



## **On Fisheries Improvement Projects**

**An analysis of the suitability of Fisheries Improvement Projects for achieving improvements in fisheries**

**A case study of a Fisheries Improvement Project for the yellow-fin tuna fishery in Lagonoy Gulf, the Philippines**

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**Mandy Doddema**

**Wageningen, November 2012**



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**Mandy Doddema  
870112-185020**

**MSc Thesis ENP 80436  
Wageningen University  
Environmental Policy Group (ENP)  
Department of Social Sciences  
Supervisor: Dr. Simon R. Bush**



## **Abstract**

The blame for overexploitation of fisheries is often attributed to the failure of management systems to maintain productive fish stocks. Fisheries Improvement Projects (FIPs) have recently emerged in various parts of the world as new governance arrangements in fisheries. FIPs bring together actors throughout the seafood value chains and seek to move a fishery towards Marine Stewardship Council (MSC) certification. The issue is that little is known about the implications of this new type of governance arrangement, particularly about the effects on the fishermen and their communities. To analyse the suitability of the FIP approach for moving a fishery towards improvement, the concept of 'upgrading' which originates from Global Value Chain (GVC) Analysis, was linked with the concept of Continual Improvement (CI) to analyse the general FIP approach and the specific case of the Partnership Programme towards Sustainable Tuna (PPTST), which is a FIP for yellow-fin tuna in Lagonoy Gulf, the Philippines.

The study reveals that FIPs use a systematic approach, similar to the CI methodology, to steer a fishery towards improvement. The suitability of the systematic FIP approach is not rejected as the strategic vision of the approach enables a clearer visualization to improvement. However, from the case study it became clear that FIPs are not incorporating specific local considerations into the plans, FIPs do not address to the greater issues that challenge the fishery. The FIP is purely focusing on the improvements needed for the certification. FIPs require that fishermen change their practises in order to meet the new requirements, but it is questionable whether fishermen will experience benefits as a consequence of FIPs.

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## List of Acronyms

|        |  |
|--------|--|
| ADB    | Asian Development Bank                                       |
| BFAR   | Bureau of Fisheries and Aquatic Resources                    |
| BFARMC | Barangay Fisheries and Aquatic Resource Management Council   |
| CAO    | City Agricultural Office                                     |
| CAS    | Complex Adaptive System                                      |
| CBNRM  | Community-Based Natural Resources Management                 |
| CEO    | Chief Executive Officer                                      |
| CFARMC | City Fisheries and Aquatic Resources Management Council      |
| CI     | Continual Improvement  |
| CoC    | Chain of Custody   |
| CPUE   | Catch per Unit Effort  |
| DANIDA | Danish International Development Agency                      |
| EMS    | Environmental Management System                              |
| FAD    | Fish Aggregating Device                                      |
| FARMC  | Fisheries and Aquatic Resources Management Council           |
| FIP    | Fisheries Improvement Project                                |
| FIIP   | Fisheries Infrastructure Improvement Project                 |
| FLET   | Fisheries Law Enforcement Team                               |
| FO     | Fisherfolk Organization                                      |
| FAO    | Food and Agriculture Organisation                            |
| GVC    | Global Value Chain   |
| GDP    | Gross Domestic Product                                       |
| ISO    | International Organisation for Standardisation               |
| LGU    | Local Government Unit  |
| MAO    | Municipal Agricultural Office                                |
| MFARMC | Municipal Fisheries and Aquatic Resources Management Council |
| MFO    | Municipal Fisheries Ordinance                                |
| MOFi   | Vietnamese Ministry of Fisheries                             |
| MPA    | Marine Protected Area  |
| MSC    | Marine Stewardship Council                                   |
| MSY    | Maximum Sustainable Yield                                    |
| NGO    | Non-Governmental Organization                                |
| OFI    | Opportunities for Improvements                               |
| PPTST  | Partnership Program towards Sustainable Tuna                 |
| R & L  | Registration and Licensing                                   |
| SFP    | Sustainable Fisheries Partnership                            |
| WWF    | World Wildlife Fund  |

# Chapter 1 Introduction

## 1.1 Problem statement

Fisheries affect the resource base that they exploit (Pauly *et al.*, 2005). The increase in the world's population coupled with the increase in the capacity to exploit fish stocks has caused an expansion of fishing (Allison, 2001). Fisheries are a key to food security and livelihood for millions of fishermen; it is a safe source of employment, and an important sector in the global economy. About 1 billion people (largely in developing countries) rely on fish as their primary source of protein and an estimated 35 million people are directly engaged, either full- or part-time, in fishing and aquaculture (World Resource Institute, 2004). Seafood is the most highly traded good internationally; the growing global demand for seafood products has doubled over the last 30 years and is projected to continue growing (Asche and Smith, 2010). The coastal waters of Southeast Asia are among the most productive and biologically diverse in the world. Not only the world's increasing food needs, but also differing and uneven levels of economic development, resource use and technological change are putting enormous pressures on the region's coastal resources and some fish stocks are threatened with overexploitation (Pomeroy, 2012).

Tuna is considered to be one of the top ten exploited species worldwide. Of the 23 tuna stocks, some are overexploited or depleted and only a few appear to be underexploited. Growth of tuna fisheries halted in 2008 as catches decreased after the 2007 global record of almost 6.5 million tons (FAO, 2010). The Coral Triangle countries which include Indonesia, Philippines, Papua New Guinea, Solomon Islands and Timor L'Este, produce a quarter of the global tuna production and over half of the tuna is caught in the Pacific Ocean. In the Coral Triangle the four main tuna species of skipjack, yellow fin, big eye tuna, and albacore are mostly exported. Small tuna provide food and livelihoods to thousands of local coastal fishers (Ingles & Pet Soede, 2010). Global demand for tuna is high and considering the fact that tuna fishing fleets have a (too) high capacity, there is a big possibility that tuna stocks may deteriorate if no action is taken (WWF, 2011). Tuna fisheries are not only important for local communities, but also for people dependent on fisheries for their livelihood throughout the tuna value chain, be it small or industrial scale, and also for the income it generates for individuals, countries and the global economy. Sustainable and equitable governance is crucial for this important socio-ecological system.

Market-based governance for fisheries aims to financially reward or "incentivize" resource users for improving their fishing practices (Grafton *et al.*, 2006). Failures in the traditional management of fisheries show that fishermen should be provided with incentives to fish sustainably (Grafton *et al.*, 2006). Fishermen have the greatest impact on fisheries and at the same time, they have the greatest interest in long-term conservation. Since its inception in mid-1990, the sustainable seafood movement has focused on educating consumers in developed countries to change their consumption patterns in seafood (Jacquet *et al.*, 2010). Creating incentives includes giving out fishing rights. A novel approach is market-based governance arrangements like certification and eco-labelling schemes. Certification schemes have emerged in recent years as new sources of standard setting and governance in the fisheries sector. These market-based incentives encourage producers to meet environmental standards and consumers to choose the best environmental option in seafood (Gullbrandsen, 2009; Cummins,

2004; Pérez-Ramírez *et al.*, 2011). Society has become more aware of environmental impacts and consumers are able to express preference through purchasing behaviour. Besides this, protecting consumers from unsafe food and from overexploitation of resources is increasingly achieved via voluntary standards, labels and code of conduct. According to Ponte (2008), food safety, environmental and social standards have become incorporated into trade of agro-food products in the last 15 years. Private and civil society actors are trying to promote sustainable fisheries by encouraging producers to meet prescribed standards, and consumers to choose products which are certified by schemes like the Marine Stewardship Council (MSC). The MSC is the most widely used certification scheme in fisheries (Marine Stewardship Council, 2012). The MSC is a third-party certification scheme that assesses fisheries against three core principles: (1) stock status and harvest strategies, (2) the ecological and environmental impacts of the fishery, and (3) the fisheries management and governance arrangements in place. The idea behind MSC certification is to address decline in fish stocks by awarding sustainably managed fisheries with a certificate. One aspect of MSC certification is the possibility to use the Chain of Custody (CoC) certification system. CoC certification ensures that seafood that is sold from a certified fishery and that meets CoC traceability requirements can use the MSC label on products, which allows for a distinction between sustainable fish and other fish. Individual operators in trade, processing and retail sectors can apply for a chain of custody certification for the entire fishery and also for the use of the MSC logo. Usually, (associations of) fishing operators catching one or multiple species in a specific area seek to achieve to be awarded the MSC label (Ponte, 2008).

The two main criticisms towards the MSC is that it is uncertain whether certification schemes are actually driving improvement on the water and that only a small percentage of fisheries in developing countries have been certified by the MSC (Jacquet and Pauly, 2008; Banks & Macfadyen, 2012). The criticisms about the low percentage of developing country fisheries certified by the MSC are a consequence of the fact that MSC certification is not accessible for small-scale fishers. This lack of accessibility is related to the lack of information about fish stocks, high costs of certification, lack of organisation and lack of technical know-how, hindering developing country fishermen to move towards MSC certification (Perez-Ramirez *et al.*, 2011). From the literature it becomes clear that fishermen consider certification as a strategy for marketing their products in the developed countries especially as they are worried that a lack of MSC certificate will become a trade barrier to the global market, which is increasingly concerned with sustainable products (Pérez-Ramírez *et al.*, 2011). The MSC acknowledges that small-scale and data-deficient fisheries struggle to move towards certification. Therefore, MSC has set up the MSC Developing World Fisheries Program and is seeking to improve awareness of MSC in developing countries. The goal of market-based governance arrangements like MSC certification is to move the fishing industry towards enhanced sustainability and environmental improvement. Certification schemes identify producers (fisheries) that meet or exceed a threshold defined by a standard-setting process and aim to enhance sustainability and environmental improvement within a production sector (Tlustý, 2012).

Fisheries Improvement Projects (FIP) have recently become popularised as a new governance arrangement in fisheries. While there are several examples of Fisheries Improvement Projects, some of which have been around for several years, there is little information to be found about this newly

popularised type of FIP. There is no comprehensive description of what Fisheries Improvement Projects are, what they aim to achieve and whether this new governance arrangement is effective in addressing sustainability problems. It is important to understand how this emerging governance arrangement functions and what the consequences of its approach are. There are various examples of different types of FIPs and these are very different in what is considered to be improvement as well as in the approach used to achieve improvement. Chapter 3 presents the differences and similarities between different kinds of FIPs. The recently popularised type of FIPs is often linked to the MSC. These FIPs use the criteria developed by the MSC to assess a fishery and often the aim is to move a fishery towards MSC certification and these FIPs also employ a similar approach to the MSC to move towards their goals. The question is whether and how this set up will be successful in improving fisheries. The FIP is introduced in a complex, local situation and seeks to move a fishery towards improvement, this will likely alter dynamics in this situation as well as throughout the value chain of that fishery. It is important to see how suitable the approach of FIPs is to achieve improvement in the fishery and particularly for the fishermen who are required to change their production strategies to fit to the requirements of the FIP. Understanding what influences fishermen behaviour is a key element of addressing overexploitation of fish stocks.

