main attraction for investors in this sector. Bitung City has also become the location of several fish processing plants because of its large catch of tuna and tuna-like species among regencies/cities in North Sulawesi province. The tuna fish group landings in Bitung are predominantly composed of skipjack tuna *Katsuwonus pelamis* L, little tuna *Euthynnus affinis*, big eye tuna *Thunnus obesus*, and various other tuna species. Skipjack tuna is the first most important species (30.6% of total pelagic fish), with annual landings exceeding those of all others, and are the

main target for small-scale handline fisheries. Bitung's main products include fresh, frozen, and canned fish, most of which are exported to various countries, mainly Japan, USA, China, Korea, Taiwan, and some European countries.

Although fisheries have historically been associated with men, women also have a significant contribution in post-harvest, processing and marketing (Williams 2008; Weeratunge *et al*., 2010). Thus, women play important multidimensional roles in fishing communities, which include livelihood, reproductive, household, and other community activities. Most workers who process the fish in Bitung's processing plants are women. Besides processed for export purposes, a small portion of fish are sold in local markets, both as fresh fish and traditional smoked fish (called *cakalang fufu*). Female workers usually perform the process of converting fresh fish into smoked fish, as well as the marketing of the fresh and smoked fish for local market. In Bitung City, as in most areas in Indonesia, women compared to men perform a more diverse range of tasks and duties and assume different roles and responsibilities. Women also often have unequal status than men, and in general have less ownership and control over assets, lower capacity in decision-making and fewer educational and economic opportunities than men.

The objectives of UNSRAT's research, conducted to inform USAID Oceans' activities, are to:

1. Differentiate the roles and interactions among male and female actors in the tuna fisheries value chain;
2. Identify learning site issues and needs to address gender equality and equity, and women empowerment, within the scope of USAID Oceans;
3. Identify strategic areas of intervention to empower and build the capacity of women along the fisheries value chains at the learning site;
4. Determine incentives for strengthened involvement of women to promote sustainable fisheries management at the learning site; and
5. Establish recommendations for gender sensitive policy, research and actions/interventions that promote gender equity and women's empowerment in the fisheries sector at both the local and national levels.

2. METHODOLOGY

2.1 Site Selection

UNSRAT conducted fieldwork in four districts in Bitung city, namely Girian (home to a smoked fish processing unit, where there are groups of smoked fish processing units and fish vendors), Madidir (a center for the fish processing industry, where there are fish processing companies and fish vendors), Aertembaga (a fish landing port, with a frozen tuna company and fish vendors/sellers) and North Lembeh (where there are groups of women working in fisheries business and is home to fish vendors/sellers) (Figure 1). These locations were selected for

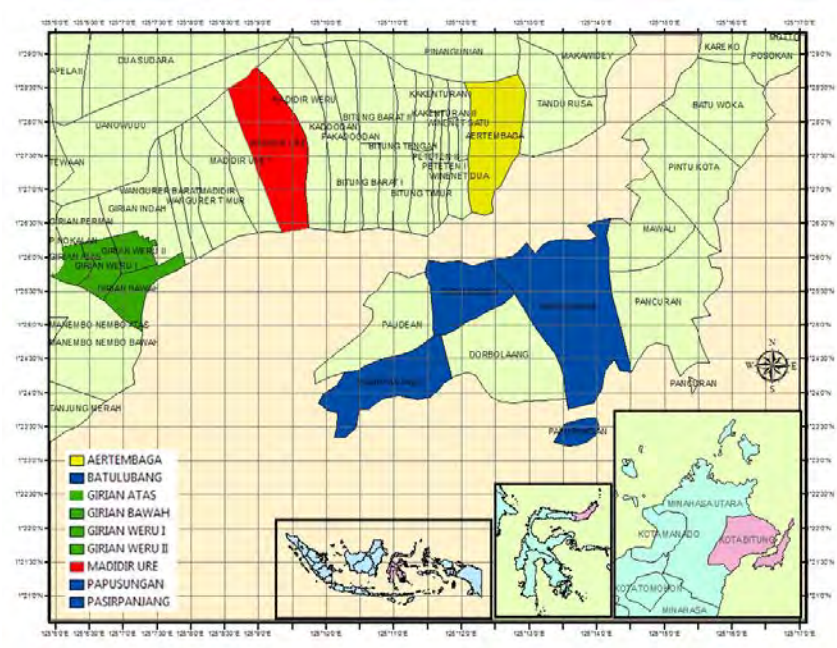


Figure 1. Map of Bitung City and the location of study sites

this study because they represented each node in tuna fisheries value chain in Bitung area. The Girian district represents small-scale fish processing industries, Madidir is where most fish processing plants are situated, the fish landing port in Aertembaga district has the most fish vendors, and finally Lembeh Utara district was chosen because most fisher communities and fisherwomen groups are found in this area. Fisher communities, and in particular fisherwomen groups, are located in the Lembeh Utara district.

2.2. Data Collection

2.2.1 Selection of Respondents

This study applied a qualitative research methodology, with several no-probability sampling techniques used and quota sampling chosen as the primary sampling method. By employing quota sampling, the researcher identified categories that were important to the study, along with subcategories based on each category. Researchers then determined the appropriate sample sizes for each subcategory. In this study, there were eight categories, which were chosen based on the learning sites. Each category consisted of three subcategories, i.e., individuals, households, and groups.

The three levels of respondents considered in this study included:

- Field/grassroots: individuals, households and communities (fisher folk, non-fishers, community-based organizations);
- Intermediate: institutions, structures and service delivery systems (local government units/councils, input suppliers, market intermediaries, exporters, processors); and the
- Macro-level: national, policy level (national fisheries agencies and associations, government ministries, fisheries research institutions).

These levels were also layered by selecting respondents across the whole fisheries value chain, focusing of the gender analysis on the field/grassroots and intermediate levels particularly those along the fisheries value chain. Overall, 244 individuals were chosen as samples from different categories and subcategories. The table below describes the details of the respondents.

Table 1. Types of respondents according to value chain roles and their locations

VC Roles and Research Sites	Men	Women	Total
Fishers			
Aertembaga, Bitung	40	0	
Batu Lubang (Lembeh Island)	9	1	
Papusungan (Lembeh Island)	4	1	
Pasir Panjang (Lembeh Island)	9	4	
Sub-total	**63**	**5**	**68**
Fish Processors			
Aertembaga	2	8	
Girian Atas	17	12	
Girian Bawah	6	22	
Girian Weru I	0	2	
Girian Weru II	2	0	
Lembeh (Batu Lubang)	1	7	
Lembeh (Papusungan)	0	20	
Madidir Ure	5	13	
Sub-total	**33**	**84**	**117**
Retailers			
Aertembaga	14	15	
Girian Atas	3	0	
Girian Bawah	1	3	

VC Roles and Research Sites	Men	Women	Total
Madidir Ure	1	6	
Sub Total	**19**	**24**	**43**
Managers (Pemilik Perusahaan)			
Aertembaga	1	0	
Girian Atas	5	4	
Lembeh (Batu Lubang)	0	2	
Lembeh (Papusungan)	0	2	
Lembeh (Pasir Panjang)	0	2	
Sub Total	**6**	**10**	**16**
Total Respondents	**121**	**123**	**244**

2.2.2 Selection of Focus Group Discussion and Key Informant Interview Participants

This study used purposive sampling method, and only selected participants with the ability, knowledge, and comprehension to provide the research team with the best information on gender issues on tuna value chain in Bitung. These participants included local government officials, the chairman of a training institution, the head of the Bitung fishing port, the head of a laboratory, polytechnic director, production managers of fish processing companies, the head of a fishermen group, the head of fish processor group, the chairman of small-scale fisheries entrepreneur's association, the chairman of fishing vessel owners' association, and three other knowledgeable persons. Research participants were short-listed according to the secondary data gathered prior to the research and contacted by phone to arrange an appointment time for interviews. Researchers conducted in-person interviews with the subjects, with interviews held at the participants' workplaces or houses, according to the time agreed. Interestingly, only 16% of the Key Informant Interviews (KIIs) conducted were with women, illustrating that men occupy most of the high positions in fisheries, both in the government and private sector.

2.3 Data Collection and Analysis

Researchers collected data using and electronic survey tools by way of Google Forms. Data was then analyzed using descriptive statistics. The results of the data input from all enumerators was collected by an administrator and were digitally analyzed by the Google Form system and illustrated in the form of pie and bar charts. In addition, qualitative data obtained from direct interviews was also analyzed by Google Forms to determine responses patterns and trends. To determine patterns, researchers established and applied a coding scheme, with stakeholder validation to verify the identified results.

UNSRAT researchers used a Gender-Responsive Value Chain Analysis (GRVCA) as an analytical tool to (1) determine the roles of women and men in catch documentation and traceability and sustainable fisheries management initiatives, (2) enhance value chain productivity through greater allocation of economic resources to women's hands, (3) improve women's economic empowerment through wider opportunities to make economic decisions, (4) recognize and address women's needs, thus, contributing to work efficiency, and (5) recognize the value of women's work and economic contributions, together with that of the men's. As such, researchers mapped the GRVCA by defining the VC activities in small-scale and large-scale tuna fisheries; producing an inventory of players and enablers in all VC functions; identifying the VC players' roles, by gender, and the enablers with their corresponding roles; determining the relationships between and among the VC players; and lastly, identifying opportunities and constraints to gender empowerment in the tuna fisheries value chain.

