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GENDER ANALYSIS IN THE PURCHASING NODE IN THE TUNA VALUE CHAIN IN THE CENTRAL PROVINCES OF VIETNAM

—

CASE STUDY OF BINH DỊNH PROVINCE.

RACHEL SUNDAR RAJ

TRAVAIL DE FIN D'ÉTUDES PRÉSENTÉ EN VUE DE L'OBTENTION DU DIPLÔME DE MASTER BIOINGÉNIEUR EN SCIENCES AGRONOMIQUES, À FINALITÉ.

ANNEE ACADEMIQUE 2019-2020

PROMOTEUR : PHILIPPE LEBAILLY

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Abstract

Revenues of fishery products have been increasing these past few years in Vietnam. Tuna being the sea-commodity with the highest added-value for exportation, its business provides an income to more and more Vietnamese (USD 653 million in 2018). Understanding a value chain enables its improvement and the suppression of bottle-necks. Yet, the existing literature on the value chain of tuna in Vietnam does not take gender, essential to progress, into account. Conducting a gender analysis will help build a picture of the role of women and highlight gender disparities, hence a good ally to reach equality. To establish what are the roles of women, a study of the gender disparities is required. To do so, interviews were conducted in Tam Quan and Quy Nhon fishing ports in Binh Dinh province, among tuna traders and middle-persons.

USAID's gender analysis methodology for value chains was used to design the questionnaires and serve as the framework for this study. It accounts for six dimensions : (i) Access to assets, (ii) Practices and participation, (iii) Knowledge, beliefs and perceptions, (iv) Legal rights and status, (v) Power and decision-making, (vi) Time and space. The three types of roles considered by Moser's Gender Analysis Framework are studied : productive, reproductive and community management.

The main disparities observed, from which all the others arise, pertain to the profession and the species of tuna traded. Men have access to a better market but this does not mean that women are denied capital : they deal with bigger quantities of fish and are owners of more fishing boats.

Women are more likely to have long working hours and little free time since they have to ensure the two roles : productive and reproductive. Here, women do not have a triple role; they are in charge of the household and most of the administrative tasks of the business. They are perceived as better at negotiating since they show patience and diligence**.**

Contrary to what one might think, the role of community managing falls to men.

Key words : tuna - value chain - gender analysis - Vietnam - role of women- gender disparities

Résumé

Les revenus des produits de la pêche ont augmenté ces dernières années au Vietnam. Le thon étant le produit de la mer à plus forte valeur ajoutée pour l'exportation, son activité procure un revenu à de plus en plus de Vietnamiens (653 millions de dollars en 2018). La compréhension d'une chaîne de valeur permet de l'améliorer et de supprimer les goulets d'étranglement. Pourtant, la littérature existante sur la chaîne de valeur du thon au Vietnam ne prend pas en compte le genre, indispensable au progrès. La réalisation d'une analyse de genre permettra de dresser un tableau du rôle des femmes et de mettre en évidence les disparités entre les genres, bon allié pour parvenir à l'égalité. Pour établir quels sont les rôles des femmes, une étude des différences entre les genres est nécessaire. Pour ce faire, des entretiens ont été menés dans les ports de pêche de Tam Quan et Quy Nhon, dans la province de Binh Dinh, auprès de négociants en thon et d'intermédiaires.

La méthodologie d'analyse de genre de l'USAID pour les chaînes de valeur a été utilisée pour concevoir les questionnaires et servir de cadre à cette étude. Elle tient compte de six dimensions : (i) Accès aux actifs, (ii) Pratiques et participation, (iii) Connaissances, croyances et perceptions, (iv) Droits et statut juridique, (v) Pouvoir et prise de décision, (vi) Temps et espace. Les trois types de rôles considérés par le cadre d'analyse de genre de Moser sont étudiés : productif, reproductif et gestion communautaire.

Les principales disparités observées, dont découlent toutes les autres, concernent la profession et les espèces de thon commercialisées. Les hommes ont accès à un meilleur marché, mais cela ne signifie pas que les femmes sont privées de capital : elles traitent de plus grandes quantités de poisson et sont propriétaires de plus de bateaux de pêche.

Les femmes sont plus susceptibles de prester davantage d'heures de travail et d'avoir peu de temps libre puisqu'elles doivent assurer les deux rôles : productif et reproductif. Ici, les femmes n'ont pas un triple rôle ; elles sont responsables du foyer et de la plupart des tâches administratives de l'entreprise. Elles sont perçues comme étant plus aptes à négocier car elles font preuve de patience et de diligence.

Contrairement à ce que l'on pourrait penser, le rôle de gestion communautaire revient aux hommes.

Mots clés : thon - chaîne de valeur - analyse de genre - Vietnam - rôle des femmes - disparités de genre

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I dedicate this study to all the actors of the Gender Equality and Women Empowerment.

Rachel

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List of abbreviations

AAS	Aquatic Agricultural System
AV	Added Value
CDTS	Catch Documentation and Traceability System
CGIAR	Consultative Group on International Agricultural Research
CIA	Central Intelligence Agency
CO	skinless boneless
CPV	Communist Party of Vietnam
CRP	Consortium Research Program
DARD	Department of Agriculture and Rural Development
EC	European Commission
EEZ	Exclusive Economic Zone
EIGE	European Institute for Gender Equality
EU	European Union
FAO	Food and Agriculture Organisation
FGD	Focus Group Discussion
GA	Gender Analysis
GDP	Growth Domestic product
GSC	General Santos City
GSOV	General Statistics Office of Vietnam
ISO	International Organisation of Standardisation
IUU	Illegal, unreported and unregulated
KII	Key Informant Interview
LCA	Life Cycle Assessment
M	million
MARD	Ministry of Agriculture and Rural Development
ME	Microsoft Excel
MP	Middle-person
MT	Megaton
NAV	National Assembly of Vietnam

NGO	Non-Governmental Organization
P	Philippines pesos
P&SGN	Practical and Strategic Needs
PGN	Practical Gender Needs
PPP	Private-Public Partnership
QC	Quality Control
QN	Quy Nhon
RH	Relative humidity
S	Skipjack tuna
SDG	Sustainable Development Goal
SFMP	Sustainable Fisheries Management Plans
SGN	Strategic Gender Needs
SRA	Social Relation Approach
T	Trader
TQ	Tam Quan
UN	United Nations
UNEP	United Nations Environment Programme
UNSRAT	Universitas Sam Ratulangi
US	United States
USAID	United States Agency for International Development
USD	United States Dollar
VASEP	Vietnam Association of Seafood Exporters and Producers
VC	Value chain
VCA	Value chain analysis
VCA4D	Value chain analysis for development
VND	Vietnamese Dong
WCS	Wildlife Conservation Society
WINFISH	National Network of Women in Fisheries
WWF	World Wildlife Fund
Y & B	Yellowfin and bigeye
YB	Yellowfin and bigeye

1. Introduction

Vietnam has seen its economy undergo many drastic changes during the past 40 years, going from a centrally planned economy to a market-driven economy. Since then, many studies on the economy of commodities have been conducted.

Fish trading has been proven to be not only a source of local food safety but also creates employment, and exportation generates foreign exchange. Even though the poorest and most vulnerable populations do not benefit from it in general. (Nguyen Dang Hoang 2020 citing Bjorndal, Child, Lem, & Dey, 2015)

Tuna is mainly destined for exportation and is the fish that has the highest added value in Vietnam. In 2018, the total income from exportation of tuna raised up to 653 million USD (Vietnam Association of Seafood Exporters and Producers [VASEP], 2019 cited by USAID 2020). The South Central provinces of Vietnam (Binh Dinh, Khanh Hoa and Phu Yen) together have a coastline of more than 700km (Wikipedia, Phu Yen, Khanh Hoa, Binh Dinh). It's also off the coast of those provinces that the population of tuna is the biggest. Therefore, fishery offers a great source of revenue for the population.

The FAO stated in 2011 that improving gender equality in the first sector could increase yield by 20-30% and the output by 2.5 to 4%, in developing countries.

Studies (Drury O'Neill 2018) (Chuenpagdee 2006) (Pacific community 2018) (Kruijssens et al, for AAS, 2013) (Krushelnytska, 2015) (WINFISH 2018) have shown that in small-scale fisheries, women usually bear a lot on their shoulders : bringing an income or a way of sustenance to the household, taking care of the family and managing the community's resources (health care, water, education,...)

Conducting a gender analysis will help build a picture of the role of women and highlight gender disparities, hence a good ally to reach equality. It's also a tool that can help assess the differences between men and women's roles and who gets the power over resources. Therefore, find the pivots on which to work to reach equity or at least reduce gender disparities. In the literature, it's common to come across the fact that women are usually working in the post-harvest nodes of the value chain, hence the focus on the purchasing node (Weeratunge et al 2010) (WINFISH 2018) (Biswas 2018) (Fröcklin 2013) (Lentisco 2015).

The objective of this study is identifying women's roles by assessing gender disparities in the purchasing node of the tuna value chain in two cities of Binh Dinh province : Quy Nhon and Tam Quan. The hypotheses are that the main differences are to be found in the daily schedule, therefore the link with the triple role, and the ownership; since women might be subjected to their husbands and denied possession but also there are many chances that men have access to more customers, and to higher-value products to sell (Fröcklin, 2013), leaving women with the low-value goods since accessing loans might be harder for women.

The questionnaires and interviews guides were designed by using the six dimensions methodology that USAID developed for gender analysis in value chains based on Havard and Moser's frameworks as well as the Social Relation Approach.

2. Literature Review

2.1. Vietnam overview

2.1.1. Geographic

The Socialist Republic of Vietnam is located in South-East Asia and shares his northern border with China and the western one with Laos and Cambodia. East of Vietnam, is the South China Sea and South-West is Thailand Golf. A particularity that the country, given its area of 331 041 km^2 (France Diplomatie) doesn't share with many others is the length of its cost: 3260 km yet, the southernmost and northernmost points are distant from 1650 km (Wikipedia, Vietnam). Vietnam lies between latitudes 8° and 24° North and latitudes 102° and 110° East. (Craeye, 2019)

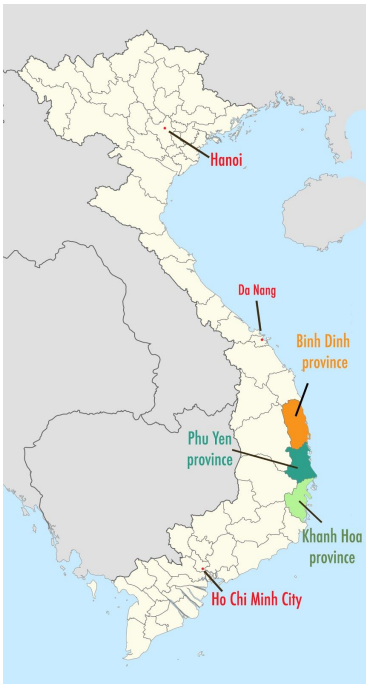


Figure 1: Map of Vietnam

Source: Wikipedia, Vietnam - modified by Sundar Raj (2020)

2.1.2. History and Economy

After the American troops left the country (1975), the communist government in place started to radicalize and instaured a centrally planned economy which had disastrous consequences, the country was starving because of a lack of production in some regions. (Ho Thi Minh, 2019b) (Thang, 2000) The regression in the development of Vietnam and the worsening quality of life lead the government to reconsider its policies resulting in a major overhaul in 1986, the *doi moi* resulting in a market-oriented economy. (Ho Thi Minh, 2019b) Foreign direct investments started pouring in, Vietnam was experiencing an economic boom and became a role model for economic reform. However, development was very slow, results didn't show before 1995. In 1997, the Southeast Asia economic and financial crisis appeared as a symptom of the bad structural and institutional factors (Thang 2000)

Until 2010, market restructuring was promoted to have quality products for export, meaning that there are no good quality products left for the internal market.

In 2018, Vietnam exceeded its 2017 GDP growth target of 6.7% with a growth of 6.8%, primarily due to unexpected increases in domestic demand, and strong manufacturing exports.

Vietnam can count on its young population, its stable political system, its commitment to sustainable growth, its relatively low inflation, stable currency, strong FDI inflows, and its strong manufacturing sector to support its will of continuing a global economic integration.

To stay on the path of a flourishing economy, authorities considered implementing new reforms, including reforming state-owned-enterprises, reducing red tape, increasing business sector transparency, reducing the level of non-performing loans in the banking sector, and increasing financial sector transparency. Vietnam's public debt to GDP ratio is nearing the government-mandated ceiling of 65%.

Yet, despite a positive economic growth, the country's infrastructures aren't able to support the needs of an expanding middle class. Vietnam has demonstrated a commitment to sustainable growth over the last several years, but even given the recent speed-up in economic growth the government remains cautious about the risk of external shocks. (CIA, 2018)

2.1.3. Politics

According to Wikipedia, Vietnam is a unitary Marxist-Leninist one-party socialist republic, meaning that only the Communist Party of Vietnam (CPV) is allowed to exist. At the head of the country sits the General Secretary. The next two most powerful figures are the President and the Prime Minister, both chosen by the National Assembly of Vietnam (NAV). The NAV is elected by the people for a 5-year term. (Wikipedia, Vietnam)

Three major political figures. First, the general secretary of the CPV who has many key administratives functions and in charge of the party's national organization. Second, the prime minister, head of the government and presiding over a council of ministers. And third, comes the President who ensures the functions of head of the state and commander-in-chief of the military. (Wikipedia, Vietnam)

2.1.4. Demographics

According to the UN, in 2018, the population of Vietnam stood at about 96.5 million people and should reach 104 million people in 2030. The population is well-balanced between sexes with 50% of each and it's assumed it will continue this way for the years to come. (UN 2020)

64,1% of the people are found in the countryside (Craeye 2019 citing CIA 2018) but the trend shows growing urbanization and therefore a decreasing rural population with a rate of 2.98% (CIA, 2018).

The living standards in Vietnam showed a clear improvement during the past years. Thanks to the many policies conducted since 1986, poverty dramatically dropped: from 58% to 8% between 1993 and 2018 (Craeye 2019 citing CIA 2018 and UNDP 2019). Also, the life expectancy at birth of 74,4 years old in 2018, a GDP per capita of 6,900 USD in 2017, a literacy rate of 95% in 2018 and an unemployment rate of 7.3% in 2017. Hence a Human Development Index (HDI) of 0,693 in 2018 (UN DHR, 2020)

2.2. Context of Bình Định province

2.2.1. Description

Binh Dinh has a particularly important geo-economic position in exchanges with countries in the region and internationally; It is located at the center of North-South Vietnam railway and road axis, and is the nearest and most convenient gateway to the East Sea of the Central Highlands, Southern Laos, Northeastern Cambodia, and Northeastern Thailand. Highway 19 and Quy Nhon international seaport. In addition to this advantage, Binh Dinh also has natural resources, abundant human resources, and plentiful human resources. (Wikipedia, Binh Dinh)

Its capital city is Quy Nhon, 1070 km south of Hanoi. The province is divided into 11 district-level subdivisions: An Lão, Hoài Ân, Hoài Nhơn, Phù Cát, Phù Mỹ, Tuy Phước, Tây Sơn, Vân Canh, Vĩnh Thạnh, Quy Nhơn, and An Nhơn. (Wikipedia, Binh Dinh)

Binh Dinh covers an area of 606.6 km^2, a fifth of it is used for agricultural production and 370 for forestry. (Official Binh Dinh province website, 2018). The coast of the province is 134 km long and therefore offers many opportunities for marine economy. (Wikipedia, Binh Dinh)

The GDP reached 6.25 million USD (74.729 billion VND) and the GDP growth rate was 7.32% in 2018. A few sectors of the province's economy saw their added value increase in 2018: by 4.99% for agriculture, forestry and fishery, by 9.03% for the industry and construction, by 7.38% for the services. (Wikipedia, Binh Dinh)

According to the General Statistics Office of Vietnam (GSOV), about 1.534 million people live in Binh Dinh. The sex ratio has varied very little during the last 15 years, only a slight increase of 0,5%, the ratio is now around 95,5%. (Official Binh Dinh province website, 2018)

Regarding the employment rate (percentage of employed workers at 15 years of age and above), it has shown an increase of 11.2 points, reaching 59.9% in 2018. (Official Binh Dinh province website, 2018)

The western part of the province is the eastern fringe of the Truong Son Nam mountain range, followed by the midlands and the coastal area. Therefore climate varies a lot and is characterized by humid tropical and monsoon: mean temperature in the mountains is about 23°C while in the coastal area it's about 27°C, relative humidity (RH) ranges between 79 and 92%. The littoral is a little bit dryer with a mean RH of 79%. As for the rainfall, the coast benefits from 1,751mm while the mountains have 2,200mm on average. (Wikipedia, Binh Dinh)

2.2.2. Fishery sector

In the last two decades, fishery production kept rising from 77,825 tons in 2000 to 243,222 tons in 2018. The caught sea fish production is more than three times higher than 20 years ago, starting with 61,3 tons in 2000 up to 190,7 in 2018. (General Statistics Office of Vietnam)

In Binh Dinh, the tuna value chain takes two directions according to the species that is fished : (i) the skipjack VC or (ii) the yellowfin and bigeye VC.

For the first one, “about 60 percent of the productions were purchased by processing companies from outside the province. The remaining 40 percent is consumed domestically. Over 95 percent of processed products of the tuna chains are exported to foreign markets, especially the United States (US) and European Union (EU). Major processed products of yellowfin and bigeye tuna are either frozen or fresh chilled, while the skipjack are mostly exported as canned products and as pre-cooked frozen fillets.” (USAID 2020)

For the second one, “about 30 percent of the catch of yellow fin/big eye went through processing and export companies in Binh Dinh, 62 percent is sold to provincial import and export companies in Khanh Hoa and Phu Yen province, 3 percent in Ho Chi Minh City and about 5 percent is consumed (fresh) in domestic wholesale markets.” (USAID 2020)

When it comes to yellowfin and bigeye fishing in Binh Dinh, most of the ship owners are fishers directly involved in catching tuna (90%) “Each fishing vessel consists of 6-7 crew members, of which 3-4 crew members are hired laborers. Net profit is usually divided at a ratio of 50:50, in which the owner gets 50 percent and the remaining 50 percent is divided among the crew members. Tuna caught are sold to export processing companies and/or for domestic consumption through the local middle-actors. Usually the vessel owners and middle-actors have an “interdependent” relationship in supplying loans and input materials and purchasing outputs. This relationship is based on "trust" rather than a contract signed.” (USAID 2020)

Middle-actors are local traders and middle-persons “who play a key role in the tuna supply chain in Binh Dinh in the context of small -scale fisheries. In the tuna industry, the middle-actors mostly act as local purchasing agents for the processing plants at a set price and receive a commission on the buying volume. However, in addition to purchasing, the middle-actors also play a role of providing loans and inputs for fishers, thus they have a certain “influence” on purchasing tuna from fishers. In this context, the middle-actors might be one of the key drivers that can have an influence on changing the practices of fishers (e.g for e-logbook and traceability systems) and help processing plants develop and operate a better traceability system if incentives were provided (e.g. premium prices and a more stable price for traceability products).

Processing plants can be seen as one of the most powerful actors in the tuna supply chain. This actor is the one who sets the price and the purchasing volume for the tuna. However, due to small catches of individual vessels (given the nature of small-scale fisheries), most of the processing plants have to rely on the local middle-actors to obtain raw materials. They have often established links to the purchasing agents/middle-actors through an agreement. Most of the processing plants are concerned about the market requirement and traceability, food quality and food safety certification (including EU, USA, and Japanese markets).” (USAID 2020)

Over the past time, authorities of Binh Dinh province have implemented many measures to develop the fisheries towards sustainable and environmental protection. With regards to the fishing activities, the province advocates the modernization of the fleet, gradually reducing the number of small-capacity fishing vessels, modernization of fishing equipment and improving safety onboard in fishing activities. Moreover, the province also promoted the application of scientific and technological advances in the capturing, processing and preservation of products, especially focusing on improving the quality of ocean tuna products. The provincial government hoped that by 2020, tuna production would reach 11,000 tons per year, reducing product losses to less than 10 per cent. (Ministry of Agriculture and Rural Development, 2017)

2.3. Value Chain

The tuna industry in Vietnam faces the same challenges as many other agriculture sector of developing countries : increasing production costs, decreasing selling prices, increasing power of chain retailers, and increasing competition are common features of agribusiness industries in developed countries (Nguyen Dang Hoang 2020 citing Hingley, 2005, Taylor, 2005, Taylor, 2006).

The purpose of the value chain analysis here is to improve competitiveness for the agribusiness food chain. Value chain analysis has been identified as means to improve competitiveness for the agribusiness food chain. To cope with the challenges of global competition and gain sustainable competitive advantages for the Vietnamese tuna industry, using value chain analysis to assess the Vietnamese tuna industry is one of the indispensable trends in the management of the Vietnamese tuna industry (Nguyen Dang Hoang, 2020)

2.3.1. Approach and analysis of a VC

a. Purpose of a VC analysis (VCA)

Analysing a value chain is essential when it comes to making decisions on the improvement of the production since any action made towards that aim is part of a wide network of actors. Therefore, seizing the ins and outs of their interactions by considering the VC as a whole. It enables understanding in which link or node investment is interesting to improve the efficiency, create advantages and eliminate bottlenecks.

“Value chains are a major channel for agricultural development due to their trans-sectoral capacity to create economic value and employment in an inclusive and sustainable way. They represent an operational framework for engaging with farmers and businesses.(...)

“The purpose of value chain analysis (VCA) is to provide decision-makers with evidence-based information that relates to sustainable development strategies. It is directed to all policy makers and stakeholders, in accordance with the needs of the EC as an aid provider. ” (VCA4D 2018)

b. Approaches

There exist three value chain approaches: the theory of VC, the theory of value-added chain and the theory of the global commodity chain.

The first approach relates to Porter’s definition of the value chain, saying that the whole chain brings more added-value than the sum of the activities. The second one’s core lies in the identification of the “critical success factors” by comparing the cost incurred by each link and against competitors. (Kogut, 1985) The last approach was developed by Gereffi who defines the commodity chain as the whole range of activities involved in the design, production, and marketing of a product. (Gereffi 1994) Yet to be mentioned, the notion of the global value chain. It includes the various activities to bring a product from the purchasing of raw materials for input to the after-sale services for the final customer. (Gereffi, 2011)

c. Analysis

The analysis of the value chain aims to take into account every stage of activity while paying attention, for each of them, to the financial, commercial, human, political, legislative and economic aspects. (Ho Thi Minh, 2019)

Mapping a value chain is the first step towards a complete analysis.

The first question to ask is: *What are the main processes of the value chain?* Then the actors have to be identified, they can be labeled as primary or secondary. The first ones are the persons or groups that are part of the production chain (e.g. owners, producers, traders...). The other ones have an impact on the chain without being part of it. (e.g. government, NGOs, …). The questions here are: *Whom are the actors involved in the process and what do they actually do? Where are they placed along the chain?*

The third step lies in mapping the flux of product, knowledge and information. Therefore, some questions have to be asked: *What are the fluxes of product, information and knowledge in the VC? How much product is made/transformed, how many actors and employments? Where does the product come from and where is it going?* To answer the first of the questions here above relating to the knowledge and information, two others are formulated: *What are the main constraints at the different levels of the VC and what are the possible solutions? How do the knowledge and information travel in the VC?* Finally comes the mapping of products and employment. The final step in value chain mapping is to understand the interactions between the different nodes of the VC. (Ho Thi Minh, 2019)

When talking of qualitative analysis, often is the notion of governance underlying. And therefore an examination of the relationships between buyers, sellers, and suppliers of services and the regulation organizations which impact the range of activities necessary to bring a product or service from the start to the end of the VC. (Ho Thi Minh, 2019)

Going through the governance enables a better understanding of the coordination of the VC, the actors and the key mechanisms (contracts, services, agreements) and why is the structure this way. It also helps the mapping of rules, regulation and formal and informal standards influencing the value chain. As well as assessing the impact of the rules on the different actors. (Ho Thi Minh, 2019)

The quantitative analysis has two aspects: the financial one and the economic one. The financial analysis is a study conducted to evaluate the financial situation of a firm at a given moment. It relies on accounting documents and a range of economic data relating to the company and its activity sector. By studying the investment and financing policies, and the wealth created by a firm, financial analysis enables the assessment of the profitability. (Journal du Net, 2019) While the economic analysis seeks to understand and calculate the fluxes at the level of the community.

Another way of seeing the methodology for a VCA is through 4 framing questions (**Figure 2**).

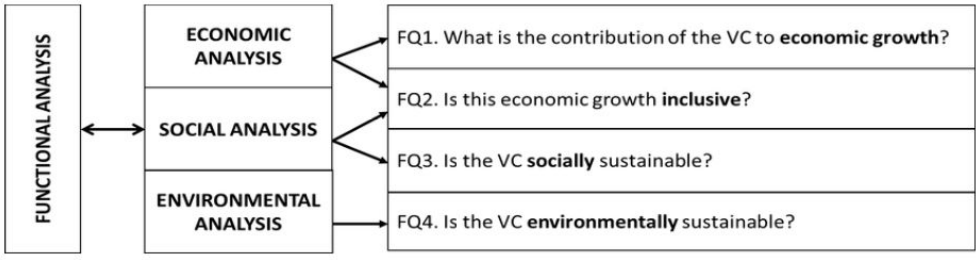


Figure 2 : Framing questions of a VCA. Source : VCA4D, 2018

Answering them by providing quantitative data or explicit expert assessment relies on four types of analysis : functional, economic, environmental and social analysis (**Table 1**).

Table 1 : Framing and core questions. Source : VCA4D, 2018

FRAMING AND CORE QUESTIONS		
Economic Analysis	**Social Analysis**	**Environmental Analysis**
FQ1. What is the contribution of the VC to economic growth?	FQ3. Is the VC socially sustainable?	FQ4. Is the VC environmentally sustainable?
CQ1.1. Are the VC activities **profitable for the entities** involved?	CQ3.1. Are **working conditions** throughout the VC socially acceptable and sustainable?	CQ4.1. What is the potential impact of the VC on **resources depletion**?
CQ1.2. What is the **contribution** of the VC to the **GDP**?	CQ3.2. Are **land and water rights** socially acceptable and sustainable?	CQ4.2. What is the potential impact of VC on **ecosystem quality**?
CQ1.3. What is the **contribution** of the VC to the **agriculture sector GDP**?	CQ3.3. Is **gender equality** throughout the VC acknowledged, accepted and enhanced?	CQ4.3. What is the potential impact of the VC on **human health**?
CQ1.4. What is the contribution of the VC to the **public finances**?	CQ3.4. Are **food and nutrition conditions** acceptable and secure?	
CQ1.5. What is the contribution of the VC to the **balance of trade**?	CQ3.5. Is **social capital** enhanced and equitably distributed throughout the VC?	
CQ1.6. Is the VC **viable in the international economy**?	CQ3.6. To what extent are major social infrastructures and services acceptable? Do the VC operations contribute to their improvement?	
FQ2. Is this economic growth inclusive?		
CQ2.1. How is **income distributed** across actors of the VC? CQ2.2. What is the **impact of the governance systems on income distribution**? CQ2.3. How is **employment distributed** across the VC?		
Addressing the 4 Framing Questions		
Cross-cutting CQ. Which **risks** may affect the performance of the VC?		