This thesis uses the concepts of Continual Improvement (CI) and upgrading to analyse the suitability of FIPs to address problems in fisheries. FIPs are based on the idea that actors in a value chain can contribute to the more sustainable production of seafood. The concept of upgrading is used to create an understanding of what upgrading strategies fishermen employ with regard to their own livelihood and the fishery. CI is a methodology which has a specific approach to move towards improvement. This approach is linked to FIPs as FIPs utilise a similar approach to move a fishery towards improvement. These two concepts are further elaborated in the theoretical framework. The focus of this thesis is to understand how the introduction of Fisheries Improvement Projects is contributing to the enhancement of sustainable fisheries governance, particularly by considering what improvement is in (the various types of) FIPs. This thesis analyses the emergence of FIPs by 'exploring' the approach FIPs use to achieve improvement and by determining how FIPs are influencing upgrading strategies of fishermen. By doing so, an understanding of the suitability of FIPs to address problems in small-scale fisheries is created. It addresses how an externally conceptualised project manifests itself in a complex local context, which through the production of high value seafood is part of an equally complex global value chain. Part of the hypothesis of this thesis is that fisheries are so complex, that the FIP approach will not be suitable to address problems in fisheries.

For the analysis, one FIP for yellow-fin tuna in Lagonoy Gulf, Albay Province, the Philippines is considered. The Philippines Partnership Program Towards Sustainable Tuna (PPTST) is a FIP for the small-scale yellow-fin tuna fishery in Lagonoy Gulf, the Philippines. In 2010, the World Wildlife Fund (WWF) in collaboration with other nature conservation NGO's and global fish exporters started up the PPTST. The aim of this Fisheries Improvement Project is to improve small scale yellow-fin tuna fisheries through market incentives by moving the fishery towards MSC certification (WWF, 2010). The choice for the artisanal yellow-fin tuna hand-line fisheries in Lagonoy Gulf was based on the fact that these fisheries are more selective than the usual long-line (industrial) tuna fisheries. By-catch and discard rates are lower

which means that they have less impact on other species. Also, artisanal hand-line vessels have a limited operational range which is thought to enable more effective fisheries management and enforcement.

## **1.2 Research Aim & Questions**

This thesis aims to contribute to the understanding of Fisheries Improvement Projects (FIP) through the perspective of Continual Improvement (CI) and upgrading. In order to understand what is improvement in fisheries, upgrading provides the lenses through which fishermen strategies can be better understood. It is assumed that fishermen are critical factors to ensure 'improvement' in fisheries, which is why the focus of this thesis is on understanding fishermen responses to risks and opportunities particularly linked to FIPs. While FIPs are a relatively new concept in fisheries governance, the methodology it uses can easily be seen as similar to the methodology the concept of CI sets out. On the one hand CI is a methodology and on the other it is a framework for understanding how FIPs move towards improvement of fisheries.

As FIPs are a relatively new concept in fisheries governance, there is little academic information which describes the origins, goals and methodology of the concept. Thus, there is no real consensus about the meaning of the concept. Most information available can be found on websites of NGO's that are working with FIPs. Therefore, the first research question is:

*What are Fisheries Improvement Projects and how do they formulate strategies for improvement in fisheries?*

This question aims to create a clearer picture of FIPs by comparing different examples of FIPs. Questions to address are: What are the origins of the concept? What are the main aims of FIPs? What is considered to be improvement in FIPs? This first research question aims to determine where the concept comes from and identifies its main characteristics and at the same time gauges how this approach contributes to fisheries improvement. A clearer understanding of FIPs is important to analyse how such a project is influencing the fisheries it is trying to improve. This research question will be dealt with in chapter 3.

It is assumed that to address problems in fisheries and to achieve improvement this new type of FIP uses a specific methodology. The second research question is:

*How do Fisheries Improvement Projects use notions similar to Continual Improvement to make fisheries change their practises?*

This research question will focus on identifying the FIPs strategic ambition and the tactical activities developed to reach that ambition. FIPs are externally conceptualised projects which are brought into a specific local setting and which use a particular methodology to achieve improvement. It is crucial to understand how fishermen respond to FIPs. Questions to address are: How do FIPs approach improvement? Do the strategies of the FIP enable or constrain fishermen in moving towards improvement? The second research question aims to determine the suitability of the FIP approach to the

complex fishery and to ascertain how fishermen respond to this new kind of project. This question will be addressed in chapter 3 and 4.

It is crucial to understand how fishermen respond to FIPs because it will be difficult to address problems in fisheries if fishermen are not engaged in a process of improvement. It is assumed that fishermen strategies are determined by many factors besides the FIP. The third research question is:

*Which upgrading strategies do fishermen employ to upgrade their livelihood and fishing practises and what factors are the most influential in determining their behaviour?*

Fishermen are influenced by FIPs but their upgrading strategies are also influenced by their position in the value chain, the local opportunities and the local constraints. Questions to address are: How do fishermen deal with external opportunities and constraints? What are the main determinants of fishermen strategies? How do fishermen move towards improvement of their situation? The third research questions aims to determine strategies of fishermen and what the main influences are that shape their behaviour. This question will be addressed in chapter 5.

Research questions 2 and 3 can only be answered after elaborate scrutiny of FIPs. Therefore, the research strategy used is a case study, which enables in-depth analysis of various aspects of FIPs.

The theoretical value of this research is that it intends to create analytical insights into the link between CI and upgrading. These concepts have not been linked before and are usually applied to companies instead of fisheries. Considering the trends in environmental governance towards more market-based governance and governance through value chains, using these concepts should enable a better understanding of the implications of FIPs for fishermen strategies and environmental improvement. Moreover, it aims to shed light on implications of the emergence of FIPs particularly on how the approach that FIPs currently apply is applicable to complex social situations. Best practise in fisheries is constantly evolving and understanding the intricacies of FIPs will provide a basis for further discussion on the emergence of this governance arrangement.

### **1.3 Research Methods**

This section describes the reasoning behind the chosen research methodology after which the case will be briefly introduced. It concludes with a review of the validity and limitations of the data collection process of this research.

The research methodology for this thesis is divided into two approaches. The first approach is a broad qualitative investigation which gathers information about the various types of Fisheries Improvement Projects (FIPs) and their characteristics. This approach compares information found in literature and on websites as well as by interviewing experts on this topic. The second approach is a case study approach. Case study approach enables inquiry into a “contemporary phenomenon within a real-life context” (Yin, 2009). In this thesis the phenomenon is the emergence of FIPs and it is analysed in the context of the

Continual Improvement (CI) and upgrading for the Partnership Programme towards Sustainable Tuna (PPTST) in the Lagonoy Gulf. The majority of the empirical information collected consisted of interviews with key stakeholders in the six different villages (barangays) spread out over the two municipalities of Tiwi and Tabaco in Lagonoy Gulf, the Philippines. A case study approach is chosen as it enables analysing complex social phenomena and it allows for rigorous analysis of different dimensions of FIPs. It also enables researchers to identify links in real-life interventions which are too complex for other research strategies (Yin, 2009). This qualitative case study aims to understand the consequences of the emergence of Fisheries Improvement Projects for small-scale, yellow-fin tuna fishermen. The majority of information to be gathered is empirical and is collected through interviews with key stakeholders.

### **1.3.1 Data Collection and Processing**

The research was carried out over a period of 9 months. The first two months were devoted to literature research and proposal writing. The data collection process in Tiwi and Tabaco took three and a half months. The last three and a half months of the thesis consisted of data analysis and writing. The main method of data collection used for this research was interviewing. The interviews were conducted with FIP experts who were involved with various FIPs and interviews were held with stakeholders in Lagonoy Gulf.

To collect data about many different types of FIPs, five interviews were performed with experts, three of which were via correspondence. These interviews are aimed at finding out more information about the emergence of FIPs and about the different type of FIP arrangements that exist. As there is a lack of academic data available about FIPs, a number of web-based documents were used as a source of information to supplement the information obtained from interviews with experts. In preparation of this research, news articles and reports about FIPs were consulted because at the time of the research hardly any data was available about this new type of FIP.

A total of 37 interviews were performed which generated qualitative information for the case study. Interviews were sought with fishermen (27), casars (7), and staff of the PPTST (3). The interview objective was to address interviewees' perceptions about the PPTST as well as about the strategies fishermen employed to "improve" their situation. The interview topics came from Global Value Chain analysis and upgrading. The interviews provided data on the fishermen's knowledge of the PPTST, their upgrading strategies, and on the main factors that influence their strategies. The interviews shed light on the perceptions of various stakeholders towards the PPTST. The fishermen were selected for the interview using snowball sampling. This method is used because it was difficult to determine which fishermen were really tuna fishermen from the scores of fishermen in the different municipalities. Once a few tuna fishermen were found, it was easy to contact other fishers engaged in (primarily) handline tuna fishing.

The interviews were semi-structured and were conducted face-to-face and lasted 1 hour on average. A list of approximately 25 issues was used during the interviews to ensure that all information was gathered. This issue list guided and structured the interview and similar data was collected from all respondents. The issue lists were used in a flexible manner, which meant that sometimes more detailed

questions were asked and sometimes topics were omitted because they were not relevant for that respondent. To ensure relevancy of the topics, separate issue lists were made for different groups of respondents; one for fishermen, one for middlemen/casas, and one for the PPTST staff members. Written notes were made during the interviews and with permission of the interviewees, audio recordings were made to preserve important details. These recordings were used to supplement the notes made during the interviews.

Although the interviews were the main data collection tool for the research, participant observation was used to complement the interviews. By making field notes of events and interesting behaviour, and by interacting with the local population a large amount of data was collected.

### **1.3.2 Validity**

While it is difficult to say something about internal validity because the research is quite exploratory, quite a few sources of data were used during this research. In order to accomplish a high internal validity in case studies, one should use multiple sources of evidence like reports, documents, interviews and observations (Yin, 2009). Multiple sources of data were used to build this thesis; a literature review was carried out, interviews were held with FIP experts, interviews were held with fishermen, casas and PPTST staff and observations were noted during the field research. With regard to the research questions, enough data was collected to be able to answer these questions.

For this research, interviews were the main data collection tool. Over 40 interviews were performed and a wide range of issues were covered which contributes to the validity of research findings. Participant observation was important to complement the interviews to study the social setting of the case study. Verification was partly achieved through use of documents presented by the municipalities where research was done as well as by PPTST staff. A complicating factor was that there are very few documents available about the PPTST; all documents used were internal documents. In terms of external validity there is a need for a definition of the domain to which a study's findings can be generalized (Yin, 2009). The findings of this specific case study are hard to generalize, because so many different factors affect whether the implementation of FIPs is successful. Also, it is difficult to make generalizations about FIPs as the findings only apply to this specific case study. However, the case study does generate theoretical insights about the combination of CI methodology and upgrading to analyse FIPs and implications of this.

### **1.3.3 Limitations**

Some limitations and challenges were observed. At the time the research was being carried out, the PPTST had only been operational for eight months and was still starting up many components of the project. This has consequences for the outcomes of this research as several components were not operational during the research period. Furthermore, the main limitation of this research was that at the time of research fishermen were not aware or engaged in the FIP. This meant that no concrete questions could be asked about the FIP. During the initial interviews with fishermen it became clear that interviewees were quite restrained when answering questions. After consequent visits to the same

village, interviewees became increasingly more open and talkative and it can be assumed that if more time was spent at location, that more detailed data could have been collected. Carrying out research in the Philippines provided quite a challenge for the researcher, despite being familiar with the culture. One of the main challenges was that the interviews with the fishermen were carried out with an interpreter. Besides the adjustment to this, it is likely that some information was lost in translation. Another issue that may have affected the outcomes of the research is that there were quite a lot of different projects being implemented in the various villages around the Lagonoy Gulf at the time of the research. The interviewees may have suffered from research fatigue, which may have affected their answers during the interviews. Quite a large and diverse amount of data was collected and this was used to show the responses of fishermen to the PPTST as well as upgrading strategies of fishermen, this will be presented in chapter 4 and 5.