In order to map the value chain of tuna fisheries in Bitung city, some primary data were collected through a one-day value chain mapping workshop, conducted in May 2017, in Bitung. Through the workshop, researchers collected primary data to supplement the secondary data and construct a map of tuna fisheries value chain in Bitung. Mapping the value chain helped to organize the data and highlighted the market segments, participant/actors, their roles and relations. Fifty participants attended the workshop and represented stakeholders in tuna fisheries in Bitung city ranging from government officials, private sectors, fishermen, academe, NGOs and observers. The workshop provided introductory information on the objectives of the activity and included hands-on activities to define the value chain activities in small-scale and large scale tuna fisheries in Bitung; identify the value chain players' roles, by gender, and the enablers with their corresponding roles; and identify opportunities and constraints to gender empowerment in the tuna fisheries value chain. During the workshop sessions, participants designed maps that identified the players/actors and enablers in each value chain, the roles and activities of women and men in each value chain, and the opportunities and constraints of women and men in the value chain.

USAID's Six Domains of Gender Dimensions Framework guided the gender analysis to identify areas in which researched analyzed gender differentials. The USAID Gender Dimension Framework includes: (1) access to assets, (2) knowledge, beliefs and perceptions, (3) practices and participation, (4) space and time, (5) legal rights and status, and (6) power. This framework encourages researchers to explore how men and women have differential status and access to resources within these domains and how elements in these domains shape gender roles and responsibilities. The tool also enables the researchers to identify gender-based constraints and systematically assess gender considerations in each of these areas. Based on the analysis, the researchers were able to establish program recommendations that acknowledge gender-based constraints or work to minimize them.

2.4 Data Validation

UNSRAT researchers validated the collected data using internal validation and triangulation techniques. Internal validation was conducted through interviews, with the answers and statements given by participants summarized, paraphrased, and repeated back to the respondents to ensure mutual understanding. Researchers also triangulated data by re-checking against the same respondents about the answers given. Finally, researchers validated the collected data collected though small group Focus Group Discussions, Key Informant Interviews, through a local gender Stakeholders Workshop (assigned for Gender project only), and through Integrated Stakeholder Consultation Workshop (ISCW). At the ISCW, UNSRAT presented the results of the gender analysis of the fisheries value chain for validation by attending stakeholder groups from the national and local fisheries and related government agencies, private sector, civil society organizations and individual men and women fishers.

3. RESEARCH FINDINGS

3.1 Gender Profile of the Tuna Fisheries Industry

Three major business segments classify the Bitung tuna fisheries industry, namely fishing (capture fisheries production), processing, and marketing. This sector is also heterogeneous and is comprised of small-scale and large-scale business. The gender profile of the tuna fisheries industry, developed from learning site research, is described using this classification scheme. Fishers in Bitung use several types of gears to catch tuna and tuna-like species. Based on the survey, the gears mainly used by fishers were handline (62%), followed by purse seine (29%), pole and line (7%), and gill net (1%). Similarly, the size of vessels operated by fishers also varied with majority smaller than five GT (38%) and five to ten GT (36%). Vessels with medium size, i.e., 11 to 20 GT and 21 to 30 GT each, amounted to three and 16%, respectively, while large vessels (larger than 30 GT)

amounted to four percent. Men (93%) own the majority of the vessels, with only seven percent owned by women.

In capture fisheries, men own the majority of the fishing vessels, while only a small portion are owned by women. Male fishers were predominantly 36 to 45 years of age (66% of respondents), and the majority with a low level of education. Eighty-three percent of respondents reported elementary and junior high school as their highest level of education. While there is no discriminatory government policy restricting women's involvement in capture fisheries, the decision not to engage as heavily as men in capture fisheries was reported as being made by the women and is generally supported by their husbands and families. Local culture also reinforces the idea that women are not fit to work as fishers in the sea, as the sea holds great danger.

Women are most involved in fish processing and marketing. In fish processing, especially at the small-scale level, most business owners are women (60%). In addition to being the owner, they also act as managers. In large-scale processing, women generally work as laborers in the production department. The majority of women who work in small-scale fish processing, particularly as owners and managers, are between 36-45 years of age and their educational attainment varies from elementary to high school. The average family size is two to three children, and women possess an average of ten years of work experience. Although most business owners are women, all laborers who work in the production of smoked skipjack tuna are men. Locals consider the work done by these male laborers to be too risky for women because it involves the use of bamboo that could hurt hands if one is not careful.

In large-scale fish processing plants that produce processed fresh fish, frozen fish, and canned fish, the majority of the workers are women. Most of these women work in the production department and only a few work as administration personnel; they rarely occupy management positions. Most of these female laborers are aged 26 to 55, have an average family size of one to three children category, and have completed on average junior or senior high school, with average work experience of three to ten years.

In fish marketing, the involvement of women is also very significant, with women working as both the wholesalers and retailers. As wholesalers, women are fewer in number than men, but as retailers, women are the majority. Most of the women who work as wholesalers and retailers are 26 to 45 years old with educational achievement from elementary to high school. The average family size is one to three children, and women have an average of at least ten years of work experience.

3.2 Fisheries Value Chain Mapping

Fisheries activities in Bitung City, which include capture fishery, fish processing and marketing, consist of two groups: small-scale and medium or large scale. Fresh fish (tuna, skipjack and Eastern little tuna or *deho*), skipjack, and *katsuo bushi* (smoked tuna flakes) are produced by small-scale fish processors, whereas large-scale fish processors produce processed fresh fish, frozen fish and canned fish. The tuna value chain is made up of relationships and interactions between business actors, including fishers, fish wholesalers, fish retailers, small-scale fish processors, large-scale fish processors, local consumers, and exporters, as depicted in Figure 2, disaggregated by sex.

The activities and interactions between business actors in the tuna value chain can be described as follows. Large-scale fishers have a choice to sell their catch to fish wholesalers, to large-scale fish processors, and fish retailers, whereas small-scale fishers generally only sell their catch to fish wholesalers and retailers.

Fish wholesalers, who usually have good business relationships with fishers and with processors, play a major role in the tuna value chain. After buying the fish from both small- and large-scale fishers, they have options to sell the fish to retailers, small-scale processors, and to large-scale processors. In contrast, fish retailers have limited options to sell the fresh fish or processed fish produced by small-scale processors to consumers.

At the processing level, large-scale fish processors generally sell their products to exporters in Bitung, Jakarta or Surabaya, and some sell directly to foreign buyers because they have long-term business relationships.

Exporters generally sell processed fish products to large importers overseas who also serve as distributors in their respective countries. Small-scale fish processors generally sell their products to retailers or sell directly to consumers, which are mainly restaurants. Furthermore, retailers sell both fresh fish and smoked skipjack fish to consumers in local markets or in residential areas.

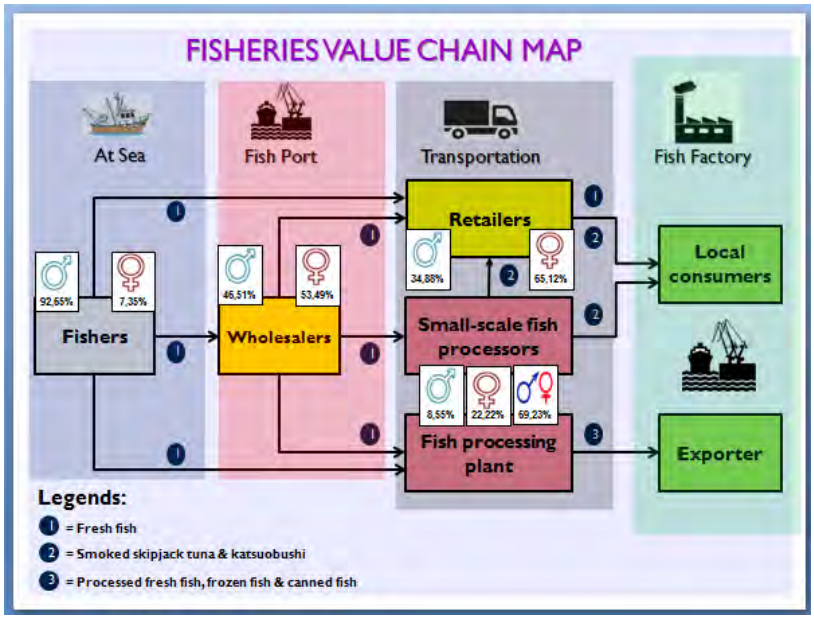


Figure 2. Gendered Tuna Value Chain Map in Bitung

3.3 Community Roles and Relationships of Value Chain Actors

3.3.1 Capture Fisheries

In small- and medium-size vessels that use handline gear to catch yellowfin tuna, fishing and handling fish while at sea is performed by men (100%, n=42), including catching fish, landing fish on the vessel deck, killing fish to reduce stress time, and storing fish with ice in the cold storage. Vessel crew usually does each of these processes quickly in order to maintain fish quality so that they can get higher price when the fish is landed at the shore or port.

In medium- and large-size vessels using purse-seine, pole and line, and gill net to capture skipjack and eastern little tuna, ship work is also performed by an all-male crew (100%, n=26). Because the vessels catch fish in large quantities, the crew quickly transfers catch to vessel's holds that have been filled with crushed block ice to maintain catch quality. During the fishing trip, some crew also conduct reproductive work, such as cooking and cleaning various parts of the vessel.

Women's involvement in capture fisheries includes several activities before and after fishing operations, i.e. preparation of supplies and documentation, sorting, icing, selling, recordkeeping and net mending. Men carry out part of these activities, others by women, and the rest are conducted together.