- "The **functional** analysis sets the value chain system by identifying the series of steps from the initial (agricultural) production to the nal consumption (or export) and the actors involved at each stage.
- **Economic** analysis helps to answer the two framing questions : *What is the contribution of the value chain to economic growth?* and *Is this economic growth inclusive?*

  It consists in 4 main steps :

  1. Undertaking the "financial analysis" of actors
  2. Assessing the overall e ects in the national economy
  3. Analysing the sustainability and viability within the international economy
  4. Assessing the growth inclusiveness

- The analysis of **social sustainability** and inclusiveness aims at assessing evidence-based established and potential impacts related to the activities of the value chain. It allows for the identification of benefits, opportunities, problems, constraints, risks and uncertainty. It should also point at areas requiring more information or in-depth study.
- The method selected to evaluate the **environmental sustainability** of the value chain is the Life Cycle Assessment (LCA). Over the last few decades, LCA has been normalised, promoted and used by various public and private actors. The upper level reference for this methodology is given by two ISO norms (ISO 14040:2006 and 14044:2006)." (VCA4D, 2018)

2.3.2. Tuna in Vietnam

In Vietnam, tuna is the fish that has the most added value for exportation. Therefore the choice of focusing on that particular species. (Nguyen Dang Hoang, 2020)

a. Overview

Tuna is mainly fished in Central Vietnam and the center of the East Sea. According to Vietnam Tuna Association, there are 35,000 farmers involved in tuna catches, mainly in Bình Định, Phú Yên and Khánh Hòa (Vietfish Magazine, 2019) Binh Dinh province on which we are focusing for the case study, accounts 2 fishing ports, 10 shipbuilding and repair shops, 125 oil and ice services, 17 tuna purchasing enterprises and 1 tuna processing plant only focussing on yellowfin. (Nguyen Dang Hoang 2020)

The country's estimated resources reach about 406 - 422 Mt of nine different species of tuna (Cao Le Quyen, 2018). The three most valuable ones are: Yellowfin (*Thunnus albacores*), Bigeye tuna (*Thunnus obesus*) and Skipjack tuna (*Katsuwonus pelamis*) accounting for a respective annual total of 23,811 tons, 5,707 and 93,561 tons in 2016 out of the 123,079 on the 170 Mt allowed (Nguyen Dang Hoang, 2020)

Yellowfin tuna and bigeye tuna are caught in the 6 month from December to June, while skipjack tuna can be caught all year round. Tuna output in the EEZ[1] of Vietnam is estimated at 27,000 Mt. Binh Dinh is the top tuna catching province with 52,823Mt, followed by Khanh Hoa with 12,103 Mt and Phu Yen with 8,616 Mt, in 2018. (Nguyen Dang Hoang, 2020, citing D-Fish 2018)

[1] Exclusive Economic zone

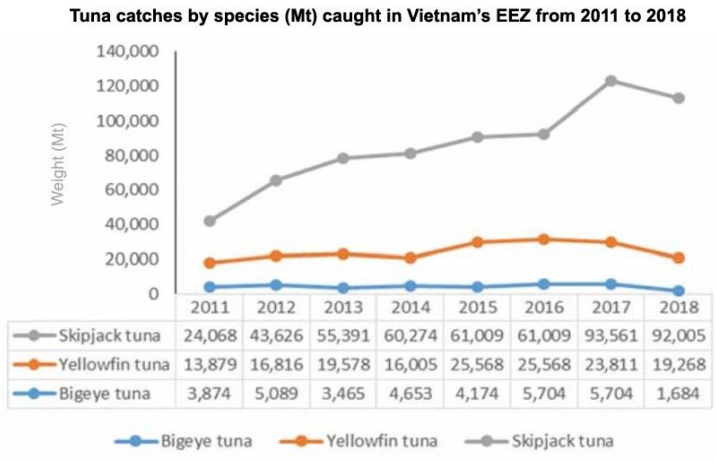


Figure 3 : Tuna catches by species (Mt) caught in Vietnam's EEZ from 2011 to 2018.

Source : Nguyen Dang Hoang, 2020 citing D-Fish 2018

Depending on the species of tuna and the quality of the product, there are different channels of commercialisation.

- *Yellowfin & Bigeye*

Those species are fished either by long-line or hand-line, then they can follow four different circuits towards exportation or local-market, three of them include middle-persons/fish traders.

Channel 1 : fishers–traders/middlemen-processors-export markets

"Yellowfin and bigeye tuna with C grade are processed into frozen tuna fillets (HS 0304 code) to export to the US, the EU, Israel, ASEAN, Japan, Canada, China, Mexico, and other markets. There are eight types of frozen tuna fillets, including tuna loin, tuna loin CO, tuna steak, tuna steak CO, tuna cube, tuna cube CO, tuna Saku, and tuna Saku CO. In 2018, the export volumes of frozen tuna fillets were about 9,566 Mt, accounting for fifty-six percent of total yellowfin and bigeye tunas in the three investigated provinces." (Nguyen Dang Hoang, 2020)

Channel 2 : fishers-traders/middlemen-processors-wholesalers/retailers-domestic markets

"Products of this channel are tuna fillets catering to hotels, restaurants in domestic markets. Its sale volume, about 342 Mt, accounted for two percent of the total amount of yellowfin and bigeye tuna." (Nguyen Dang Hoang, 2020)

Channel 3 : fishers-traders/middlemen-processors-wholesalers/retailers-domestic markets

"Products of this channel are by-products of tuna processing such as tuna plasticizers, tuna ribs, tuna eyes, tuna bones, tuna heads, consumed in domestic markets. Its sale volume explained forty-one percent of the total volume of yellowfin and bigeye tunas (about 7,004 Mt)." (Nguyen Dang Hoang, 2020)

Channel 4 : fishers-traders/middlemen-processors-wholesalers/retailers-domestic markets

Best quality (A & B) small-sized tunas but are flown whole, to Japan. This method is unrealistic for the moment since fishers use outdated fishing and preservation techniques. Only one percent of the yellowfin and bigeye tuna go through that channel since the quality standards are really high and not

much of the production is able to meet them. Yet, this channel has a higher value of a product unit than the 3 previous ones.

- *Skipjack*

The fishing methods of skipjack tuna are different from the ones for the other species, it is catched by purse seine and gillnet. Like the yellowfin and bigeye, skipjack can be sent to local-markets as well as to other countries such as Korea and China. Two channels of commercialisation that can be followed.

Channel 1 : fishers-traders/middlemen-processors-wholesalers-retailers-domestic markets

The local consumption of skipjack represents about 10% of the production, so the equivalent of 12,000 Mt. The 39,600 Mt of by-products are turned into fish sauce and animal feed. It accounts for 33% of the volume of the total skipjack tuna products. (Nguyen Dang Hoang, 2020)

Channel 2 : fishers-traders/middlemen-processors-export markets

Fifty-seven percent of the finished skipjack tuna products for export are in four different forms only : canned food, tuna in oil, pickled tuna, and frozen. The total volume raises about 68,499Mt per year. (Nguyen Dang Hoang, 2020)

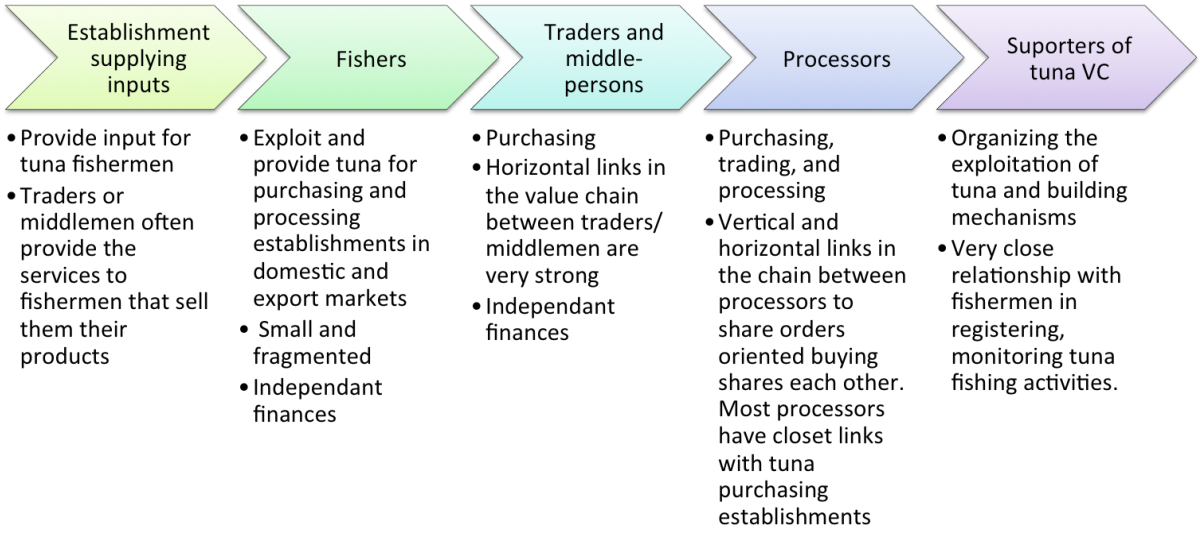


Figure 4 : Simplified Value Chain of tuna - Design by Sundar Raj based on the material of Nguyen Dang Hoang 2020.

After the harvest, farmers gathered ocean tuna on the shore and sold them to traders at 80,000-120,000 dong/kg, depending on the quality. (Vietfish Magazine, 2019) Each fishing trip costs about 70-150 million VND[2] and generates revenue of 120-300 million VND and lasts about 20-30 days, hence a lesser quality of the fish at the end. In Vietnam, the shipowners usually borrow money (for the maintenance of the ship, to food for the crew and the wages) from the traders/middle-persons to whom they will sell their catches. (Nguyen Dang Hoang 2020)

[2] Vietnamese dong

In 2000, income from tuna export from Vietnam amounted to 22.98 million USD, 484 million in 2014 while in 2018 it reached 653 million USD, "accounting for 22 percent of the country's total marine seafood export value and 7.5 percent of total seafood export turnover (Vietnam Association of Seafood Exporters and Producers [VASEP], 2019)" (USAID 2020), an impressive increase in a short period of time (Nguyen Dang Hoang 2020 citing Nguyen Viet Thanh and VASEP 2017, 2018). "Over 2009 - 2018, the annual average growth rate of tuna catches and export turnover reached 16.9 percent and 15.08 percent, respectively (Directorate of Fisheries 2019). Currently, Vietnam's tuna export market has expanded to over 101 countries and territories, of which EU and US are the two largest markets", generating foreign currency revenues. (USAID 2020)

Vietnam now exports about 66% of the tuna products and the remaining 33% are for the domestic market. The major part of the tuna found on the market in Vietnam is the byproduct of the processing of the tuna. (Nguyen Dang Hoang 2020 citing Huy 2018)

The main destinations of the tuna are the US (229,542 million USD in 2018) and Europe (158,274 million USD in 2018) (Nguyen Dang Hoang 2020 citing VASEP 2017).

It's only recently that the tuna value chain caught the eye of researchers, hence a multiplication of the literature. The general aim is to improve the sustainability of the industry as well as increasing the added value (AV).

Some studies (Nguyen Dang Hoang 2020 citing Nguyen Ngoc Duy 2012; Cao Le Quyen 2018; Huy 2018) show that benefits are not distributed according to the added value that each actor of the chain brings. Fishermen even though they contribute the most to the AV are the most at risk (market price volatility) and get a less percentage of benefits. In contrast traders get the highest benefits while their contribution to the AV is the lowest. They also don't face many risks. Yet, the organization of the tuna industry in Vietnam is still traditional, fragmented, and small scale, production orientation, and loose cooperation, which results in low efficiency, unsustainability, and low product competition (Nguyen Dang Hoang 2020 citing Huy 2018)

"(...) the development of the tuna industry in recent years is limited due to the fishing grounds are far from the shore compared to some countries in the region. This has revealed several shortcomings that lead to low production efficiency, lack of sustainability and weak competitiveness in the export market. Current production in the tuna industry is largely small-scale and dispersed with less developed technology. The chain linkages both horizontal and vertical, from fishing, collecting/purchasing, processing and trading, are still very limited. The presence of traders plays an important role in the tuna supply chain, while also creating the dominance or privilege of this actor in the chain. As a result, there are issues of information transparency, traceability, and benefit sharing among chain actors. The recent EU's Yellow Card, US's Dolphin Safe regulation and increased standard requirements from import markets also pose more challenges for Vietnam's tuna industry." (USAID 2020)

These past years, Vietnam has shown the will to act towards sustainable fishing practices by adopting international rules such as IUU[3] of the EU. "The yellowfin tuna fishery of Vietnam is the most important wild-capture export product in Vietnam, with approximately 2,000 vessels fishing for yellowfin and a 2014 total export value of nearly $370 million". (WWF 2019)

[3] Illegal, unreported, and unregulated

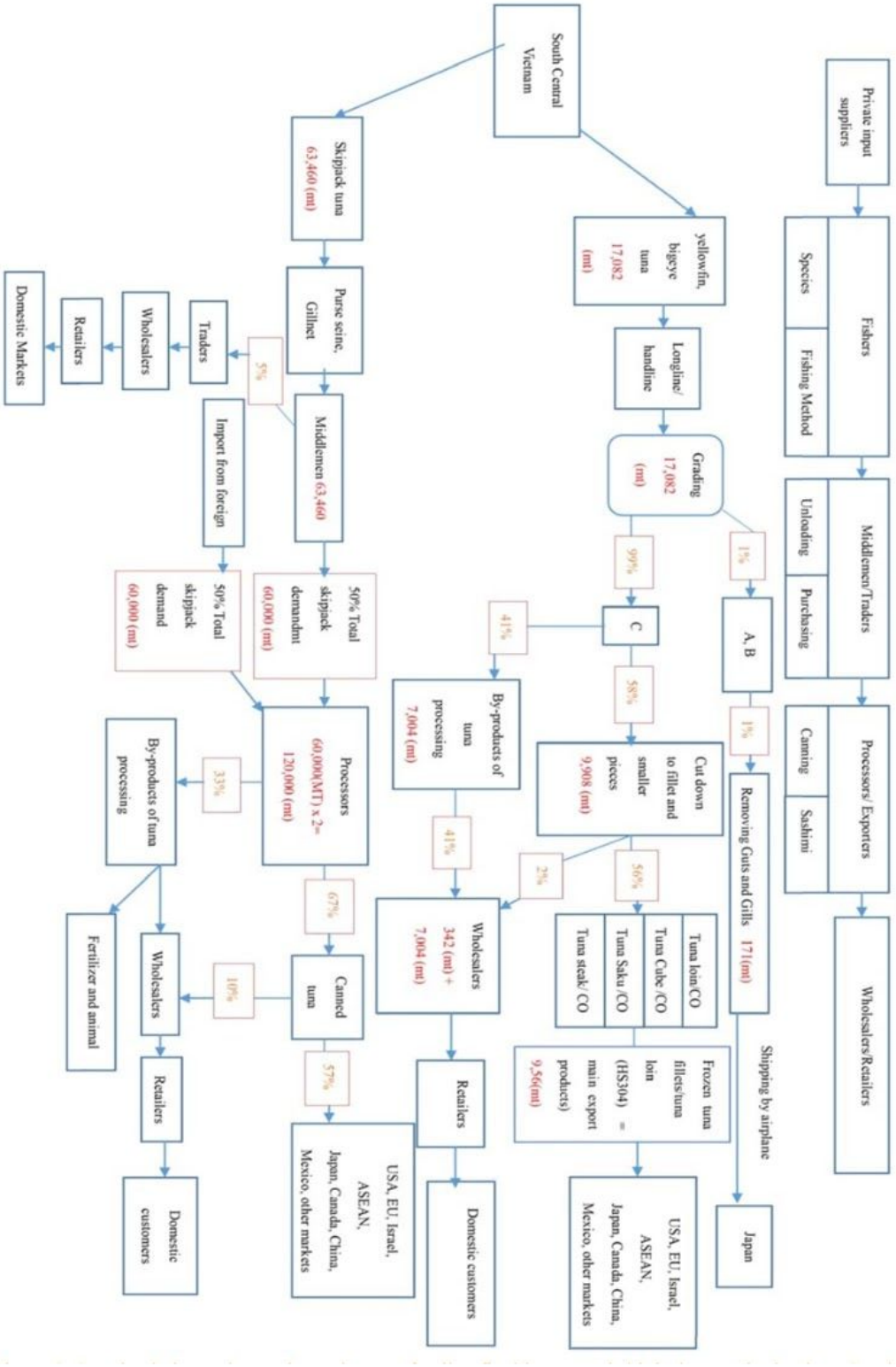


Figure 5 : Supply chains and mapping volumes of yellowfin, bigeye, and skipjack tunas in the three South Central provinces of Vietnam in 2018. Source : Nguyen Dang Hoang, 2020

b. Purchasing node

- *Small-scale fisheries*

The majority (98%) of all fishers and fish farmers is estimated to be living in developing countries in Asia, Africa and Latin America.

The small-scale fisheries sector is characterized by great diversity in terms of physical attributes, ownership of craft and gear, fishing patterns and range, the social structure of the fishing enterprise, and economic imperatives such as market orientation and income. The differences are present both within and between countries. Mindful of this diversity, clearly defining the small-scale fisheries would be a huge mistake, since leaving it to be defined according to local contexts leaves room for women to intervene so that the small-scale fisheries sector in their local context is defined in ways that take into account the full range of activities that they perform. (FAO Biswas 2017)

- *Fish traders and Middle-persons*

"Purchasing actors include traders and middlemen who are responsible for buying raw tunas and selling them to processing and exporting companies or for domestic consumption. Both middlemen and traders have much experience in tuna transactions. Traders buy tunas directly from fishing vessels, then sell most of them to middlemen or processors and sell the remainder at domestic markets. Meanwhile, middlemen purchase raw tunas directly from fishing vessels or traders and sell them to processors. Compared to traders, middlemen's buying volume is much bigger. Most middlemen and traders are women. Most middlemen have matured from traders and have the closest relationship with fishers. Purchasing actors play an intermediary role in the chain; however, they have a great influence on other actors, especially fishers. They provide finance on time for fishers and dictate the classification and price of raw tunas at fishing ports." (Nguyen Dang Hoang, 2020)

According to data of the Departments of Fisheries in Binh Dinh (cited by Nguyen Dang Hoang, 2020), Binh Dinh province has 17 tuna purchasing establishments – each owned by a middle-person – and 36 traders.

The percentage of men and women amongst those actors of the purchasing node in Binh Dinh province is given in the table 1 (Nguyen Dang Hoang, 2020)

Table 2 : Number and percentage of men and women working as traders and middle-persons in Binh Dinh province. (Source : Nguyen Dang Hoang, 2020, citing Fisheries 2018)

	Traders		**Middle-persons**	
	Number	Percentage	Number	Percentage
Men	4	11%	11	65%
Women	32	89%	6	35%
TOTAL	**36**	**100%**	**17**	**100%**

2.4. Gender Analysis

2.4.1. Definition

A gender analysis (GA) can be defined as the study of the difference between women's and men's roles and conditions, needs, power, and so on.

It provides the basis for addressing inequalities in policies, programs and projects, and it can be conducted at multiple levels (household, community and national), across different life stages and in the various roles men and women play". (European Commission 1998) (Biswas 2018)

To be relevant, a gender analysis has to consider some more aspects than gender: age, environment, ethnicity, rights, social level. It looks at how the relations within the households impact the ones at the international, state and/or community level. Therefore, it breaks down the divide between private and public social spheres. As it is supposed to examine a given situation to make policies to improve it, it simply cannot turn a blind eye on these major factors.

That kind of analysis is conducted to evaluate to what extent do the development programs are influenced by the aforementioned aspects. Also, Weeratunge (2010) states that "Without gender analysis, policies may have negative impacts on people's livelihoods, well- being and the environment they depend on or fail altogether to achieve intended outcomes of improved fisheries and aquaculture management."

Many questions are asked while conducting a gender analysis to thoroughly explore and underline gender relations in society as well as the inequities: *Who does what? Who has what? Who decides? Who wins and loses?* but the underlying concern here is: *Which men and which women?*

A few frameworks, each one with its particularities, have been designed to conduct such an analysis. They are the foundation of any development or gender-related work. They will be detailed in a further section.

Most of the information on the two following sections comes from Oxfam's Guide to Gender Analysis Framework (1999). If not, it will be specified.

2.4.2. Key elements and concepts

a. Sex and gender

The difference between sex and gender has to be plainly explained to avoid possible misunderstanding. Many people are born with biological sex, characterized by the anatomy of an individual's reproductive system, and secondary sex characteristics. But gender does not rely on biology: it is either the way people feel, based on an internal awareness (gender identity) either can it be "built" through social roles based on the person's sex (gender role). The perception of gender is

deeply rooted, varies widely both within and between cultures, and changes over time. But in all cultures, gender determines power and resources for females and males.

“In some circumstances, an individual's assigned sex and gender do not align, and the person may be transgender. In other cases, an individual may have biological sex characteristics that complicate sex assignment, and the person may be intersex.” (Wikipedia, Sex and gender distinction) (Biswas, 2018)

Gender relations refer to the relationship between women and men (as sexes) that can be positive (cooperation, mutual support,...) or not (inequality, competition,...). They “are concerned with how power is distributed between the sexes. They create and reproduce systemic differences in men’s and women’s position in a given society.” (Oxfam, 1999)

Gender relations vary with the social and historical context (skin color, classes, ethnicity,...)

It’s important to insist on the difference between gender equality and equity. The first one refers to the enjoyment of the same “rights, opportunities and entitlements in civil and political life, in terms of access, control, participation and treatment. While equity means fairness and impartiality in the treatment of women and men in terms of rights, benefits, obligations and opportunities. At times, special treatment/affirmative action/positive discrimination is required. (Biswas, 2018)

b. Mainstreaming gender

To thoroughly understand the aim of a gender analysis, one should focus on the notion of *mainstreaming gender*. It can be described as the change of an organization’s point of view as it starts to integrate gender into every aspect of their procedures and priorities so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality and equity. (Biswas, 2018)

This definition drives many debates: on one hand, some claim that mainstreaming gender can only be achieved by a broad-scale machinery or specialists team. On the other hand, others say that making gender everyone’s concern in the organization will lead to a situation where the issue is lessened and ends up being no one’s by a lack of consistent attention, resources and strong commitment. (Oxfam 1999) Byrn and Laire (1996) stated that national machinery is inefficient to change political fortune.

Yet, a common ground is found when both approaches are used together to prevent marginalization and co-optation of gender issues. This is the first step to an integrationist approach which is a political as well as a technical process. For it to be fully achieved, mindsets, organizational cultures and the goals, as well as resources allocations and structures of national instances and NGOs have to change.

The real challenge is to understand how mainstreaming can be achieved and not only agree on the fact that it has to be. Therefore, some attention must be paid to the three following issues while using both of the approaches aforesaid :

- both the internal and external political processes in which a particular development organization and its members may be engaged;
- the setting up of the so-called “machineries” entrusted with the task of incorporating women and/or gender issues into the design and implementation of policies;
- the development of appropriate “tools and technical capabilities”. (Buvinic 1984, cited by Oxfam, 1999)

Mainstreaming gender is a milestone in the development as it will enable women to be active actresses of their freedom by granting them access to education, taking part in the political life, having access to mobility, … According to Sen's *Capabilities Approach*, development is not only about economic growth nor the tryptic "savings-accumulation-investments", it also is a process that aims to expand an individual's freedom. Saying that poverty can be seen, apart from a weak income, as the privation of those freedoms. (Wikipedia, Capability approach)

c. Different levels: macro, meso and micro

For this paragraph, the majority of the information is taken up from the *Building Block 6: Useful gender analysis frameworks*, *EU Resources package*

Using different levels highlights the complexity in which a VC applies. It helps to shed light on the social relations that occur between several actors and how they influence each other. Also it helps to assess the power relations between genders.

Table 3: The macro-, meso- and micro-levels of the VC

Macro	This level relates to national government, organizations, authorities,... and their influence on activities in an institution or organization. It's essential to have a comprehension of the cultural setting, the values and norms and the institutional environment to thoroughly understand the ins and outs of the situation. Hence, identifying the norms and values regarding gender roles is essential since they have influenced the regulations and legislations around key issues such as labor, access to resources, market demand and so on. (Sanders 2014) The analysis consists of the identification and discussion with the stakeholders key gender issues concerning the cultural setting and the institutional and regulatory framework in which the VC operates. (Sanders 2014)
Meso	The meso-level refers to local structures: the scales can be from the village or a small group up to a province or region for example. An analysis at that stage focuses on institutions and organizations and their delivery systems. It investigates whether they reflect gender equality principles in their structure, in their culture, in the services they provide and in the way these services are provided. (Sanders 2014)
Micro	Here, only individuals women, as well as men, are concerned. An analysis at this scope has to focus on how to identify people's specific needs and examine the extent to which gender roles, relationships and cultural issues are key. And therefore helps to identify major constraints faced by women at the household level, which will have repercussions on the meso- and macro-levels. (EU Resources package, 2014), (Sanders 2014)

d. Work

Labor is usually different for women and men in every society and culture. Its division also depends on external circumstances and the era.

Two types of work are commonly mentioned in gender analysis: productive and reproductive works.

The productive work only focuses on the production of goods and services that have an income or subsistence aim. Only this kind of work is taken into account when doing economic statistics. Even if both women and men do work, it is not valued in the same way. While the reproductive work is mainly about household maintenance. It is seldom taken into account in economic analysis and is not valued as much as productive work, even though it is necessary. This kind of work is usually done by women and is never retributed.

e. Status and role

- *Condition and position*

One must not confuse position and condition as the meaning of condition is the "immediate, material circumstances in which men and women live, related to their present workload and responsibilities". Whereas the position is "the concept that describes the place of women in society relative to that of men". (Oxfam, 1999)

Due to the low status granted to women, their activities get less valuable and this has a negative feedback on the status.

To tackle the women's position issue, the way of how gender determines power, status and control has to be addressed. Here, control is defined as the power one is given to decide how a resource must be used and who can have access.

- *Practical and Strategic gender needs (P&SGN)*

If met, the practical gender needs (PGN) will improve the women's conditions of life but not their position. It won't change the existing gender division of labor. Such needs relate to physical conditions: food, shelter, water, work and so on.

The strategic gender needs (SGN) differ from the previous ones as they will challenge the position of women in society. The main concern here is the gender division of labor, power and control. If met, the existing relationship of unequal power between men and women would be transformed.

- *Transformatory (or redistributive) potential*

Complementary to the P&SGN, the transformatory potential helps women or development planners to reflect on the way they will meet the PGN, done as enabling women to challenge the unbalanced power relations between genders to contribute to women's empowerment.

Kabeer defines empowerment as a process by which those who have been denied the ability to make strategic life choices acquire the ability to do so. (Kabeer, 1999)

2.4.3. Frameworks of Gender Analysis

a. Different frameworks

Six different frameworks can be found throughout the literature. In this review, the focus is on the Harvard and Moser's ones as well as the Social Relations Approach, as they will be used for the gender analysis conducted for the tuna value chain. The four other frameworks are detailed in **Appendix 6**.

- *Harvard Analytical Framework (HAF)*

Also known as Gender Analysis Framework was designed to prove that allocating resources to women as well as men, in a development effort, shows an economic interest and could improve the efficiency of the initiatives. Another goal of this framework is to map work and resources to highlight the differences between women and men.