#### **1.4 Outline of the thesis**

This thesis will analyse the implications of the emergence of FIPs on upgrading strategies of fishermen. Chapter 2 presents the theoretical framework, where the concepts of CI and upgrading are introduced and linked to each other. Chapter 3 compares and contrasts various types of FIPs and provides insights into the approach that the new type of FIPs uses. Chapter 4 and 5 are the centre of this thesis. Chapter 4 presents the strategic and tactical improvements set out by the PPTST and analyses how fishermen are responding to the PPTST. Chapter 5 analyses fishermen strategies outside the PPTST and considers the most important determinants of fishermen behaviour. Towards the end of this chapter the overlap and difference between fishermen strategies with or without the PPTST are presented. In chapter 6, the wider implications of the emergence of FIPs are discussed as well as the strengths and weaknesses of this research. Chapter 7 will answer the research questions, discuss the hypothesis and end with some conclusive statements.

## **Chapter 2 Theoretical Framework**

### **2.1 Introduction**

The objective of this chapter is to build an analytical framework capable of analysing the emergence of Fisheries Improvement Projects (FIP) and how these new types of projects are influencing upgrading strategies of fishermen involved in FIPs. Although there is no generally accepted definition of a FIP, frontrunners see FIPs as bringing together stakeholders throughout supply chains and via private sector initiatives move towards sustainable fisheries through a process of improvement, using MSC certification as an indicator for sustainability. This theoretical framework follows two main topics. First, Global Value Chain (GVC) analysis and particularly upgrading are introduced as a framework for evaluating how GVCs are organised and to consider the consequences for producers (fishermen) that are part of specific value chains. Secondly, the concept of Continual Improvement (CI) is introduced and its methodology is then linked to the FIPs. The concept of CI will be used to assess the processes of improvement as set out in FIPs to move towards sustainable fisheries. The concept of upgrading is then linked to CI in order to evaluate how an external intervention of CI (FIP) can lead to internal improvements (upgrading). Finally, the Analytical Framework is elaborated and is linked to the research questions.

### **2.2 Global Value Chain Analysis and Upgrading**

In this section, the vertical and horizontal elements of Global Value Chain (GVC) analysis are elaborated to create an understanding of the various factors which influence fishermen that are part of global value chains. The concept of upgrading is introduced as framework to understand opportunities and constraints that fishermen face with regard to various kinds of upgrading. Seafood is the most highly traded food product internationally (FAO, 2010) and the private sector is playing an increasingly greater role in fisheries governance. As a consequence of globalisation and high demand for seafood, fishermen are producing more fish for consumers living large distances away from where the fish is being landed. Many developing countries export high-valued seafood (like tuna) to developed countries. According to Oosterveer (2008) fish processing companies, trade firms and retailers are replacing fishermen as the central agents in supply chains as more raw material inputs are processed into different fish products and delivered to consumers via large supermarket chains. Retailers in the United States, United Kingdom and Europe have given public commitments to only sell Marine Stewardship Council (MSC) certified fish by 2012 (Bush, 2010); this has consequences for developing countries fisheries in maintaining access to these western markets.

Global Value Chain (GVC) analysis is concerned with a value chain which is the full range of activities that bring a product from its conception to its end use. GVC analysis is an analytical tool concerned with how global production and distribution systems are organised, and emerged in the early 1990's as a tool to understand the dynamics of economic globalisation and international trade (Humphrey and Schmitz, 2002). GVC analysis creates understanding of the different processes and actors involved in production chains and the relations between actors. The focus of many GVC analyses used to be on the higher end of the chain, where dominant actors regulate the relationships within the chain. The bottom- end

producers were often taken for granted for producing the raw materials (Bolwig *et al.*, 2010). This lack of attention for the bottom-end of the chain led to a lack of attention for the local context, as well as neglect for the agency of individual producers. The focus was only on the interaction and relations within the chain, and the context and relationships outside the chain were not considered. This discrepancy can be avoided by exploring both the vertical and horizontal elements of value chains and particularly applying them to the local context.

Vertical elements refer to “vertical” relationships between buyers and suppliers and the movement of a good from producer to consumer. There are various types of value chain governance which determine the process by which the value chain is steered. Governance in value chains is seen as coordination of economic activities through non-market relationships (Humphrey and Schmitz, 2002). Gereffi *et al.* (2005) distinguish five types of value chain governance: markets, modular value chains, relational value chains, captive value chains and hierarchy. Markets are characterised by loose linkages between actors although there are repeat transactions over time. Modular value chains occur when suppliers have generic machinery but produce products to a customer’s specification, interactions between actors are increasingly more intense. Relational value chains are characterised by complex interactions between buyers and sellers, which often come from mutual dependence and high level of asset specificity. These kinds of relationships are built on trust and reputation and are built up over time. The hierarchy governance form is characterised by vertical integration where a single organisation owns multiple linkages in the chain. Captive value chains are characterised by a dependence of small suppliers on much larger buyers. These large buyers or lead firms set out terms of participation to suppliers. In captive value chain, governance could correspond to an organisation’s ability to enforce production standards. Firms aim to govern the value chain for various reasons one of them being to meet external and internal pressures to comply with environmental standards.

External actors, like national government and certification bodies can also influence how a GVC is governed. It is important to distinguish between overall form of governance and the forms of coordination between actors throughout the chain. There may be different forms of coordination in different segments of the chain (Bolwig *et al.*, 2010). Vertical elements alone are not enough to address issues of development and sustainability in GVC, which is why horizontal elements are crucial to understanding the ability for fishermen to upgrade. Horizontal elements of value chain analysis refer to the effects of integration into globalised systems on local level dynamics. It is about identifying producers’ sources of capabilities and how these lead to increased competences. This includes analysing terms of participation in value chains and consequences of exclusion and inclusion. Another aspect of incorporation into value chains is the influence this has on strategies of fishermen, but also on how incorporation affects the resources fishermen are able to mobilise to affect their situation. Understanding how incorporation into value chains or restructuring of value chains is influencing well-being or access to resources of a particular group (fishermen) shows how new requirements are creating opportunities or inhibiting developing country producers. Integration into value chains has consequences for the producers, but also for the local communities of which they are a part.

Upgrading is a component of GVC analysis which aims to identify how producers in developing countries can make better products, improve processes to make these products and /or taking over new functions in value chains (Ponte and Ewert, 2009). Upgrading includes the local context and the investigation of the concept of human agency into GVC analysis. Developing countries and their producers are becoming increasingly integrated into the global market, putting the producers in these countries under pressure to obtain new knowledge and improve their products. Humphrey and Schmitz (2002) argue that this increased pressure is a consequence of increased competitiveness on the global market. Upgrading is seen as a way of addressing this increased competitiveness and it entails making better products, producing these products more efficiently and moving into more skilled activities (Porter, 1990). More specifically, it refers to the increases in skill content of activities (capabilities) and/or moving into market niches through participation in particular chains. External relations influence upgrading, and this influence varies with the way the value chain is organised and with the type of upgrading considered. Humphrey and Schmitz (2002) distinguish between four types of upgrading:

- Process upgrading which refers to transforming inputs into outputs more efficiently by reorganising the production system or introducing superior technology.
- Product upgrading refers to moving into more sophisticated product lines in terms of value.
- Functional upgrading refers to acquiring new functions to increase the overall skill content of activities.
- Inter-sectoral upgrading refers to clusters of firms that move into new productive activities

According to Ponte and Ewert (2009) there are some difficulties with using this classification, as it is difficult to distinguish between product and process upgrading as new processes generate new categories of products (e.g. 'sustainable' products). Furthermore, process upgrading does not recognise the importance of meeting standards as is the case with the European retailers demanding MSC certified fish. In this case meeting these demands does not add value to the product but enables access to the market. Applying environmental management procedures implies improving production processes but it is not necessarily more efficient. This thesis will use the aforementioned upgrading classification as elaborated by Humphrey and Schmitz (2002) to ascertain strategies of fishermen and particularly focusing on process, product and functional upgrading. However, where the classification is too constraining, a broader view of upgrading will be used so that the intricacies of FIPs are portrayed coherently. Upgrading creates an understanding of how producers in developing countries can gain access to global markets and what benefits of access and risks of exclusion might be. Considering the concerns about overexploitation of fish stocks and the demand for more sustainable fisheries, value chains have to address environmental concerns which arise from the production and handling of the products (Bolwig *et al.*, 2010). Furthermore, following Ponte and Ewert (2009) and Bolwig *et al.*, (2010) it is assumed that developing country producers can upgrade without going through the traditional upgrading trajectories and that upgrading is not *per se* about value adding. Considering that fishing is the main livelihood activity for fishermen, upgrading is framed by fishermen undertaking activities to add value but also to reduce risks.

This thesis builds on the issue that in recent years, food safety and environmental standards have become key features in the seafood trade. Standards are set which fisheries have to adhere to and this provides producers, retailers and ultimately consumers proof that fish is caught sustainably. This also has major consequences for producers in terms of how they are able to add value to their product or to determine access to specific segments of the market. In developing countries, there are major obstacles to meeting standards. The question that arises is how producers are able to comply with new requirements. Participation in niche chains could raise the income of fishermen as more money is paid for sustainably produced products (Jaffee, 2003). Upgrading can be seen as improvement to the livelihood of fishermen and participation in value chains influences the local fishing communities in terms of creation of new opportunities. It should be noted that addressing social issues such as poverty through market mechanisms is debated. Value chain interventions are designed and regulated at a global scale using market incentives as ways of motivating behavioural change which is then landed in a specific local context. It is difficult to know whether this can be successful in the long run. Consequently, this thesis addresses how developing country fishermen are affected by being part of niche value chains which seek to move to MSC certification through FIPs. FIPs use market-based incentives as a trigger to move towards more sustainable fishing behaviour.

Incorporation into niche value chains that are moving towards MSC certification often requires structural changes in fisheries. Changes observed are shifting from meeting national needs of food security to export oriented production which influences and changes the locally shaped practices of production and trade. Local communities might be hesitant in adopting new practices as the requirements might be difficult to meet and this could be seen as a reason why there are not so many developing country fisheries certified by MSC (Ponte, 2008). Although the MSC is committed to “fair and equal access for all fisheries” it is not a social standard, its focus is environmental improvement (Gullbrandsen, 2009). The MSC system seems to fail to protect small-scale fisheries from risks of participation in global markets and to address social issues in small-scale communities. To understand the consequences of incorporation into global value chains for fishermen it is essential to understand the structures and social relationships in which fisheries are embedded. The increasing demand for sustainable seafood and the fact that small-scale fisheries are struggling to move towards sustainable development is a cause for concern. Small-scale fishermen are lagging behind because of poverty and high dependence on fisheries resources. Fishermen (small-scale or industrial) are often dependent on fishing for their livelihood (Pérez-Ramírez *et al.*, 2011). Addressing issues of human development is crucial for the overall sustainability of fisheries in developing country because one cannot ignore the impact fishermen are having on the resource base and how they are dependent on this resource base for their livelihood. Social issues like poverty, livelihood sources and resources fishermen are able to mobilise, influence the capabilities of fishermen and fishing communities. These factors affect their capacity to participate in value chains and also how they can benefit from participation in value chains (Bolwig *et al.*, 2010). Issues related to income, risk and vulnerability are central to inclusion or exclusion in niche value chains. Relationships and capabilities that producers have are important to understand upgrading capabilities; this includes looking at how a chain is perceived in the local community as well as how different stakeholders compete and collaborate and what assets and capabilities producers have to influence their situation. While local communities

might be rigid in adopting new practices, upgrading sets out a framework for analysing how fishermen move towards meeting these requirements.