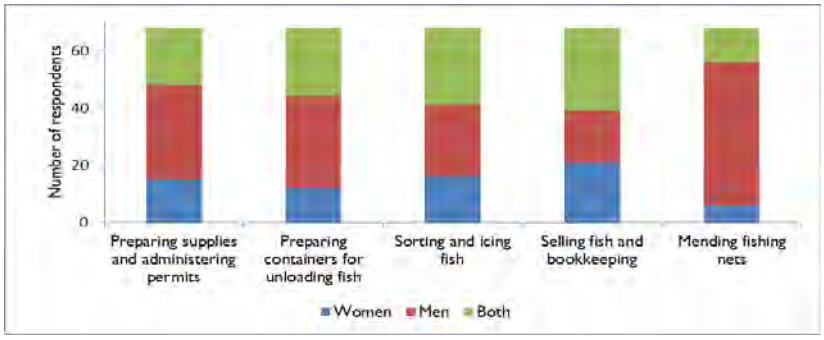


Figure 3. Roles of Men and Women in Capture Fisheries

Before going out to sea to fish, men and women need to prepare fuel, ice, bait, food, cigarettes, first aid, over-the-counter drugs, and complete permits and other administrative requirements. Based on interviews with respondents, most of the work are carried out by men (49%, n=68), either by the owners, the skippers, or the managers of fishing vessels because they are the ones who know most about the needs of the crew on board during fishing operations. Some women (22%) and both men and women (29%) carry out this work as well. Women who are involved in these activities generally have experience to assist the owners, the skippers, or the managers in the preparations.

After the vessel returns to the port from sea, the buckets, baskets and cold boxes for unloading and transporting fish are provided done either by men alone (47%, n=68), some by women alone (18%), and the rest by both men and women (35%) together.

However, unloading the catch, procuring block ice, crushing ice into smaller pieces, and loading fish to transport vehicles are all performed by men (100%, n=68) because these tasks are considered to require speed, skills and physical strength that men are uniquely suited for. Women also do not want to do these activities because they consider heavy physical work that they consider they are not well physically suited. Some women are involved in the process of sorting and icing the fish (24%, n=68), although most of the work is performed by men (37%) or both by men and women (40%). The involvement of women here is to help men to perform these activities quickly.

The process of selling fish and bookkeeping are mostly done by women (43%, n=68) or by both women and men (31%). However, there are also some men (26%) who carry out these activities alone. The involvement of women in these activities is generally due to demand from vessel owners. Although not many, some women (9%) also perform some reproductive activities, like mending fishing nets, but men perform the majority of these activities (74%), while some are carried out by both men and women (18%).

3.3.2 Processing

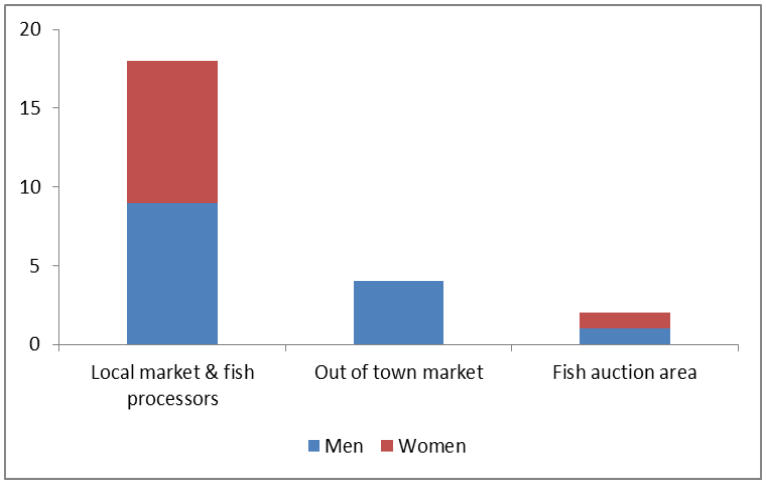
In fish processing activities, there is a clear division of labor between men and women for many types of work. Based on survey and observations, small-scale processors of traditional smoked skipjack tuna, perform work which includes pretreatment (watering fish with cold water), butchering and cleaning the fish, dividing the fish into two parts, clamping the fish by using bamboo, smearing the fish with food color and spice, putting the fish in the furnace, and smoking the fish. Men perform these tasks exclusively, as well as some reproductive activities, namely cleaning the processing equipment, repairing damaged equipment, and cleaning up the processing room. On the other hand, women perform some reproductive activities, namely cooking and preparing food for workers and managing the business' finances. Men and women jointly perform other activities (72%), such as purchasing fresh fish, additive materials, and processing equipment. In some cases, women (28%) also perform these activities independently.

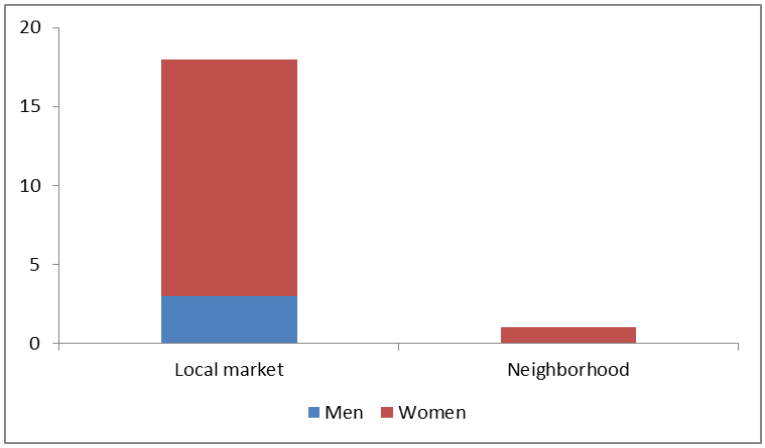
Large-scale processors of canned fish, productive activities perform work, which includes receiving and sorting the fish, thawing the fish (soaking the fish in running water), butchering the fish, washing the fish using clean water, pre-cooking the fish at temperature less than 100°C (to remove the excess oil and fluids and to ease the process of beheading, skinning and loining fish), and cooling the fish (spraying water to fish using mist sprayer). Men exclusively perform these tasks. Women exclusively perform beheading, skinning and loining the fish (removing the fish head, tail, skin, bones, and brown meat), washing the empty can, packing the fish (filling the fish meat into the can), weighing the fish in can, and filling the medium into can (either sunflower oil, canola oil, or brine), seaming, and washing the cans that have been filled with fish. Men also exclusively perform sterilization or retorting the canned fish, cooling the canned fish, casing the canned fish, and storing the packed canned fish. Both male and female workers perform the process of labeling the can.

3.3.3 Marketing

Fish marketing can be divided into two activities. The first activity includes wholesaling, i.e., selling fresh or processed fish in large quantities to those who will sell it again as fresh or processed fish, including transporting the fish to a location specified by the buyers (fish processing site or marketplace). The second activity includes retailing, i.e., selling fresh or processed fish at market or retail sales point, including peddling fish in a residential neighborhood on foot or using motorcycles. Of the 43 research respondents, 24 were fish wholesalers and 19 were fish retailers.

Figure 4. Target marketplace of fish wholesalers (top)
Figure 5. Target marketplace of fish retailers (bottom)





Among the respondents for wholesale activities, more men (58%, n=24) were involved than women (42%). In these activities, there were similarities and differences in the target marketplace that men and women choose. As shown in Figure 4, for wholesaling to local market and fish processors, the number of men (38%, n=24) and women (38%) involved were same. For wholesaling to fish auction area, the number of men (4%, n=24) and women (4%) involved were also same. However, for wholesaling at out of town markets, only men (17%) were involved. In fish wholesaling activities, the involvement of women was limited to owning the business, while men usually performed physical activities of loading and transporting fish to target marketplace.

Contrary to fish wholesaling activities, women were more dominant in fish retailing activities. Of the 19 fish retailers interviewed, 16 were women (84%) while only three were men

(16%). As shown in Figure 5, the target marketplace for fish retailing activities was local markets and the neighborhood. Fifteen women (79%) and three men (16%) performed fish retailing in local markets, while only one woman (5%) sold fish on foot in the neighborhood area. In fact, almost no man was selling fish exclusively in the neighborhood, except those who sell groceries using a motorcycle.

In fish marketing activities, there are other tasks performed by women and men, including making decisions about whom to sell the fish to, the volume of fish to be sold, and negotiating the selling price of fish. Figure 6 shows that women play significant roles in fish marketing decision making, although there are some decisions that have to be made by both men and women, and by men alone. Regarding the decision of to whom to sell the fish, most decisions are taken by women (34%, n=43), followed by men (28%) and by both (19%). Decisions about the fish volume to be sold, are mostly decided by women (38%, n=43) and by men (38%), followed by both (6%). In price negotiation, most decisions are taken by women (34%, n=43), followed by men (28%) and by both (19%).

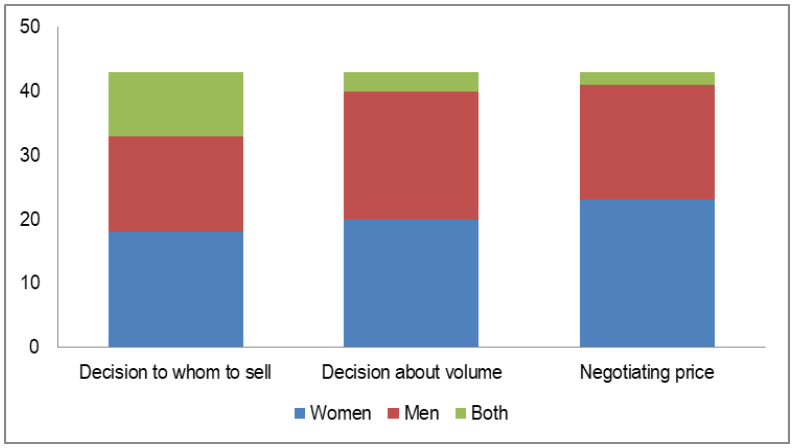


Figure 6. Gender differences in fish marketing decision-making

3.4 Analysis using the USAID Gender Dimensions Framework

3.4.1 Access and Control

Research found that men and women have different access and control to resources in each node along the tuna value chain. In capture fisheries, access to and control over assets related to these businesses, including fishing vessels, fishing gears, information, catch, and financial resources, are dominated by men (97%, n=68), a logical conclusion as the majority of fishing vessels in Bitung are owned by men. Likewise, the skippers, crews, and staffs are all men. Men perform many activities in this business, including the preparation of fishing operations, such as completing permits and provision of fuel, block ice, groceries, and cigarettes; conducting fishing operations; landing fish and reporting the catch to marine and fisheries agency. In addition, as business owners, the involvement of women in this business is limited to selling fish and manage the finance function.