The framework has four main tools : Activity Profile, Access and Control Profile - resources and benefits, Influencing factors and Checklist for Project-Cycle Analysis (**Appendix 3**)

The Harvard Analysis framework has three major drawbacks. First, as it highlights the consequences or symptoms of inequity, it does not show the causes and thereby is not helpful if guidance on how to change gender inequalities is sought for. Second, it does not ask the informants to describe their own experience of the development issues they face. Third, it only considers two roles of the women : productive (the work that brings an income in cash or kind) and reproductive (the care and maintenance of the household which is the actual and future workforce of the family) The first one is , Still, it remains widely used because of practicality, the fact that it can be easily adapted, that it is gender-neutral (rely on facts rather than theory), that it gives a clear picture of the labor division and finally because it distinguishes control and access.

- *Moser Gender Analysis Framework*

This framework aims to link the examination of women's roles to the larger development planning process. Unlike Harvard's framework, it considers the triple role of women : productive reproductive and community managing. This third role, according to the European Institute for Gender Equality (EIGE), is mostly related to care and unpaid work, and provision of collective resources as water, healthcare, etc.

Moser's framework is composed by six tools: Gender roles identification, Gender needs assessment, Disaggregating control of resources and decision-making within the household, Linked planning for balancing the triple role, Distinguishing between different aims in interventions: the Women in Development and Gender and Development policy matrix, and involving women, and gender-aware organizations and planners, in planning (**Appendix 4**)

The main advantages of Moser's framework are ease of use and that it encourages planners to adopt a broader point of view and see the planning not only as a technical approach but also as a way to understand the political significance. It challenges inequality in relations and supports women's empowerment. It uses the concept of practical and strategic gender needs which is a powerful tool to assess the impact of an intervention on gender. Thanks to the triple role concept, all the areas of work

are visible and it helps promote it. It also highlights the fact that those three roles are intertwined. The fifth tool of the Moser framework helps planners "think through the main policy assumptions which are driving a particular project (and therefore alerts you to its possible shortcomings)". (Oxfam, 1999)

It can't have only good sides, so here are some main drawbacks or limitations of the Moser framework.

The word "role" in the triple role concept is stained with many meanings according to the context. A notion of "natural way of things" or that "it is chosen", emerges. The schism between women's and men's activities is highlighted rather than relationships between the two. The Moser framework does not address other concerns than autonomy, yet the triple role and the overwork remain major issues in women's lives, sometimes more important than empowerment. The concept of P&SGN does not allow the planners to see the full picture, as it tries to dissect something which is a continuum. Those needs are not assessed to men in the Moser framework and therefore, in some ways, make the planner forget about men as gendered-beings. The time component is not taken into account and examined as a variable. The division of the policy approaches to simplify the reading can be misunderstood and they may be seen as having no impact on one another. The planners may have to face some strong resistance from the population as the aim of the analysis is women's empowerment.

- *Social relation approach*

Naila Kabeer created this approach based on concepts rather than tools to analyze the effective inequities between genders concerning the resources distributions, responsibilities and power and also policy-making programs that enable women to be active actors of their development.

The author states that the triple role of women does not pay enough attention to the fact that the resources can be produced through many different social relations.

Five concepts rule this approach: Development as increasing human well-being, Social relations, Institutional analysis, Institutional gender policies and Immediate, underlying and structural factors (**Appendix 5**)

On the one hand many are the reasons why this method is appealing, like the fact that it shows a whole picture of poverty, that it links analysis at all three levels and therefore concentrates at some point on institutions. Furthermore, it aims to place gender at the center of an entirely new framework for development theory and practice. The approach may be used to highlight the processes of impoverishment and empowerment.

On the other hand, we can spot a few drawbacks as well. First, the institutions are seen as it feels like change is impossible, and it might lead to losing faith in the possible enhancements. Second, by its cross-cutting vision, gender issues can melt with others such as ethnicity, class, religion, and so on. Third, it's not fit to use with communities in a participatory way. Fourth, it requires an important knowledge of the case study and therefore is not usable in situations where the context is a bit blurred. And finally, institutions studied at the macro-level have in reality no clear boundaries and it is hence difficult to determine what an institution is in this particular context.

b. How to choose

In order to choose a framework it is important to first know which one(s) match(es) the aim of the study carried out by asking a few questions. The choice of the framework will not be the same if the main goal of its use is to analyze a context, to visualize and plan, to communicate and sensibilise or to

monitor and evaluate a situation. The availability of resources is to be taken into account while choosing a method of analysis.

Here are some major questions to ask before choosing a framework:

- To which extent does the framework integrate an analysis of social relations that goes further than the gender issue?
- What is the flexibility of the framework?
- Does the framework analysis focus mainly on social roles (labor division) or social relations (the links between people at different scales)? Attention has to be paid if the Harvard method is used to not end up dissecting relations and rather have a full picture and see how everything fits. The role-focused frameworks do not cover the power dimension, unlike the Social Relations framework.
- Does the framework value intangible resources as much as the tangible ones?
- Is the main goal empowerment or efficiency?
- Can the framework be used in the work about gender identity and the male roles?
- How will people react to the analysis? Some communities can be reluctant to tackle gender issues or the relations of power. Or simply they may not want to change their way of thinking because some foreigner tells them to.
- What are the limitations of the framework and how can they be integrated?

Literature can provide examples of contexts and case studies in which the different frameworks were used: USAID Oceans 2018, Pacific Community 2018, Bañez Sumagaysay (USAID) 2018, Hillenbrand 2014, …

2.5. Gender and Value Chains

According to Sanders, women get less access to anything that could enable them to take a greater part in the value chain: capital, technology, land, financial services, benefits from the VC. (Sanders, 2012)

And this cannot be justified by the fact that they are less present in the fishery sector: the majority of the traders are women, and they are said to be more present in the post-harvest tasks. Men usually have more to do in fishing. This perception of the highly gender-segregated division of labor (men fishing / women processing) has shaped the generalized approach in supporting development initiatives for small-scale fisheries. More often than not, this approach targets men as fishers, and women as processors and marketers of fishery products. However, this generalization has also made fisheries governance blind to women's other valuable inputs to the sector. In fact, their roles can and should go beyond postharvest and marketing. However, the lack of utilization of their additional contribution has deterred, for example, women's participation in fisheries resource management and policy decision-making. (Lentisco, 2015)

2.5.1. Gender-Sensitive Fish and Tuna Value Chain Analysis

a. Rationale

Weeratunge (2010) states that gender disparities affect not only the livelihoods of women in particular but also the entire household and community. Improving women's incomes, educational levels, access to information and their ability to participate in decision-making processes enhances the capabilities of the entire household and society in general. And also that it has been proven that countries, which have improved gender equity have reached higher levels of economic growth and social well- being. (Weeratunge 2010 citing World Economic Forum 2006, 2007). Clearly, networks and identity and how they play out in fishing communities have gendered consequences and affect the abilities of individuals to cope with or rise out of poverty. (Weeratunge 2010)

The FAO advances three categories of arguments in favor of a gender-sensitive value chain development: business, social justice, and poverty alleviation and food security. (Sanders, 2014)

From a business point of view, setting women aside is a missed opportunity as they account for 47 % of fisheries supply-chain workers, which is equal to about 56 million jobs in the harvest and post-harvest sectors. (Lentisco, 2015) So they represent an underestimated force for upgrading strategies. Yet, the lack of disaggregated data repeatedly mentioned in the literature (Williams 2002, Weeratunge 2010, Biswas 2017) strengthens the common belief that fishery is a man's world.

At a social justice level, it seems normal to fully take women into account when working on expanding capabilities and opportunities. Let's keep in mind that the UN's fifth Sustainable Development Goal (SDG) is "Gender equality and women's empowerment", stating that women's economic empowerment and access to markets and services is by many of them considered as essential for sustainable economic development and poverty reduction (Sanders, 2014). Still, most of the women's activities, income-generating or not, belong to the informal sector. (Lentisco 2015)

Which brings us to the third argument: poverty alleviation and food security. A common mistake made by the many organizations of which this goal is the hobby horse, is their focus on economic growth rather than an equal share of wealth. Also it has been proven many times that women tend to allocate a higher share of their income to the welfare of the family. (Kristof & WuDunn, 2008)The FAO stands that women would produce 20-30% more if they were given the same access to resources. (Sanders 2014 citing FAO Women - Key to food security, 2010-2011)

We can summarise by saying that the main reason for mainstreaming gender in VC is to qualify those statements by filling the gaps of data that lead to gender-blind policy-making and give women credit when credit is due to contribute to the realization of the 5th SDG.

b. Tools

Three main tools are helpful while considering gender in the value chain:

- the chain empowerment matrix through a gender lens
- a gender empowerment framework using the concepts "agency" and "structure"
- a matrix combining the two above levels in which the four dimensions of gender empowerment in the value chain are presented.

- *Chain empowerment matrix*

The matrix has two main dimensions: chain governance and chain activities. The first one answers to the question *Who does what?* while the second one answers to *Who determines how things are done?*

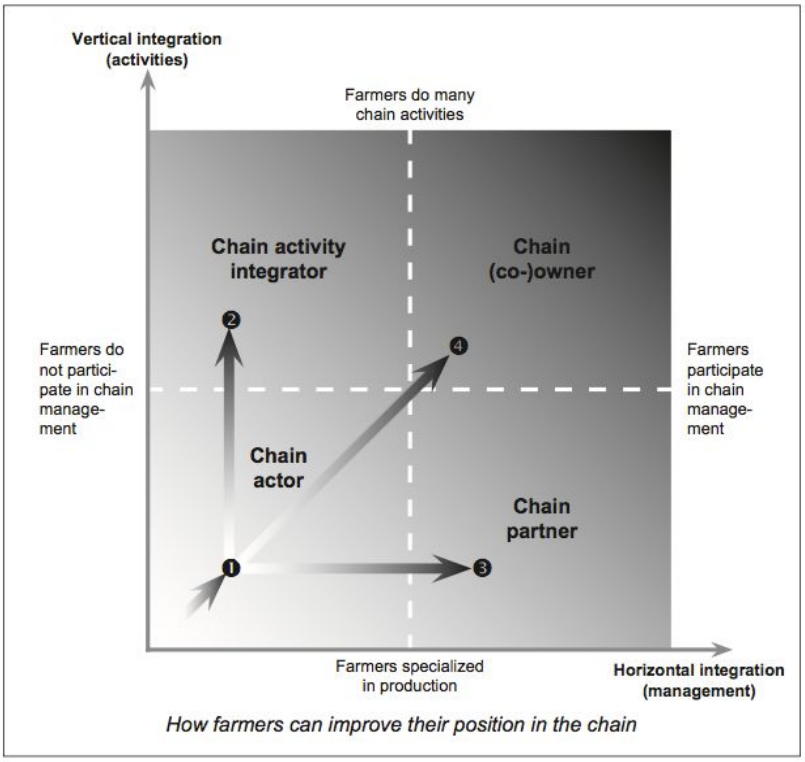


Figure 6: Chain empowerment dimensions
Source : KIT, Faida MaLi, IIRR, 2006

On the figure one two types of integrations are visible. Vertical integration means taking part in various activities in the chain and horizontal integration is being involved in many chain management issues.

So the first approach is the first strategy of empowerment, the second one happens when developing partnerships with other actors and the last strategy is developing ownership over the chain.

- *Gender empowerment framework*

A gender empowerment framework has to be used in addition to the matrix because it offers a quite narrow view on the gender issues as it doesn't address the many questions about the power, income and workload distribution, nor does it assess the gender needs issues.

To integrate gender relations in value chain development, one must integrate two new dimensions: structure and agency.

- **Agency**: is the capacity of individual humans to act independently and to make their own free choices. It has similarities with Sen's capabilities. (Sanders 2014), (Wikipedia, Capability approach)
- **Structures**: are factors such as social class, religion, gender, ethnicity, custom, etc. which limit or influence the opportunities that individuals have. (Sanders, 2014)

Having a closer look at those to dimensions enables the development of upgrading strategies that can lead to gender-equal outcomes.

- *Four dimensions of gender empowerment in value chains*

When combined, the two previous approaches result in a matrix of four components. Each of them bears elements of agency and structure. At every level, questions are asked (**Table 4**)

Table 4: Four dimensions of gender empowerment in value chains (Source: Sanders 2014)

Vertical integration	- What activities do women and men in the chain do? - What benefits do women and men gain?
Horizontal integration	- Who determines the conditions under which these activities are done and benefits are gained and distributed?
Gender dynamics in household and community	- How do changes in the first two dimensions affect the gender division of labor assets and decision-making within the household? - How do changes in the first two dimensions affect the gender dynamics within the community?
Institutional context: rules, norms and values	- Which economic, political and social factors enable or constrain women's empowerment on the other three dimensions? - How do changes in the first two dimensions influence the institutional context?

c. The six USAID gender dimensions

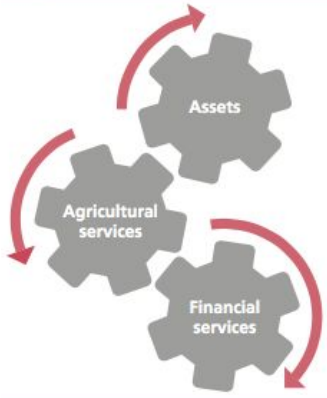
USAID has established six domains used in the gender analysis they conduct.

Table 5: The six domains and their associated key issues - source: USAID 2012

DOMAIN	KEY ISSUE
Access to assets	Who has access to which particular assets? What constraints do they face?
Knowledge, beliefs, perceptions	Who knows what? What beliefs and perceptions shape gender identities and norms?
Practices and participation	Who does what? What are the gender roles and responsibilities that dictate the activities in which men and women participate? How do men and women engage in development activities?
Time and space	How do men and women spend their time, as well as where and when?
Legal rights and status	How are women and men regarded and treated by customary and formal legal codes?
Balance of power and decision making	Who has control over the power to make decisions about one's body, household, community, municipality, and state? Are such decisions made freely?

- *Access to Assets*

According to USAID (2012), access to assets refers to the extent to which women and men are able to use the resources necessary to be fully active and productive participants (socially, economically, and politically) in society. Assets should be considered in the broadest possible sense—both tangible and intangible; they include the following, among others: Human assets (health services, education/training, knowledge, and skills), Natural assets (land, forests, waterways, labor), Social assets (social networks, economic markets, value chains), Physical assets (transport, communication technology, equipment, raw materials) and Financial assets (capital/income, collateral, credit).



Access to labor-saving equipment can help increase women's efficacity. The allocation of time for the different roles may, therefore, go through some changes.

Also, social capital is the key to gaining access to markets and resources. Women's networks are usually less spread than men's and consist of neighborhood and family.

Figure 7: Dynamics of the access to assets

Source: FAO 2016

- *Knowledge, Beliefs, and Perceptions*

This domain involves understanding the beliefs that shape gender identity and behavior and the perceptions that guide how men and women interpret aspects of their lives differently depending on their gender identity. Men and women may also have different types of knowledge or beliefs, and some forms of knowledge may be accessible to one sex only. Among other considerations, those who are conducting gender analyses should closely examine whether any gender-based stereotypes could have an impact on a given project or its outcomes. (USAID 2012)

- *Practices and Participation*

This domain requires an examination of behaviors and actions in life— what people actually do—and how this is influenced or determined by gender. This should include exploring how various roles are divided according to gender, and how responsibilities and activities are socially allocated to men and women. While it may not be noticed in everyday life, all societies assign gender roles based on what is considered "appropriate" for men and women, and different roles are valued differently. Gender analysis at this stage requires identifying who does what—looking both at quantitative and qualitative information. Examining participation also includes looking at how men and women engage in development activities and the ways in which gender roles and norms affect their participation. (USAID 2012)

- *Time and Space*

Analyzing time and space means recognizing both the gender differences in the availability and allocation of time as well as the place in which time is spent. Consider the gender differences in the division of both productive and reproductive labor, and identify how and where time is spent during the day, week, month, or year and in different seasons. This analysis will help determine how men and women contribute to the maintenance of the family, community, and society. A time-use analysis will also reveal whether men and women have equal access to unallocated or leisure time. An analysis of time and space should also explore the implications that different time commitments for women and men have on their availability to participate in development projects. Such an analysis should also look at whether men and women's time is flexible, negotiable, or interchangeable. (USAID 2012)

- *Legal Rights and Status*

Analysis under this domain involves assessing how men and women are regarded and treated by both the customary and formal legal codes and judicial systems. This includes: (1) how men and women access legal documentation such as identification cards, voter registration, and property titles; and (2) protection of their human and legal rights generally (e.g., the right to inheritance and employment, the right to representation in legal processes, and to redress for violations of rights). (USAID 2012)

- *Balance of Power and Decision Making*

It focuses on the ability of men and women to decide, influence, and exercise control. It refers to the broad capacity to make decisions freely and to exercise power over one's body and within one's household, community, municipality, and the state. It also includes the capacity to vote and to run for office at all levels of government. (USAID 2012) It can relate to the notion of agency and Sen's capabilities.

2.5.2. Gender in the purchasing node of Fish and Tuna Value Chains

a. Rationale

Women are widely present at each node of the tuna value chain but their work is overshadowed and not considered as much as men's. The necessity of gender analysis in the tuna value chain relies, among other things, on a statement of the FAO that says that in order to reach the objectives of food security and nutrition, equality between genders is essential. (Sanders 2014)
As stated by Fulton *et al* (2011 cited by Barclay 2017), managing fisheries resources means managing human behavior, so social and economic understandings are important considerations as well as the understanding of biological and ecological factors.

b. Status in the World

- *Situation*

Women dominate the domestic fish retail trade and by extension small-scale export. For example, in the Mekong river basin in Southeast Asia, nearly five thousand fish markets in the area are run by women. (FAO Biswas, 2017 citing UNEP, 2010). Yet, they have little capital, less connection with government officers or with fishers/fish lot owners, and less capital to extend credit to fishers to ensure their supplies of fish. To become exporters and wholesalers, they need to build up relations with fishers and fish lot owners as well as other traders to secure enough fish. As they are poor in capital and political ways, they cannot change their fate, they remain poor.

Two reasons for women to be more involved in the small-scale trade are, first that this activity is considered unsuitable for men since small-scale traders need to be subservient to all other actors. (Kusakabe, 2006). Second, is women's "natural ability" to avoid conflict so have better skills in negotiation. (Weeratunge 2010 citing Kusakabe et al. 2006)

- *Existing gender analysis in the fishery sector*

In all of the studies mentioned below, the results are no surprise, women are more present in post-harvest activities such as processing and selling, in addition they spend more time than men doing chores and non-related fishing activities. Furthermore, they are given less power in decision making. Access to loans and gear is lower than for men, so it's harder for a woman to trade with fishers as she has less to offer.

In 2018, the Pacific Communities released a report on a gender analysis of the fisheries sector in the **Solomon Islands** (Boso 2018). It aimed to understand the gender aspects in the fishery sector at the micro-level, for both women and men. The goal was also to assess the responsibility load in the management of marine resources and the way the sale decisions are taken. Five methods were used to gather data: a literature review, a single community consultation, a small set of interviews with small-scale fish traders, interviews with NGOs and local government departments, and finally, interviews at a national level with people from the Ministries and NGOs. Unfortunately, there is no mention of the gender analysis frameworks that were used. An outstanding result of the primary data

collection is that the roles in fishing are shifting but there is not enough information to fully understand the change in the social norms.

The same year, USAID conducted two GA in the VC: tuna in the **Philippines** and fisheries of **Indonesia**. of which objectives were 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 the use of the CDTS to priority biodiversity areas in the Asia Pacific region; (iii) strengthen the 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. (USAID - UNSRAT 2018) Both studies aimed to spot the differences between men's and women's roles, hence the related problems and the strategic intervention-areas to foster gender equality and women's empowerment. Three of the six gender analysis frameworks were used: Harvard, Moser and Social relations approach. The questionnaires were designed to take the key constructs into account: productive, reproductive et community roles at each node, relations, interactions and the six USAID gender domains. (USAID 2018) The methodology used for those gender analysis is a combination of Harvard's and Moser's frameworks with SRA and the six USAID domains of gender analysis. As it assesses the matter with many angles, this mashup of methods will be used in the gender analysis of the tuna VC in Vietnam. The firsts results show that women in the trading node tend to have more responsibilities or more "intellectual" than physical tasks.

In **Cambodia**, the Fish on Farm research project was analyzed through a gender lens to assess its impact on women's empowerment and to gain a greater understanding of gender relations in the Cambodian context. To do so, this analysis uses the Social Relations Approach as a framework. What was shown by the study is that women and men face an unequal workload sharing, unequal responsibilities and knowledge around caregiving, and prevalence of alcohol misuse and gender-based violence. (Hillenbrand 2014)

The situation around Lake **Victoria** (Kenya, Tanzania, Uganda) was described in early 2000 (Lwenya 2000; Medard 2001), to gain some more knowledge to improve the future interventions designed to promote and foster women's empowerment in the fishery sector. Surveys were conducted during interviews, again, no mention of which framework was used. But the results show that more male traders only focus on this activity, women are more often polyvalent. Also it seems that more and more women are becoming fish traders, probably due to the migration of men to other parts of the lake or urban areas.

Browne (2002) focussed on **Sierra Leone**, given the ongoing war, at the time. People had to change their habits and therefore women started to invade the fishery sector. The paper reviews some persons that stand out by the activities they do and the choice they have made that brought them a sort of success.

Matthews (2012) makes a review of nine studies conducted in **Bangladesh, Belize, Fiji, Gabon, Indonesia, Kenya, Madagascar, Nicaragua and Papua New Guinea**. The overall goal of this project is to provide a contextualized assessment of opportunities for improving the livelihoods of people involved in small-scale fisheries and marine conservation by focusing on the impacts of gender dynamics and women's engagement. This project was guided by three objectives: i) Assess gender issues as they relate to improved fisheries management globally ii) Prioritize two focal regions for in-depth assessments within the WCS network iii) Design scalable pilot projects. The key findings are similar to the ones of many other studies but they also show that gender is a means to new and

innovative partnerships, that helping women improve their bargaining power and income generation potential throughout the fisheries value chain will contribute significantly to equitable economic, social and health outcomes within the household — enhancing sustainability and impact of fishery-related interventions.

Another meta-analysis of the existing GA in the fishery sector was led by Weeratunge for the Aquatic Agricultural System (AAS) of the CGIAR in 2012. The countries mentioned are **Cambodia, Zambia, Bangladesh, Philippines and the Solomon Islands**. The goal here was to provide a first input into the development of knowledge about the Consortium Research Program (CRP). To do so, the social relation approach and the AAS CRP's conceptual framework were used. The review sheds light on two things: first, the prevalence of gender disparities across the AAS program countries, meaning considerable challenges remain in achieving gender equity in economic returns and social wellbeing; second, it shows how varied these contexts are and how good research in development programs will need to be based on solid contextual understanding—including of the causes and consequences of gender inequality. (Weeratunge 2012)

c. In Vietnam

To date, there is no gender analysis of the tuna or fishery value chain in Vietnam, except for two about the shrimps from 2009 and 2016 (Veliu 2009; Oxfam 2016). That's why this study is conducted. The fact that other countries of Southeast Asia like Thailand, Philippines, Indonesia and Cambodia have already been the subject of such studies and that Vietnam hasn't is a bit odd given the length of its shore.

The specific need of Vietnam for a gender analysis lies, manly on that gap but also the intensification and complexification of the production, the situation of women is believed to deteriorate first and more dramatically than that of men, (Veliu 2009)

2.6. Research objectives

Since Vietnam's economic boom in 1995, there are more and more studies aiming to build the value chain of Vietnamese agricultural products. In the fisheries sector, export commodities are more than often concerned; shrimps (Nguyen Ngoc Duy, 2012)(Nhuong Thran, 2013), brackish fish (Cao Le Quyen 2018 citing Pham Thi Thanh Thuy, 2011) and tuna (Thanh 2012) (Nguyen Ngoc duy, 2012), (Cao Le Quyen, 2018).

Unfortunately, the studies aforesaid do not take gender into account. So far, there is no existing gender analysis in the fisheries VC in Vietnam. The decision of doing a gender analysis and focusing on gender disparities is driven mainly by the will to acknowledge women's work and take a step forward to gender equality.

As for the choice to focus on the purchasing node, it is based on the observation that the majority of traders are women, while half of the middle-persons are men. In large parts of Vietnam (and Thailand), even if the earnings can be attributable to men, it is the women who receive the money—they are described as "looking after the money"—and their social identity is tied to their ability to handle it and to build up the household resources by selling the aquaculture products. So an understanding of why such a difference, given the social context may and hopefully will shed a light on the whole situation. An important factor influencing this decision was the ease of finding people to interview given the time allotted for this study.

If the study focuses on the South Central provinces, it is simply because the majority of Vietnamese tuna is produced there (Nguyen Dang Hoang, 2020).

Given the already existing studies and their repercussions, it is relevant to be willing to apply this to Vietnam which, as said above, does not have literature on the subject. The collection of disaggregated data will constitute a basis for future decision-making and the development of gender-sensitive policies.

This study has two parts : first, examining the differences between women and men, second, identifying the specific roles of women.

To assess the difference between men and women in the purchasing phase, this study will analyze the 6 USAID gender dimensions : (i) access to assets, (ii) practices and participation, (iii) knowledge, beliefs and perceptions, (iv) legal rights and status and finally, (v) balance of power and decision making (vi) time and space. The choice of those items as a base to tackle the gender inequality issue relies on the reading of similar studies; in order to have comparison points and some material on which to base the data analysis.

The biggest differences are expected to be found in the second and fifth dimension since women are more likely to take care of the household in addition to their work, to be subject to their husbands or the men in the household and to be denied possession. Also, there are many chances that men have access to more customers and to higher-value products to sell (Fröcklin, 2013), leaving women with the low-value goods since access to loans is restricted for women. That having for possible consequences that women usually don't start a trading business.

As for the other dimensions, it's more than possible to find out that more men have access to education even if the proportion of women having a higher degree is more important (Fröcklin, 2013),

that women have longer work days than men, due to their triple role and also that they are denied some fundamental rights. But those three domains are also the key and the starting point of the inequalities since the beliefs, norms and laws shape society and therefore the behavior of and towards women. Hence, forcing them to occupy the roles they currently have.

The questionnaires designed for the study are aiming to seize the essence of all those dimensions, using amongst other things, some indicators of the participation of women in the tuna VC, such as the income ownership, the scale of their trade, etc.

Concerning the specific role of women, it will be possible to define it after the analysis of the differences between genders.

This study is part of Nguyen Dang Hoang Thu's Ph.D. thesis which focuses on the gender in the whole tuna VC in the South Central provinces of Vietnam.

3. Methodology

3.1. Study site

3.1.1. Binh Dinh province

The study focuses on the South central provinces of Vietnam : Binh Dinh, Phu Yen and Khanh Hoa. Since Binh Dinh yields the biggest amount of tuna, it makes sense to interview people in that area.

"Binh Dinh, has a coastline of over 134 kilometers, a territorial sea of 2,500 km2, and an exclusive economic zone of 40,000 km2. It is a South-Central coastal province where the offshore fisheries, particularly the tuna fishing, is the most developed in Vietnam, and mostly concentrated in Hoai Nhon districts and Quy Nhon city (**Figure 6**). Binh Dinh currently has three large fishing ports including Quy Nhon, De Gi and Tam Quan, which are in the list of MARD's designated fishing ports2 for certifying the fishing origin.