While upgrading considers how fishermen are becoming incorporated into niche value chains, actors in seafood supply chains often set out a process for improvement which needs to be followed in order to be able to participate in specific value chains. The primary difference between a supply chain and a value chain is a difference of focus from the supply base to the consumer. Supply chains focus on integrating supplier and producer processes, improving efficiency and reducing waste, while value chains focus on the downstream aspects, on creating value in the eyes of the consumer. As consumers have become more aware of problems in fisheries, retailers in value chains seek to be perceived as responsible and thus address environmental issues (Cummins, 2004). A product, which is labelled as sustainable, is perceived as an economic and ecological win-win situation. Consequently, private actors are taking up new functions in managing natural resources such as fisheries. Many companies work with processes of improvement to rectify issues on production and the methodology is increasingly more applied to the management of natural resources (Kraus and Platkus, 2007). The question that arises is how a process of improvement (based on any criteria) is achieving more sustainable fisheries and whether this methodology is suitable for managing natural resources. The word “improve” as defined in the Oxford English Reference Dictionary (1996) is “to make something better or to produce something better than it is in its current state”. A consequence of wanting improvement is that a specific process is set out to achieve this. In seafood value chains it is assumed that processes of improvement are based on objectives and goals set out in the value chains. These can include producing more efficiently, adhering to food safety standards, but can also mean moving towards MSC certification. Actors in value chains are often companies or organisations with a philosophy that is market oriented with profit and efficiency as key drivers. Environmental improvement is approached like any other aspect in a company: decision-making is centralised, although employees are consulted; and an optimal outcome is set, with procedures to make sure that that outcome occurs (Brouwer and van Koppen, 2008). The question is how and whether market-oriented mechanisms are able to fully address issues in complex socio-ecological systems. To properly evaluate FIPs which seek to move towards fishery improvement, a concept is needed which addresses how fisheries can move to more sustainable fisheries. Improvement and the process of achieving improvement are explored further. FIPs function through value chains and seek to move a fishery toward improvement which is why in the next section the concept of Continual Improvement is elaborated. This concept will be used to assess the improvement approach used by FIPs and at also assess how the fishery is moving towards improvement.

### **2.3 Continual Improvement**

In this section, the concept of Continual Improvement (CI) is assessed and elaborated. As will be shown in chapter 3, Fisheries Improvement Projects (FIP) follow a process towards improvement. Considering that FIPs set out a process for improvement, an understanding of the concept is required to be able to determine its manifestation as well as ramifications of its use. CI is linked to the assessment of improvement objectives like environmental performance and other goals like human development. While upgrading sheds light on the intricacies of seafood production and trade in specific contexts, it is

important to understand how a process of improvement influences upgrading strategies. Throughout this thesis the concept of Continual Improvement is used to show the methodology behind FIPs and ultimately the question is whether this methodology is suitable for addressing problems in fisheries.

The concept of “Improvement” can have many different meanings depending on who is defining it. Furthermore, there are many different ways of achieving improvement. Within fisheries governance there are several examples of what is considered to be improvement. Often this is seen in projects that aim to improve fisheries and set out objectives to meet the goals, as well as specific indicators which measure the progress to achieve the objectives. Improvement could be perceived as nothing more than a buzzword with little meaning or as an important concept for fisheries which is not yet fully understood.

According to Kraus and Platkus (2007) no theoretical basis exists for Continual Improvement (CI), but it can best be described as a business philosophy. CI has evolved from traditional manufacturing systems that concentrate on reducing waste in production lines and improving product quality to more evolved methodologies that focus on on-going improvement in an entire organisation (Bhuiyan and Baghel, 2005). The origin of CI initiatives can be found in several companies operating in the US in the 1800’s, where employees were provided with incentives to come up with ideas to bring about positive changes in the company (Schroeder and Robinson, 1991). According to Imai (1986) ‘Kaizen’, which is the Japanese interpretation of CI, looks for ways to make uninterrupted, on-going, incremental changes. The idea is that there is always room for improvement, and production operations cannot stand still. CI is dynamic and recurring and is critical to long-term success of an organisation. How improvement is implemented can vary from organisation to organisation. Continual Improvement and Continuous Improvement are often used interchangeably to address the same thing, in this thesis, Continual Improvement will be used.

### **2.3.1 Improvement Methodology**

Improvement is achieved through the use of a number of tools and techniques dedicated to searching for sources of problems and finding ways to minimise them (Bhuiyan and Baghel, 2005). CI methodologies have developed from the basic concept of quality or process improvement in order to reduce waste, simplify the production line and improve quality. More recently, more companies are using standardized Environmental Management Systems (EMS) to manage environmental concerns of a company (Cochin, 1998). EMS are an important component of ISO 14001 certification and firms are required to integrate strategic environmental management into company operations through an EMS. ISO 14001 defines continual improvement as “a process of enhancing the environmental management system in order to achieve improvements in overall environmental performance consistent with the organizations environmental policy” (Brouwer and van Koppen, 2008).

EMS refers to the management of an organization's environmental programs in a comprehensive, systematic way and provides an outline for integrating strategic environmental management into company operations in hopes of realizing broader environmental goals. Such an EMS system has an elaborate methodology and is concerned with improving environmental performance of companies.

Because this thesis is not concerned with companies, but with actors in the fishery supply chain and particularly fishermen, it must be remembered that fishermen and value chains function quite differently from companies. EMS provides a comprehensive framework for analysing environmental performance, which is useful for the scope of this thesis. Company EMS plans include a framework for tracking and measuring environmental performance which includes periodic performance measurements as well as system audits and management reviews to achieve CI (Cochin, 1998). EMS audits evaluate organisation's environmental performance by checking conformance with stated criteria. Before audits focused on checking compliance, but now they also cover reducing environmental risks, preventing environmental impact and conserving natural resources.

Auditing is a crucial aspect of measuring improvement and auditing for CI recognizes non-conformance and opportunities for improvement. It also recognizes and documents how the management system is encouraging positive practices. Auditors often make remarks on "opportunities for improvements" (OFI) which are usually based on the auditors' prior experience and generally accepted best-management practices (Kraus and Platkus, 2007). Indicators are used to measure environmental performance. Company-specific environmental indicator systems are an important tool to evaluate environmental performance. Benchmarking allows for an evaluation of the relative environmental progress of a company. Companies have to formulate targets in terms of measurable performance in accordance to the environmental objectives and to record their progress towards these targets (Brouwer and van Koppen, 2008). Increasingly more companies are using standardized EMS but it should be noted that it is not yet known whether and how EMS affects actual environmental performance. A joint EMS consists of several enterprises which use the same standards to measure environmental performance. An example of a joint EMS in fisheries is MSC certification. MSC certification is seen as the measure of sustainably caught seafood for many companies. Corporate environmental performance can be seen in two aspects: the environmental management efforts of the company and the environmental performance of operations. Indicators are used to evaluate performance and the environmental performance can be judged based on the development of these indicators (Ammenberg and Hjelm, 2002). There is a variety of methods for environmental appraisal of systems of production, but they are usually not integrated within analysis of the value chains of which these systems are part. Auditing measures progress towards improvement and when considering CI it is important to continue to audit environmental performance as improvement doesn't have an end-point.

The CI capability model (Bessant and Caffyn, 1997) provides a tool for evaluating the usefulness of CI implementation. The model elaborates measures that are needed to successfully implement CI (in a FIP) and the characteristics needed by companies to develop CI capability. This is useful for taking into consideration the organisation of a process of improvement in a FIP. Caffyn (1999) developed CI behaviour factors that are essential for all organizations. These behavioural factors are important to consider because CI does not only happen "on the floor", it is also dependent on the organisation of the project. The organisation of FIPs influences whether and how fishermen and fish traders respond to the FIP and, consequently, an understanding of CI capability of FIPs can provide insights into whether a FIP is successful. Behavioural factors include an understanding of the objective of a project, promotion of

active involvement in CI, reinforcement of assessment mechanisms, commitment and on-going learning by doing.

As a consequence of the popularity of eco-labelling schemes in fisheries, there has been an increase in the use of environmental standards and related assessments. In the methodology a distinction is made between criteria set and indicators which measure whether these criteria are met. This is a crucial aspect of Continual Improvement and is further elaborated in the next section.

### **2.3.2 Strategic and Tactical Improvement**

Underlying CI is a strategy to resolve recognized problems through a step-wise programme of improvement. CI is a systematic review and documentation of practices that show improvements beyond compliance to an agreed baseline. Within this, a tactical and a strategic improvement cycle can be distinguished. The tactical cycle aims to achieve established objectives and targets. Tactical Improvement is based on a clear point of reference and can be measured by indicators. CI within this cycle means moving towards these targets. Improvement in the tactical cycle is insufficient as a determinant of CI because the overall environmental progress will depend on the ambition level of objectives. The level and scope of objectives is set in the strategic cycle, which consists of continual adjustment of objectives to external factors and internal motivation. Companies often formulate general normative principles such as sustainability as a foundation of their environmental policy or as a long-term goal. These principles cannot easily be quantified, but they are important to realizing strategic improvement. CI can also be seen as such a principle, as many companies explicitly express their ambition of realizing Continual Improvement in environmental performance (Brouwer and van Koppen, 2008).

Integration of environmental performance aspects into value chain analysis requires knowledge about the demands and expectations that compliance with different kinds of standards entails (Bolwig *et al.*, 2010). Fishermen and fish traders seek to have market access and to improve their income, for this they are reliant on trade and the value chain. All fisheries are part of a value chain (local or international) and for most of these fisheries meeting environmental standards requires that changes are made to their practises. Strategic and Tactical Improvement are interconnected with upgrading strategies of fishermen. Fishermen are the means through which strategic improvements are achieved. Tactical improvement is about meeting established objectives set out to meet environmental improvement and is consequently linked with product, process and functional upgrading. Upgrading strategies of fishermen are concerned with rising to meet new demands which they are faced with when becoming incorporated in value chains. At the same time, tactical improvement is concerned with practical aspects of measuring the process towards improvement using indicators.