In terms of access to capital, there was no perceivable difference between male business owners and female business owners. Business owners usually use their own capital (37%, n = 68), receive aids from the International Fund for Agricultural Development (IFAD) or government agencies (34%), or obtain informal credit from family, friend or loan provider (10%). Some respondents (4%) use both their own capital and receive aids from IFAD, and the rest (19%) reported that they did not know the capital source of their businesses because they inherited them from their parents.
Access to capital from the banking sector very limited and challenging for local business owners and is rarely availed of.

In small-scale processing, women owners hold the access and control over assets related to these businesses, which include the processing unit and its equipment. Those women are directly and actively involved in their

business, from buying fish as raw materials, supervising the fish processing performed by male workers, and selling the products. As owners, these women have access to business information because they are often in contact with suppliers and retailers, as well as banks. In addition to using their own capital, some of these women also get credit from banks, cooperatives, and fellow entrepreneurs. In addition to being fish processing workers, men are also involved in the transportation of fresh fish as raw materials and the delivery of smoked skipjack tuna fish as finished products to markets and restaurants. The husbands of the women entrepreneurs usually carry out these tasks.

In large-scale canned fish processing firms, the managers are generally men who also maintain access and control of the company's assets. Workers are mostly women and have limited access to company assets because they only work in processing room using simple equipment. The main tasks of those female workers include beheading, skinning and loining the fish, washing the empty can, packing the fish, weighing the fish in can, filling the can, seaming and washing the filled cans.

In fish marketing activities, men and women hold joint access and control of assets used for marketing, especially cars for transporting fish, although only men are in charge of and perform the actual transportation of fish. Men and women also jointly perform retail sales of fresh tuna or skipjack fish jointly, but women generally conduct the sales of smoked skipjack tuna in markets. In retail business, access and control over products are also carried out together, but women generally hold the access and control over sales and sales revenue.

3.4.2 Knowledge, Beliefs and Perceptions

Research found that men have more knowledge about fish capture, while women have more knowledge in fish processing and marketing. Although some women have good knowledge about fishing activities, they do not choose to work as fishers because of the wide-held cultural beliefs and perceptions that women are unsuited to work as fishers due to physical factors, as well as women's responsibility to take care of home and children. In contrast, men who are knowledgeable about fish processing and marketing and choose to work as fish processors and fish wholesalers do not face constraints from societal beliefs and perceptions. Women in fish processing are considered to have more challenges than men, despite their knowledge of fish processing, as they often have to work a full day, even when they are pregnant or breast-feeding.

Table 2. Knowledge, beliefs, and perceptions in fisheries sector

Statements	Capture fisheries	Fish processing	Fish marketing
	Agree, n=68	Agree, n=133	Agree, n=43
Men have more knowledge than women	88%	47%	35%
Men are better suited for working than women	100%	44%	44%
Women have more challenges than men	96%	69%	47%

Men who are involved in fisheries generally obtain knowledge about the sea and fishing from their parents or relatives who are fishermen or their own experience after working on fishing vessels. Similarly, men and women who have businesses or work in fish processing and marketing activities also obtain knowledge from their parents, relatives, and their own working experience.

Societal beliefs and perceptions hold that women are not suited to be fishers reflect the absence of gender equality or existing barriers to achieving gender equality in the fisheries sector. Nevertheless, the women interviewed thought that these beliefs and perceptions in society could be accepted in the future.

3.4.3 Practices and Participation

There are many activities in fisheries sector where men and women work can together, however societal beliefs and practices have created a practiced division of labor between men and women. Men, in general, are accustomed to performing relatively heavy physical labor, while women do work that is less physically intensive but requires persistence and often a long time to complete. Thus, men dominate fishing activities, while women dominate the processing and marketing of fish. However, because of good gender relations, men and women can both be involved in business activities, with each party contributing accordingly. For example, wives or adult daughters in fish sales often assist men who own a capture fishery business after the ship landed at the harbor. Likewise, husbands or adult boys often assist women who own fish-processing businesses to transport and smoke the fish.

Men and women also participate in different ways in social activities in their respective neighborhoods. Most women prefer to participate in social activities, such as "arisan," a regular social gathering where members contribute to and take turns at winning an aggregate sum of money. In contrast, most men prefer to engage in physical activities, such as efforts to clean-up the environment or building tents for grieving families.

3.4.4 Time and Space

Activities in fisheries sector are conducted in several places, including at sea, in port, and at processing plants, and require the mobility of their workers. The distribution of respondents according to their activities and location of activities is presented in Table 3.

Table 3. Distribution of Respondents' Activities and Location of Activities

Activities	Men		Women		n
	%	Location of activities	%	Location of activities	
Capture fisheries	97%	At sea	3%	At land/fishing port	68
Fish processing					
Large-scale	28%	At fish processing plant	72%	At fish processing plant	117
Small-scale	38%	At fish processing site	63%	At fish processing site	16
Fish marketing					
Wholesaling	58%	At port, out of town	42%	At port & at plant	24
Retailing	16%	At market	84%	At market/neighborhoods	19

In terms of space, the percentages of male and female respondents who conduct activities outdoors in fisheries sector are relatively equal. In capture fisheries, men conduct activities at sea, whereas women only conduct activities on land around the fishing port. In processing activities, more women than men conduct activities at large-scale fish processing plants and at small-scale processing sites. In marketing activities, the proportion of men and women is almost the same, but the difference is that men are more involved in wholesaling activities, both in the port and the delivery of fish out of town, while women are more involved in retailing activities, especially in the market and neighborhoods.

Likewise, at certain times, the allocation of time for working is fixed and certain, but in other occasions, the allocation of time is flexible and uncertain. In capture fisheries, the allocated time for fishing at sea is often very long, from three full days up to one month, with breaks taken for eating, resting, and sleeping. Apart from the high-risk factors and the dangers of working at sea, fishing activities that require long time commitments become constraints for women to work on fishing vessels because of their responsibilities to take care of the home and the children.

Many women are involved in fish processing and marketing activities because it allows them to be closer to home perform household tasks as well. Fish processing jobs, both in small and large-scale industries, generally

require workers to work for eight hours per day, with occasional overtime work for one to three hours. Fish vendors often work shorter days, around three to eight hours. Fish wholesalers usually start their activities at the fishing port at 4:00AM and finish distributing and selling fish within eight hours.

3.4.5 Legal Rights and Status

The fisheries sector in Bitung has a high degree of legal gender equality. The 1945 Constitution of the Republic of Indonesia guarantees equal rights and status regardless of gender. Article 27, Paragraph (1) states that, "All citizens shall be equal before the law and government and shall uphold such law and government with no exceptions." Furthermore, Article 27, Paragraph (2) states that, "Every citizen shall have the right to work and to earn a humane livelihood." This article asserts that men and women have the right to work and to earn a decent income. In general, there are equal legal rights to own land, inheritance, court access, and freedom of movement for both men and women.

Gender issues in Indonesia are contained in Presidential Instruction No. 9 of 2000 on gender mainstreaming in national development. This concept is one of the development strategies undertaken to achieve gender equality and equity, aimed at narrowing and even eliminating the gender gap.

According to respondents' perceptions, in general, the rights and legal status of men and women are equally protected by the constitution and the government has implemented rules and policies so that no women or men feel oppressed. Survey results also show that 91% of respondents (n = 68) argue that there is no government policy that limits women's intentions to engage in capture fisheries business. They also believed that women's freedom is rewarded (91%), and women's and men's rights are equal (90%). In addition, in running the business, 85% of respondents reported that they know the laws, government policies and regulations they must obey. Regarding the regulation, 68% of respondents stated that there are regulations that make it difficult for them to run their businesses.

Men dominate fishing activities; however, women are not legally prohibited from owning fishing vessels or working as fishers. There are no gender-discriminatory laws that inhibits women's rights to own property, including fishing vessels. In fact, this gender-neutral legal structure creates an opportunity to push for gender equity in the fisheries sector. In Bitung, several women own fishing vessels. At certain occasions and conditions, there are women who also go fishing, but the involvement of women in fishing activities is overall less significant than that of men.

Women working in large-scale fish processing plants also face no legal constraints on their rights and status. They generally work with pleasure and without complaint because they get the same treatment as men. The scope of work for women, however, is more limited because they are not allowed to work in high risk activities, such as forklift operation. Women are paid equally to men for the same work. Women consider company policies to limit more dangerous or physically intensive work to men to be an honor for them and not limit their capacities because it is in line with societal culture that holds that women should not do high-risk jobs. Eighty-seven percent of respondents (n = 117) held the opinion that there is no government policy that limits women's intentions to work in fish processing plants. They also argue that women's freedom is rewarded (90%), and women's and men's rights are equal (89%).

3.4.6 Power and Decision-Making

In fishing households, there are differences in decision-making power between men and women over the resources and activities. Husbands and wives each have power to make certain decisions, and sometimes make decisions together.

In any activity in the fisheries sector, the power and right to make decisions are distributed to certain persons, including men and women. In principle, there are written and unwritten rules governing the division of power in decision-making. In fishing activities, the decision to go fishing is made by the vessel owner or the captain who are all males. As shown in Table 4, men dominate decision-making in capture fisheries. Men exclusively make fishing decisions, including the trip time, location of fishing ground, and composition of crew. Meanwhile women, particularly the wives of vessel owners, have limited power in selling the fish, determining the price, and using the income.