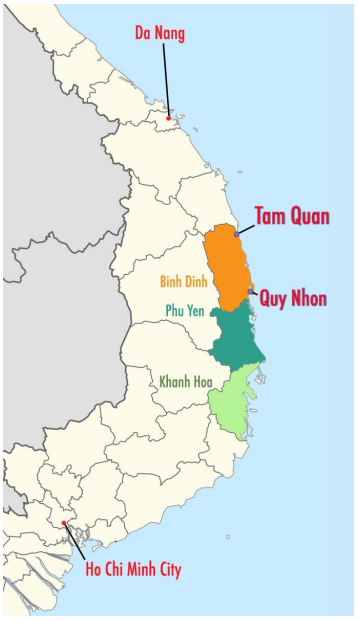


Figure 68 Map of South Central Vietnam

Source: Wikipedia, Vietnam - edited by Sundar Raj (2020)

The fisheries industry plays an important role in the economic development of Binh Dinh province, creating jobs and income for a significant portion of the province's labor force. In 2019, Binh Dinh has 6,115 fishing vessels, of which more than 50 percent have a length of over 15m, with some major fishing gears including longline/handline, purse seine, gillnet and trawling. According to Binh Dinh Department of Fisheries (DARD), the total catch in 2019 reached 245,000 tons (5 percent more than in 2018), equivalent to 402,674 USD, and accounting for about 4 percent of the total value of agricultural production (1,065,275 USD).

The tuna fishery, introduced in 1998, has now been considered as a key production sub-sector of the fishing industry in Binh Dinh. In 2019, Binh Dinh has more than 2,100 tuna fishing vessels, mainly distributed in Hoai Nhon district, of which over 60 percent are handline fishing for yellowfin and bigeye tuna. The rest are purse seine (34%) and gillnet (3%) for catching skipjack tuna. Tuna fishing grounds are mainly in the Central region and the middle of the South China Sea, particularly around "Hoang Sa" and "Truong Sa" islands." (USAID 2020)

3.1.2. Quy Nhon (QN) and Tam Quan (TQ)

In the province of Binh Dinh, two cities were investigated during the field trip : Quy Nhon (from 18th to 20nd of May 2020), where the main catch is skipjack tuna and people are working as traders and middle-persons; and Tam Quan (from 20th to 23rd of May 2020) in which the respondents were middle-persons, dealing mainly with yellowfin and bigeye tuna.

Quy Nhon is the capital city of Binh Dinh province, and accounts for 457 400 inhabitants (Quy Nhon, Wikipedia). The main activities used to be agriculture and fishing but these past few years tourism, service industries and manufacturing took over.

“Currently, the structure of Quy Nhon's economic sectors has shifted towards increasing the proportion of the service industry, reducing the ratio of agriculture, forestry and fishery to GDP. The proportion of agriculture, forestry, fishery - industry and construction - services in GDP in 2014 reached: 5.5% - 47.6% - 46.9%. Export turnover is estimated at 918.4 million USD, import turnover is estimated at 608 million USD. Per capita income in 2018 was 6,052 USD / person.” (Wikipedia, Quy Nhon, 2020)

Tam Quam covers 7.56 km ^{2} and accounts for 18 837 people. The city has a “fleet of over 2,000 ships, large and small, which gives the locality a sizable source of seafood, Tam Quan Fishing Port was born, contributing to raising the position of the locality. After being harvested, most of the seafood is processed and consumed in the domestic market and a few are exported to the country, in addition to serving local needs. There is also the profession of making Tam Quan coconut rice paper, which many people inside and outside the province also know” (Wikipedia Tam Quam Bac, 2020)

The middle-persons were interviewed at their residence, unlike in Quy Nhon where they were interviewed in the fish market located in the harbour.

3.2. Research design

3.2.1. Primary data

a. Choice of the respondents

We expect about 40 individual interviews, 15 people for the FGD and around 4 persons for the key informant interviews (KII). At the end of the day, no FGD were conducted, the reasons will be detailed in the further section *5. To go further*

The research focuses on the micro- and meso-level of the purchasing node of the tuna value chain. Therefore, middle-persons and traders are interviewed.

Among the 40 respondents, 30 were women and 10 men. Among the ten men interviewed, only two are actually trading fish; the others are owners of the company and are in charge of the communication with processors and suppliers or sell oil, ice, fishing gear and so on. Their wives are trading fish but are not legally owners of the enterprise. Regarding the profession of the respondents, 31 are middle-person and 9 are traders (all women).

Four KI were interviewed : two employees of Binh Dinh Department of Fisheries, the two directors of Quy Nhon and Tam Quan fishing ports. The objectives of these interviews are to understand the overall enabling environment for gender equality in fishing communities in Binh Dinh province, especially in the purchasing node.

The director of the Quy Nhon fishing port gave the research team the list of thirty-eight middle-women and female-traders, since only women are occupying this position in QN. So did the director of the Tam Quan. Twenty-one out of thirty-eight purchasing actors were interviewed in Quy Nhon. All the nineteen middle-persons from Tam Quan answered the survey.

As not every trader and middle-person of the province were interviewed, it cannot be used to assess the percentage of men and women that work in the purchasing node of the VC. According to the Fishery Department of Binh Dinh, in 2018, there were 82% of women among the middle-persons in Tam Quan, 100% among traders and middle-persons in Quy Nhon (Nguyen Dang Hoang, 2020 citing Fisheries 2018). In our sample, 71% of middle-persons are women and so are 100% traders.

b. Gender analysis frameworks

A combination of Harvard's, Moser's frameworks and the Social Relation Approach (SRA) has been used and designed with the six USAID gender dimensions in mind. The two former frameworks are often used together so Harvard gains in-depth by taking the community role into account in its tools. Also a better insight on the gender disparities is given by the gender needs assessment. If only using Harvard's method, one would miss an important link with the SRA. Using the SRA gives the analysis a broader point of view that will help in the VC mapping since drawing connections between the different actors and genders.

c. Focus group discussion

We were first supposed to proceed with a focus group discussion in order to gain a better insight into the context and to have material to feed the questionnaire on some aspects such as the activity profile. The USAID domains are sometimes really close with one another, therefore, some activities conducted may overlap some of the former. What FGDs offers and surveys don't is to surface issues and concerns that required depth and probing and which a survey, with its time and number limitations, could not address. (Bañez Sumagaysay, 2018)

The major advantage of an FGD is that respondents are given the place and opportunity to speak their minds freely. So the pollster has to make them talk.

The guide for the FGD is to be found in the **Appendix 10** (Oxfam 2016)

Unfortunately, in Quy Nhon, the traders had no time for us since they work from 1am to 5am and spend the rest of the day taking care of their family and sleeping. In Tam Quam, we had to go from house to house to interview the middlemen and middlewomen so it was impossible to conduct a FGD.

- *Access to assets and Balance of power and decision making*

The tool used to answer the question of access and control aim to collect information on a community scale is Harvard's framework second tool (**Appendix 3 - table II**) (Oxfam 2016)

- *Practices & participation*

First, a pocket chart on household responsibilities has been done.
Respondents listed all of the productive and reproductive tasks carried out within the household and allocated each task to the person typically responsible for these tasks. The chart illustrated the gendered division of labor and disparities in workload distribution. (Hillenbrand 2014)

- *Time and space*

An activity profile following Harvard's framework and the SRA have been drawn at two different scales:

Daily
The group had to complete two pie charts (1 for women and 1 for men), each divided in 24 hours. The different activities can be colored according to the role they are related to: productive (blue), reproductive (yellow) and community (red) role.
Yearly
Participants have been asked to make a calendar of the best income activities, peak labor, practices, type of catch, food insecurity occurring periods, price of tuna,...

Then to situate the resources, ask the participants to draw a resources map, using a map of the area or a sketch, the participants had to point the regions where each type of resource is used and by whom (women, men, function in the VC).

- *Knowledge, beliefs and perception*

Bodymaps for gender norms
Through the drawing of the "ideal man" or "ideal woman", people will express the underlying social norms and what was and is expected from a woman or a man. (Hillenbrand 2014)

- *Off-category*

Influencing factors
Identifying the factors which influence the opportunity and constraints arising from the differences in the gender division of labor. This tool is Harvard's third one (**Appendix 3 - table III**) (Oxfam 2016)

d. Interviews and questionnaires

- *Traders and Middle-persons*

Many of the questions of the questionnaires are taken up from the USAID 2018 gender analysis of the fisheries sector in General Santos, Philippines. This is because of the impossibility for us to do a preliminary assessment of the situation by going on the field and getting to understand the way things work, before making the questionnaire. The complete questionnaire is in **Appendix 8**.

Some of the open-ended questions are based on different tools of the three frameworks used in this analysis.

Gender needs assessment

To do so we used Moser's framework second tool (**Appendix 4 - table IV**) (Oxfam 2016) and the results of the question on the access and control of resources and benefits from the FGD.

Control and decision-making in the household

Almost the same question as the one on control and access asked during the FGD but it applies here on a household-level, rather than on a community-one. This question has a reason to be if not enough or no information on households have been given during the previous discussion.

- *Key informants (KI)*

The key informants are actors at a meso- and macro-level. Four people were interviewed : two employees of Binh Dinh Department of Fisheries and the two directors of the fishing ports of Quy Nhon and Tam Quan. The aim of these interviews is a better understanding of the overall enabling environment for gender equality in fishing communities in Binh Dinh province, especially the gender equality in the tuna purchasing node.

The major advantage of KI interviews is the global and more objective insight on the primary actors they can give. They have a different point of view as they are not directly concerned by the VC.

3.2.2. Secondary data

Most of the secondary data about the value chain were collected by Mrs. Nguyen Dang Hoang Thu during her PhD thesis. With regard to information on gender analysis and the gender in the value chain, the research team joined forces for the literature search.

The last section of the results aims to compare the purchasing nodes of the VC of tuna in Vietnam with two different countries on a gender point of view based on the WINFISH report of 2018 about General Santos City and the Pacific Sector and the Pacific Communities gender analysis of the fisheries sector (2019).

3.3. Data analysis

Given the resources available, we couldn't conduct the survey online and had to proceed with the questionnaire on sheets of paper.

Nevertheless, a Google Form was created to facilitate data analysis. The answers on the paper were manually encoded in the online survey after coming back from the field trip.

Thanks to Google Form, getting a Microsoft Excel (ME) spreadsheet is automatic. The empirical data are processed with that software. Then the descriptive statistics and the comparisons of means were conducted with RStudio, since there are only forty people in the sample, the data are non-parametric (the Shapiro tests proved that also), therefore Wilcoxon Rank sum Test were conducted instead of t-tests, using the function *wilcox_test* to compare men and women. When more categories were to be compared, Kruskal-Wallis tests (*kruskal.test*) were used followed by Dunn tests (*dunn_test*).

The threshold of significance selected for the p-value is 0.05, if not, it is specified.

To assess qualitative data or open-ended questions, the occurrence of words among responses was observed and counted.

First and foremost, it's essential to characterize the sample to spot on which criteria we can compare men and women, taking into account their profession and the city in which they live, therefore the species traded.

3.4. Limitations and challenges

Many obstacles might impact the quality of this study. Some are related to some gaps in my training as a bioengineer, others are due to the conjuncture.

3.4.1. Timing

a. COVID-19

Due to COVID-19, Vietnamese middle-persons and traders were reluctant to meet a foreigner. So the interviews were only conducted by Mrs. Nguyen Dang Hoang Thu, leading me to a lack of understanding of the whole picture until pretty late in the realisation of the study.

Also the whole month of April was a total lockdown and the borders between provinces were closed, therefore our field trip was postponed for a month.

b. Fishing periods

Fishing boats go offshore for two weeks more or less, and so just after quarantine time. So we had to wait for two more weeks to go on the field trip and be able to interview the fishtraders and middle-persons.

c. Health

Mrs Nguyen Dang Hoang Thu is the only person able to encode the data of the interview in the Google Form since they were based on her notes (in Vietnamese). Unfortunately, she got health problems and that step of the study was only finished on the 8th of July.

3.4.2. Other

a. Lack of communication

From the very beginning, we knew that communication wouldn't be easy due to the language but it was a real struggle when it came to specific details about the study, answering questions or understanding each other's idea. Also, never was a whole report or debriefing made after the interviews of the respondents or KI, thus a foggy insight on the progress (despite having requested it).

b. Inexperienced interviewer

The studies of bioengineering do not properly prepare to conduct interviews nor to create a good questionnaire where this is a competence that takes time and practice to master. The supervision I had while preparing the questionnaire is not enough to make it adequate especially since it is one of the first surveys I make.

The scientific rigour and critical sense of the interviewer being weak, part of the questions weren't answered or many mistakes were made

c. Lack of informations

The lack of studies on the topic made it harder to understand the global situation. Also, the fact that the existing studies are in Vietnamese and that the power of the translation sites is quite low from Vietnamese to English, made it difficult for me to access the information.

This is also a problem for the statistics, because there is no point of comparison.

d. Google Form

Some data from the Google Form are not in the Google Sheet. And the person that encoded the data was using it for the first time so some of the answers to the questions were incomplete or made no sense.

3.5. To go further

3.5.1. Post-analysis verification of the data

Only one field trip has been done due to the short timing, offering no opportunity to verify the data after analysis. If a second one was possible, here are some things that would be wise to do.

a. FGD

The availability of the respondents didn't allow us to conduct FGD. It would have meant that too many people would be absent at the same moment from the market. Or it would take some of their "free" time that they were not willing to give us. Therefore, we lack some information that is considered as important to get a good global picture.

The use of frameworks of gender analysis isn't complete without FGD because some dimensions are left aside or some questions are not asked.

b. Complementary questions

Processing the data gave a better understanding of the context, therefore some questions would have been interesting to be asked to complete the study.

- How did they start their business : legacy from the parents, by themselves and if so how did they raise the capital ?
- The exact number of customers
- What is the nature of the relation with the customers : contract,...
- What is the exact profession of the husband of middle-persons and traders of skipjack tuna?
- How many hours a day do women and men sleep ?
- Who between men and women are more subject to health problems ?
- Since kids start going to school at 6 years old, who takes care of the younger children when their parents work ?

3.5.2. Identifying factors and processes to improve women's participation in fisheries resources management and decision-making

To go further on the path of an integrated equitable governance, one may have a look on the next figure that illustrates the integrated equitable fisheries governance by Lentisco (2015)

Yet, so many things things are left to do to fully embrace gender equality: the "traditional" approach of work division have to be challenged, education on gender equity has to be provided, the women's work has to be recognized and an appropriate support to women's organization has to be given,

guaranteeing women's access to resources, putting in place adaptive or interactive governance, change institutional arrangement, collecting disaggregated data and so on. (Lentisco 2015)

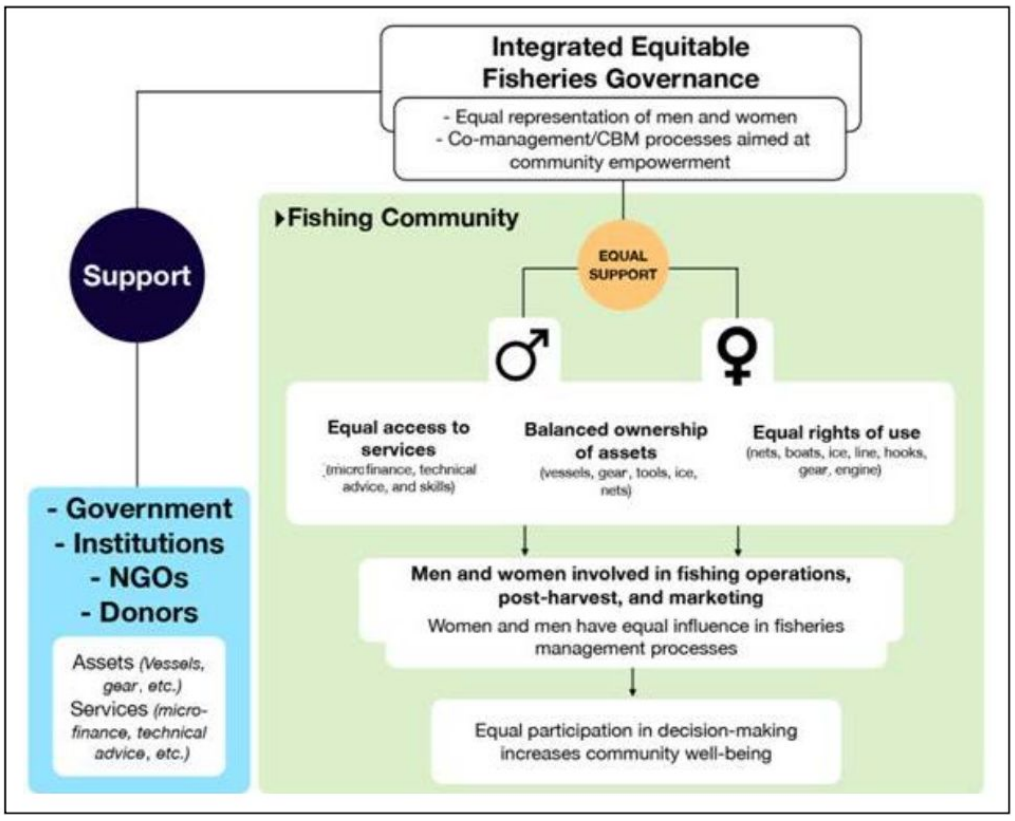


Figure 9 : Integrated equitable fisheries governance

Source : Lentisco 2015

4. Results and discussion

Through the results gender disparities are meant to appear more clearly. To spot those differences, a characterization of the sample has been done, followed by a comparison between men and women for the 6 USAID dimensions.

As a reminder, the first research objective was to assess the gender disparities in order to identify the role(s) of women in the purchasing node of the VC of tuna, which is the second aim of this study.

4.1. Characterization of the sample

4.1.1. Gender and age

Table 6 : Age of the sample, differentiation between men and women, Binh Dinh, 2020.

Profession	Middle-person			Trader
Gender - Species	Men - Y & B	Women - Y&B	Women - Skipjack	Women - Skipjack
15 - 25	0	0	0	0
26 - 35	1	0	0	0
36 - 45	5	4	5	6
46 - 55	1	2	5	3
56 - 65	2	3	2	0
66+	1	1	0	0
TOTAL	10	9	12	9

Table 6 shows that half of the people working as traders or middle-persons are between 36 and 45 years old. None of the interviewees were under 26, which seems normal since it requires some experience to become a trader or a middle-person.

4.1.2. Education level

Six men out of ten, working as middle-persons in Tam Quan and trading yellowfin and bigeye tuna, went to high school at least and three attended college. Most women did not even make it to high school.

Table 7 : Female respondent's level of education according to the city and the profession

Profession	Middle-person			Trader
Gender - Species	Men - Y & B	Women - Y&B	Women - Skipjack	Women - Skipjack
Elementary School	3	3	1	1
Secondary School	1	5	8	7
High School	3	1	2	0
University / College	3	0	1	0

Y & B = Yellowfin and Bigeye tuna

It shows that globally, traders have lower levels of instruction, but also that only one woman out of thirty attended university or college. This validates the hypothesis that men have a better access to education or have a higher level of education.

4.1.3. Experience

a. Time in the business

The average age when starting the company, for women is 35.0±5.7 and for men is 29.0±1.4, yet the Wilcoxon test showed that the difference is non-significant (Wilcoxon, $p = 0.255$).

On average, women have spent 12.0±10.6 years in the business and men 9.95±10.4, the difference is non-significant (Wilcoxon, $p = 0.5283$). Some change in the kind of fish traded occurred for eight respondents, they turned to tuna for two main reasons : the stability in the output and input of the skipjack and the ease to buy and sell yellowfin and bigeye for exportation since they are bigger, have a higher value and are easier to buy and sell.

All the respondents got a promotion during their career, but men tend to have it a little faster with an average time between starting to work and the promotion of 3.5±1.84 years against 4.28±3.65 for women. But the difference is not significant (Wilcoxon, $p = 0.6887$).

b. Choice of career

Separating the choice of tuna species in the choice of career was essential since they imply different lifestyles.

When asked why they are in the tuna business, *tradition* and *relation* have been mentioned times, the most, equally by men and women : the family has been in this business for years which is a cause of good relationship with the processors and fishers. Strong links built with the customers and providers along the years - even if not working in tuna in the past - made some of the middle-persons change

their activity and chose tuna. *Stability*, *income* and *the fact that it's easier than skipjack* have been mentioned by women.

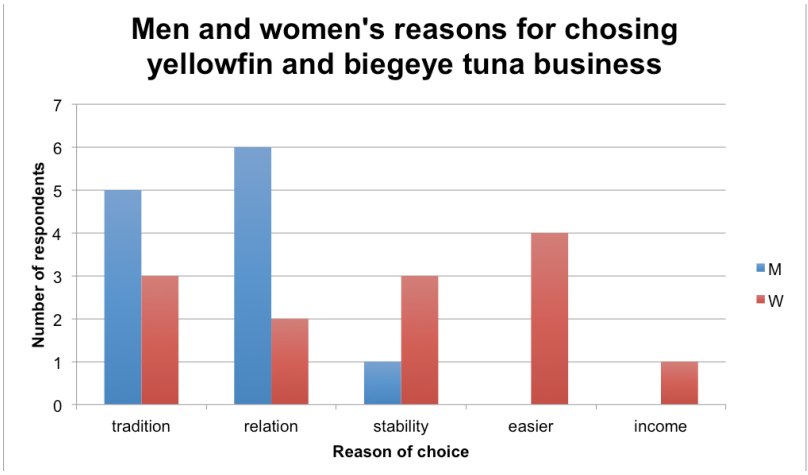


Figure 10 : Men and women's reasons for choosing yellowfin and bigeye tuna business

In the skipjack business, the reasons are different. The main one that leads traders to choose this vocation since they have good *relationships* with the other actors of the VC. Middle-women evoked mainly *tradition* but the *stability* of the outcome and income coming from skipjack is something to be noticed. Indeed, this tuna is fished all year round, every day, unlike yellowfin and bigeye.

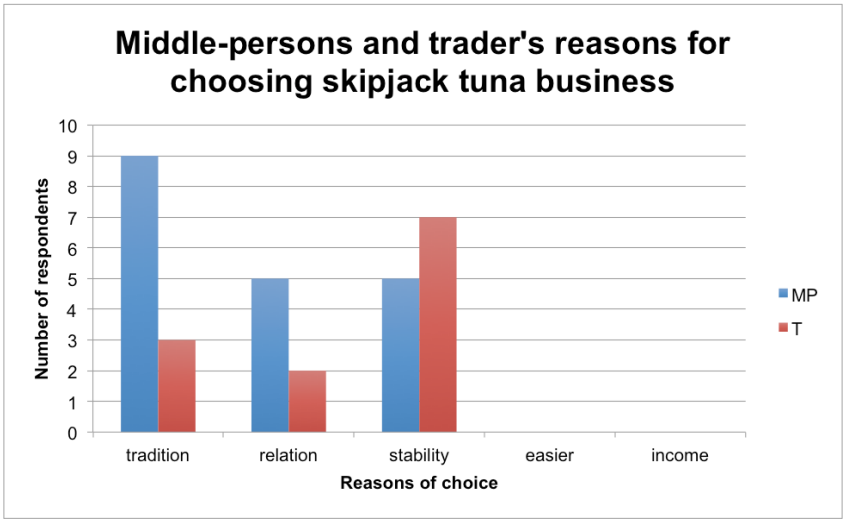


Figure 11 : Middle-persons and trader's reasons for choosing skipjack tuna business

4.1.4. Household

Only one of the interviewed is single, all the others are married. **Table 8** shows that wives tend to be a bit younger than husbands.

Table 8 : Characterisation of the partners : gender and age

	Wives	Husbands
15 - 25	1	0
26 - 35	0	0
36 - 45	5	9
46 - 55	2	15
56 - 65	2	4
66+	0	1
TOTAL	10	29

On average, women had their first child at the age of 22.0±1.86, while for men it's a bit later, around 25.2±2.05 years old, the Wilcoxon test shows that there is a significant difference (Wilcoxon, p = 0.0004547). The two women that attended university had their children the latest.

The size of the households varies between 1 and 10 people, with a higher occurrence of 6 persons per household. On average, there are 5.2±1.5 persons per household. In Vietnam, the tradition wants the children to take care of their parents so it's common that the grand-parents live with their kids and grandchildren. People have on average 2.8±1.0 children.

4.1.5. Business

The main source of income is fish trading and selling for every household except for two: one who indicated fish processing as the prime source of income (and no secondary source) and one that said that trading is a secondary source of income as well as remittance. Those companies actually have some other activities such as selling other products and running hotels.

There are three main species of tuna that are fished : yellowfin, bigeye and skipjack. The 21 persons that trade skipjack only focus on that specific tuna while the 19 other respondents sell 90% of yellowfin and 10% of bigeye.

a. Company

- *General information*

Trading yellowfin and bigeye tuna is different from trading skipjack tuna.

Most middle-actors of the yellowfin and bigeye tuna business act as purchasing agents of the processing plants through contracts and they receive the commissions from processors. Almost all the production is destined for exportation.

When it comes to the skipjack tuna trade, middle-persons have two roles: purchasing representatives for processors (of canned tuna for export) and wholesalers in the domestic market. The amount of skipjack of good quality tuna were sold at the Quy Nhon fishing port with higher price for customers at the domestic markets.

The area of coverage is mainly at the scale of the region but two is at the province one.

Only one out of 31 companies have a minor process, consisting in freezing, in addition to trading.

- *Labour union*

Labour unions are organizations established in the companies to take care of the working life of the employees such as sickness, maternity, workers' rights ... Usually this organization only cares for the rights of employees who work long-term for the company. In only 30% of the companies, there's a labour union.

b. Production

None of the male respondents are in the skipjack business the main reason being that the skipjack tuna trade takes more time and is more labour intensive. It is considered that only women have good enough stamina and the patient to work that hard.

In Quy Nhon, the business is only about skipjack tuna and the purchasing actors are all women. When in Tam Quan, the market only concerns yellowfin and bigeye tuna.

A peak day means that people work between 7am and 11pm instead of finishing the day at 5pm. That kind of day only occurs 2 to 3 times per month.

Table 9 : Price of kilo of tuna, quantities traded per month, daily expenses and revenue for fish trading, depending on the species of tuna and gender of people.

Tuna species		**Yellowfin & Bigeye**	**Skipjack**	
Price of a kilo of tuna in 2020 (VND[4])				
	Men	83,700±823	-	
	Women	83,222±1,563	34,583±669	34,222±441

[4] Vietnamese Dong, 1 VND = 0,000043 $, 1 VND = 0,000037 €. 16/08/2020 (Source : Morningstar for Currency and Coinbase for Cryptocurrency)

Quantity of tuna traded per month (kg/ month)				
		Middle-person	Middle-person	Trader
Low month	Men	126,000± 103,409		
	Women	241,111±163,435	564,167±444,843	85,556 ± 30,766
Peak month	Men	205,000±169,984		
	Women	314,444±215,355	757,500±595,622	171,111±61531
Average month	Men	165,500±103,409		
	Women	167,778±112891	379,167±297,305	128,333±46,149

On an average month, the difference between genders in the quantity of fish bought from the fishermen by middle-persons regardless of the species, is important (Dunn, p = 0.0248). Also middle-men and women of Y&B deal with quite similar quantities of tuna (Dunn, p = 0.691). Regardless of the species of tuna and the profession, women deal with bigger quantities than men (Wilcoxon, p = 0.045) with a respective mean of : 336,500 ± 347,471 and 165,500 ± 136,615.