## **2.4 Link between Upgrading and Continual Improvement**

While Continual Improvement (CI) has a basis in business philosophy and initially focused on manufacturing processes, the concept has evolved and is used to address a wide range of issues. Upgrading enables a wide understanding of the factors which influence fishermen's behaviour. It is

interesting that CI focuses on companies whose environmental strategy is secondary to its main activity of production. Companies invest in environmental improvement because of benefits that accrue. In companies, procedures are set out to organise moving towards goals a systematic way. A company can be seen as predictable and controllable and Continual Improvement can be seen as a systems approach. Systems are characterised by being made up of several interconnected components which interact and make up the system. A system which is geared to improve specific parts of the system, will not improve the whole system (Goldratt, 1990). A fishery system is often considered to be a socio-ecological system which on a broad level is made up of a human and a natural system (Mahon *et al.*, 2008). Human activity and natural fluctuations interact and one cannot consider the two to be separate. Only addressing issues of the natural system doesn't give the wanted outcome. Getting rid of defects of one part of a system doesn't improve the performance of a system either, which is why improvements should focus on the whole system. Fishery systems used to be treated as controllable and management was focussed on acquiring more information, constructing more complex models and refining control systems. However, this approach has not been able to deal with the complex, dynamic nature of fisheries systems. Fisheries cannot be seen as predictable or controllable and problems in fisheries can be defined as 'wicked' problems. Wicked problems, as defined by Rittel & Weber (1973) are unique problems that are difficult to define and delineate from other and bigger problems. These problems are highly resistant to solutions and are not solved once but tend to re-appear, as there is no stopping rule. Fishery systems complexity and unpredictability are not new to fishery managers, which is why fishery managers focus on resilience and adaptation to address this complexity. Fisheries are Complex Adaptive Systems (CAS) and characteristics of complex systems stem from interactions and patterns in the system (Mahon *et al.*, 2008). CI focuses on processes of improvement in companies. The idea behind CI is that if all component processes are improved, then the entire system will improve. This ignores the interdependence between parts within the system. Within companies, objectives are set and then a manager goes about initiating, controlling and directing company towards change. When using CI, it should be remembered that fisheries are complex systems which cannot be controlled and directed like a company. The fact that a process similar to CI is being used by FIPs is a noteworthy development for fisheries governance and it will be interesting to see how this method for managing problems in fisheries will manifest itself.

The link between upgrading, which is concerned with incorporation into value chains, and CI, which is concerned with processes of improvement within controllable systems, is that FIPs utilise a methodology similar to CI to achieve sustainable fisheries which affect fishermen upgrading strategies. Beyond this, upgrading provides a framework for understanding how fishermen are incorporated into specific value chains. Fishermen become involved in certain processes of improvement to participate in value chains. The processes of improvement are based on goals for achieving sustainable fisheries set out in FIPs. As is explored in the next chapter, FIPs use a methodology similar to CI as a basis for how they approach fishery improvement. As a consequence of consumer demand for sustainable seafood and public commitments by retailers to provide sustainable seafood, there are many examples where seafood supply chains are seen as new realms of fisheries governance. A structured path is set out towards being able to source from sustainable fisheries (guided by consultants and NGO's) and this is then referred to as a FIP. CI is a top-down, external intervention and upgrading analyses how fishermen (producers) move towards internal improvement. The question is whether this CI methodology contributes to upgrading

possibilities of fishermen and whether this is so in practice. In the next section the Analytical Framework is presented which will be used to evaluate the emergence and manifestation of FIPs.

## 2.5 Analytical Framework

This thesis aims to contribute to the understanding of the emergence of Fisheries Improvement Projects (FIP) and what the consequences are of these new types of governance arrangement for addressing problems in fisheries. The analytical framework is built up based on upgrading and Continual Improvement (CI). Based on the preceding discussion of the theory, a framework was created which is assumed to represent the various aspects of upgrading and CI. This framework is used as a guide in the analysis of the emergence of FIPs and the effects of FIPs on fisheries improvement, as well as consequences of the FIP on strategies of fishermen and how fishermen themselves move to improvement.

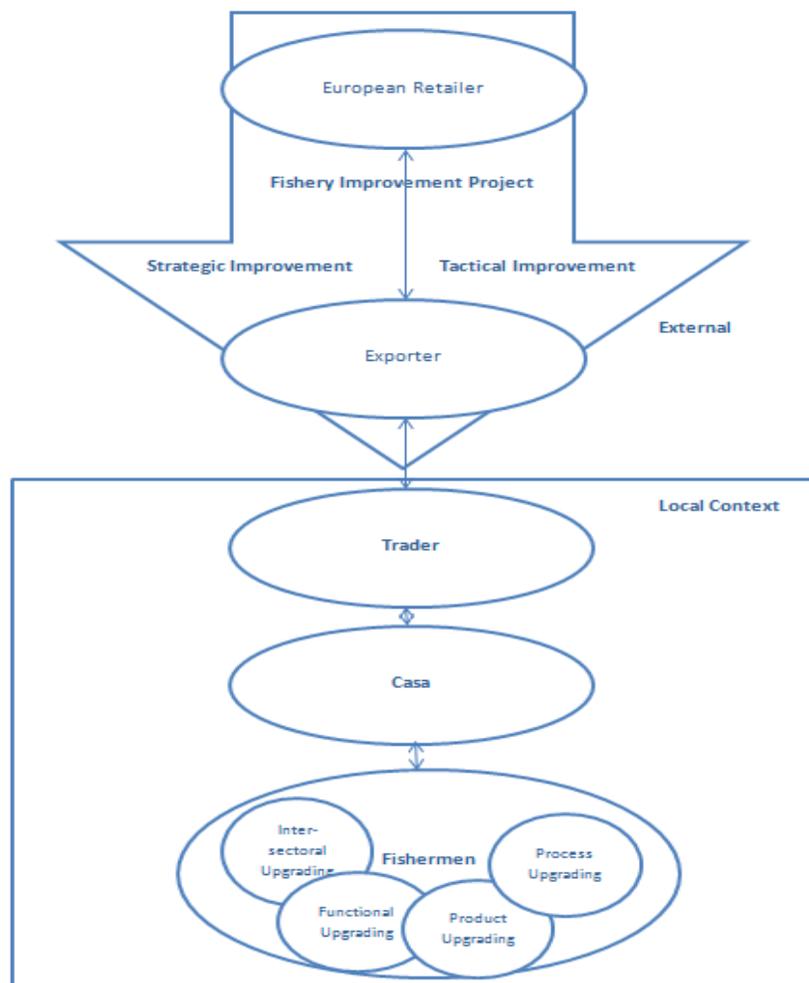


Figure 1 Analytical Framework (constructed by author)

The Analytical Framework consists of two main parts that together account for the evaluation of what is improvement in fisheries. The upper half of the framework focuses on the FIPs and draws on the CI

methodology to analyse the suitability of the FIP approach. The upper half of the framework is pointing/moving towards the lower half of the framework. This represents how FIPs are affecting the fishery and also signifies the fact that FIPs are external to the setting in which the fishery is embedded. The lower half of the framework focuses on the fishermen and uses upgrading as a framework to understand what factors influence fishermen strategies. What links these concepts together is the value chain from European retailer to fishermen. The value chain of the fishery is key for both the FIP and the fishermen.

The upper half of the analytical framework analyses the new type of FIPs. This exploration shows the shifts in what is considered to be improvement in fisheries governance and also describes the methodology FIPs use to achieve their objectives. This part of the analytical framework is applied to literature study as well as to information from FIP experts. Understanding the influence of FIPs is crucial to assessing how suited they are in addressing problems in fisheries and particularly in influencing the upgrading strategies of fishermen. The case study provides insights into how FIPs are going about achieving improvements in fisheries and sheds light how fishermen are responding to this. The lower half of the analytical framework considers various factors which influence fishermen upgrading strategies. One of these factors is the external imposition of a FIP, but other factors include, being part of a global value chain and relationships they have with other actors as well as the local context of the fishery. Furthermore, it is examined how fishermen cope with challenges that they face. This part analyses how this new kind of FIP and particularly the methodology it uses is affecting fishermen's strategies. The different types of upgrading and the different types of GVC governance are seen as a framework to understand fishermen strategies to improve their situation. The value chain is an important component to both the upper and the lower half of the analytical framework. It is assumed that the value chain affects the relationships fishermen have and the opportunities they can take up. Besides this, the FIPs, are based on the idea that supply chain are the new means to governing fisheries and that private actors can incentivise fishermen to change their behaviour. This analysis seeks to contribute to the debate about the possibilities of developing country fisheries to move towards improvements. Based on the concepts elaborated, another part of the hypothesis of this thesis is that "FIPs use CI methodology to move towards sustainably managed fisheries and this enables fishermen to upgrade their situation," Therefore, the complete hypothesis of this thesis is:

*"FIPs use CI methodology to move towards sustainably managed fisheries, but fisheries are so complex, that the FIP approach will not be suitable to address problems in fisheries, and FIPs will not provide fishermen with opportunities to upgrade their situation".*

The outcomes of the various chapters will be used as the basis for the discussion on the consequences of the fact that FIPs using CI methodology are emerging as new types of projects to address problems in fisheries. This information feeds back into the discussion of how the introduction of FIPs in local contexts is contributing to the enhancement of sustainable fisheries governance. The theoretical concepts have been introduced and in the following chapter FIPs are further introduced.

## Chapter 3 Fisheries Improvement Projects

### 3.1 Introduction

This chapter presents an overview of the emergence and characteristics of Fisheries Improvement Projects (FIP). As FIPs are a relatively new concept in fisheries governance, little is known about its origins and its structure. A better understanding of FIPs is needed to be able to determine whether this new type of governance arrangement is suitable to addressing problems in fisheries. This chapter portrays where the concept comes from, the range of goals and the means of achieving these goals. It portrays the most common arrangements of FIPs and seeks to contribute to the matter of whether the “improvement” concept really promotes fisheries improvement. Improvement is a normative concept which implies moving towards a better situation through a specific process.

### 3.2 Emergence of Fisheries Improvement Projects

Most recently, the term Fisheries Improvement Project (FIP) has been popularised as projects which help fisheries move towards Marine Stewardship Council (MSC) certification. There are multiple examples of FIPs and many of these projects have been around for a long time, the earliest example dating back to 1989, which is long before the emergence of the MSC. The origins of the concept are not very clear; it is a concept which has gradually emerged. Although the term has been around for quite some time there is little information to be found in academic literature and there is no comprehensive description of what FIPs are, what they aim to achieve and whether this new governance arrangement is effective in addressing problems in fisheries. Most of the examples found are separate initiatives and are not linked in terms of conceptualisation or method, purely with the goal of achieving some sort of “fisheries improvement”. Fisheries improvement has been a concern since it has become apparent that many fisheries are threatened by overexploitation (Pauly *et al.*, 2002). There are many examples of projects that aim to improve fisheries and there is quite some variation in the aims and means of achieving improvement. The range of projects aiming to “improve fisheries” portrays the great diversity of issues to be addressed in fisheries and ways in which policy makers/ projects go about addressing these problems. Furthermore, there are many projects not specifically named Fisheries Improvement Projects that also seek to address problems in fisheries (Interview FAO, 2012). The way policy makers go about addressing fisheries improvement is a reflection of what is seen as improvement by discourses in management. Also the definition of what fisheries improvement is may vary depending on who is defining it. There is a broad range of means to improve fisheries, for example: addressing the management/ governance of fisheries, technical requirements, as well as conservation of the marine ecosystems.

The FIPs that are linked to MSC certification have more specific goals, similar methods to achieve these goals and are linked to market-based initiatives to improve fisheries. Several non-governmental organisations (NGOs) and fishery consultancy firms like the Sustainable Fisheries Partnership (SFP) and Poseidon Consultancy Ltd. have been very active in addressing this issue.

### **3.3 Examples of Fisheries Improvement Projects**

In this section some examples will be given of FIPs in the last 40 years. This elaboration will shed light on the differences between FIPs from the first much diversified projects to the currently more cohesive types of FIPs.