Table 4. Decisions made by men and women in capture fisheries

Decision	Decision made by (%, n=68)		
	Men	Women	Both
To go fishing	100	0	0
Where to sell the fish	59	22	19
Taking the fish to sell	69	31	0
Amount of fish to sell	59	37	4
How to use income	53	40	7
Fish selling price	69	38	33

In the small-scale fish processing industry, the decision to produce traditional smoked skipjack tuna and katsuobushi are made by the business owners, which consists of women (63%, n=16), men (31%), and both women and men (6%). Other decisions made by the business owners include the purchase of raw fish as raw materials, recruitment of labor, fish processing and the sale of processed fish products. Business owner opinions are presented in Table 5.

Table 5. Opinions of business owners on their fisheries enterprise

Business Owners' Opinion	Agree/Strongly agree (n=16)
The work they do is very important for the welfare of the family	88%
Governments value their businesses and professions	75%
They must be professional and independent in running the business	88%
People also appreciate their efforts and professions	94%
By having their own business they have the opportunity to make business decisions	94%
They do the work as they wish	94%
They must have confidence to face adversity	94%
They need autonomy in doing their business	94%

Furthermore, business owners' opinions on women's abilities to engage in and conduct business activities refuted the idea that women are poorly suited for these tasks (Table 6).

Table 6. Perceptions of fisheries business owners on women in fisheries

Statements	Disagree/Strongly Disagree (n=16)
Women are less independent	88%
Women are less able to make decisions	94%
Women are less competitive	94%

In fish marketing, both wholesaling and retailing, power and decision-making are generally in the hands of business owners. Fish wholesalers generally buy a large quantity of fish directly from fishing vessel owners and have buying power because of their high-volume purchase of fish. When purchasing fish from fishing vessel owners, they usually come with transport vehicles, a weigh scale, large fish containers or cooler boxes, block ice or crushed ice, and some workers. The workers are generally men and their main tasks are sorting, grading

and weighing fish, loading fish to and unloading fish from transport vehicles. Some fish wholesalers also hire female workers, but they are only assigned to sort the fish. The activities of fish wholesaling usually entail sorting, icing the fish in containers, loading the containers to vehicle, unloading the containers from the vehicle, and transporting the fish to the market or fish processing plant. In contrast to wholesalers, retailers can buy fish directly from fishermen or from wholesalers in relatively small quantities, then sell them in the marketplace or directly to neighborhood residents.

3.5 Issues Related to Gender Equality and Women's Empowerment

The gendered profile of the tuna fisheries industry in Bitung can be classified into three segments: capture fisheries, processing, and marketing. The involvements of women in capture fisheries are rare due to cultural norms and societal beliefs that reinforce what kind of work is appropriate for each sex. Thus, men dominate the capture fisheries, while women are more involved in fish processing and marketing. In the communities of Lembeh and Glan, women not only dominated small-scale fish processing activities but also own more than 60% of the businesses. Similarly, in large-scale fish canning processor plants, the majority of workers are women.

Women are involved in these activities, as they require skills that are culturally suited to women, such as beheading, skinning and loining, packing, weighing, and filling with oil or brine, and seaming/washing the cans. Men, on the other hand, perform activities that require more physical work, such as sterilization or retorting, cooling, and casing up and storing. Men and women perform some tasks together such as labeling the can.

Women also dominate fish vendor activities (around 75%), while only around 25% of men perform these activities. Women sort and sell the fish, while men transport the fish within and out from fish landing sites.

Research illustrated a variety of gender-specific issues along the tuna value chain in Bitung that may influence the actions and decisions of men and women differently.

1. Cultural norms apply to small-scale fish processors, fish vendors, fishers and workers and determine the type of work that men and women do in each node of the chain, which is often defined according to the physical demand of the task.
2. Women have limited access to resources, such as fishing vessels.
3. There is limited access to resources such as raw materials due to low bargaining power in determining the price of fish products because of monopsony in small-scale women fish processors (*katsuwobusi*).
4. Women face time constraints for money-making activities due to their household and childrearing responsibilities.
5. Women fish vendors lack access to landing centers/harbors very early in morning, as public transportation options are limited and can make women vulnerable to harmful conditions, such as sexual abuse.
6. Value chain actors have poor access to financial resources due to limited or no collateral, particularly for small-scale businesses. As a result, women are limited from upgrading their fisheries businesses, and therefore have not been able to form sustainable and viable fish trade especially when it comes to the export of fish and other fishery products.
7. Value chain actors have limited access to information, networks, extension and associations.

3.6 Gender Champions and Women Leaders

As part of its research for USAID Oceans, UNSRAT researchers identified gender champions and women leaders who are working to promote improved human welfare conditions and gender equity, as summarized below.

1. Group processing and marketing of smoked skipjack 'cakalang fufu' (Poklahsar *Ustafu*)
Poklahsar Ustafu is located in Girian Bitung City and was established in 1996 by Marwiah Lahadji and her husband Sudirman Pakaya. This group consists of 20 people, namely 14 members as fish processors, four persons as suppliers of raw materials and two persons as marketing distributors. The smoked skipjack business (cakalang fufu) is run by Marwiah, along with her husband, brother, and sister.

Poklahsar Ustafu's vision is to improve member welfare and is guided by a mission to grow a sense of togetherness and solidarity among group members; increase the income of group members; improve employment opportunities of surrounding communities; and establish partnerships with relevant agencies.

2. Processing and Marketing Group (Poklahsar Anggrek)
This group was established in 2013 in Pasir panjang village, Lembeh Selatan sub-district, Bitung city. The coastal area has a great diversity of natural resources that have great potential, but processing and marketing of fishery products in Pasir panjang village has not been maximized, thus Poklahsar Anggrek was established. Poklahsar Anggrek processes fish products from eastern little tuna that are bought from local fishermen. Members of this group are all women who have a high level of care to improve the family economy and group members. Poklahsar Anggrek leadership figures are passionate women, committed to finding new business opportunities and bettering their family livelihoods.

3. Women Fish Traders
Fish traders are predominately women. Maya Serang is one of the women traders who is successful in her business. She started her business by being a street fish vendor, selling fish from house to house in her neighborhood. With her enthusiasm and hard work in this small-scale fish business, and with financial support from a bank, she was able to expand her business to sell fish not only in local market but also outside Bitung. She is an example to her friends and the community around her, where she shows dedication to her work through her leadership as a group leader of fisherwomen groups. The group consists of women who are small fish traders/retailers. They support each other in a variety of activities such as finding new markets as well as keeping the existing buyers, getting financial supports from each other or from financial institutions/government, and improving their business by sharing success stories.

4. CONCLUSIONS

4.1 Implications to USAID Oceans' Objectives

Overall, this study found that tuna value chain in Bitung City is characterized by many small-scale actors. Women dominate as small-scale fish processors, fish processing plant workers, small and medium scale wholesalers, urban street vendors and market retailers, whereas men dominate as fishers, transporters, and large-scale wholesalers. These findings are consistent with several other fish value chain studies in other countries, such as in Nigeria (Cheke, 2012) and in Ghana (O'Neill, 2013). There are several key factors influencing the degree of women's participation in the fisheries sector, namely the culture within the society, the applicable laws and regulations, and the government's policy priority of ensuring the achievement of gender equity and women's empowerment. In general, women participate actively in fisheries activities,

however, their low status in many Asian countries shows that their contribution to fisheries is not recognized and is often underappreciated (Siason et al., 2002).

Women's participation in the fisheries value chain, both as small-scale processors, fish wholesalers and vendors, and involvement in the preparation for fishing, obtaining port clearance and fishing licenses, and writing out catch reports, gives women knowledge about the fisheries conditions and activities, and fluctuations of catch amount over the year and from year to year. Harper et al. (2013) argues that the governments of many developing countries often complain about the lack of human resources to monitor the condition of the marine environment and fisheries, whereas they actually have enough women who are sufficiently knowledgeable about the fisheries in general because of their involvement in various activities in fisheries value chain. However, women's knowledge relevant to fisheries management is rarely utilized. In this regard, women's ability to organize and collaborate makes them ideal partners in spawning initiatives for fisheries development and management. With adequate training and empowerment, women can participate in monitoring activities, especially those relevant to the eradication of IUU fishing and the improvement of fisheries management. In addition, because of their role in monitoring and assessing fish supply and demand at the household level in particular, women can make a meaningful contribution to developing policies, particularly those related to fisheries and food security. Although women are not directly involved in ocean fishing trips, they can closely observe the catch obtained by fishermen. Women can carefully examine the catch fluctuations of diverse fish species in various time interval because they play an active role in the fish sorting and grading system. They also can quickly ask why the catch amounts today are different from yesterday, or they may ask why the catch is smaller/larger in number or in size. These issues are mostly not the concern of the fishermen. Women can play an indirect role as liaisons with local authorities to provide accurate information about marine and fisheries conditions.

Furthermore, women were observed to enjoy gathering in groups, with unofficial groups organized but spontaneously formed. For example, "arisan" gatherings can be used by the government to obtain crucial information. By providing a few incentives, such as mobile phone prepaid credit that can be used to support communication among them, or gathering spaces, governments can more effectively use women's communication and organizational strengths to their benefit.

A major implication of this study, particularly to USAID Oceans' objectives, is that the role of women in all aspects of the tuna fishery sector in Bitung City should be recognized and appreciated by involving them in process of fisheries planning and management. In addition, the promotion of some selected women as part of fisheries policy-making body is thought to be key to establishing a successful catch documentation and traceability and sustain fisheries management program.