The quantity of skipjack traded every month by middle-women is almost twice the one of yellowfin and bigeye tuna since those are only sold during ten days on the market, yet the difference is not significant (Dunn, p = 0.076). Yellowfin tuna and bigeye tuna are catched by handline or longline with light. Fishers of Y & B go to sea as there is no moon ; from the 21st to the 9th the following month in the lunar calendar. When the moon starts to rise and shed light on the ocean, the tuna vessels return to the fishing port and sell their catch to middle-actors between the 10th and the 20th. It matches the fact that for two years now, the actors of the VC of tuna noticed a huge decrease in the population of bigeye and yellowfin due to overfishing. Contrary to appearances, the difference in the quantities of skipjack tuna traded by middle-women and traders is significant at 10% (Dunn, p = 0.0527).

Also, there is a correlation between the number of vessels owned and the volume of fish. For the skipjack, the 5 middle-women having the biggest production ($\geq$ 700,000 kg/month) all have at least 100 boats. The traders that have the widest fleet (15 to 30 ships) sell between 112.5 to 225 tons of fish per month. All the others have fewer vessels and an inferior volume of catch. When it comes to yellowfin and bigeye, the 6 persons having at least a hundred boats all produce at least 150,000 kg per month of tuna, but there's a woman that owns only 70 ships and produces monthly around 250,000 kilos.

Table 10 : Average quantities (kg/month) of bigeye, yellowfin and skipjack traded per month by traders and middle-persons

	Trader	Middle-person
Yellowfin & Bigeye	-	201,316 ± 150,691
Skipjack	430,313 ± 46,149	564,167 ± 444,843

Clearly, traders deal with smaller quantities of skipjack tuna than middle-persons according to the Dunn test, the difference is significant (Dunn, p = 0.0264), so are the middle-people trading Y&B compared to skipjack (Dunn, p = 0.0401).

c. Expenses, turnover and profit

Traders and middle-persons receive the commissions from processors (on average 2,075,000 ± 67,202 VND per ton), which includes the transportation and cleaning costs for workers and the returns (profit) for traders and middle-persons.

Usually, the commission varies between 1,800,000 and 2,400,000 VND per ton of tuna in which 1,000,000 VND paid for transporting and cleaning tuna for workers leaving 1,200,000 VND as returns for the purchasing actors.

The existence of this commission explains why turnover and expenses are the same.

Table 11 : Monthly expenses, turnover and profit from fish trading (M VND/month)

Tuna species		**Yellowfin & Bigeye**	**Skipjack**	
		Middle-person	Middle-person	Trader
Monthly expenses for fish trading (M VND / month)				
Low month	Men	1,060 ± 880	-	-
	Women	1,408 ± 970	453 ± 331	97 ± 34
Peak month	Men	1,392 ± 1,163		
	Women	2,023 ± 467	706 ± 485	146 ± 51
Average month	Men	1,725 ± 1,448	-	-
	Women	2,638 ± 1,846	968 ± 654	195 ± 69
Monthly turnover from fish trading (M VND/month)				
Low month	Men	1,060±880	-	-
	Women	1,408±970	453 ± 331	97 ± 34
Peak month	Men	1,392 ± 1163		

	Women	2,023 ± 467	706 ± 485	146 ± 51
Average month	Men	1,725 ± 1,448	-	-
	Women	2,638 ± 1,846	968 ± 654	195 ± 69
Monthly average profit from fish trading (M VND/month)				
Average month	Men	165 ± 117	-	-
	Women	262 ± 138	348 ± 142	200 ± 105

On a low month, the gap between the expenses of the middle-women of Y&B and skipjack tuna is significant (Dunn, $p = 0.046$). Among the sellers of skipjack, traders have a very lower turnover than middle-persons (Dunn, $p = 0.08$).

During the busy periods, the only significant difference of turnover at 10% is between middle-women selling skipjack and yellowfin and bigeye tuna (Dunn, $p = 0.0548$).

On an average month the turnover and expenses of traders and middle-persons of skipjack is highly different (Dunn, $p = 0.0432$), unlike the gap between middle-men and women selling Y&B.

For YB and skipjack tuna destined for exports, the turnover and the expenses are equal since the profit comes from the commissions that are given to the purchasing-actors by the processors. For the skipjack tuna that is sold on the local market, there is no commission, therefore we should have seen a difference between expenses and turnover. But the price is higher to offset.

Middle-people don't have a much higher profit than traders who buy tunas directly from fishing vessels, then sell most of it to middlemen while those purchase raw tunas directly from fishing vessels or traders and sell them to processors (Dunn, $p = 0.426$).

Middle-persons working in the skipjack business have a higher profit than the ones in the Y&B trade (Dunn, $p = 0.0328$).

Women have a slightly higher revenue than men in the YB business, yet it's not much (Dunn, $p = 0.485$).

All the respondents except for one indicated that they reinvest 51-75% and take 0-25% as profit.

It's interesting to link the revenue to the membership of a fishery-related organization : 9 out of the 11 respondents that are members of such organisations get more than 400 M VND as a monthly return. It's important to underline that for skipjack, the production of the women that earn more than 400 M VND per month is twice the average of the skipjack production. Those respondents are all middle-women.

The associations of which the interviewees are members are all at the level of the tuna industry, none are related to processing or fisherfolk.

d. Market

At the fishing port, yellowfin and bigeye tuna are sorted in 3 categories depending on weight of the fish : less than 20kg (type 3), between 20 and 30kg (type 2) and over 30kg (type 1). Then the quality management staff as known as Quality Control (QC) assess the quality of fish. If quality and weight

are the criteria of the processors, it is sold at the price agreed upon by both parties. If it does not, and is of lower quality, the price is lowered and/or is the weight of the fish (of 3 to 5 kg).

Thus, it will have a repercussion on the fishermen who depend entirely on the judgment of the middle-persons, traders and QC.

As explained in the 3.2.a section of the literature review, there are two possibilities for skipjack tuna; either (i) it is sold to processors for canned tuna, serving for exportation, which happens for the most of the production or (ii) small amounts of good quality are sold at the Quy Nhon fishing port for the domestic market

Bigeye and yellowfin tuna have the same average price of 83,474±1,219 VND per kilo where it's only 34,429 ± 598 VND for the skipjack. The price is decided by the processing company. The traders and middle-persons get a commission from the processing companies only after buying fish from the fishers. The profit that traders and middle-persons get comes from this commission (around 1M VND per ton of tuna, after deducting the expenses for handling and processing). Therefore the data of tuna revenue and expenses (**Table 11**) on an average month are the same.

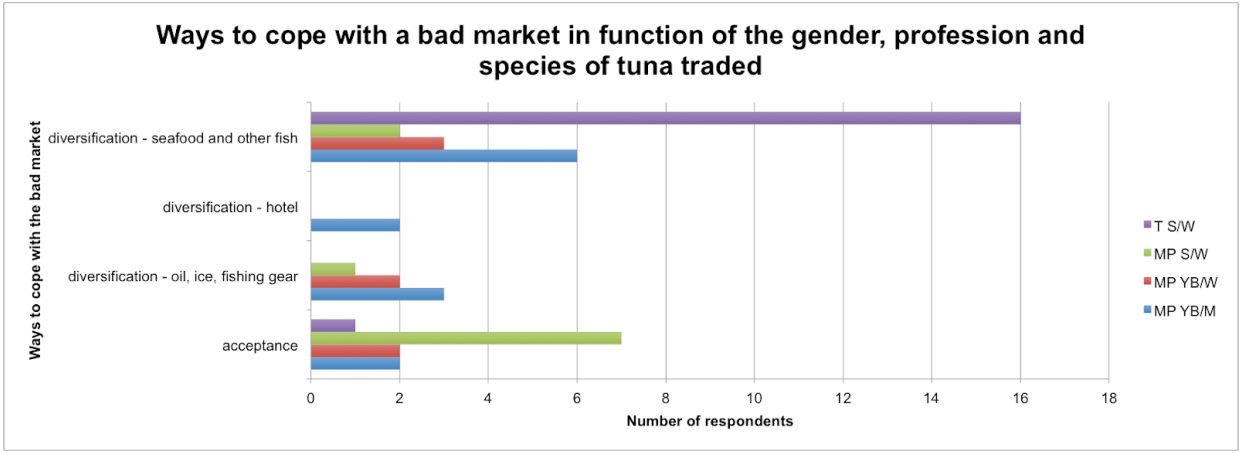
Its price per kilo being lower and the catches being smaller, skipjack (**Table 10)** is considered less valuable, the results show that no men trade that kind of fish. Therefore, we can imagine that men have access to a better market.

Market always has ups and downs, when facing bad conditions, the tuna sellers have two options : diversification and accepting the lower return.

Eighteen respondents indicated that they chose to diversify, either by selling another type of fish, seafood - those can be fresh but mainly frozen - (chosen by 78% of the people choosing to diversify) or by selling, ice, oil, fishing gear... (17%).

The rest of the respondents (15 people out of 31) choose to accept having a lower return when the market is bad.

What is also important to underline is that two of the interviewees mentioned that two years ago, the quantity of yellowfin and bigeye tuna decreased and so did the income.



T=trader; MP= middle-person, S=skipjack, YB= yellowfin and bigeye, W=women, M=men

Figure 12 : Ways to cope with the bad market in function of the category of respondents

Another possibility to cope with a bad market is to go somewhere else, in another market. **Table 12** indicates the percentage of the people that have the possibility to do so.

Table 12 : Percentage of the respondents that have the possibility to change the market and those who assert that it's easy to do so.

	Gender		Profession		Species of tuna traded	
	Women	Men	Middle-persons	Traders	Skipjack	Yellowfin and bigeye
Change	76%	50%	67%	89%	76%	76%
Easy	76%	50%	50%	89%	33%	60%

In total, two thirds of the interviewees assert that it's not easy to change markets. But we see that it's harder for middle-persons than for traders and for men than women.

4.2. Access to assets

4.2.1 Material

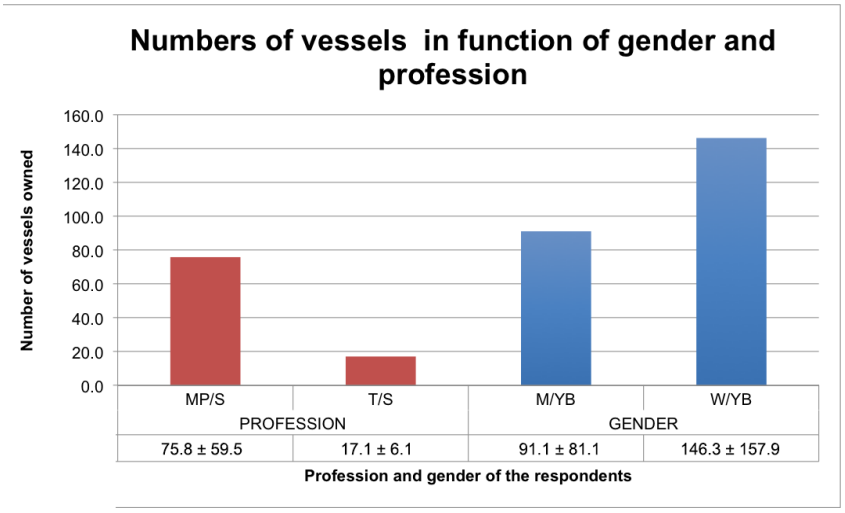
a. Generalities

- *Materials*

For women, the most important items for their jobs and to which they all have access are the cellphone, motorbike, freezer, fridge and calculator. Knives, scissors, tables, baskets and bags are also highly needed but only for the people that deal with skipjack tuna.

Ice is always needed by men and women, regardless of the species of fish.

- *Vessels*



T=trader; MP= middle-person, S=skipjack, YB= yellowfin and bigeye, W=women, M=men

Figure 13 : Means of the numbers of vessels owned by the respondents according to the species they fish, their profession and their gender

All the respondents are the owner and president or vice-president of their company and own at least 10 vessels. The differences seem really visible in each criteria that was observed : women are owners of more ships than men but that is not significant (Wilcoxon, $p = 1$) and in the skipjack business, traders have around five times less boats than middle-persons (Dunn, $p = 0.0151$). This is consistent with the fact that women deal with bigger quantities of fish every month since they have on average, more vessels.

b. Facilities

- *Storage*

Having a good storage facility is essential to preserve the quality of the fish. Seventy percent of the respondents indicate that they own a storage facility. All the interviewees that answered yes are the owner. Only 33% of men have a storage facility, against 62% of women. On the 18 female-owners of a storage facility, 8 were able to finance it by themselves and 10 had to take a loan. There is no significant difference between the number of facilities owned by traders and middle-persons.

- *Oil*

There is no significant difference in the numbers of oil shops owned by men and women whether they are working as middle-persons, traders or selling Y&B and skipjack.

More men tend to have an oil shop (88% of owners) than women (40%).

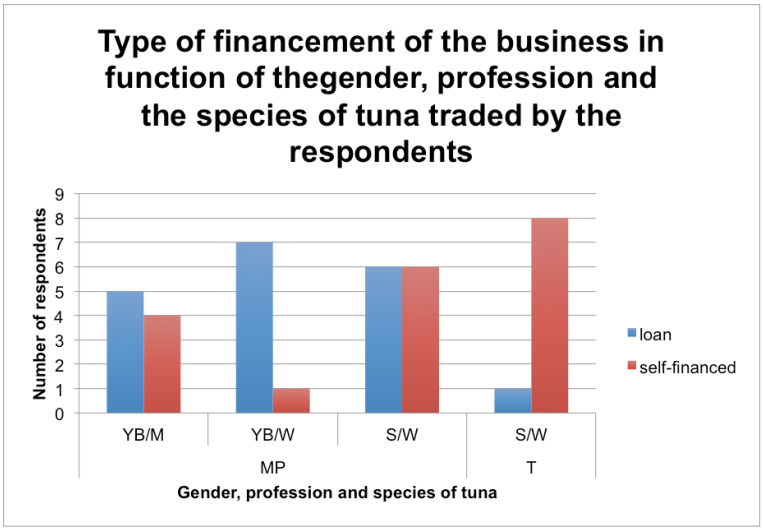
It's interesting to notice that among the 10 women that have a return higher than 400 M VND per month, 5 have at least one oil facility.

Also, the percentage of traders having an oil shop is low (20%), compared to the middle-persons (64%).

The hypothesis of women being denied possession can neither be confirmed nor refuted in the light of this information.

4.2.2. Finance

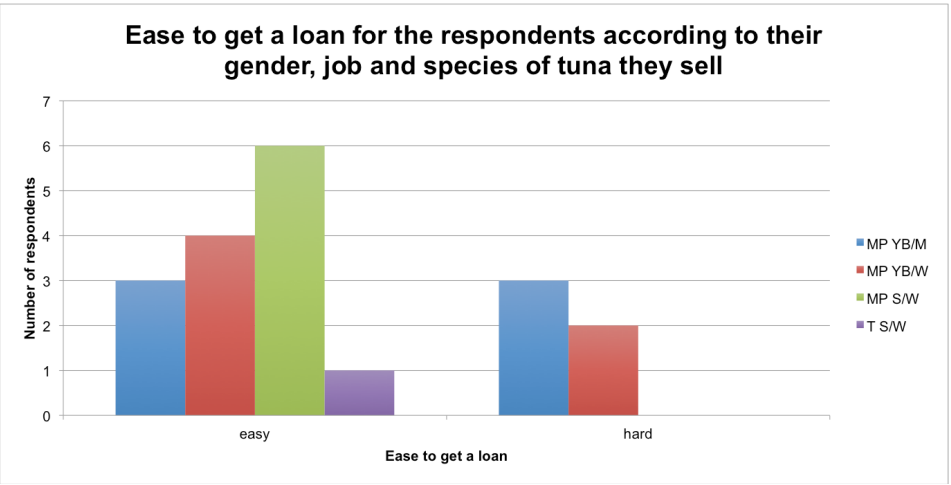
Loans are mainly used by middle-persons. The traders tend to self-finance their facilities. And women have greater use of credit when it comes to Y&B tunas (**Figure 14**).



T=trader; MP= middle-person, S=skipjack, YB= yellowfin and bigeye, W=women, M=men

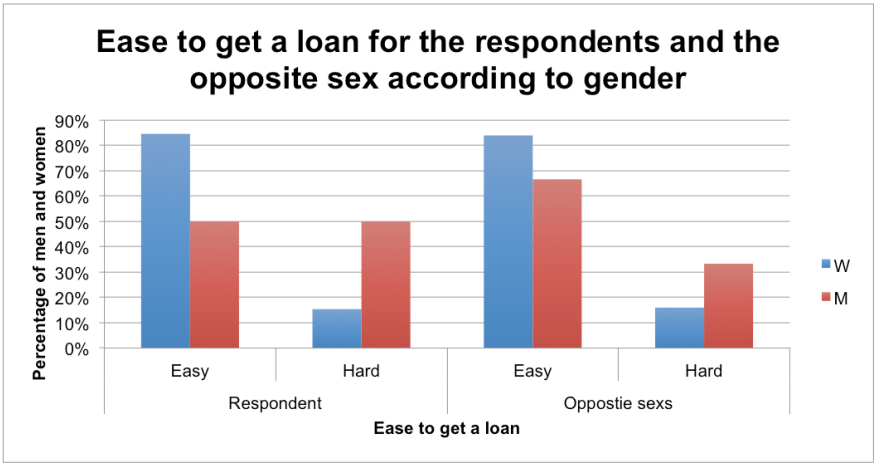
Figure 14 : Type of financement of the business in function of the gender, profession and species of tuna traded by the respondents

Among the beneficiaries, it is clear that the middle-women and traders of skipjack had easy access, yet, only 2 traders got a loan, the others were able to self-finance them or inherited the business from their families or husband's families. Also, since the traders have less collateral than middle-persons, the access to loan is restricted. In the Y&B business, the opinion is shared among middle-men : only half of them think it's simple to get credit and more middle-women attested of the ease to access it.



T=trader; MP= middle-person, S=skipjack, YB= yellowfin and bigeye, W=women, M=men

Figure 15 : Ease to get a loan for the respondents according to their gender, job and species of tuna they sell



T=trader; MP= middle-person, S=skipjack, YB= yellowfin and bigeye, W=women, M=men

Figure 16 : Ease to get a loan for the respondents and the opposite sex according to gender

Majority of women stated that it's also easy for the opposite sex to get a loan. Men believe the same but in a lower percentage.

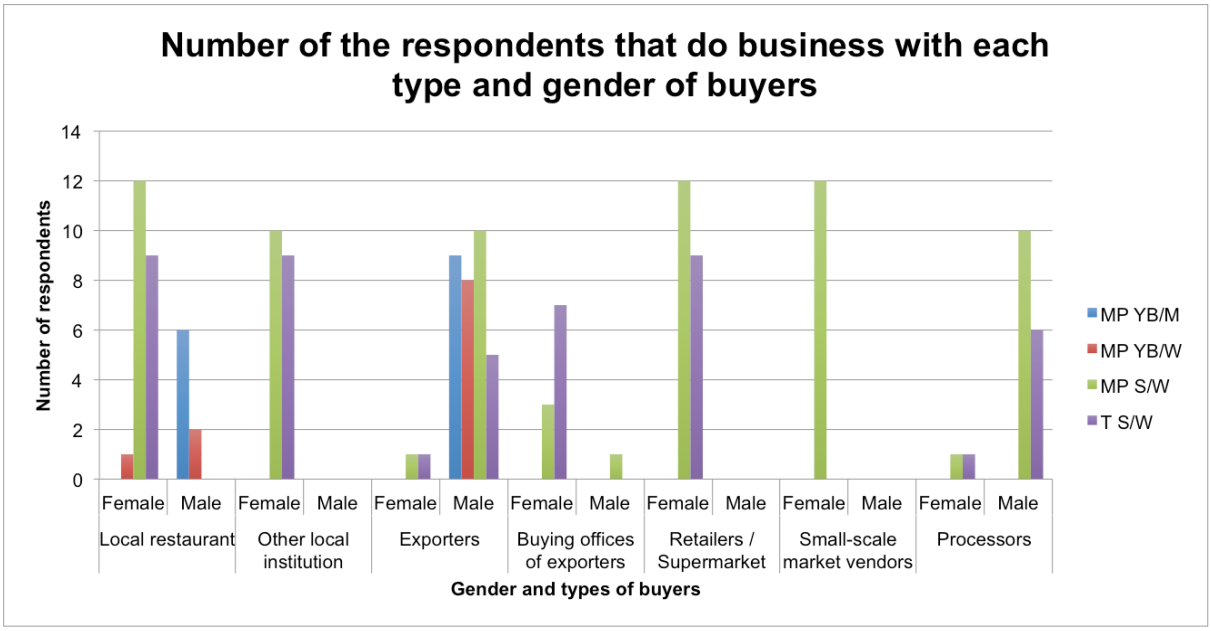
These results are at odds with the hypothesis of women having a restricted access to loan.

All the respondents that got loans, got it from banks at the frequency of once every three years.

Interviewees have a special pot of money just for fish trading, they reinvest 50 to 75% of their turnover.

4.2.3. Suppliers and customers

There are seven types of main buyers (**Figure 17**) : Local restaurants, other local institutions, exporters, buying offices of exporters, retailers/supermarkets, small-scale market vendors and processors. Men only trade with men, women do business with both genders.



T=trader; MP= middle-person, S=skipjack, YB= yellowfin and bigeye, W=women, M=men

Figure 17 : Percentage of the respondents that do business with each type and gender of buyers

In the yellowfin and bigeye middle-persons trade with 3.8±4.7% of women, while in the skipjack sector, there are 73.1% of female-customers.

The **Figure 17** shows two things : first that women have a bigger diversification of customers than men who only have business with processors, exporters and local restaurants. This observation goes against the hypothesis saying that men probably have more customers. Second, is since men don't diversify their customers much, they are more focussing on certain types (exporters and processors) that are not really sought by women. So the hypothesis saying that the best clients go to men can be confirmed if we consider exporters and processors as the best. But in general, except for the local buyers and small-scale vendors, women have their ways with quite good clients such as supermarkets, retailers and buying offices for exporters. This supports the theory that men have the biggest clients.

Still, it's important to notice that the species of tuna will impact the type of customer; yellowfin and bigeye tuna are mostly destined for exportation.

67.5% of the respondents said that they would like to have other customers but they didn't precise what kind. All the traders answered that broadening their clientele would be nice, so did 78% of the

men. Middle-women working in the Y&B business are mostly not interested (71% of no), unlike the ones working in the skipjack business (40% or disinterested).

All the traders and middle-persons allow their clients to get fresh products on credit, without any distinction of gender. Fifty percent of the customers that get credit are women. The main reason being that there is no difference in the purchase behaviour between the genders.

All the suppliers are men.

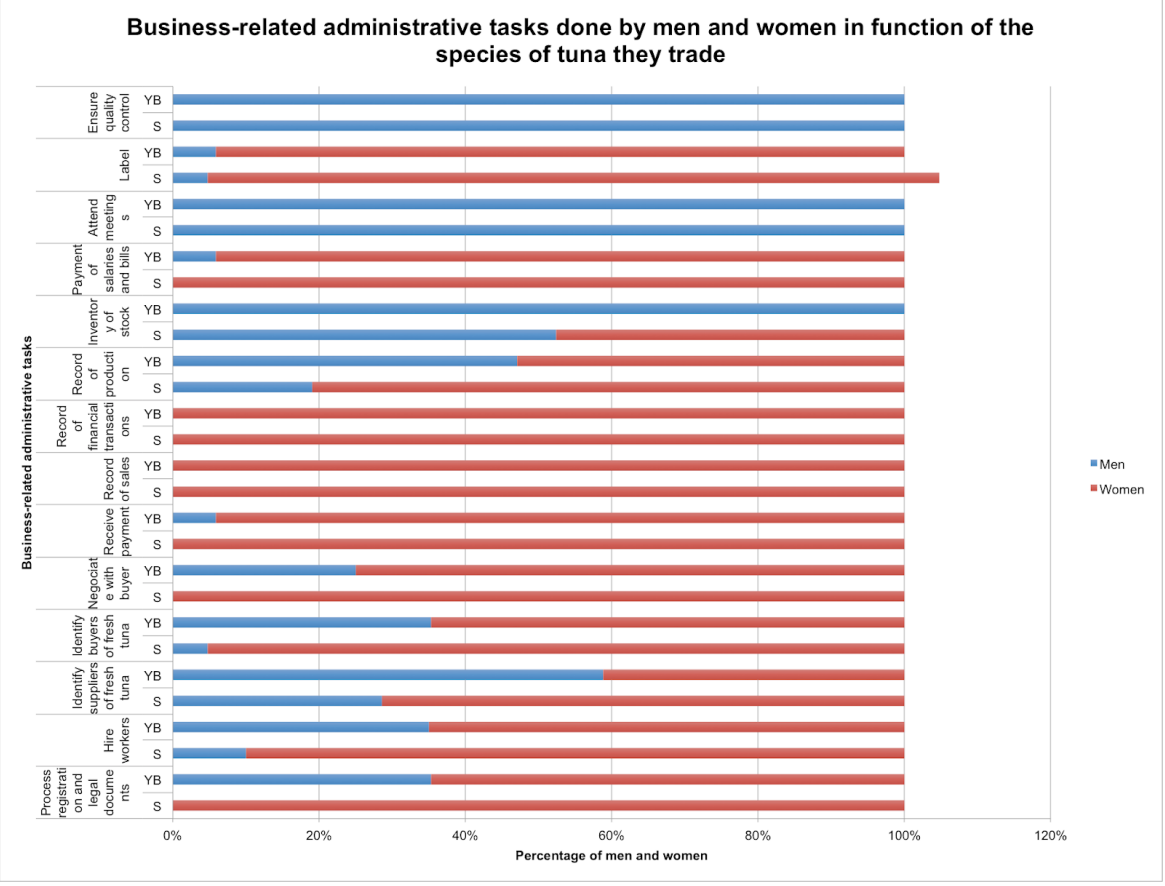
4.3. Practices and participation

Very little tasks are shared equally between women and men; only blast freezing, the recording of the production (Y&B), identifying the suppliers (Y&B) and inventorying the stock (S).

The activities that are exclusively or mostly taken care of by women, no matter the tuna species, are mostly administratives : recording the sales and financial transactions, the payment of the bills and salaries, receiving the payments, processing registration and legal documents and labelling. When it comes to maintenance tasks, women also take care of weighing, sorting and classifying the production, packing, cooking and removing guts naf gills.