#### **3.3.1 Discovery Bay Fisheries Improvement Project – Jamaica (1989)**

The Discovery Bay FIP for reef fisheries in Jamaica is the oldest example of a FIP. This project was started up by the Discovery Bay Marine Laboratory in collaboration with Trent University because there was an awareness of the overfishing problem and they believed that grassroots, community-based action was the best way to address the issue. Through correspondence with DBML (2012) it became clear that the aim of the project “as its 'descriptive' name suggests - to improve a declining artisanal fishery on the north coast of Jamaica. It involved a lot of planning, finding staff and the equipment needed, communication with the fishermen and trying to understand the problem before looking for solutions.” The project was adapted in response to new information in the start-up phase of the project. Research was carried out and it became clear that the reef fisheries were being overexploited. The project’s scope was to provide a long term programme which would investigate the potential of community-based management of the North Jamaican coastal reef ecosystems. The idea was that with appropriate management measures, ecosystem damage would be minimal and both the fishing communities and the tourism sector would benefit economically.

The objectives of the project were to:

1. Do research on and monitor biological and cultural systems
2. Set up an education/communication program to facilitate interaction between communities and researchers
3. Use the knowledge gained to motivate and empower the users towards collective action to improve the status of the resource

Source: Allison 1989; Personal Communication DBML (2012)

#### **3.3.2 Fisheries Infrastructure Improvement Project (FIIP) – Vietnam (2004)**

The FIIP was formulated in early 1990’s in a time where Vietnam’s marine fisheries were constrained by war-damaged, inefficient fishing port infrastructure which led to post-harvest losses and, consequently, to loss of revenue. At this time Vietnam’s inshore fishing fleets rapidly expanded resulting in overexploitation of inshore marine resources. The Vietnamese Ministry of Fisheries (MOFi) data showed that the Catch per Unit Effort (CPUE) had decreased from 0.9 tons per horsepower (hp) per year in 1990 to 0.6 tons per hp in 1993. To address this situation MOFi adopted a strategy of upgrading vessels and fish ports and encourage fishing in the less exploited offshore waters, to protect inshore resources. This was to be accompanied by training of government staff members in modern fisheries resource management, but there was a lack of funds. Following a review by the Asia Development Bank (ADB), recommendations were suggested and a substantial loan was given to implement the recommendations through the FIIP. The FIIP intended to increase earnings in fisheries on a sustainable basis which meant expanding landings but within the limits of Maximum Sustainable Yield (MSY) and reducing post-harvest

losses. The FIIP was to promote improved marine resources and environmental management by increasing availability of fisheries data and to strengthen institutional capacity through trainings and national and provincial levels. The project consisted of two parts:

- Part one was to develop fisheries support facilities which included rehabilitation or construction of 10 fishing ports and the establishment of environmental and resource management units.
- Part two was to provide credit to fishermen and to entrepreneurs through private sector support so that the fishermen would be able to buy engines more suitable for offshore fishing and entrepreneurs would be able to establish in-port ice plants and cold stores.

Source: Asia Development Bank (2004)

### **3.3.3 Fishery Improvement Program - Nevada, USA (2005)**

There is a significant initiative in the Walker Basin, with the aim of saving the Walker Lake, which is a closed-system, terminal lake. Walker Lake is one of 7 terminal lakes in the world and this initiative identified funding which could finance several activities for conservation of Walker Lake. The Lahontan cutthroat trout is currently challenged by very high levels of salinity and alkalinity and low levels of water. The program is called a Fisheries Improvement Program, because there was a need to protect the fish stock. The concept of fishery improvement was chosen because the program addresses issues facing the Lahontan cutthroat trout, but it is not based on other examples of similar projects with the same name. The aim of the program was to improve the survival of the Lahontan cutthroat trout. There are several problems in the Walker system, there is a shortage of fresh water flow and another issue is that a dam was built which cut off Lahontan cutthroat trout from their migration routes. The funding the project received was intended for rigorous research and monitoring to be carried out to determine shifts in the ecosystem. As the lake is changing in chemistry through lack of fresh water input, information was required to see the response of the trout to these changes. The project is still running, and currently it is in a critical phase. When the project started in 2006 the Lahontan cutthroat trout was still being stocked, but now the water level in the lake is too low and this is not possible anymore. US Wildlife and Fisheries bureau are maintaining the stock in alternative places and hatcheries and are hoping that they will be able to set out trout again when the water level in the lake is higher. This partnership in concert with research organisations has been very successful in establishing the monitoring project. Research is considered to be important because it provides real time information. Efforts are coordinated with researchers and information from the monitoring project is used to make adjustment in the project. Therefore, the program could be called an adaptive management program.

Source: US Fish and Wildlife Service, 2012; Interview USFWS.

### **3.3.4 SFP Indonesian Snapper Fisheries Improvement Project - Indonesia (2010)**

The Indonesia snapper fishery is based on small-scale fisheries which use hand lines, bottom long lines, bottom gillnets and traps, but there are also large fleets of trawlers. Indonesian snapper is mainly exported to the USA and there is a high demand, which has led to intensification of the fishery. There is an increase in the number of fishing vessels licensed to operate in Indonesian water. The Sustainable Fisheries Partnership (SFP) is a non-profit, non-governmental organisation that works with seafood buyers and producers to promote the long-term security of their own supply, by improving fisheries

management and marine conservation. Private sector capacity is built up in two ways, namely by developing business practices and alliances that support sustainable sourcing of seafood and by advocating stronger government fisheries and marine conservation policies. According to the SFP the strength of the SFP lies in helping buyers and suppliers exert their influence in supply chains and among decision-makers who govern fisheries. The SFP improves access to information that buyers rely on to guide responsible seafood sourcing. They recommend specific improvements in management and provide critical assistance to seafood companies as they press governments for fisheries improvement. According to SFP, improvements to be considered are effective harvest regulation, monitoring and enforcement and measures to reduce illegally caught seafood. To achieve environmental improvement in the Indonesian snapper fisheries, several steps have to be undertaken. Data has to be collected to analyze the health of the snapper stocks, the environmental impacts of the various fishing methods and identification of (possible) regulatory reforms. The SFP collaborates with the progressive Indonesian snapper producers and processors and other NGO's in the fishery improvement process. Initial steps in the Fisheries Improvement Process include:

- Support research to define stock status of Indonesian snapper, as a comprehensive nation-wide biological stock assessment for snapper is not available. It is difficult to improve the fishery management without knowing the status and condition of the fish stock. Therefore, the initial steps should be taken to work with experts from local universities and other organizations to study the snapper population in some priority areas and to develop a conservation strategy for the snapper population. This step should be encouraged to ensure continued research to define stock status of Indonesian snapper population and develop management plans to improve sustainability of the fishery.
- Organizing an Indonesian snapper buyers group. There are at least forty U.S. companies importing snapper from Indonesia.
- Facilitating formation of snapper producer association in Indonesia: At present, there are more than 20 snapper processing/exporting companies exporting snapper to the United States. Formation of a producers association has worked well for SFP in other fisheries improvement initiatives including Indonesian blue swimming crab and Russian Pollock. One of the challenges is the high competitiveness among snapper processors/exporters in getting raw material.
- Initiating Marine Stewardship Council (MSC) pre-assessment at national level can help addressing some of the issues in lack of data on stock.
- Gain a better understanding of how the red snapper fishery business contributes to local communities. Based on that develop programs/initiatives to improve local people's livelihood working together with one or two producers to improve fishing gears that will minimize by-catch, increase landings, and minimize energy consumption.

Source: Sustainable Fisheries Partnership (2011)

### **3.4 Similarities and Differences between FIPs**

This short overview of the various kinds of FIPs shows the wide range of problems facing different fisheries as well as objectives and methods for achieving fisheries improvement. The examples show that, while there is a wide range of issues there are similarities and trends which can be distinguished. All

the projects seek to carry out research and monitoring; this is probably based on the fact that most fisheries are faced with a high data-deficiency and need to build up a scientific background to determine the status of the fish stock, as well as to identify courses of action required to address specific issues. Another connection is the focus on bringing together different stakeholders. This could be seen as a consequence of the fact that there has been a shift away from top-down management to more collaborative forms of governance which seeks to involve all stakeholders in addressing problems in fisheries. The lack of involvement of stakeholders is perceived as negative due to the fact that project managers are not the only ones with expertise/knowledge on a specific topic and stakeholders offer important insights into issues and needs of a program. The FIIP in Vietnam and the SFP Snapper FIP in Indonesia specifically mention the need to involve private actors in collaborative projects. This can be seen as a consequence of the fact that market-based governance solutions are perceived to provide more suitable solutions to fisheries problems, because they incentivize stakeholders to change their behaviour. This could be seen as a shift in fisheries governance which can also be seen in different examples of FIPs. Projects often base their improvement trajectory on what is considered to be the best-practice in management/governance. The Discovery Bay FIP sees Community Based Natural Resource Management (CBNRM) as the best way to address the overexploitation of the reef fisheries. At the time the project was implemented, CBNRM was extensively promoted as an approach for pursuing biological conservation and socio-economic objectives. While there are still many examples of CBNRM, more recently there has been a focus on more market-based approaches to natural resource management. The SFP Snapper FIP in Indonesia and other SFP FIPs see market-based governance through value chains as the best way to address problems in fisheries.

The fact that there is a difference between what is considered best-practice in management is linked to the ever changing and evolving ideas about how to address problems in fisheries. It can be deduced that over time, ideas of what is best-practice shift. The concept fishery improvement implies that tackling problems in fisheries is improvement. Another issue is that because the ideas about how to govern problems in fisheries are constantly changing and evolving, what is considered to be improvement is also changing. The meaning of improvement in FIPs is not explicitly stated, but if improvement is considered to be the achieving goals of the projects, then it still varies greatly between projects. Most of these projects focus on improving a specific fishery; each has a specific goal and steps towards achieving this goal following a specific methodology. This approach, combined with local and internal factors which affect the fishery, influence the status of that specific fishery.

With all these projects/programs there is an awareness of the fact that fisheries are facing problems. These problems are diverse but often goals are linked to sustainability or environmental improvement. Many projects, but also NGOs focus on addressing conservation of fish stock, but fisheries are faced with more issues than just environmental aspects. Fisheries are socio-ecological systems, which have a natural as well as a human component and, consequently, organizations like the Food and Agricultural Organization (FAO) focus on human well-being and food security when considering problems in fisheries. Consequently, the scope of improvement could be broader. Currently there is a narrow focus on specific locations and purely ecosystem improvements (interview FAO, 2012). It is important to consider what improvement means within the context of the different projects. A project can strive to improve the

status of the various components of fisheries, for example: for improvement of fish stock, a sustainable, healthy fish stock is often the goal. This would be achieved through limiting fleet capacity, improving destroyed ecosystems and setting up MPA's, giving out access rights, limiting the amount that can be caught. All the aforementioned matters have to be addressed through governance/management on different scales, on international, regional, national and local levels. Or a project could focus on achieving improvement for fishermen, which refers to being able to continue fishing in the future and sufficient returns from fishing to sustain their livelihood and even bring profit for them. It could also mean increasing fishing skills, and allowing them to invest in more boats. For improvement of marine ecosystems fishing techniques and fishing would have to have the lowest impact possible on the ecosystem; this could be achieved by using more environmentally friendly gear and boats. For the seafood supply chain, improvement could mean that throughout the supply chain there is sustainably caught fish, which meets the quantity and quality demanded by the consumers. An interesting example is the SFP Indonesian Snapper FIP: this project aims to achieve MSC certification; it could be assumed that improvement is MSC certification. But then it is important to consider, what MSC certification actually improves. The aforementioned goals are just examples to give an idea of the range of goals projects have.