4.2 Summary of Findings

Through literature reviews, in field data collection, and the conduct of a value chain mapping workshop, the UNSRAT research team established the following summary findings:

- Men control the access to physical resources (ships, fishing gear and industrial-scale processing units), while women dominate small-scale processing units and local marketing activities. Access to capital and information resources, especially for small-scale ventures, are most often dominated by women.
- Both women and men have roles in Bitung's fisheries sector. Men complete heavier physical tasks like fishing and transporting fish, while women are more involved in fish processing and marketing. Although participation of women and men is relatively balanced in terms of equal opportunities to work and generate income, there is still a need to conduct quantitative research to determine contributions of quality time, investments and incomes.
- Men were found to be more knowledgeable in fishing activities, while women have more knowledge in fish processing and marketing activities. These gender roles are reinforced in the community

through beliefs and perceptions that women are not suitable for fishing activities, either because of physical factors or their responsibility to take care of the house and the children.

- Time spent by women and men in tuna value chain is relatively equal. Women spend more time than men in fish processing activities, but outdoor activities that are conducted outside the house or buildings, including fishing, fish transportation and selling fish around the community along the value chain are relatively equal between men and women.
- Women and have equal legal rights and status in all activities of tuna value chain. Both have equal rights to ownership of properties such as boats, vehicles and houses. Empowerment and decision making varies across the value chain, but on average are relatively equal.

5. RECOMMENDATIONS FOR KEY STAKEHOLDER TYPES

Recommendations can be categorized into three major groups:

- **Women's Empowerment**: Strengthen existing groups of women fish processors and support the formation of new women's groups to develop new fish vendor and fish processing businesses. Support capital assistance programs for women-owned businesses and a balanced role between women and men in public decision-making.
- **Services**: Provide daycare facilities for children of female workers in fish processing plants, and support programs for women entrepreneurs to conduct business diversification, market expansion, and product development.
- **Capacity building**: Support tailored trainings to improve women's entrepreneurial, managerial and technical skills, and support capacity development for women entrepreneurs to gain greater access to raw materials and financial resources.

The following items are recommendations for different types of stakeholders within the fisheries value chain who can support and effect initiatives to promote gender equity and women empowerment.

5.1 USAID Oceans and Fisheries Partnership

Policy:

- Facilitate and strengthen member states to create an enabling environment wherein participation incentives are provided to women fishers, processors and workers, in the form of capital to start or develop their fisheries business activities. The enabling environment should allow for assistance and monitoring support in ensuring funds are effectively used to improve the livelihood of the target groups.

Interventions:

- Support CDT system development and implementation, increase the capacity of women actors in the value chain such as fishers, fish processors, and workers in CDT and fisheries management-related skills through training.
- Empower women fishers and fish processor groups through various fisheries related trainings by introducing technologies that could boost their business, receive timely technical and market information, and provide them a comparative advantage.
- Assist in marketing network of women in fisheries business to improve their market opportunities and bargaining power.
- Support the identification, recognition and implementation of advocacies of gender champions in fisheries.

5.2 Local Government Units (District) and National Government

Policy:

- Support the formation of women fisher and fish processor groups, as well as women self-help groups for micro-financing and learning exchanges.
- Develop women-friendly policies and procedures particularly in financing, marketing of products, and business permits issuance to encourage entrepreneurship among women who are involved in fisheries business.
- Advocate for women-friendly and safe workplaces in fisheries, and development of local ordinances to ensure that women and youth involved in fisheries work feel safe in their communities and work places.

Interventions:

- Support capacity building and extension among women stakeholders (individually or through the women's groups or associations) in fisheries on fish product quality, processing, marketing, business sustainability, leadership skills, group management, advanced fisheries technologies particularly the women-friendly ones, fisheries laws and regulations, other fisheries related information and skills to upgrade women's knowledge and skills so they will be able to level up with their male counterparts.
- Recognize and provide incentives to fisheries businesses and establishments where gender equality and women empowerment are being upheld including those with a gender in fisheries policy.
- Drive information and extension of regulations on gender equality, empowerment of women and girls, fisheries regulations and guidelines as well as controlling the enforcement of the regulations.
- Provide financial support for women-owned start-up businesses.
- Help to regulate/maintain/evaluate the price of fish so it remains stable and ensure women receive similar prices as men.

5.3 Private Sector/Fisheries Industry

Policy

- Develop and adopt company gender equality policies to ensure women are not discriminated against or excluded in recruitment, promotions and salary increases, management, opportunities for capacity building, or travel, among others.
- Benchmark company human resources policies and procedures against national labor laws/codes and international labor instruments, including the national ministerial decree on gender equality and CEDAW principles.

Interventions

- Implement company gender equality policies.
- Support the formation of small-scale women fish processor groups and provide them with technical skills on particular products with export standard methods.
- Provide opportunities to women small-scale fish processors to supply the companies with their products, for e.g., as a result of participation in the groups and in training, and offering them at competitive prices.

5.4 Educational and Training Institutions

Policy

- Advocate for gender sensitive courses and curricula in fisheries and related fields.
- Establish a gender desk at every unit.

Interventions

- Develop and provide equal access to degree and non-degree training programs for coastal communities on fisheries related science and skills, in particular targeting both the young women and men.
- Provide equal access to training of female and male students to equip them with skills needed to work in the fisheries industry.
- Develop a curriculum on gender in fisheries.

5.5 Research Institutions

Policy

- Advocate for gender sensitive research methods to be able to extract sex and gender disaggregated data.

Research

- Understand women's and men's roles and relationships in the fisheries sector for identifying hotspots and opportunities for upgrading and promotion of sustainable fisheries development.
- Research women-friendly and appropriate technologies for fish processing, like smoked fish.
- Document gender-sensitive indigenous technical knowledge on tuna and tuna-like species and how they can be applied for sustainable fishing practices and sustainable income.

5.6 NGOs, Civil Society Organizations, Women's Groups

- Develop or support networking of women's groups to enable them to contact each other to gain experiences, skills, information on various fisheries related activities including market opportunities, prices, resources and financial aids/supports.
- Share gender sensitive methodologies and skills to other fisheries stakeholders.
- Support the identification, recognition and implementation of advocacies of gender champions in fisheries.

5.7 Development Assistance Agencies and other Regional Bodies

Policy

- Develop gender policy or strategy within their organizations.
- Require project proponents to have a gender strategy in all the projects related to development.
- Prioritize assistance to organizations and projects with gender integration strategies in conducting research,

Interventions

- Support initiatives that promote gender equity and women and youth empowerment in fishing and coastal communities through provision of start-up capital, training, sharing information, and other activities related to coastal community empowerment.
- Support initiatives of governments, private sector and civil society organizations in identification, recognition and implementation of advocacies of gender champions in fisheries.

REFERENCES

BCAS (Bitung Central Agency of Statistics). 2014. Bitung in Figures 2013. Bitung Central Agency of Statistics, Bitung City, Indonesia.

BCAS (Bitung Central Agency of Statistics). 2016. Bitung in Figures 2015. Bitung Central Agency of Statistics, Bitung City, Indonesia.

Bitung Marine Affairs and Fisheries Agency; Yearly Report. 2014. Bitung Marine Affairs and Fisheries Agency, Bitung City, Indonesia.

Bitung Marine Affairs and Fisheries Services; Yearly Report. 2016. Bitung Marine Affairs and Fisheries Services, Bitung City, Indonesia.

Central Bureau of Statistics. 2015. Analysis of Fisheries Households in Indonesia (in Indonesian). Central Bureau of Statistics (Indonesia), Jakarta.

Cheke, Abiodun O. 2012. *Women in Fish Value Chain in Nigeria*. Paper presented on the IIFET 2012 Tanzania Proceedings.

FAO (Food and Agriculture Organization). 2014. FAO Yearbook - Fishery and Aquaculture Statistics. Food and Agriculture Organization, Rome.

FAO (Food and Agriculture Organization of the United Nations). 2016. Promoting gender equality and women's empowerment in fisheries and aquaculture. FAO

Ministry of Marine Affairs and Fisheries. 2009. Strategic Plan of the Ministry of Marine Affairs and Fisheries 2009-2014. Ministry of Marine Affairs and Fisheries, Jakarta.

Ministry of Marine Affairs and Fisheries. 2014. Marine and Fisheries in Figures. Ministry of Marine Affairs and Fisheries, Jakarta, 2014. Bitung Central Agency of Statistics. Bitung in Figures 2014. Bitung Central Agency of Statistics, Bitung City, Indonesia.

O'Neill, Elizabeth D. 2013. *A Value Chain Analysis of Tuna Industry in Ghana*. Master Thesis in the University of Algarve, Portugal.