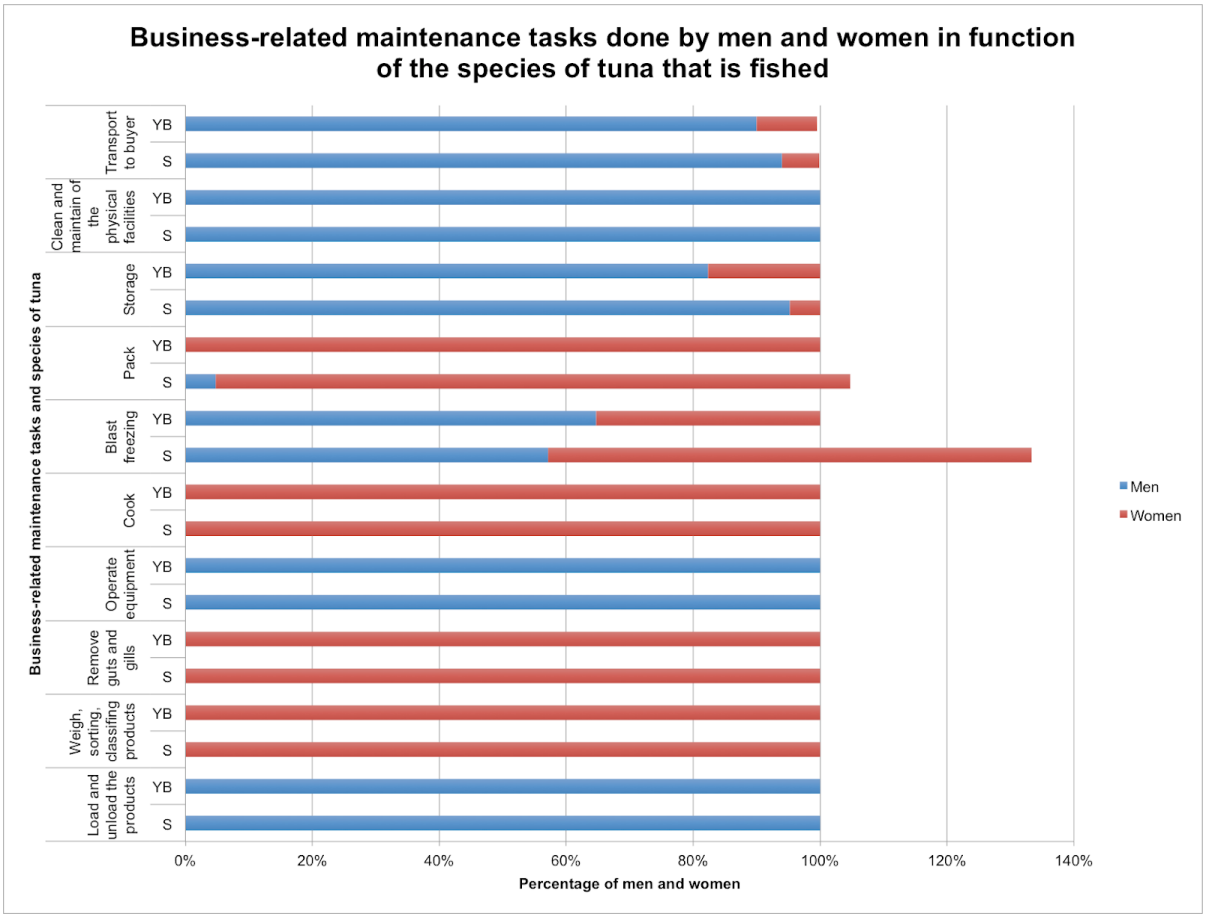
Men have more physical or maintenance tasks like loading and unloading the trucks, operating the equipment, cleaning and maintaining the facility, taking care of the storage. But some have responsibilities such as assisting meetings and ensuring the quality control and attending meetings.

Some chores are dispatched differently according to the species of tuna, for example, taking care of the stocks that are equally done by men and women that deal skipjack but done by men for yellowfin and bigeye. But hiring workers and recording the production that are taken care of by both genders in yellowfin and bigeye trade, but is done in majority by women that sell skipjack.



S=skipjack, YB= yellowfin and bigeye

Figure 18 : Business-related administrative tasks done by men and women according to the species of tuna they trade



S=skipjack, YB= yellowfin and bigeye,

Figure 19 :Business-related maintenance tasks done by men and women according to the species of tuna they trade

Women traders of skipjack tuna indicated that even though they don't have a company in which they could work with their husband, as it is the case for middle-persons, their spouses also operate at the fish market, mostly by selling oil, ice and fishing gear or managing the cold storage.

4.4. Knowledge, beliefs and perceptions

4.4.1. Skills and abilities

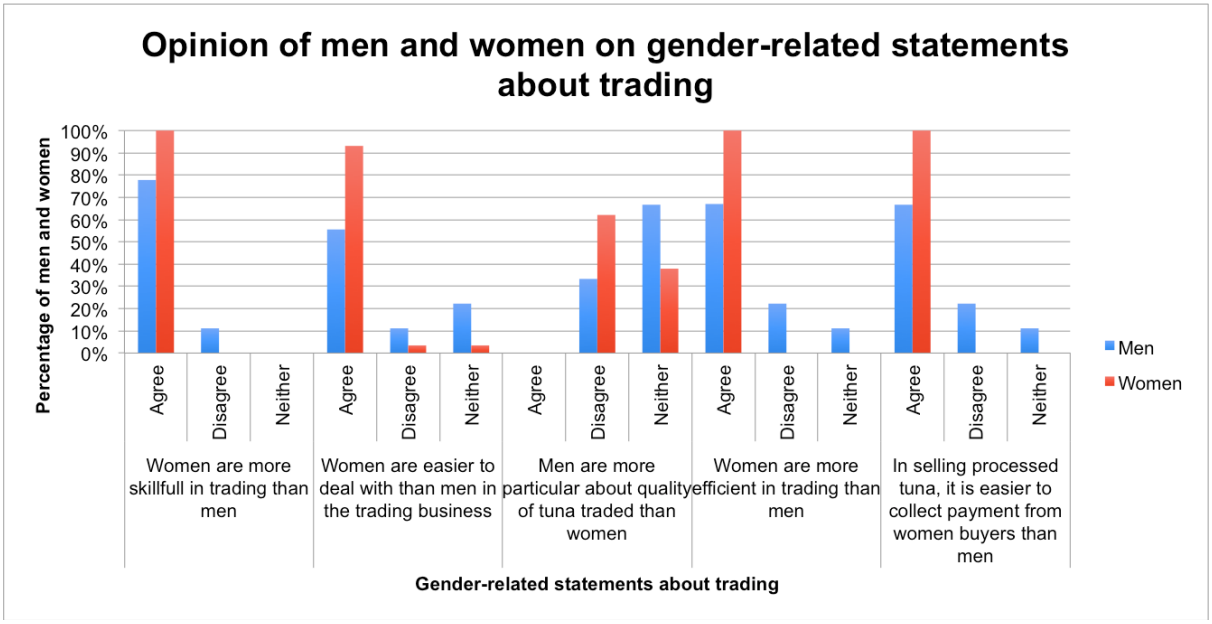


Figure 20 : Opinion of men and women on gender-related statements about trading

Five received ideas were identified.

- *Women are more skillful at trading than men*

  Everyone except for one man agrees with that statement.

- *Women are easier to deal with than men*

  The majority of the respondents, either men or women, agree with the statement, but one man and one woman disagree while two men and a woman have no opinion on it.

- *Men are more exacting about the quality of tuna traded than women*

  No one agrees with that fact, the majority of women disagree, while men neither agree nor disagree. The opinion is quite balanced between “disagree” and “neither”.

- *Women are more efficient at trading than men*

  All the women agree and two men disagree when one other is neutral on the question.

- *In selling processed tuna, it’s easier to collect payment from women buyers than men*

  As for the previous statement, every single woman out of the 29 that answered the question agreed on the matter. Men’s points of views are different : two disagree and one neither agrees nor disagrees.

So globally, in people's mind, women are more skillful at trading, easier to deal with, more efficient at trading and pay their debts more often. They perceive themselves as more exigent on the quality of the tuna than men, who do not think that they are more demanding than them.

Two reasons for women to be more involved in the small-scale trade are, first that this activity is considered unsuitable for men since small-scale traders need to be subservient to all other actors. (Kusakabe, 2006). Second, is women's "natural ability" to avoid conflict so have better skills in negotiation. (Weeratunge 2010 citing Kusakabe et al. 2006)

This is here the key to explain why this node of the tuna VC is mostly feminine and there are so little men trading fish.

4.4.2. Enjoyment of the job

When asked if they love their own job, eight arguments are evoked. The prime reasons that are given are the good and stable income, the stability of life which are the cause of happiness. Other factors influence happiness, such as freedom, working with the husband or wife and social life. Two women working as middle-person in the skipjack tuna business are the only ones that mentioned the pride of having a good job after having a low education. Also two women spoke about the fact that they find an interest in trading, they can develop some of their skills by working in this field.

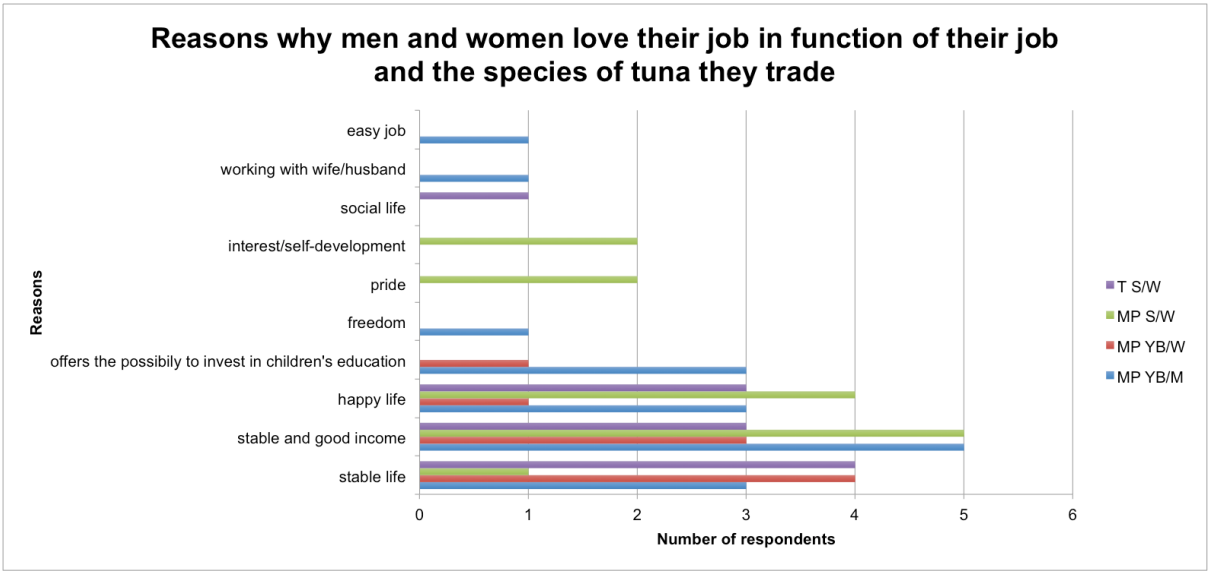


Figure 21 : Reasons why men and women love their job in function of their job and the species of tuna they trade.

But when it comes to the hypothesis of whether people from the opposite sex like their job, all interviewees said yes : either because they are going with their husband/wife, either because it's their choice of career and if they didn't like it they would have done something else or because it's a way to have a social life. The two first arguments were cited an equal number of times while the third one was only evoked by three people.

4.4.3. Income and prestige

All the respondents are satisfied with their income and consider it good. The source of revenue is mainly selling, even if some people have a complement from small processing.

One woman also mentioned that she is respected in the whole community in Tam Quam thanks to her success as a middle-woman.

The opinion on the status of fish-seller is quite divided according to the species of fish. All yellowfin and bigeye tuna middle-persons agree that it's a high status where it's half and half for the skipjack sellers, with traders tending to give a bit more consideration to their status than middle-persons.

Therefore, for the same job and species traded, there ain't no difference of judgment between genders.

When it comes to the equity of salaries, all the people that work in the Y&B business think that men are paid more than women – even though the numbers (**Table 11**) show that it's the other way around –, while in the skipjack trading, men and women are paid the same. This may be explained by the fact that yellowfin and bigeye tuna are larger than skipjack, therefore to manipulate and transport them, men are required, they have more tasks than women.

4.4.4. Hopes and fears

Majority of the respondents mentioned that they wish they could keep going on with their business like they do now for a long time. The second hope is to develop the business evoked by a higher number of men. Then the third comes the desire for stability, no surprise that the middle-persons trading skipjack are a majority; usually, skipjack-people are longing for more stability, hence the will to pass it onto their children. Only one man mentioned this last wish, showing how women are more concerned by their family.

Fears are only evoked by middle-persons of yellowfin and bigeye tuna : a man and a woman about COVID19 being a cause of drop in income and two thirds of the men about the decrease of the population of bigeye and yellowfin tuna.

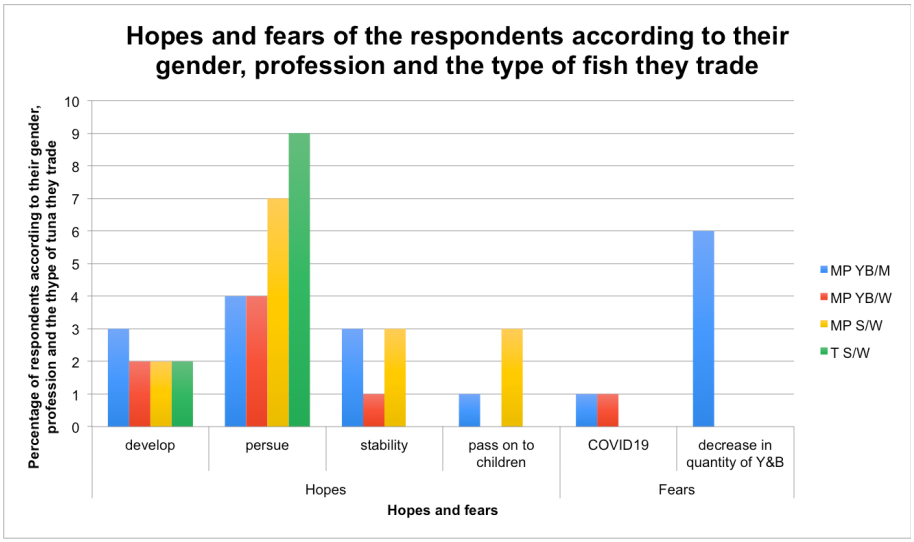


Figure 22 : Hopes and fears of the respondents according to their gender, profession and the type of fish they trade

4.5. Legal rights and status

4.5.1. Fisheries-related policies and law

The awareness about the laws and policies is quite low, though lower among men (33%) than women (41%).

If a closer look is taken on the professions and type of tuna that is traded, it's clear that middle-women in the Y & B business are way more unaware of the legal situation than middle-men or than the middle-women in the skipjack tuna trade. The traders tend to be a little more aware than skipjack-traders.

Table 13 : Percentage of awareness among middle-persons and traders according to their gender and the type of fish they sell.

	Middle-person			Trader
	Y & B / Men	Y & B / Women	Skipjack / Women	Skipjack / Women
Aware	33%	25%	50%	44%

Y&B= yellowfin and bigeye tuna

4.5.2. Pregnancy and paternity

There is no pregnancy nor paternity leave. If a woman is pregnant, she'll be treated as a normal worker. In companies, most female workers are hired seasonally or temporarily to do simple works such as weigh, sort, classifying products or removing tuna's guts and gills. It means that women must work for a salary even during their pregnancy, and the companies pay them based on the quantity of tuna that they touch.

4.6. Power and decision making

4.6.1. Decision making

a. Household-related

Female and male respondents have similar opinions on who takes the decisions when it comes to Community involvement, Discipline and Food. Those decisions are respectively taken by fathers for the two first ones and mothers for the last one, even though some men say that discipline is managed by both parents.

Decisions about education seem mostly made by mothers and fathers but a third of the men indicated that only fathers have their word to say when it comes to that.

Opinions are shared among and not between genders on who makes the health-related decisions : two third of men and half women believe that fathers are the decision-makers, when the other halves say it's mothers.

When it comes to budgeting, men tend to perceive that both parents are in charge while most women see it as a chore they have to manage.

And finally, leisure activities are managed by fathers mostly, even though a fifth of women assert that mothers are decision-makers.

Table 14 : Decision-makers in the household according to men and women in function of the decision to make

Respondent	Man			Woman		
Decision maker	Father	Mother	Both	Father	Mother	Both
Education	3	0	6	2	2	24
Food	0	9	1	0	27	1
Budgeting	1	3	5	0	20	8
Leisure activities	8	0	1	18	6	4
Health	6	2	1	12	12	4
Discipline	7	0	1	27	0	1
Community involvement	9	0	0	28	0	0

b. Business-related

There are 6 topics on which to make a decision in fish-selling : the choice of the supplier of tuna, setting the production schedule, choosing the volume of production, hiring workers, pricing of products and training.

The owners are the main deciders when it comes to business, especially if the owner is a man; he takes all of the decisions. Also, either there are no male managers or they don't have much power over decisions.

Table 15: Decisions-makers over business-related topics according to women.

Point of view of	**Men**				**Women**		
	Female owner	Husband of the owner	Male manager	Female manager	Female owner	Husband of the owner	Female manager
Supply of fresh tuna	4	5	1	1	25	3	8
Supply of non-raw fish materials	1	2	0	0	0	1	0
Finance processing operations	2	5	0	1	22	3	6
Buy of proceed tuna	1	1	0	0	2	1	0
Production schedule	2	5	0	1	21	3	5
Production volume	2	5	0	1	17	3	5
Hiring workers	3	4	0	1	23	3	8
Pricing products	2	5	0	1	22	3	5
Training	2	5	0	0	19	3	3

The three husbands helping are married to either a middle-woman or a trader of skipjack. Spouses do not help in the Y&B business, therefore the help comes from employees; mostly female-managers. That's only in that sector that they are found.

4.6.2. Fisheries-related activities

Twenty persons out of thirty-six indicated that there are fisheries-related activities or projects organised in their community; it occurs to be community activities only, there are no training, public hearing, researches, social activities, committee membership, coastal resources management nor association membership.

Very few respondents go to those events, the highest frequency of attendance is “sometimes” : 62.5% of men against 53.6% for women.

4.7. Time and space

4.7.1. Time

a. Working time

Yellowfin and bigeye tuna trade occurs only between December and June, but only between the 7th and 23th days of the month (in the lunar calendar) from 7am to 5pm. Skipjack tuna is fished all year long and sold and purchased from 1am to 8am at the fishing port every day.

On average for the yellowfin and bigeye tuna, men work a little bit more than women during peak periods with respectively 16.5±0.7 and 14.8±1.8 hours, but the difference is not significant (Dunn, p = 1). Yet, globally, men work fewer hours on a normal day than women, in the Y&B business with 4.56±0.882 against 4.88 ± 0.991. The difference is significant (Dunn, p = 0.0121).

Also, men have a purchasing team at the market but are not there in person.

In Quy Nhon, on a peak day, women spend 16.0 ± 0.0 hours a day working and during the normal period 8.0 ± 0.0, regardless of whether they are traders or middle-women.

The ratio normal / peak day is quite different for women in the two cities with respectively 0.5 and 0.33 in Tam Quan and Quy Nhon, meaning that they work two and three times less during the normal period. But the men work almost four times less between a peak and normal day, with a ratio of 0.24.

It's clear that the skipjack tuna trade requires longer hours of work and the schedule is harder because during the night and early morning and that everyday.

Table 16 : Time spent at the market and working by men and women according to their profession and the species of tuna they trade.

Profession	**Middle-persons**			**Traders**
Species and gender	YB / M	YB / W	S / W	S / W
Time spent at the market	4.8 ±3.16	6.0 ± 2.14	8.0 ± 0.0	8.0 ± 0.0
Time spent working on a normal day	4.56 ± 0.882	4.88 ± 0.991	8.0 ± 0.0	8.0 ± 0.0
Time spent working on a peak day	16.1 ± 0.333	14.8 ± 1.83	16.0 ± 0.0	16.0 ± 0.0

S=skipjack, YB= yellowfin and bigeye, W=women, M=men

All the married women answered that they would spend more time trading fish if they had less household tasks. The only single woman said she wouldn't.

Men indicated that they already spend all their time on business, even though they said that they spend time with their friends during their free time. Yet, they said that their wives would spend more time on trading if they had less tasks. This illustrates the unawareness (or the unwillingness to be aware) of men about the triple role of women and validates the hypothesis that women, only, take care of the household. Given that men work almost as much as women on peak days and less on normal periods, they have the time to help their wives who toiled all day.

b. Spare time

Spare time activities are really different for men and women : 89% of men drink beer or coffee with their friends while only 10% of women —among who one is single — are able to do so. Only 22% of men (2 respondents) indicate that they take care of children or family. 93% of women mentioned that they have to manage the household during their free time and 17% told that they sleep. So the men in Tam Quam indicate that they work four times less than women on a normal day by seeing their friends.

What is also interesting to underline is that some people told what their partner did. Six women mentioned that their husband takes some good time with his friends. Four men out of nine gave information on what their wives do (taking care of children, cooking,...) during their spare time. But only two of them complimented their wives hard work besides the job.

c. Evolution

Over the years, the income increased for all people selling skipjack. Those past two years, in the Y&B business 40% of the middle-persons in Tam Quan noticed a drop in their revenue. It can be explained by the fact that those two past years, the quantity of bigeye and yellowfin tuna decreased a lot. Yet, compared to their parents and grand-parent's, their revenue is way higher since yellowfin and bigeye tuna are destined for exportation which wasn't the cas before.

4.7.2. Space

The main reason for choosing the market place is the small distance with the house; 13 women mentioned it and 2 men. Others spoke about the habit

Only one man and one woman have a car which means that 89% of men and 93% of women go to the market by motorbike.

If the average distance between the house and the market is different in function of the gender : 4.72 ± 2.07 km for women and 5.67 ± 2.0 km for men, which is not significant (Wilcoxon, $p = 0.151$)

4.8. Limits and bias

Comparing the disparities of the profession between genders regarding the city (or the species of tuna) is impossible because there are no male-traders of skipjack and there are no traders of yellowfin and bigeye tuna.

Women interviewed tend to speak for their company and not for herselves. Therefore there can be a bias. This is particularly the case for married people, who responded for the couple. The answers are therefore not individual for the two pairs of spouses.

This can give a good insight on how the Vietnamese society thinks : women do not “exist” as individuals but either as part of a couple or a spouse.

4.9. Comparison with the Philippines and the Solomon Islands

4.9.1. Socio-demographic profile

In General Santos City Fishing Port, men working as traders (brokers, *jamboleros*, dinancers, suppliers, scalers, dispatchers and recorders,...) dominate a huge part of the market where the big tuna fish are traded in bulk or in kilos : the personnel accounted for 76.8% of men and 23.2% of women in February 2017. The study conducted by WINFISH interviewed 45 traders-respondents : 51% of men and 49% of women.

Unlike in Binh Dinh province, there are less married traders in General Santos (74% of women and 64% of men against 97% and 100%). Also, women are more educated than men with at least 9 of them who attend college.

The revenue in the Philippines is not enough to ensure a comfortable living to the at-least five-people households. Male-traders earn P9,375.00 (VND 216,388,416; 192 USD) and female P7,955.00 (VND 183,612,784; 163 USD). In Vietnam, the respondents are satisfied with their income which is higher.

In the Solomon islands, a good catch can be sold between 500-1000 $, and traders can earn 2000 to 3000$ during the good season, unfortunately, the species wasn't mentioned.

4.9.2. Six domains of Gender Analysis

a. Access to assets

In Binh Dinh, 62% of the respondents have access to a storage facility when it's only the case of 49% of traders in the Philippines, and the women that have access to it have to bow to their husband's will and final say on the matter pertaining to use.

Unlike in Vietnam, the fish traders in Philippine are mostly men and when their spouses help them, half of the time they don't get any revenue for their work. Also, the participation of minors (sons and daughters) to the tasks of the trading enterprise is considered as family labour. Where in Vietnam, children do not take part in business.

Hiring workers on a contractual basis is preferred to permanent employees in the Philippines and Vietnam. Women are hired for tasks such as removing guts and gills and men to carry fish for example.

In General Santos City (GSC), women have a wider range of sources of price, technology and market information than men. In Binh Dinh, people do not seek such information.

A big difference between the two countries is the trader's customers : in Philippine, women mostly sell to households (which never happens in Vietnam) since they are tied to the household chores, unlike men that benefit from more profitable buyers. Vietnamese female-sellers have a broader array of customers, yet men still have an easier access to a better market.

There is no mention of the access to assets in the Pacific Communities report.

b. Practices and participation

The similarity between the Philippines and Vietnam is that women do more administratives jobs and men do the physical tasks. But in GSC they also are in charge of the marketing (finding buyers and suppliers) where in Binh Dinh province, this is a more or less shared between genders activity.

Very few people are aware of the fishing-related projects in their communities, and among those who are, even fewer took part in it, in both countries.

In the Solomon Islands, the fishers sell their production themselves either in Honiara, 2-3 times per week if they are able to go there, or to local restaurants, on the roadside, to dealers that will trade it in Honiara. Seventy-six percent of the suppliers to Honiara are male sell fish. Women are active sellers of other sea-products.(Boso, 2018) In other villages, the whole family goes to the market. Women can sell food and earn a bit of money, they love going there for social life.

A shift in the practices has been noticed these past couple of years in the Solomon Islands : men started to take part in some of the household chores and women picked up fishing due to population increase.

“Women’s greater responsibility for household food production and their lack of participation in decisions relating to farming and fishing have significant impacts for household food security.” (Boso, 2019) When it comes to decisions relative to the management of marine resources, women are never involved unlike men that are always or sometimes.

c. Knowledge, beliefs and perceptions

In General Santos, “Both male and female traders have limited knowledge about tuna and fishery regulations. Increasing the level of knowledge among the traders is necessary to ensure the sustainability of their trading operations and promote the sustainable fisheries management with the end objective of strengthening the competitiveness of the tuna value chain.” (WINFISH, 2018) It is also the case in Vietnam, a precision has to be made : women than men about fishery regulation.

In the Philippines, women are perceived as very meticulous in their work and better at negotiating and easier to deal with, but men still consider themselves as more demanding on the fish quality. Winfish’s study showed that these positive beliefs were the door gate for a better appreciation of ladie’s work in the value chain of tuna. The salaries seem equal in people’s minds even though the men’s revenue is higher due to the additional tasks they are able to perform. The qualities of both genders suit more or less the employers for hiring them : men can record and do physical tasks when women are more meticulous and trustworthy. Vietnamese trading-actors have the same thoughts.

The male Solomon Islanders acknowledge that women are better at budgeting and saving money than men.

d. Legal rights and status

In neither Vietnam nor the Philippines a maternity (or paternity) leave. Therefore, during that period of inactivity after giving birth, the income only comes from the husband. They either have to work more to offset the loss of revenue hence be less present at home or urge their wife to go back to work as soon as possible.

The Solomon Islands report doesn't mention the legal rights and status dimension.

e. Power and decision making

In the Philippines, the profit earned by men is usually handed over to their spouse who is in charge of budgeting in the family even though they are obliged to sometimes ask for their husband's opinion to respect his position of head of the household. It never happens that men consult their wives on matters that pertain to business.

The needs and contribution of women to the Solomon Islanders fisheries is often overlooked since men are the main liaisons with the fisheries agents.

In Binh Dinh province, men see budgeting as a joint chore, unlike women that perceive it as something they have to handle by themselves.

Discipline is imposed by both parents but education and community involvement depends either on mothers or father, depending on the family. In Vietnam, discipline is under the responsibility of men, so is the community life. Education though is managed by both parents.