The goals of most FIPs are very specific to a particular fishery in a geographical area. Furthermore, some projects have multiple goals, which also has consequences for what is perceived to be improvement and for the process of implementation of the project. Some of these factors are (or seem) contradictory, but for all of them goes that sustainability is the baseline. Sustainability is often named as a goal of improving fisheries, which can be attributed to the fact that fisheries have been inherently unsustainable, the issue is that the meaning of sustainability again varies on who is defining it. Of all the examples of FIPs that can be found with its many different "names", it can be deduced that FIPs main function is to improve management/governance of fisheries.

These examples portray a wide range of issues that are related to fisheries improvement within FIPs. It can be discerned that fisheries improvement is linked to governance of fisheries and what is considered to be best practise in fisheries. There are shifts in what is considered to be best-practise in governance, and, consequently, there are shifts in what is considered to be improvement. There is a lack of cohesion between these projects in form and organisation. However, the SFP Snapper FIP in Indonesia is only one example of many similar projects which are seeking to bring together market actors and harness market forces to achieve sustainable fisheries and, consequently, MSC certification.

### **3.5 Codification of FIPs**

This section contributes to the exploration of what is considered to be improvement in Fisheries Improvement Projects (FIP). Through shifts in governance a new type of FIP has emerged and this brings new conceptions of what improvement is. This new type of FIP is explored and its characteristics are arranged and presented so that a better conceptualisation of a FIP is made. The exploration will contribute to the understanding of this new type of FIPs and give insights into the implications of the emergence of this new type of FIP.

While a definition of a FIP may vary depending on who is defining it, various definitions which are elaborated by actors working with the “new” type of FIP are compared and contrasted to give an idea about important aspects of FIPs. About 9 years ago, Jim Cannon, CEO and founder of the Sustainable Fisheries Partnership (SFP) came up with this “new” variant of a FIP (personal communication SFP). The idea was to convene major suppliers of fisheries and using collective leverage to drive changes in fisheries. While there is not a generally accepted definition of a FIP, several organisations have come up with definitions for their own usage. Since it was started up, SFP has worked with many FIPs around the world and they have brought together a lot of new information about processes and tools for carrying out successful FIPs. The SFP defines FIPs as *“an alliance of stakeholders – retailers, processors, producers and/or catchers – that come together to resolve problems within a specific fishery that require attention. The FIP works through key organisations and individuals, talking through the management of the fishery and the challenges that it may face, identifying data that needs to be collected, agreeing on a set of priority actions that should be undertaken to improve the fishery and then overseeing an action plan”* (Sustainable Fisheries Partnership, 2012a). The SFP is a member of the Conservation Alliance for Seafood who have developed their own definition of a FIP. The FIP definition of the Conservation Alliance is: *“a multi-stakeholder effort to improve a fishery. These projects are unique because they utilise the power of the private sector to incentivise positive changes toward sustainability in the fishery. Participants may vary depending on the nature of the fishery and the improvement project, and may include stakeholders such as producers, NGO’s, fishery managers, government and members of the fishery supply chain”*(Conservation Alliance for Seafood, 2012) According to the Conservation Alliance the ultimate goal of a FIP is to perform at a level consistent with an unconditional pass of the MSC standard. According to the World Wildlife Fund (WWF), FIPs aim is to improve the fishery so it will meet or exceed the MSC standard (World Wildlife Fund, 2011). The WWF is involved in aiding and sometimes even facilitating FIPs. FIPs are often externally facilitated by consultants with previous experience of conducting fisheries pre-assessment and full-assessments for MSC certification.

How FIPs achieve improvement is related to the process of improvement that is set out by a FIP. Underlying a FIP is a strategy to resolve recognized problems within a fishery through a step-wise programme of improvement. MSC certification is linked to FIPs in the way that these new FIP arrangements aim to move towards MSC certification. MSC certification is seen as guiding the process of improvement (World Wildlife Fund, 2011; Sustainable Fisheries Partnership, 2012a). FIPs base improvement targets on the outcome of MSC pre-assessment and targets are linked to MSC standards. The Sustainable Fisheries Partnership has gathered useful data about processes and tools needed to carry out successful FIPs (Sustainable Fisheries Partnership, 2012a). According to Poseidon Consultancy (personal communication, 2012) , a FIP usually consists of two phases – first evaluating a specific fishery against a set of benchmarks (MSC standard) and the proposing of a set of actions to improve the fishery to meet or exceed the standards set in the first phase (strategic and tactical improvement). The SFP stipulates several tasks which have to be carried out for a FIP to be successful.

- FIP Formation by actors in the supply chain of a specific fishery
- Assessment of all current fishery data
- Fishery Assessment to identify issues and might be part of pre-assessment

- Agreement to a work plan for improving the fishery
- Creation of a monitoring system which uses indicators for the elements set out in the work plan to assess progress
- Implementation

To assess the progress a FIP is making to achieving actual results the SFP has developed the “FIP Process”, which sets out a series of progressive stages and indicators which represent completion of each stage. This FIP process measures progress but does not define what progress is enough. Defining the level of progress that is acceptable is a task for the FIP participants and other stakeholders.

|   | <b>Stages</b>                | <b>Indicators</b>   |
|---|------------------------------|---|
| 1 | Launching the FIP            | Evaluation of the sustainability of the fishery   |
| 2 | Forming FIP                  | Organisation of stakeholders to evaluate fishery  |
| 3 | Encourage Improvements       | Development of work plan with improvement milestones  |
| 4 | Improve policies/practise    | Achieving improvement milestones and adjusting policy and practise to be more precautionary |
| 5 | Deliver improvement in water | Increased fish stock biomass, decreased fishing mortality, increased compliance in fishery  |
| 6 | MSC Certification (optional) |   |

Table 1. FIP Process (adapted from Sustainable Fisheries Partnership, 2012a)

The Conservation Alliance for Seafood sets out a three-step process which should be followed so ascertain how and whether a fishery is moving towards sustainability.

|   |  |
|---|--|
| Step 1 - Scoping                              | Stakeholder mapping and engagement process<br>MSC pre-assessment<br>White paper with action points                       |
| Step 2 – Work plan Development                | A list of activities<br>Responsible parties<br>Timeframes<br>Metrics and key performance indicators<br>Associated budget |
| Step 3 – Implementation and tracking progress | Implementation of the work plan<br>Tracking and reporting on progress  |

Table 2. Indicators for Fisheries Sustainability (adapted from Conservation Alliance for Seafood, 2012)

These indicators for tracking progress and project processes for achieving improvement set out a procedure which a project must follow to move towards certification/sustainability.

### 3.6 Continual Improvement Methodology

Continual Improvement as presented in the theoretical framework is a systematic review and documentation of practices that show measurable improvements beyond compliance to an agreed upon baseline. A joint Environmental Management System (EMS) is when several organisations use the same measure of environmental performance. MSC could be seen as a joint EMS, while fisheries through FIPs are the organisations that measure their environmental performance according to the scheme. Considering that this thesis focuses on small-scale fishermen, an issue is that these fishermen have to be organised to a certain extent to be able to work at the environmental performance of the sector. FIPs are the projects to organise a scattered group of fishermen so as to be able to work towards environmental improvement. Following Bush *et al.* (2013), it is supposed that the strategic ambition of the MSC can be seen in its principles and criteria for sustainable fisheries. Achieving sustainable fisheries is stated to be based on a process of maintaining, but also developing and re-establishing effective management systems, the integrity of habitats and healthy populations of target species. Another aspect which has to be considered is that a FIP has to function within the existing management framework. This requires investment in building relationships, since the success of a Fisheries Improvement Project depends on the commitment and capacity of stakeholders as well as national and local governments to implement the project. Research and monitoring of biological/ecological as well as social and economic aspects of a fishery are often lacking, so it is crucial to create baselines, monitor fish stocks and collect data on the social side of a fishery.

As this new type of FIP sees MSC certification as a means to achieve improvement, they seem to take over this strategic improvement for sustainable fishing, but they may also have other goals. For example in FIPs established by the SFP, other goals include achieving long-term security of supply and improving local fishermen's livelihood. Also, most recently the SFP has made a crucial change in its goals. While before the end goal was to achieve MSC certification, more recently the SFP has stated that: "*FIPs do not end at a common pre-determined point – some may choose the form of certification, such as MSC, but other may adopt a different target. SFP supports all FIPs that deliver improvement but recommends that the ideal end goal should be a fishery that could score and unconditional pass with the MSC if a full assessment were to be conducted*" (Sustainable Fisheries Partnership, 2012a). This new development could be seen as adaptation to opportunities and can be considered as strategic improvement for the project, but it could undermine the MSC standards. At the tactical level, CI is realized through Performance Indicators following the standards set by the MSC assessment scheme, even with this new definition of the end goals of FIPs it seems that MSC criteria will be used as the basis for measuring sustainable fisheries and environmental improvement.

The FIP methodology and the process of improvement that it sets out is linked to strategic and tactical improvement as set out by the CI methodology. FIPs set out a step-by-step approach to achieving improvement in fisheries. This approach is straightforward and neat and sets out a systematic path of improvement. Following Ponte (2008), it can be assumed that new types of FIPs like MSC certification are using a hands-off approach where auditing is key and systemic and managerial methodologies are central. System performance and conformity with rules is central to this methodology. Particularly, developing country, small-scale fisheries have difficulty meeting all the requirements set out by the MSC

and looking at the SFP FIPs, most of these are found in developing countries (Sustainable Fisheries Partnership, 2012b). The question is how the methodology set out by FIPs functions in a complex, social, developing country context and how fishermen respond to the FIP approach and adapt their strategies. In the next chapter, the FIP in Lagonoy Gulf the Philippines and the yellow-fin tuna fishery which it is trying to improve are evaluated in how they match each other.

## **Chapter 4 Partnership Programme towards Sustainable Tuna**

### **4.1 Introduction**

The aim of this chapter is to illustrate and analyse the yellow-fin tuna Fisheries Improvement Project (FIP) in Lagonoy Gulf, officially named the Partnership Programme towards Sustainable Tuna (PPTST), with the goal of analysing improvement in the context of fisheries. This will be done using the framework developed in chapter 2 and building on the findings of chapter 3. The focus is on evaluating the FIP methodology and testing its applicability in real complex fisheries. Section 4.2 will introduce the yellow-fin tuna fishery of Lagonoy Gulf to highlight the characteristics of this particular fishery in order to introduce the case study. This chapter builds on Continual Improvement (CI) and upgrading, which is why a distinction is made between the different strategies employed by the FIP which seek to move towards fisheries improvement. Section 4.3 will portray the strategic and tactical improvements that are set out in the FIP. In the next chapter the factors that enable and constrain these different strategies are elaborated.