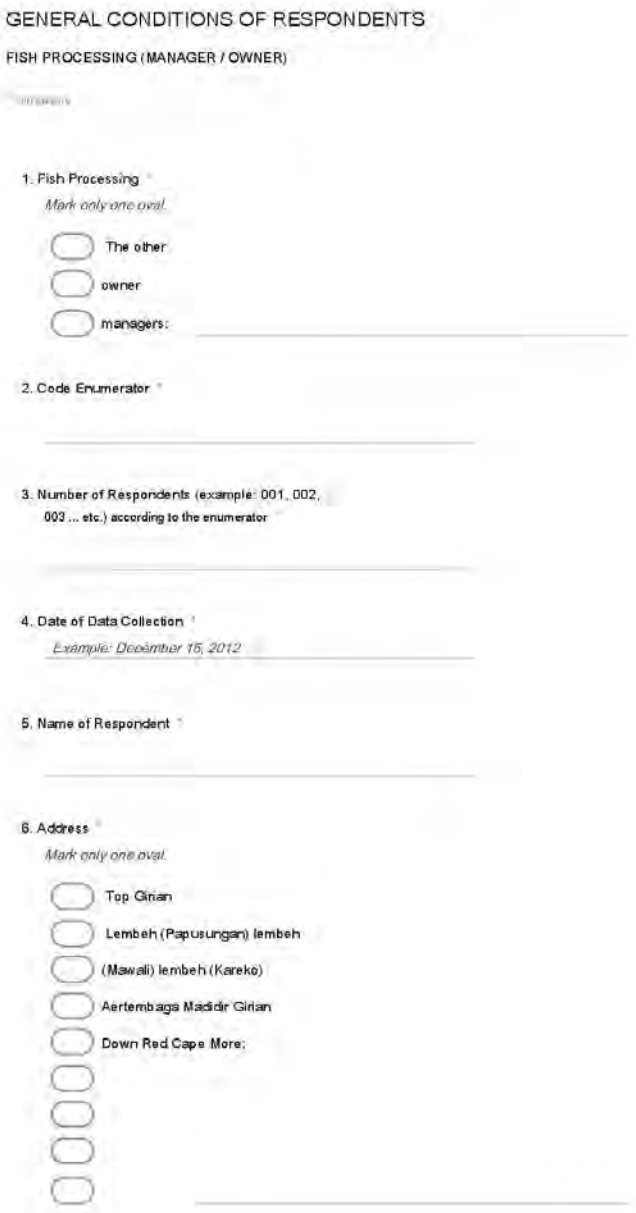
Siason I.M., Tech E., Matics K.I., Choo P.S., Shariff M., Heruwati E.S., Susilowati T., Miki N., Shelly A.B., Rajabharshi K.G., Ranjit R., Siriwardena P.P.G.N., Nandeesha M.C. and Sunderarajan M. (2002) 'Women in Fisheries in Asia'. *World Fish Centre Publication*. pp. 21-48.

Weeratunge, N., Snyder KA, Sze CP. 2010. Gleaner, fisher, trader, and processor: Understanding gendered employment in fisheries and aquaculture. Fish and Fisheries. 11: 405–420.

Williams, Meryl. J. 2010. Gender dimensions in fisheries management. In Grafton, R. Q., Hilborn, R., Squires, D., Tait, M., and Williams, M.J. (Eds.). Handbook of Marine Fisheries Conservation and Management. Oxford University Press, New York.

ANNEX I. SURVEY QUESTIONNAIRES

The following survey is a sample questionnaire used for fish processing managers and owners. Additional questionnaires for fish processing workers, retailers/wholesalers, and fishermen can be accessed at www.seafdec-oceanspartnership.org/resource/indonesia-gender-analysis-survey-questionnaires/.



GENERAL CONDITIONS OF RESPONDENTS

FISH PROCESSING (MANAGER / OWNER)

1. Fish Processing *

Mark only one oval.

- ◯ The other
- ◯ owner
- ◯ managers:

2. Code Enumerator *

3. Number of Respondents (example: 001, 002, 003 ... etc.) according to the enumerator *

4. Date of Data Collection *

Example: December 15, 2012

5. Name of Respondent *

6. Address *

Mark only one oval.

- ◯ Top Girian
- ◯ Lembeh (Papusungan) lembeh
- ◯ (Mawali) lembeh (Kareko)
- ◯ Aertembaga Madidir Girian
- ◯ Down Red Cape More:
- ◯
- ◯
- ◯
- ◯

7. Age *

Mark only one oval.

- 15 25 26
- 35 36 45
- 46 55 56
- 65> 65

8. Religion *

Mark only one oval.

- Hindu Buddhist
- Catholic
- Protestant Islamic
- Confucianism

9. Parts *

Mark only one oval.

- Minahasa
- Sangihe Talaud
- Bantik
- Mongondow
- Borgo The
- others:

10. Gender *

Mark only one oval.

- Man
- Woman

11. Education *

Mark only one oval.

- ( ) Finish Elementary School
- ( ) Junior High School SMSS
- ( ) SD
- ( )
- ( )
- ( )
- ( )

12. Status *

Mark only one oval.

- ( ) Single
- ( ) Married
- ( ) Widower
- ( ) Widow

13. Number of Dependents Family *

Mark only one oval.

- ( ) None 1 2 3 5
- ( ) above 5 More:
- ( )
- ( )
- ( )

14. Main Job *

15. Additional Work

Check all that apply.

- [ ] Tambak
- [ ] Building Workers
- [ ] Peasants Workers
- [ ] Factory Workers More
- [ ] Stores:
- [ ]

16. Main Job Experience *

Mark only one oval.

- <3 yr 3 yr 5 yr
- 5 7 7 10 yrs>
- 10 yrs
-
-

17. Work Previous

_____

18. Shelter *

Mark only one oval.

- Premise Owned Rented
- Mess Parent Company
- The others:
-
- _____

19. Conditions Home *

Mark only one oval.

- Semi Permanent
- Permanent Emergency
- More:
- _____

20. Ownership of Goods (more) *

Check all that apply.

- Bicycle Motor
- Car Mobile TV
- Watch More:
-
-
-
- _____

21. Social Activities (more)

Check all that apply.

- [ ] Arisan Religious
- [ ] Marriage
- [ ] Anniversary
- [ ] Bhakti More Grief
- [ ] Work:
- [ ]
- [ ]

Go to Question 22.

FISH PROCESSING (manager / owner of the business)

A. TYPE OF BUSINESS

22. Any attempt you run?

23. What is your position in this business?

Mark only one oval.

- ◯ Own
- ◯ Workers
- ◯ The other owner-workers:
- ◯

24. Who owns the business?

Mark only one oval.

- ◯ Male Female
- ◯
- ◯ joint ownership

B. ACCESS TO FACTORS OF PRODUCTION

25. Do you get supplies directly from the fishermen or through a broker?

Check all that apply.

- [ ] Directly from fishermen
- [ ] Traders another Mediator:
- [ ]

26. How do you find the supplier of a fish?

Check all that apply.

- [ ] Directly from fishermen
- [ ] Traders another Mediator:
- [ ] _____

27. Do you know the man / woman who has a fishing business where you buy?

Check all that apply.

- [ ] Male Female
- [ ]
- [ ] Male Female

28. Do you find any difference in the quality / quantity of the products you receive from fishermen / middlemen male or female?

Check all that apply.

- [ ] Yes No Other:
- [ ]
- [ ] _____

29. If Yes or No, why?

_____

_____

_____

_____

_____

30. What are the most important factors play a role in this effort?

Check all that apply.

- [ ] Capital Labor
- [ ] Skills Experience
- [ ] More:
- [ ]
- [ ] _____

31. Where did you get capital for your business

Check all that apply.

- [ ] Personal savings of Bank
- [ ] Loans
- [ ] Informal credit (moneylenders, family, friends, dll) Others:
- [ ] _____

32. If you need extra money for this effort, from where to get it

Check all that apply:

- [ ] Family Friends
- [ ] Others:
- [ ] _____

C. PRACTICES AND Participation

33. When is the uptime in your business?

Check all that apply:

- [ ] Morning
- [ ] afternoon
- [ ] Evening
- [ ] Not necessarily (specify)
- [ ] Other: _____

34. How many employees?

Check all that apply:

- [ ] Male Female _____
- [ ]

35. How do you / your employees to and back from work?

Check all that apply:

- [ ] Public transport company
- [ ] vehicles Walk The other private
- [ ] vehicles:
- [ ]
- [ ] _____

36. Type of work / activity involved in the operation of this business, what skills are required for each activity, and who is doing it? (Activity, skills required, anyone working man or woman who, why?) (Table attached)

_____

_____

_____

_____

_____

37. To whom are you selling a product?

Check all that apply.

- [ ] Local market
- [ ] More Exporter
- [ ] Company:
- [ ] _____

38. Do you provide training for your employees?

Check all that apply.

- [ ] Yes No Other:
- [ ]
- [ ] _____

39. Identify and explain the kind of training I've ever attended!

_____

_____

_____

_____

_____

40. When will the training take place?

_____

_____

_____

_____

_____

41. Who is more likely to participate in the training?

Check all that apply.

- [ ] Male Female
- [ ] Both
- [ ]

42. Do you have more customers male or female?

Check all that apply.

- [ ] Male Female Same
- [ ] both
- [ ]

D. KNOWLEDGE AND beliefs (KNOWLEDGE AND FAITH)

43. Are there any aspects of the processing that is believed to be more difficult for men?

Mark only one oval.

- ◯ Yes No
- ◯
- ◯ What is an example of the task .....

44. Are there any aspects of the processing that is believed to be more difficult for women?

Mark only one oval.

- ◯ Yes No
- ◯
- ◯ What is an example of the task .....

45. Is there any kind of work that is recommended for men? (Please specify)

46. Is there any kind of work that is recommended for women? (Please specify)

47. What major challenges have male employees in the processing business? Explain!

48. What major challenges have women employees in the processing business? Explain!

49. Is there a difference in the supply quantity and quality of the products you receive from male or female?

Mark only one oval.

- Yes No
- Explain .....

E. LAWS AND Policies

50. Are there any laws or policies that make it difficult for you to run your business?

Mark only one oval.

- No
- If so, please describe .....

51. Is there a law / policy / regulations you must obey in running your business?

Mark only one oval.

- No
- If so, please describe .....

52. Are there any rules that make it difficult for you to run your business?

Mark only one oval.

- No
- If so, please describe .....

53. What are the challenges in this effort, especially for women? Explain!

54. How are women in this effort to face these challenges? Explain!

55. In addition to the common challenges facing women in this business, if there are other challenges for women in households where women's role as head of the family? Explain!

56. nothing are the challenges in this effort, especially for men? Explain!