In the Solomon Islands, budgeting for the household is holded by men and women and so are the ones related to marketing and income.

"Clearly roles in decision-making vary from household to household and subject to subject." (Boso, 2019)

f. Time and space

On average, in GSC, men spend nearly 12 hours a day working and women more than 12. Nine of those hours are dedicated to fish trading, the rest is for additional productive activities for increasing the income of the household. In Vietnam, the time spent working depends on the species of tuna traded, therefore the work time varies between 4.5 and 8 hours/day during the normal period.

Regarding the household management, the Filipino fish traders seem to have a more balanced way of life since both parents cook and raise children, even though most of the chores are the wife's burden : cleaning, laundry, helping the kids with homework,... cause in Vietnam husbands all acknowledged that their free time is spend on drinking beer or coffee with their friends and most of them have very few or no chores at all. It's important to notice that the way things are conducted in General Santos are against the traditional culture in which women are assigned to home duties. But those ladies do not let this straitjacket prevent them from working and encroach on their business time.

What emerges from the WINFISH study and ours is the fact that women work more hours in the trading-business and at home. This impinges on their well-being and reduces their social opportunities.

5. Conclusion

5.1. Gender disparities

The two major disparities between men and women pertain to :

- the **career** : no man is working as a fish trader which is an inferior position and entails less responsibilities, providing a lower revenue.
- the **species** of tuna traded : men are only found in the Y&B business.

Men tend to choose a softer market that doesn't require much details.

Other differences are found in the general information about the respondents such as the level of education – which is higher for men than women – and the age at which they had their first child, women earlier than men.

But also the reasons for choosing this profession. The reasons that led to the choice of career. Tradition and relation with fishers and processors lead the men to being middle-persons. When what drew women to selling yellowfin and bigeye rather than skipjack tuna is the ease and the fewer work hours.

As well as, in the quantities of fish traded : men deal with lower volumes of tuna than women, regardless of the job and species. Otherwise, there is no significant difference between middle-men and women in the Y&B sector.

Some assumptions were made for the research objectives, saying that the major disparities were more likely to be found in the USAID's *Access to assets*, *Practices and participation* and *Power and decision making* dimensions.

The hypothesis that women are denied access to capital is disproved by a few facts.

First, women have on average more boats than men which is in line with the fact that they trade bigger quantities.

Second, it is more common for a lady to access a loan. Men are able to self-finance their business thanks to the traditional system providing them bequest and legacy from their parents. The fact that more women are benefiting from credits from banks means that shows that there is no connection between having access to loans and therefore being able to invest to get higher value products. Yellowfin and bigeye tuna being destined for exportation, the profit therefore the profit resulting from that trade is higher than the one from the skipjack tuna trade. Since men are only working in the yellowfin and bigeye tuna business, we can conclude that they operate in a better market and have bigger customers, also they only trade with men, where women deal with both genders. The diversification of customers is an asset for resilience that women benefit from. It goes against the theory that men have more buyers.

Despite that, ladies working in the Y&B business consider having a less substantial revenue than men, the latest operating different activities since not directly working in the fish trading.

The three other dimensions of USAID gender analysis showed disparities between gender.

Men mostly evoked “a good relation with the customer and suppliers” has a reason why they started their job; it's quite representative of the fact that most of them spend their free time with their friends drinking coffee and beer, as they call it “socializing for the good of the business”.

Ladies have no time for themselves, every second is either spent on work or managing the household. Despite that, they still love their profession shows the power of the society. Never an interviewee mentioned that they don’t like their job because of the lack of free time. The prestige that comes with the good income is the only factor that accounts for job satisfaction.

The salaries are equal for the same job. Men are earning more only in the yellowfin and bigeye tuna business thanks to their physical advantage – of usually being stronger –, needed to manipulate the big catches.

5.2. Roles of women

5.2.1. Productive role

Two reasons for women to be more involved in the small-scale trade are, first that this activity is considered unsuitable for men since small-scale traders need to be subservient to all other actors. (Kusakabe, 2006). Second, is women's "natural ability" to avoid conflict so have better skills in negotiation. (Weeratunge 2010 citing Kusakabe et al. 2006)

Women are given tasks that require more responsibility and tact such as negotiation, receiving payments or recording the financial transactions with suppliers and customers since they are perceived as more patient, efficient and diligent than men.
This is here the key to explain why this node of the tuna VC is mostly feminine and there are so little men trading fish.

Yet when husband an wives are running a company together, the man tend to be in charge of being aware of the legal rights and status.
The nonexistent maternity leave makes women totally dependent on their husband's revenue throughout the period of time they don't work to take care of the household.

5.2.2. Reproductive role

Regarding the free time, it's unusual for women to have some. They clearly specified during the interviews that if they're not working for the trading business, they are taking care of the household. Also, if they'd have more time, they'd spend it on working for the company.

The decisions concerning the household are shared between both parents, even though women are spending all their free time taking care of it. Mothers only have the final word on food and budgeting. Discipline, education, leisure activities and health are the responsibilities of fathers. Therefore even in a place where they are supposed to be in charge, men overtake them and dominate.
Two arguments support the fact that women always keep the well-being of the family in mind. First, a lot of them mentioned a stable life and income as a reason why they love their job. Second, they are more wanting a healthy business to be able to pass it onto their children. Yet, more men talked about investing in children's education.

5.2.3. Community managing role

The results show that fathers are in charge of the community involvement, and a majority of the respondents indicated that they sometimes go to fish-related community activities.

There is no such thing as managing the common resources; except maybe for the quantities of yellowfin and bigeye tuna in the ocean. When it comes to the future of the tuna fishing business, men are more worried than women about the decreasing quantities of Y&B in the ocean.

The social life and relations in the community in this sector is ensured by men in their free time.

Appendix

Appendix 1 : GDP growth of Vietnam between 1985 and 2018

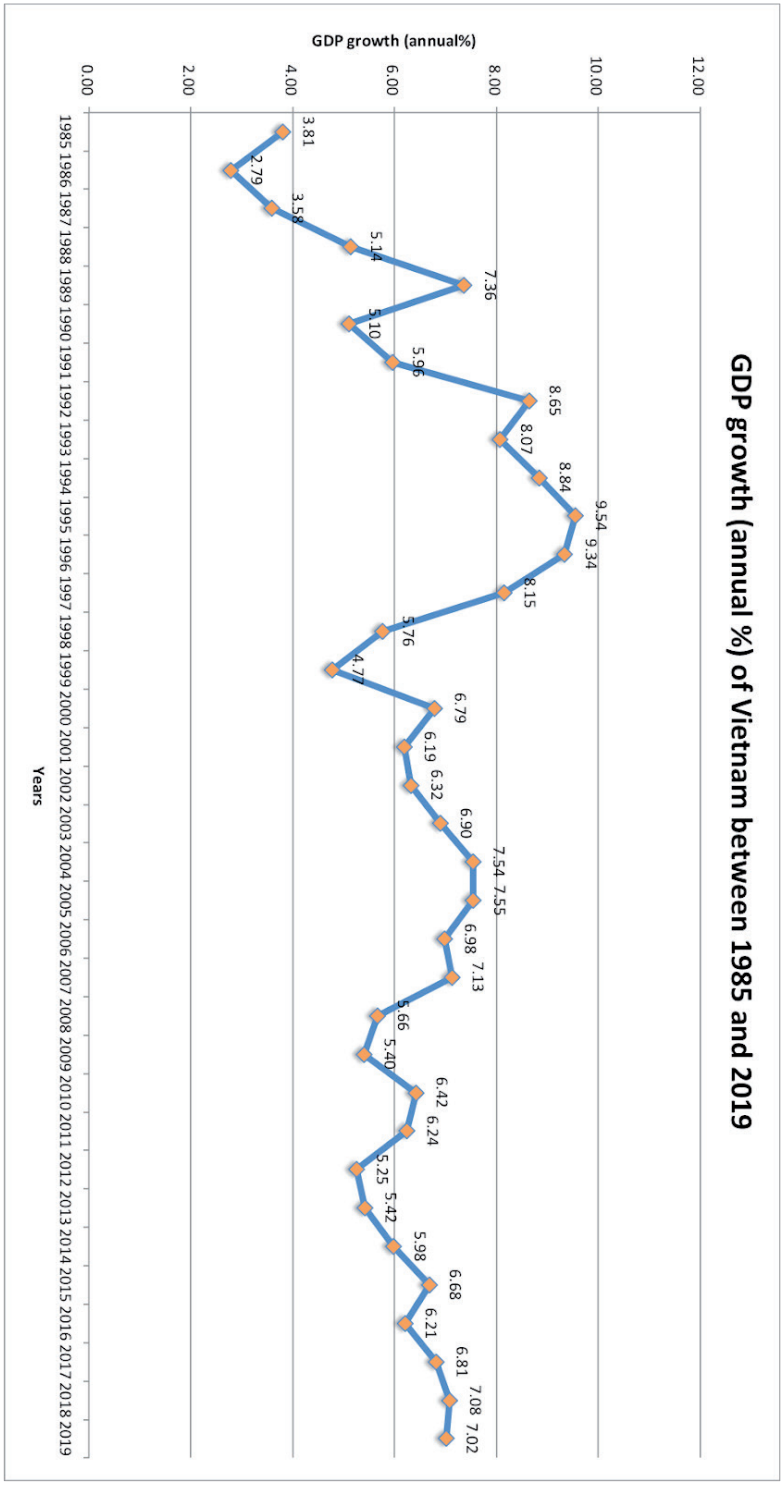


Figure I: GDP growth of Vietnam between 1985 and 2018
Source: World Bank national accounts data, and OECD National Accounts data files.

Appendix 2 : Simplified version of the tuna value chain

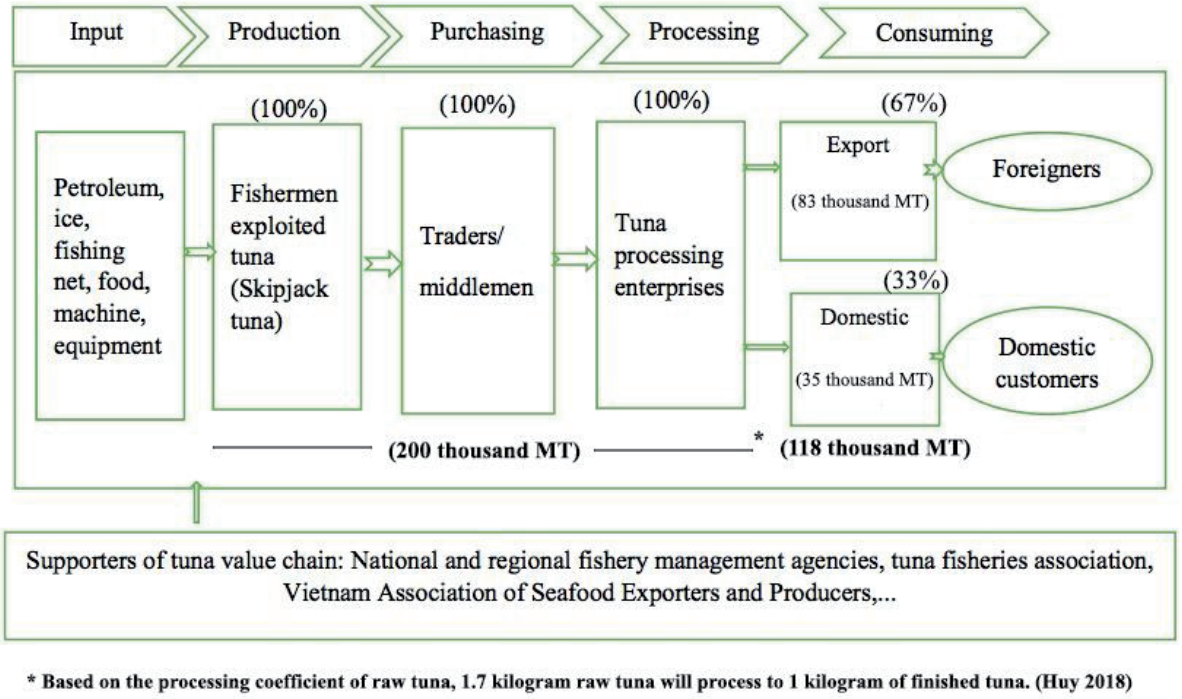


Figure II : Simplified version of the tuna value chain

Source: Huy 2018 modified by Sundar Raj 2020

Appendix 3 : Harvard's framework tools

Tool 1: Activity profile

The core of this component lies in the question: *Who does what?* It can be put in a table like the one here below. Activities are split into the two roles described earlier: production and reproduction.

Table I: Example of Harvard Tool 1 : Activity profile

Activity	**Women / girls**	**Men / boys**
Production - Fishing - Income-generating - Employment - Other		
Reproduction - Water-related - Fuel related - Food preparation - Health-related - Cleaning and repair - Market-related - Other		

Source: A Guide to Gender-Analysis Frameworks, Oxfam, 1999, p. 33

Genders may be more detailed if needed by bringing the age factor for instance. The proportion of time allocated to each activity can be mentioned (%), as well as the location in order to reveal the mobility.

Tool 2: Access and Control Profile - resources and benefits

The second tool links access and control to gender as well as to resources and benefits in a matrix (table 2)

Table II: Example of Harvard Tool 2: access and control profile

	Access		**Control**	
	Women	**Men**	**Women**	**Men**
Resources - land - equipment - labor - cash - education - other				
Bénéfices - outside income - assets ownership - basic needs - education - political power/prestige - other				

Source: A Guide to Gender-Analysis Frameworks, Oxfam, 1999, p. 34

Tool 3: Influencing factors

Pointing out the former and present influences may help design future trends. This is the aim of the third component. It also underlines the constraints and opportunities for increasing involvement of women in development programs and projects.

Table III: Example of Tool 3 Harvard: Influencing factors

Influencing factors	Constraints	Opportunities
- Community norms and social hierarchy - Demographic factors - Institutional structures - Economic factors - Legal parameters - Training - Attitude of community to development workers		

Source: A Guide to Gender-Analysis Frameworks, Oxfam, 1999, p. 35

Tool 4: Checklist for Project-Cycle Analysis

It is a list of several questions tailored to examine a project proposition and the range of intervention from a gender point of view by the use of disaggregated data in order to understand the many effects of a social change on both women and men.

A complete list of the questions can be found on page 36 of the Oxfam report (1999), for each step of the project cycle. Here are only the headlines.

- Identification: Assessing women's needs, defining general project objectives and identifying possible negative effects.
- Design: Project impact on women's activities, project impact on women's access and control
- Implementation: Personnel, organizational and structures, operations and logistics, finances and flexibility
- Evaluation: Data requirements, collection and analysis

Appendix 4: Moser's framework tools

Tool 1: Gender roles identification

Moser's framework identifies one more role in the addition of the two ones detailed in the previous section: the community role. It can be described as a (mostly volunteer) work that supports and enables cultural and social events and services. It is seldom taken into account in economic studies even if it is done on the women's "free" time and that it requires labor.

The question "*Who does what ?*" is the key to map the household-required work (by all its members, including children) on twenty-four hours helps to identify those roles. Furthermore, it is the starting point to assess how much time is allocated to each role (*see tool 4*).

Tool 2 : Gender needs assessment

This component aims to assess the gender needs detailed in the *Key Concepts* section. To do so, the table here below (table XXX) helps match the needs and the roles.

Table IV : Gender needs assessment chart for case studies - Source: ILO 1998

Project	*Role on which focused*						*Gender needs met*			
	Intention			*Actual*			*Intention*		*Actual*	
	R	P	CM/P	R	P	CM/P	PGN	SGN	PGN	SGN

R = reproductive, P= productive, CM = community managing, PGN = practical gender needs, SGN = strategic gender needs

Tool 3 : Disaggregating control of resources and decision-making within the household

The main questions to ask here in order to desegregate information about access and control over the assets in the household (by sex) are: *Who makes decisions about the use of the resources? Who decides what? Who controls what?* and *How?*

Tool 4 : Linked planning for balancing the triple role

This tool aims to identify how women juggle with their three roles and also how do the measures of a program impact the allocation of the time for each role. Unfortunately it usually mainly focuses on women's productive one, hence a misconception of women's capacity to increase their productivity.

Tool 5: Distinguishing between different aims in interventions : the Women in Development and Gender and Development policy matrix

The fifth tool is used in the evaluation part of the cycle of a project or program mainly to clarify where the weaknesses, constraints and pitfalls are. The question asked here is: to what extent do the interventions meet the practical and strategic gender needs ?

Tool 6: Involving women, and gender-aware organizations and planners, in planning

It is important to force oneself to involve women, gender-aware organisations and the planners themselves in the planning. It must be done at every step of the project cycle, except maybe the evaluation.

Appendix 5: Social Relation Approach concepts

Concept 1: Development as increasing human well-being

Human well-being is broadened to survival, security and autonomy and not restricted to economic growth or high productivity.

Concept 2: Social relations

The social relations shape the way people behave and act in society as it assigns them roles, rights, responsibilities, and claims over others.

Concept 3: Institutional analysis

Gender inequities root not only in the household but also in state institutions, markets and the international community. Those are the four main institutions, they have rules, resources, people, activities and power all of which engender social relations. Also it challenges the neutrality of the ideology and independence of institutions.

Concept 4: Institutional gender policies

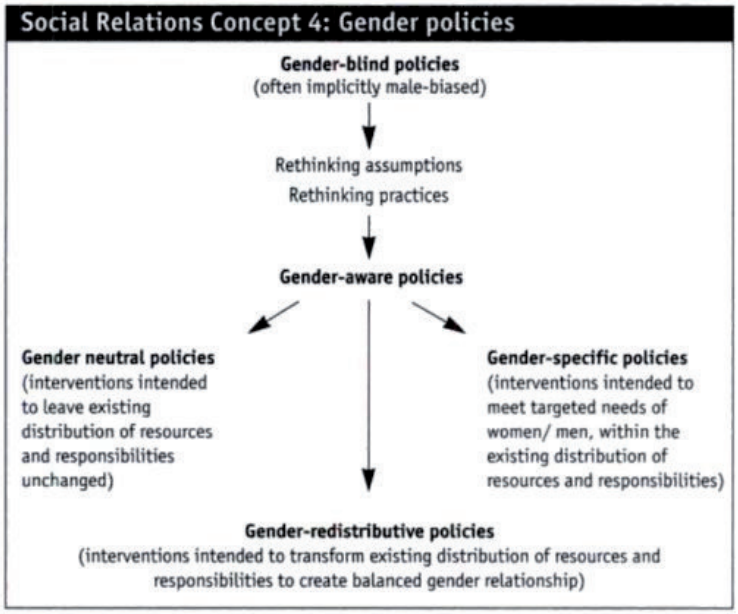


Figure III : Social Relations Concept 4 : Gender policies - **source**: A Guide to Gender-Analysis Frameworks (Oxfam, 1999)

Concept 5: Immediate, underlying and structural factors

While analyzing planning, immediate, underlying and/or structural factors have to be examined thoroughly to identify whether or not they are causes of problems or if they have any impact on people involved.

Appendix 6 : Other frameworks of a gender analysis

- *Gender Analysis Matrix (GAM)*

That framework aims to pinpoint the impacts of development interventions on women and men by using a community-based technique to identify the differences between genders. It also encourages the community to start the analysis by themselves and challenge its assumptions about gender. It can be used at any stage of the project-cycle.

But unlike other frameworks, it is designed to be used by the members of the community itself.

Two tools are used in this method and can be combined in a matrix.

Table V: Example of Gender Analysis Matrix

	Labor	**Time**	**Resources**	**Culture**
Women				
Men				
Household				
Community				

Source: A Guide to Gender-Analysis Frameworks, Oxfam, 1999, p. 69

Criteria can be added on the column, for example age, class, the color of skin,...

- *Women's Empowerment (Longwe) framework*

The creator of this framework (Longwe) claims that the inequities between genders and women poverty are not due to a lack of production coming from women but rather to oppression and exploitation. To tackle that problem and enrich women or at least lessen their poverty, they must be empowered.

To do so, Longwe has imagined five levels of empowerment, each with a different strength :

- Control: equal control over in decision-making over factors of production.
- Participation: equal participation in decision-making processes related to policy-making, planning and administration.
- Conscientisation: reaching an equal awareness of the existence of a difference between genders and that it has cultural causes that are therefore alterable.
- Access: equal access to the factors of production (land, work, training, market and so on) - in order to impact this level, equity of opportunities is required. Therefore some laws and administrative practices have to change to get rid of any form of discrimination.
- Welfare: equal access to material welfare (food supply, income, medical care) relative to men

The keyword here is equity, so it means that no genders take precedence over the other.

The best intervention is not the one that has an impact on every level, it should concentrate on the higher ones because the lowest ones offer less chance to foster empowerment.

- *People-oriented planning framework (POP)*

This framework has been designed for crisis situations. Therefore it won't be used for this study, hence no need to linger on it.

Though here are the main lines to know about the POP framework. The main purpose is to ensure equity in the distribution of resources and services. The framework relies on three pillars : change of livelihood, the participation of the refugees to the project and the importance of analysis.

It shares some of the HAF's advantages and disadvantages, such as the ease of use and adaptability or the fact that it has been developed from an efficiency perspective, rather than an equity perspective.

- *Capacities and Vulnerabilities Analysis framework (CVA)*

This framework is the other one designed for crisis situations : it aims to facilitate the assessment of the endangered population's needs in order to meet them directly and also to increase people's long-term socio-economic development efforts.

Appendix 7 : Making a gender-sensitive value chain map

A few tools are designed in order to draw a gender-sensitive value chain map.

It aims to make the women visible in any value chain as they are often set aside because women-owned businesses are considered as too small and not enough contributing to the chain since they are not competitive enough.

Tool 1

Step 1

Two main questions are the guidelines of the hypothesis: *Where are the women in this value chain, what do they do?* and *What are the characteristics of a map that convince stakeholders and decision-makers of the importance and opportunities of women in VC upgrading?*

The hypothesis will indicate which mapping route to follow or what route to design. They have to treat the subject of how women participate in the VC.

Step 2

To be able to draw the value chain to get a full picture, it's important to identify each link. While choosing the women to interview, it's essential to keep in mind to pick some at very different levels such as leaders and small-scale informal businesswomen. This will prevent a biased point of view of the VC.

Tool 2

« This tool is focused on changing the perception (self-perception and perception of others) of women's contribution to farm and family business economics and chain upgrading, as a first step to position women as important and equal economic actors in farm, business and value chain development. This tool is especially recommended when working with male-dominated value chains. » (Sanders, 2014)

This tool follows 4 steps but before starting, the participants have to « have clear market vision and can define product quality in terms of market requirements » (Sanders, 2014)

Table VI : Steps of the second tool of Making a gender-sensitive value chain map

Step	Setting	Questions / Activities
1	Group work	How do women and men contribute to the quality of the product? What benefits do women receive for their work with this product/ in this value chain?
2	Group work	Are the benefits distributed equally between men and women? Are they proportional to the workload?
3	Plenary session	Outcomes of the group work will be discussed. Women and men have the chance to give their opinion about the results and their participation as seen by themselves. It is also the time to perceive how it can impact the upgrading of the VC.
4	Plenary session	Does the fact that women receive less benefit than men for their work, affect the volume and quality of the goods in the value chain? How? What proposals do you have for improving women's benefits

Some recommendations

One of the purposes here is to open the dialogue between men and women so the former can be listened to. So their work and the inequities can finally be seen. Therefore women must be heard and given the right to speak as much as men.

Connecting «issues on the chain's upgrading and growth with gender gaps and gender constraints.

Tool 3

This tool aims to map activities and gender-based constraints. This will give insight into the division of work. Beforehand, the participants have to get a clear picture of the value chain.

Table VII : Steps of the tool 3 of the Gender-sensitive value chain

n°	Step
1	Identifying every actor of the VC by completing the first column of the table xxx
2	Pinpointing all the activities that each actor does as well as all the responsibilities incumbent upon them. This relates to the 2nd and 3rd columns of table XXX.
3	Identifying the constraints related to each activity that men and women are likely to face. It's the last column of the table.
4	Analyzing the constraints found in the previous step by completing the second and third columns of the table VI
5	Imagining actions that could limit the smooth running of activities. To do so the last column of the second table has to be completed.

Table VIII :

Actors by Value chain Nodes	Description of activities under each node of the Market Chain	Responsibilities/ roles and level of implication by gender		Which constraints are faced that limit access and control of resources for the activity carried out, by gender	
		M	F	Male	Female
Input Supply					
Production					
Processing					

Source: Sanders 2014 citing Terrillon 2013

Table IX :

Gender based constraint(s)	Consequence	Cause/Factor leading to Gender based constraint	Actions to address Gender based constraints
Input Supply			
Production			
Processing			

Source: Sanders 2014 citing Terrillon 2013

Appendix 8 : Questionnaire for traders an middle - persons

Questionnaire - Tuna value chain - Traders & Middle-persons

Many of the questions were taken from the USAID gender analysis of the fisheries sector in Genderal Santos, Philippines (2018)

Screening Questions

A) Is your enterprise/company involved in buying and selling (trading) tuna either in the local market or export markets ? (For middle-persons only)

O Yes O No

Yes : proceed to question B
No : end interview and replace respondant

B) How would you rate your level of knowledge about the trading operations of yout enterprise/company ?

A - Excellent
B - Very Good
C - Good
D - Fair
E - Poor

A, B, C, D : proceed with interview
E : end the interview and replace respondant

General informations

About the respondant

Name :

Age O 15 - 25 O 26 - 35 O 36 - 45 O 46 - 55 O 56 - 65 O 66+

Gender : O female O male O other :

For how many years have you been living in this village/city ?

How long have you been working as a trader/middle-person ?

Highest educatoinal attainment :
O No formal schooling
O Elementary school (Tiểu học)
O Secondary school (Trung học co' sò)
O Highschool (Cấp trung học phổ thông)
O University / College

Civil status :
O Single O Widow / Widower
O Married O Live-in
O Separated O other :

Religion :

About family and household

1) How many persons live in your household ?

2) How old were you when you had your first child ?

3) How many children do you have ? Indicate the number of boys with a B and girls with a G
__ 0 __1 __ 2 __ 3 __ 4+

4) Do they go to school ? O Yes O No
If Yes, until what age are they going to be in school ?

About the respondant's partner

Age O 15 - 25 O 36 - 45 O 56 - 65
O 26 - 35 O 46 - 55 O 66+

Gender : O female O male O other :

For how many years has she/he been living in this village/city ?

Highest educatoinal attainment :
O No formal schooling
O Elementary school (Tiểu học)
O Secondary school (Trung học co' sò)
O Highschool (Cấp trung học phổ thông)
O University / College

Is he/she a respondant of this study ? O Yes O No O I don't know

---

About business

5) Who among members of your family work with you in fish trading ?

Household members	Number	Age	Sex	Paid ?	Type of work
1. Respondant					
2. Son					
3. Daughter					
4. Father					
5. Mother					
6. Niece					
7. Nephew					
8. Grandfather					
9. Grandmother					
10. Daughter-in-law					
11. Son-in-law					
12. Brother					
13. Sister					

6) Rank your main household's sources of income (1 = most important; 2 = secondary source; only 2 answers)

__ Fishing
__ Fish processing
__ Fish trading/sellin
__ Farming
O I dont' know
__ Profession (you are employed by a company and get a salary)
__ Remittence (you are given money by a relative that works somewhere else)
__ Other (specify) :
__ None

7) How much money do you buy fish for per day ? _____

8) How much money per day approx. do you get from fish trade? _____

9) How much of that money do you take as income?
O 0-25% O 26-50% O 51-75% O If more than 75% : _____%

10) How much of that money do you reinvest ?
O 0-25% O 26-50% O 51-75% O If more than 75% : _____%

11) Indicate by A how much approximatevely you earn per month from fish trading/selling; and by B the total household income **per month** from all sources.

__ < 100.000 VND	__ 300.001 - 400.000 VND	__ 700.001 - 800.000 VND
__ 100.001 - 200.000 VND	__ 400.001 - 500.000 VND	__ 800.001 - 900.000 VND
__ 200.001 - 300.000 VND	__ 500.001 - 600.000 VND	__ 900.001 - 1.000.000 VND
__ I don't know	__ 600.001 - 700.000 VND	__ > 1.000.001 VND

12) Are you part of some groups in your community, and which are you a member of ?

_____

_____

13) Type of trading facility you are employed in ?
O wholesaler O wholesaler-retailer O buying office of exporter
O Retailer O broker/agent

14) Area of coverage
O village O region O global/international
O province O nationwide

15) Type of operation
O trading only O trading and minor processing O trading and major processing

16) Form of tuna product traded
O fresh O canned O chilled O frozen O dried O smoked O fillet
O cooked ready-to-eat O I dont't know O other :

Why this/these specific form(s) and why many ?

_____

_____

18) Which species of tuna do you sell and in what proportions ?
___% Yellowfin ___% Skipjack ___% Bigeye ___% other :

What is the average price of each tuna ? Specify VND by kg or tons
Yellowfin : Bigeye:
Skipjack: Other :

19) How are the species chosen for the sale ? How to assess the demand ?

_____

_____

_____

20) What is your position in the trading enterprise/company ?
O owner O management team O worker

9) How much of that money do you take as income?
O 0-25% O 26-50% O 51-75% O If more than 75% : _____%

10) How much of that money do you reinvest ?
O 0-25% O 26-50% O 51-75% O If more than 75% : _____%

11) Indicate by A how much approximatevely you earn per month from fish trading/selling; and by B the total household income **per month** from all sources.

__ < 100.000 VND
__ 100.001 - 200.000 VND
__ 200.001 - 300.000 VND
__ I don't know
__ 300.001 - 400.000 VND
__ 400.001 - 500.000 VND
__ 500.001 - 600.000 VND
__ 600.001 - 700.000 VND
__ 700.001 - 800.000 VND
__ 800.001 - 900.000 VND
__ 900.001 - 1.000.000 VND
__ > 1.000.001 VND

12) Are you part of some groups in your community, and which are you a member of ?

_____

_____

13) Type of trading facility you are employed in ?
O wholesaler O wholesaler-retailer O buying office of exporter
O Retailer O broker/agent

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___% Yellowfin ___% Skipjack ___% Bigeye ___% other :

What is the average price of each tuna ? Specify VND by kg or tons
Yellowfin : Bigeye:
Skipjack: Other :

19) How are the species chosen for the sale ? How to assess the demand ?

_____

_____

_____

20) What is your position in the trading enterprise/company ?
O owner O management team O worker

27) Who is your primary buyer ?

	Gender	Buyers provide financing
Local restaurants		
other local institutional buyers		
exporters		
buying offices of exporters		
retailers/supermarkets		
small-scale market vendors		
processors		
households		
other :		

28) Would you like to have other custommers ? O Yes O No
If yes who ? _____

29) How do you know whom to sell fish to ?

_____

_____

30) What percentage of the buyers you deal with are women ? _____ %

31) Do you allow your buyers to get your processed products on credit ? O Yes O No
If No, why not ?
O I/owner needs cash for trading operations
O I/owner needs cash for everyday expenses
O Avoid risks of non-payment
O Difficulty of collecting debts
O other :

If Yes, what percentage of those that you allow credit to, are women ? _____ %

32) Are there differences in the purchase behaviour between men and woman buyers ?
O Yes O No

If yes, please indicate for each behaviour stated below refers to women, men or the same.

Behaviour	W, M or =
Who is more strict with product quality ?	
Who is easier to negotiate with ?	
Who is more knowledgeable about product ?	
Who is more serous in complying with agreed sales conditions ? (e.g delivery schedule, packaging and labeling requirements, quality standards, ...)	
Who is more firm with their decision ?	

33) Who is your primary supplier of fresh and processed tuna ? Please indicate if they are male or female. Do they allow you to get the fresh tuna on credit ? (Choose only one)

Type of supplier	Gender	Fresh (F) or processed (P) tuna	Buyers provide financing
small-scale municipal fishers			
small-scale commercial			
medium-scale commercial			
large scale commercial fishing operators			
other traders of fresh tuna			
other :			

34) What percentage of your fresh-tuna suppliers are men/women ?

_____% Men _____% Women

Practices & Participation

35) In your trading operation, who usually perform the following ?

Process registration and legal document					
Hiring of workers					
Identify suppliers of fresh tuna					
Identify suppliers of processed tuna					
Identify buyers of fresh tuna					
Identify buyers of processed tuna					
Load and unload products					
Weigh, sort and classify products					
Remove the guts and gills					
Operate equipment					
Ensure quality control					
Cook					
Blast freezing					
Pack					
Label					
Storage					
Clean and maintain of the physical facilities					
Negociate with the buyer					
Transport to the buyer					
Receive payment					
Record of sales					
Record of financial transactions					
Record production					
Inventory of stocks					

36) In your trading organization, who usually attend the following activities ?

	Men	Women	Boys	Girls
Meetings				
Seminars / Training				
Industry meetings				
Public hearings				

37) What kind of fishery-related activities do you do but that are not trading ?

_____

_____

_____

Knowledge, beliefs & Perceptions

38) Based on your experience, please say to what extent you agree/disagree with the following statements related to fish trading

Statement	Agree	Neither disagree nor agree	Disagree
Women are more skillfull in trading than men			
Women are easier to deal with than men in the trading business			
Men are more particular about quality of tuna traded than women			
Women are more efficient in trading than men			
In selling processed tuna, it is easier to collect paument from women buyers than men			

39) Do you like going to the market ? O Yes O No

Why?

_____

_____

40) Do you think that men / women enjoy going to the market ? (If the respondent is a man ask about women and vice versa) ? Why ?

O Yes O No

_____

_____

_____

41) Are you satisfied/proud of being a fish trader? Why (not) ? And is fish trading high status in the society ?

_____

_____

_____

42) What effects has fish trade had on your life (e.g. income, increased decision making power in the household) and on the community?

43) Do you like your job ? O Yes O No

Why? And what could make you change your mind ?

44) Do you think you have a good income ? What could help you increase it ?

45) What are your dreams and hopes for the future?

Legal rights & Status

46) How many % of the male and female workers in th trading facility plant are contractual / regular ?

	Peak season		Off season	
	Men	Women	Men	Women
Regular				
Contractual				

47) If a women happen to be pregnant, what happens for her ? Until when does she keep working ? Is there any pregnancy/paternity leave ?

48) For the same kind of work, how does your pay compare to your male/female counterpart ? (*Interviewer reads the sentences out loud and asks the respondent to choose one sentence that best represents his/her belief)*

	Answer (only one possible)
Men are paid more than women	
Men and women are paid the same	
Men are paid less than women	

Power and decision making

49) Who makes the decisions within your household about the following ? (*Read the proposition out loud and check the cell of the person who has the final word, if the respondent insists on a joint decision, check both cells)*

Area of decision making	Father	Mother	Daughter	Son	Other male household member	Other female household member
Education						
Food						
Budgeting						
Leisure activities						
Health						
Discipline						
Community involvement						

50) Who makes the decisions with regard to trading operations ? (*same directives as previous question*)

Area of decision	Owner	Spouse of owner	Male manager/supervisor	Female manager/supervisor	Male staff	Female staff
supplier of tuna						
supplier of non-fish raw materials						
financing the processing operations						
buyer of proceed tuna						
production schedule						
production volume						
hiring of workers						
pricing of products						
training						

51) Are there any fisheries related-projects/activities in your community ? O Yes O No
To what extent are you involved in these fisheries related-project/activities ?

	Never	Sometimes	Often	Always	N/A
Community activities					
Meetings					
Training					
Public hearing					
socials					
researches					
committee membership					
association membership					
costal resources management					
other :					

Time & space

52) How many hours per day do you work in your trading operation during peak period ? _____ hours

53) How many hours per day do you work in your trading operation during non- peak period ?
_____ hours

54) What are your main occupation on your spare time ? What do you usually do after you are done working ?

_____

_____

_____

55) Why do you go to that market and not another one ? What made you choose it ?

_____

_____

_____

57) Would you spend more time on fish trade if you had less household work? O Yes O No

58) How often do you go to the market to trade ? _____

59) How do you go to the market ? _____

60) How long do you stay at the market ? _____

61) How far is the market from your home ? (km, time) _____

62) Compared to the time of your parents and grandparents, what has changed about the following topics ? And why those changes ? *(If the respondent is a woman ask to comare with her mother and grandmother, and vice versa)*

Income

_____

_____

_____

Involvement in the tuna industry

_____

_____

_____

Catch species

_____

_____

_____

Other :

_____

_____

_____

Appendix 9 : Interview guide for Key Informant Interviews

Key informants interview guide

The structure and the questions of this guide are almost all taken up from the Gender Analysis of the Fisheries Sector conducted by USAID in Philippines (2018)

Personal Information Data

Name :

Gender :

Company/Firm/Organisation :

Address of the company/firm/organisation :

Current position :

No. of years in the company/firm/organisation :

Involvement/role in the tuna industry :

Work-related Infomation

Access to resources : *How has your company/firm/organization ensured that women have access to resources ?*

1) Training for men ? Women ? *What trainings ? (skills training, credit management, entrepreneurship) Who attends ?*

2) Financing assistance for men ? Women ? *Types ? Terms ? Who avails ?*

3) Technical support for men ? Women ? *Types ? Who adopts ? Who avails ?*

4) Technology transfer for men ? Women ? *Types ? Who adopts ?*

5) Information dissemination for men ? Women ? *Types ? Who mostly uses the info ?*

6) Legal and social protection for men ? Women ? *Types ?*

Women's participation : *How has your company/firm/organization ensured utmost women's participation in the workplace ?*

7) In marketing/trading
Opportunities provided to increase women's marketing and entrepreunarial engagement ? (specify)

Decision making : *In what ways has your company/firm helped enhance the decision-making space of women in the workplace ?*

8) Position occupied by women ? By men ? (%)
Highest position occupied by a woman :
Supervisory positions :
Rank and file :
Assembly line :
Others :

9) Membership in committees

Specify the committees. Who mostly participates ? Position occupied by men/women.

10) Others

Specify othe ways of involving women in decision-making

Ecosystem approach to fishieries management (EAFM) and Catch Documentation and Tracability (CDT) : *In what ways have women been involved and engaged in EAFM and CDT?*

11) What company/firm/organization EAFM-related projects/programs have women been involved in ? *Specify project/program. Specify women's involvement. Have women been effective in their role ?*

12) What concerns/issues emereged from women's involvement (or non-involvement) in EAFM and CDT activities ?

13) How can women strenghten EAFM and CDT initiatives ?

Policy Recommendations : *How can your company/firm/organization help women become more visible and more effective partners in EAFM and CDT initiatives ?*

14) In project planning and formulation

15) In project implementation

16) In project monitoring and evaluation

17) Others : control, surveillance

Gender and Development (GAD) information

18) What proportion of the company/firm/organization personnel have undergone basic gender sensitivity trainings ?

- *among all staff*
- *among field staff*
- *among those directly involved in EAFM and CDT*

19) Does the company/firm maintain sex-disaggregated data ? *Cite examples, if any*

20) How is GAD integrated in the company/firm functions that are related to EAFM and CDT .

- *in its programs/projects ?*
- *in its policies ?*
- *in its plans ?*

21) Any suggestion on how to stregthen GAD mainstreaming in company/firm/organization PPAs (projects, plans, activities) ?

- *recruitement*
- *firing*
- *benefits*
- *oportunities*
- *working conditions*
- *others*

Appendix 10 : Interview guide for Focus Group Discussions

Focus group discussion - interview guide

The structure and some of the questions of this guide are for most of them taken up from the Gender Analysis of the Fisheries Sector conducted by USAID in Philippines (2018)

Preliminaries

Greetings and introduction of participants and facilitators

Objectives :

- **Determine the role of women in fisheries management**
- Probe on the roles and relations of men and women in the tuna VC
- Identify strategies to enhance women's participation in fisheries management

Don't forget to ask for consent : voluntary participation, rule of confidentiality, permissioni to take photos and record conversation.

At the begining, the group is mixed.

Access to assets

Activities covering Access to assets and Power and decision making

To start, fill the following table on a flipchart and ask the participants how they would fill it and discuss. Try to focus on the comunity-scale.

		Access		Control	
		Women	Men	Women	Men
Resources	Land				
	Equipment				
	Labor				
	Cash				
	Education				
	Market				
	Informations				
	Social networks				
	Other :				
Benefits	Outside income				
	Assets ownership				
	Basic needs : food, water, shelter				
	Education				
	Political power/prestige				
	other :				

Activities concerning Access to assets only

1) If you want to get credit/ borrow for a livelihood project, who would you approach and how easy or difficult is it to borrow ? Discuss reasons for their answers

2) Do you agree that women access credit for fishing enterprises ? What happens if the men access credit?

3) If women wanted to participate in a training or workshop, whom can they approach ? Why ?
(Probe / discuss)

4) If there was a training that women are invited to attend, where would you recommend that training or workshop be held ? For how long (schedule that works for them) ?

5) If women are invited to attend a training program, in what way are they able to find tme to do so,in relation to their houshold and other tasks ?

6) What is the reactoin of your husband/wife when you are asked to participate in projects/activities/training, especially related to fishing ? If not favorable, how do you think this can change ?

7) When women are given an income-generating project in what way are your husbands involved in the project ?

8) When women earn income from their activities, who holds or manages the money ? Are there any disagreement that arises from use of income of the wife ?

9) Similarly, who holds or manages the income earned by you husbad from tuna-related activities ? Are there any disagreement that arises from use of husband's income ? (Elaborate/probe/why)

10) In what ways/areas do you want to have the same access to resources as you husbands ?

Practices and participation

---

11) Do you have an organization of intermediaries ? are you a member/officer of this organisation ? Why?

12) What kind of fisheries management projects do you know ?

13) What are the fisheries management activities that you are involved in ? Why ?

14) What benefits do you get form your participation in fisheries management ?

15) What will make you more involved in fisheries management ? what incentives would encourage you to participate ?

16) What changes have you seen (how you see yourself, how you are treated in household, community) due to your participation in tuna fisheries ?

17) Have these changes translated into increased decision making ?

**18) What are your (husband's, if with the group of wives) opinion on wives who actively participate in fisheries management ? How has it changed ? Why ? What about the women's other perception ?

19) How do women percieve other women who are active in fisheries management and in the tuna VC ?

20) Did women's particiaption in fisheries-related projects undermine or support women's empowerment?

21) What are the barriers to meaningful participation of women in fisheries management and un the tuna VC ?

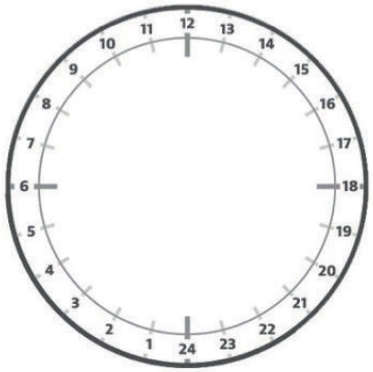
22) How can we enhance women's participaiton in tuna fisheries VC ?

23) How can we ensure that men and women equitably share in the benefits of tuna fisheries VC ? Diaggregate the VC in : fishing, processing and selling.

**24) Draw on a page of the flipchart a man and a woman, each of them will be attributed household responsibilities. Do this like a brainstorming.

Time and space

**25) Draw a pie chart by gender, divided in 24 and ask the respondents how they'd fill it for one of their typical day.



26) Make a timeline of a year and ask the respondents to indicate the periods of /when occur the
- best income activities
- peak/drop of labor
- types of catch (spiecies fished)
- time-depending practices
- food insecurity
- price of tuna (for each month)

27) According to the answers you get from the previous question, ask :
- Why do only men/women do XXX activities ?
- Are women willing to go to see ? Why (not) ?

28) Are you satisfied with your responsibilities as wife/husband ? Or do you wish you had more or fewer responsibilities, or totally different ones ?

29) What kind of future do you want for your girls (e.g. : Marry someone like your wife ? etc.) For your boys ?

30) Give the participants the floor to make a map of the resources. Beforehand, draw the map of the village / area / ... Use different colors for the resources held by women or men. Let anyone come (one by one) but be carefull to give equal power to women and men. When they think they are done, check if every resources on the list bellow are on the map.

- Capital
- Benefits
- Credit
- Labor
- Trainings
- Political represnetation
- Information
- Land
- Social networks
- Employment
- Processing facilities
- Market
- Technology, fishing boat, gear

Legal rights and status

31) Are the local legislations that promote women's participation and empowerment in the tuna fisheries value chain ? What are these ? (If none, probe why)

32) Are there customary practices that encourage men and women's participation in the tuna value chain? What are these?

33) Do women and men have legal representation in special bodies ?

34) How will women's improved status affect the power relations inside the home ? In the workplace ?

Knowledge, beliefs and perceptions

Knowledge

35) Who is involved in the management of tuna fisheries and tuna trading companies ?

36) What are the agencies that have projects that aim to improve management of tuna fisheries ?

Perceptions

For the next question, use a table of two columns : benefits & problems
37) What benefits and problems, if any, has the tuna industry brought to your lives and that of your community ?

For the following question, split the group in two : Men / Women
**38) Ask the participant to describe «the ideal» men (if women are asked, an vice versa) in order to assess the social standards. Criterias can be about the personality, the things he does or the way he looks. Give a personal example to show the way and make people less shy to answer.

Power and decision-making

39) Which areas do men have greater decision making-power, and which areas are women's ? Obviously, if the question has been answered before (cfr quesion 1), do not ask it here.

40) What are the constraints in men's and women's participation in decision making ?

41) Could there be unintended negative consequences if women are to have greater voice in decision-making ?

Off-categorie

Influencing factors	Constraints	Opportunities
Community norms and social hierarchy		

Demographic factors		
Institutional structures		
Economic factors		
Legal parameters		
Training		
Attitude of community to development workers		
Other		

Appendix 11 : Statistic tables of the results

Table X : Statistics of the age at which both genders started (to work for) their companies

Wilcoxon test		**Descriptive statistics**				
Null hypothesis	$H_0 : \mu_1 - \mu_2 = 0$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis	$H_1 : \mu_1 - \mu_2 \neq 0$	Men	10	36.9	7.72	2.44
		Women	30	35.0	5.71	1.06
P-value	**W**					
0.2546	180.5					

Table XI : Statistics of the time spent in the company by both genders

Wilcoxon test		**Descriptive statistics**				
Null hypothesis	$H_0 : \mu_1 - \mu_2 = 0$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis	$H_1 : \mu_1 - \mu_2 \neq 0$	Men	10	9.95	10.4	3.29
		Women	30	12.0	10.6	1.97
P-value	**W**					
0.5283	125					

Table XII : Statistics about the time after which men and women got a promotion

Wilcoxon test		**Descriptive statistics**				
Null hypothesis	$H_0 : \mu_1 - \mu_2 = 0$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis	$H_1 : \mu_1 - \mu_2 \neq 0$	Men	10	3.5	1.84	0.582
		Women	30	4.28	3.65	0.678
P-value	**W**					
0.6887	132.5					

Table XIII : Statistics of the age at which both genders got their first kid.

Wilcoxon test		**Descriptive statistics**				
Null hypothesis	$H_0 : \mu_1 - \mu_2 = 0$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis	$H_1 : \mu_1 - \mu_2 \neq 0$	Men	10	25.2	2.05	0.683
		Women	30	22.0	1.86	0.346
P-value	**W**					
0.0004547***	230.5					

Table XIV : Statistics about the quantities of tuna traded per month in a low, peak and average month.

Kruskal-Wallis and Dunn			Descriptive statistics				
Null hypothesis		$H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis		$H_1 : \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$	M MP YB	10	126000	103409	32701
			W MP YB	9	167778	112891	37630
χ^2	**df**	**P-value**	W MP S	12	379167	297305	85825
10.606	3	0.01406*	W T S	9	85556	30766	10255
Null hypothesis		$H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis		$H_1 : \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$	M MP YB	10	205000	169984	53754
			W MP YB	9	314444	215355	71785
χ^2	**df**	**P-value**	W MP S	12	757500	595622	171941
11.264,	3	0.01038*	W T S	9	171111	61531	20510
Null hypothesis		$H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis		$H_1 : \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$	M MP YB	10	165500	136615	43201
			W MP YB	9	241111	112891	54478
χ^2	**df**	**P-value**	W MP S	12	564167	444843	128415
10.958	3	0.01195*	W T S	9	128333	30766	15383

Table XV : Statistics about the quantities of tuna traded by middle-men and middle-women on an average month

Dunn test			Descriptive statistics				
Null hypothesis		$H_0 : \mu_1 - \mu_2 = 0$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis		$H_1 : \mu_1 - \mu_2 \neq 0$	Men	10	165500	136615	43201
			Women	21	425714	382568	83483
Statistic	**P-adjusted**	**P**					
2.64	0.0248*	0.00827					

Table XVI : Statistics about the volume of yellowfin and bigeye tuna traded on an average month by middle-men and middle-women

Dunn test			Descriptive statistics				
Null hypothesis		$H_0 : \mu_1 - \mu_2 = 0$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis		$H_1 : \mu_1 - \mu_2 \neq 0$	M MP YB	10	165500	136615	43201
			W MP YB	9	241111	112891	54478
Statistic	**P-adjusted**	**P**					
1.58	0.691	0.115					

Table XVII : Statistics of the quantities of skipjack tuna traded by traders and middle-persons on an average month

Dunn test			Descriptive statistics				
Null hypothesis		$H_0 : \mu_1 - \mu_2 = 0$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis		$H_1 : \mu_1 - \mu_2 \neq 0$	Trader	9	128333	30766	15383
			Middle-person	12	564167	444843	128415
Statistic	**P-adjusted**	**P**					
-2.51	0.0724	0.0121					

Table XVIII : Statistics of the quantity of tuna traded by both genders

Wilcoxon test		**Descriptive statistics**				
Null hypothesis	$H_0 : \mu_1 - \mu_2 = 0$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis	$H_1 : \mu_1 - \mu_2 \neq 0$	Men	10	165500	136615	43201
		Women	30	336500	347471	63439
P-value	**W**					
0.045 *	85.5					

Table XIX : Statistics about the time spent working by men and women trading yellowfin and bigeye tuna on a peak day

Dunn test			**Descriptive statistics**				
Null hypothesis		$H_0 : \mu_1 - \mu_2 = 0$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis		$H_1 : \mu_1 - \mu_2 \neq 0$	M MP YB	9	16.1	0.333	0.111
			W MP YB	8	14.8	1.83	0.648
Statistics	**P-adjusted**	**P**					
0.316	1	0.752					

Table XX : Statistics about the time spent working by men and women trading yellowfin and bigeye tuna on an average day

Dunn test			**Descriptive statistics**				
Null hypothesis		$H_0 : \mu_1 - \mu_2 = 0$	**Survey**	**N**	**Mean**	**StDev**	**SE Mean**
Alternative hypothesis		$H_1 : \mu_1 - \mu_2 \neq 0$	M MP YB	10	4.56	0.882	0.294
			W MP YB	9	4.88	0.991	0.350
Statistics	**P-adjusted**	**P**					
-3.09	0.0121*	0.00202					

Appendix 12 : Summary of the links and interactions between the parameters observed

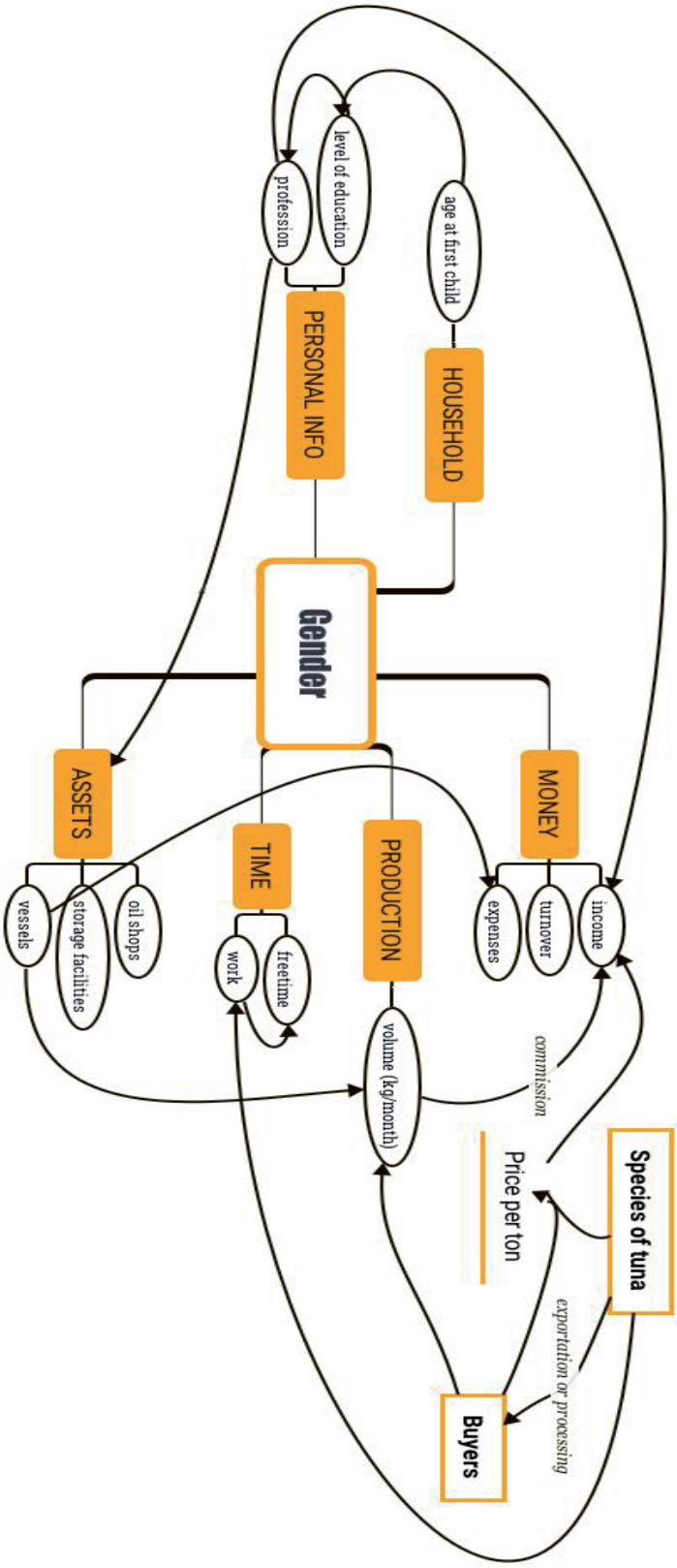


Figure IV : Summary of the links and interactions between the parameters observed

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