57. How do men in this effort to face these challenges? Explain!

DISKR_GENDER

QUESTIONS FOR THE PERCEPTION, THE ROLE AND PROFESSIONALISM men and WOMEN Fill these statements by providing a "√" in every statement with: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = disagree and 5 = strongly agree

58. There is a policy that causes the limitation of women to act / do something

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

59. Women should not exceed men in work performance

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

60. Competence of women underestimated

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

61. Freedom of women argue underappreciated

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

62. Quality of women rated yet competitive

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

63. The position of women is considered lower than men

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

64. Women are considered less capable in terms of decision-making

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

65. Women are considered less able to occupy important positions

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

66. Women are considered less willing to take risks

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

67. Women only as a complement to the work

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

73. The nature of women as housewives who have to take care of the housework

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

74. Culture / tradition position women to bear the burden of domestic work more and longer

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

75. Women who work outside the home are considered merely helping husband

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

76. Women were considered impossible to do a higher job demands

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

77. I have a job right now because like this job

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

68. Women are not rational and emotional

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

69. Women were considered physically weak

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

70. Women were considered less independent

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

71. Women were considered always be submissive and dependent on others

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

72. The main function of women considered only as caregivers for children and serve the husband

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

73. The nature of women as housewives who have to take care of the housework

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

74. Culture / tradition position women to bear the burden of domestic work more and longer

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

75. Women who work outside the home are considered merely helping husband

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

76. Women were considered impossible to do a higher job demands

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

77. I have a job right now because like this job

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

78. Work is now an encouragement for me to be an independent person

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

79. I am pleased to see the work and dedication made by peers

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

80. I will keep a career on work right now even though my income is less

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

81. Work must now comply with the professional standard

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

82. Currently the professional standards of the current job adequately applied in the work environment

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

83. Organization of professions now have the power to develop and implement standards of conduct for its members

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

84. Work now have a way to assess the ability and the work of the current job

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

Profession 85. Current work is very important for the welfare of the family

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

86. Work is now an important profession in government

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

87. Lack of professionalism or the lack of independence of the work now will hurt

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

88. acknowledges the importance of public employment services now

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

89. I would like to be given the opportunity to make a decision about what I'm doing right now

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

90. According to my current employment decisions should not be under pressure

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

91. Work should now have great confidence in the face of difficulties jobs

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

92. In my opinion the autonomy necessary to do the job right now

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

93. I subscribe to and read journals or magazines related to work now

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

94. I often attend and participate in any work-related meeting held today

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

95. I often ask and encourage exchange ideas and experiences related to work now

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

96. I believe the work is now needed to support the development of fisheries

Mark only one oval.

- Strongly Disagree
- Disagree Neutral Agree
- Strongly agree

ANNEX II. FOCUS GROUP DISCUSSIONS AND INTERVIEW GUIDES

Questions for the Key Informant Interviews

1. In your opinion, do women and men have equal access *to, utilize or operate* of, and benefit from the following specific resources, property or assets:
    a. Land, house, and car;
    b. Fishing vessel, fishing gear, and fish aggregate device (FAD);
    c. Fishing permit or license
    d. Formal and informal networks that share information related to entrepreneurship in fisheries sector;
    e. Technologies, government grants and services that are relevant to being an entrepreneur, including training and other opportunities for skill development;
    f. Participation in the project or activities being designed and planned.
2. What are the constraints faced and easiness obtained by women in accessing to, *utilizing or operating of, and* benefiting from specific resources, property or assets which have been asked in the previous questions?
3. Do women and men generally have the same knowledge to become entrepreneurs in the fisheries sector, including fishing activities, fish processing and fish marketing?
4. Is there culture or custom and beliefs in society that limits or prohibits women to become entrepreneurs in the fisheries sector, including fishing activities, fish processing and fish marketing? If so, please state and explain.
5. Do women and men generally have the same perception regarding entrepreneurship in the fisheries sector, including fishing activities, fish processing and fish marketing?
6. Can you explain the perceptions of men and women each in doing activities or working in the fisheries sector?
7. What are the main and additional activities that are often performed by men and women in the fisheries sector?
8. Is there any difference in women's and men's participation in the fisheries sector, particularly in skill training, project design, policy formulation and decision making which affect activities in the fisheries sector?
9. Is there a difference in the time spent and the usual place of activity for women and men in the fisheries sector? Which ones spend more time working in the field or outdoors?
10. Do women and men have equal rights to work or become entrepreneurs in the fisheries sector?
11. Are there any special benefits or restrictions in the legal or regulatory framework that explicitly or indirectly target women or men?
12. Are women and men equally likely to be owners of property that might serve as collateral for a business loan (e.g., land, car, equipment, etc.)? Do women and men have equal rights to inheritance – both by law and by custom?
13. Are women and men treated unequally in all legislation related to employment and entrepreneurship issues, particularly in fisheries sector? If so, in what ways does a woman accept treatment that is not the same as a man?
14. Do women have the power to make decisions about their own economic activities?
15. Will women have control over and benefit from the funds and assets they may accrue as a result of the business they create and develop?
16. Do women actively participate in formal decision-making structures or bodies that address business-related issues (e.g., local economic development committees, business associations, chambers of commerce, etc.)? Do women and men hold an equal number of the decision-making positions in these entities?

Questions for the Focus Group Discussions

Women in Tuna Value Chain

1. In Bitung, which nodes or activities in tuna value chain are women currently participating in?
2. What are women's condition and position in this tuna value chain? What are the returns and benefits they receive?
3. Which nodes or activities in tuna value chain are women not participating in, and why? Is there custom and beliefs in society that limits women to participate in those nodes or activities?
4. Is it possible to improve women's condition and position in tuna value chain in Bitung? If so, how?
5. How can we improve the institutions and market incentives for women to participate, and flourish, in tuna value chain in Bitung?

Six Gender Dimension Framework

1. Is there any difference between women and men in terms of access to assets and resources, particularly those relating to activities in the fisheries sector, both as workers and as entrepreneurs? If so, please state or list and explain.
2. Is there any difference between women's and men's knowledge, beliefs and perception regarding various activities in the fisheries sector, especially along the tuna value chain? If so, please state or list and explain.
3. Is there any difference between women and men in terms of activities performed and level of participation in the fisheries sector, both as workers and as entrepreneurs? If so, please state or list and explain.
4. Is there any difference between women and men in terms of time spent and place of activities in the fisheries sector, both as workers and as entrepreneurs? If so, please state or list and explain.
5. Is there any difference between women and men in terms of legal rights and status, particularly in the fisheries sector, both as workers and as entrepreneurs? If so, please state or list and explain.
6. Is there any difference between women and men in terms of power and decision making in the fisheries sector, both as workers and entrepreneurs? If so, please state or list and explain.

ANNEX III. LIST OF COLLABORATING INSTITUTIONS

LIST OF RESPONDENTS

Node and Research Site	Men	Women
Fisher - 68		
Aertembaga, Bitung	40	0
Batu Lubang (Lembeh Island)	9	1
Papusungan (Lembeh Island)	4	1
Pasir Panjang (Lembeh Island)	9	4
Subtotal	**63**	**5**
Fish Processors - 117		
Aertembaga	2	8
Girian Atas	17	12
Girian Bawah	6	22
Girian Weru I	0	2
Girian Weru II	2	0
Lembeh (Batu Lubang)	1	7
Lembeh (Papusungan)	0	20
Madidir Ure	5	13
Subtotal	**33**	**84**
Retailer - 43		
Aertembaga	14	15
Girian Atas	3	0
Girian Bawah	1	3
Madidir Ure	1	6
Subtotal	**19**	**24**
Manager (Pemilik Perusahaan) - 16		
Aertembaga	1	0
Girian Atas	5	4
Lembeh (Batu Lubang)	0	2
Lembeh (Papusungan)	0	2
Lembeh (Pasir Panjang)	0	2
Subtotal	**6**	**10**
Total Respondents	**244**	

LIST OF FOCUS GROUP AND KEY INFORMANT INTERVIEW PARTICIPANTS

No.	Key Informants	Male	Female
1.	Vice Mayor of Bitung City	√	
2.	Head of Marine and Fisheries Agency of North Sulawesi Province	√	
3.	Head of the Institute of Marine and Fisheries Education and Training	√	
4.	Head of Bitung Oceanic Fishing Port	√	
5.	Head of Marine and Fisheries Agency of Bitung City		√
6.	Head of Fish Quality Control Laboratory at Bitung City		√
7.	Head of Industry and Trade Agency of Bitung City		√
8.	Director of Marine and Fisheries Polytechnic at Bitung City	√	
9.	Head of South Bitung District	√	
10.	Head of South Aertembaga District	√	
11.	Head of Aertembaga Satu Sub-District	√	
12.	Head of Aertembaga Dua Sub-District	√	
13.	Head of Aertembaga Papusungan Sub-District	√	
14.	Head of Aertembaga Girian Atas Sub-District	√	
15.	Manager/Representative of PT. SIG Asia (Frozen tuna exporter)	√	
16.	Manager/Representative of PT. Nutrindo Fresh Food International (Fresh tuna exporter)	√	
17.	Manager/Representative of PT. Delta Pacific Indo Tuna (Canned tuna exporter)	√	
18.	Manager/Representative of UD. Karya Bersama Mandiri (Processor of katsuobushi)	√	
19.	Head of fishers' group of Bitung City	√	
20.	Head of fish processor group of Bitung City		√
21.	Chairman of Small-scale Fisheries Entrepreneurs' Association of Bitung City	√	
22.	Chairman of Fishing Vessel Owners' Association of Bitung City	√	
23.	Former supervisor at fish cannery and former manager of IFAD program for Bitung City	√	
24.	Extension worker who supervise fishermen and fish processors	√	
25.	Officer at Marine and Fisheries Agency of Bitung City and current manager of IFAD program for Bitung City	√	