### **4.2 The Yellow-fin tuna fishery of Lagonoy Gulf, the Philippines**

The Philippines is situated in a region of relatively abundant tuna resources. In 2003, the Philippines were the fourth largest producer of tuna and tuna-like species in the world (Vera and Hipolito, 2006). Tuna fishing has been a traditional livelihood activity among Filipino fishers for a very long time. The municipalities of Tiwi and Tabaco that lie along the Lagonoy Gulf are characterized by the high percentage of handline fishermen. In this thesis, the focus is on small-scale handliners which commonly catch adult yellow-fin, skipjack, and big-eye tuna (ANCORS *et al.*, 2011). 'Palaran' handline fishermen are seen as the producers of the yellow-fin tuna supply chain. Palaran handline fishermen have (priority) fishing rights in the 15km of municipal waters, as set out in local fishery ordinances. Handline fishers use simple hook-and-line gear to catch tuna. The hooks are baited on a nylon handline, strong enough to catch fish weighing 30-100 kg (Vera and Hipolito, 2006). Handline fishermen are the primary producers of the high-priced grade A tuna destined for the international market and, consequently, these fishermen are increasingly positioned in global value chains. The demand from the global market is something external which influences the local setting, which is why the local setting of production has to be considered to understand the value chain and trade.

Lagonoy Gulf is divided into municipal waters, provincial and national waters. This creates issues with jurisdiction. The Municipality of Tiwi is geographically located in the Northern tip of Albay Province. It has a total land area of about 11,628 hectares and this area is distributed into 25 villages (barangays). Tiwi is located closely to Tabaco and it became clear during the research that in terms of tuna fishing, the important centre is Tabaco. It is the capital of Albay province and is officially classified as a city. Because of this many fishermen, casa's and traders are based there. The city of Tabaco has an area of 11,714 hectares and this area is distributed into 47 villages/barangays (Tabaco City, 2011). Tabaco City has the only international seaport in the region which contributes to the city's economy. Fishing and farming are the main source of livelihood. For both Tiwi and Tabaco their coastal area is located inside Lagonoy Gulf

which serves as a fishing ground of most of the fishermen living in coastal barangays. Tabaco City has thirty five kilometre length of the coastline with fifteen thousands (15,000) hectares of municipal waters (Tabaco City, 2011).

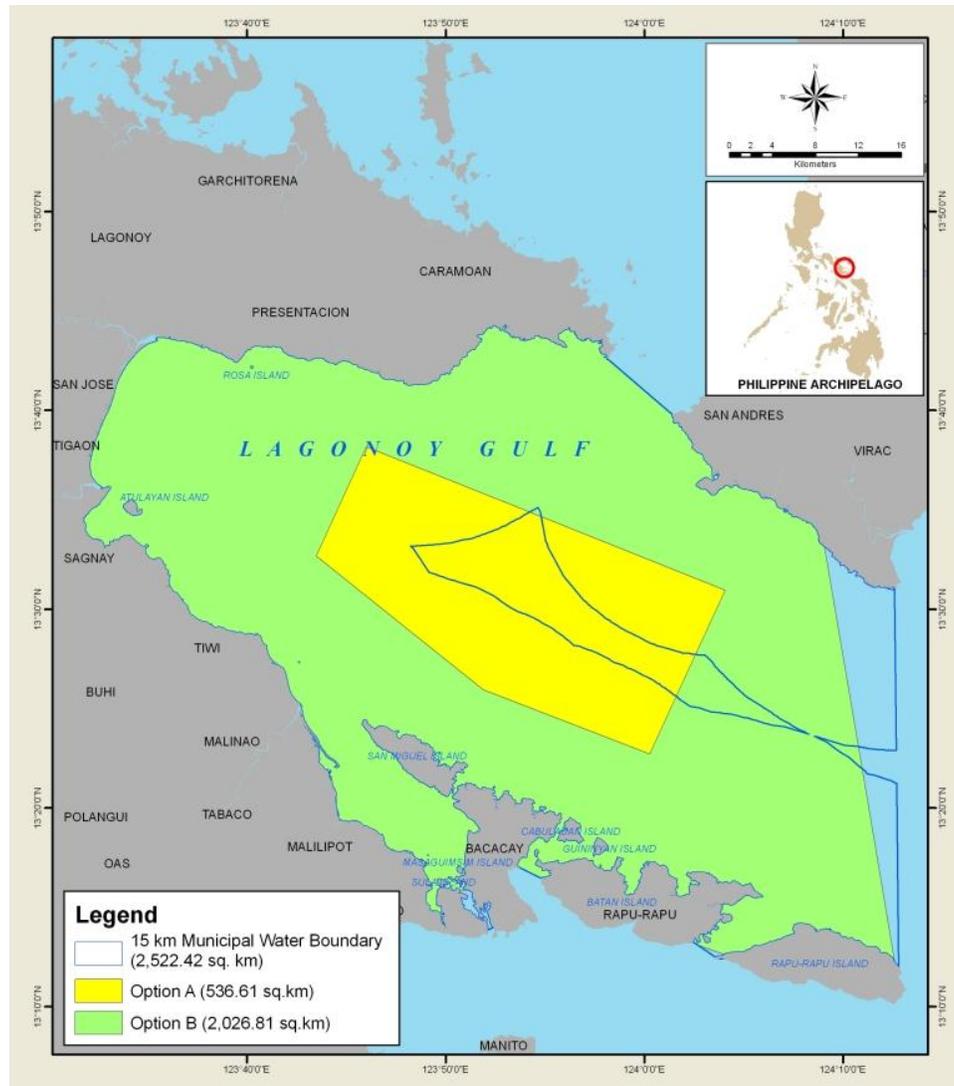


Figure 2: Map of Lagonoy Gulf, the Philippines (Partnership Programme towards Sustainable Tuna, 2009)

According to Tabacos' municipal records, fish production is continuously declining due to overfishing and illegal fishing activities in the coastal area (Tabaco City, 2011). Low fish catch means low income and ultimately results in poverty. Reasons given for decreased fish catch are destructive fishing methods, use of fine mesh nets, increases in the number of fishermen and poor law enforcement. According to the municipality of Tabaco implementation of fishery laws, self-discipline in fishing and community cooperation in managing the coastal resource will help alleviate some of these issues. Fishermen are very much dependent on fishing, which is often their main or only source of income. In Tiwi and Tabaco, most fishermen know each other and share close or even familial ties with other fishermen. In most

cases they use the same fishing practises, gear, fishing ground and market and are faced with the same challenges.

Data from Lagonoy Gulf indicate that more than 70% of tuna is sold in the barangays and local markets within the immediate vicinity. At present, only 30% of tuna caught in Lagonoy Gulf is geared towards the export market (ANCORS *et al.*, 2010). The supply chain for yellow-fin tuna in Lagonoy Gulf follows a rather simplified chain because of the relatively unprocessed form of tuna. For the local market, the tuna is sold from the handline fisher, to the casa or associate casa, fish vendors, and ultimately, consumers. For the export market the chain is a little more extended. The tuna is sold from fisherman to casa to trader to Filipino exporter to European retailer and finally to the consumer. One constraint for engaging more with the export market is the distance/time before the tuna reaches Manila, where the main exporters are based. The higher prices offered in the export market provide an incentive to shift effort to producing for the export market. The shift must be managed effectively because, while some benefits accrue to producers, it comes with an added cost.

### **4.3 The Partnership Programme towards Sustainable Tuna FIP**

In this section the objectives and aims of the FIP will be elaborated and, consequently, the implementation of the FIP as well as the consequences for the fishermen will be analysed. This case study is particularly interesting as there have been quite some studies about the incorporation of developing country producers into value chains, but so far no research could be found on small-scale developing country producers that are moving towards MSC certification. The issue is that this small-scale fishery sector in Lagonoy Gulf not only has to comply with the standards set out by the MSC, but also has to be able to export this MSC-certified tuna. The fishery has to change to comply with food safety and hygiene standards. While Continual Improvement is a business concept applied to various aspects of improvement within a company, this FIP sets out a process of improvement that in form is very similar to Continual Improvement as well. In this case, the aim of the FIP is not to increase efficiency but to move to more environmentally acceptable levels of production. The Project Proposal of the PPTST (2009) states that the goal of the FIP is to *“establish a sustainable fishery for Yellow- fin tuna within the geographic range of the fishery by applying active bottom-up approach and securing active participation of all relevant stakeholders along the supply chain. The standard of the Marine Stewardship Council will be the guiding framework for this fishery improvement initiative”*. The following sub sections are organised following the Continual Improvement approach and are thus divided into a subsection of the strategic improvement and one for tactical improvement.

### **4.4 Strategic Improvement**

In this section strategic improvement of the Partnership Programme towards Sustainable Tuna (PPTST) is elaborated to portray what the wider ambition of the project is. The PPTST is a four-year conservation program which started in May 2011 and which is being carried out by the WWF Philippines with the support of Danish International Development Agency (DANIDA) under the WWF Coral Triangle Network Initiative. The goal of the program is to contribute to sustainable management of fisheries resources, in

particular the tuna fishery in two locations in the Philippines, one in Mindoro Occidental and one in Lagonoy Gulf in Bicol Region. This research focuses on the Lagonoy Gulf tuna fishery. The goal of the PPTST is to achieve sustainability through fisheries co-management and market incentives (Partnership Programme towards Sustainable Tuna, 2009). Staff members of WWF Philippines and Blue You consultancy conceptualized the PPTST with the aim of creating a sustainable tuna-sourcing programme for European markets. The Lagonoy Gulf was chosen because the artisanal handline fishery is a highly selective fishing method and it has no by-catch and discards and thus it has less impact on the endangered species such as sharks, marlins, sailfish or turtles. The boats of these small-scale fishermen have a limited operational range and this allows for more effective fishery organisation and management/enforcement procedures. The retailers involved in this project are European retailers. Namely, Seafresh Urk from the Netherlands and Bell Seafood, which is associated with Coop Switzerland. These two retailers who are seeking to source from sustainable fisheries have committed to financing the MSC certification of the Lagonoy Gulf yellow-fin tuna fishery, particularly the ensuing Chain of Custody (CoC) certification. The main issue for Filipino Exporters within the PPTST is that tuna export to Europe has to adhere to certain quality standards. The Bureau of Fisheries and Aquatic Resources (BFAR) have set up a list of exporters that comply with these quality standards and the European retailers are already sourcing from these exporters even though MSC certification has not yet been achieved.

This project is based on the idea that fisheries are difficult to manage and that certification schemes combined with co-management efforts are the best ways to address problems. Both approaches are based on stakeholder involvement and joint decision-making as well as orientation towards markets and related supply chains. The reasoning for choosing a market-based approach was related to the fact that the persons that conceptualized the project were aware of other initiatives which used integrated value chain promotion and MSC certification and who were successful in meeting their goals (Partnership Programme towards Sustainable Tuna, 2009). The idea is that sustainability in fisheries can only be achieved if all actors along the supply chain behave as partners. In the Project Proposal of the PPTST (2009) it is stated that the project has a strong market orientation and this is proven through the direct link the PPTST has with European market actors that are serious in taking up their corporate responsibility to promote sustainable fisheries. The standards set out by the MSC are the guiding framework for the FIP and one major objective of this programme is to facilitate and achieve certification by the MSC for the Yellow-fin tuna caught by the participating fishermen. The principles and criteria of the MSC guide fishery improvement activities and serve as a benchmark for management in order to attain sustainability and also a better position of the local fishery in markets which seek to source certified products. It is not only the result of final certification but also the process of undertaking certification which is deemed relevant by the people involved in the project. It is assumed that the FIP aims to move towards being an accessible and reliable source of sustainable tuna. The PPTST project proposal (2009) stated that the FIP is going to provide market benefits for the producers, for processors and retailers as well as reassurance for environmentally aware consumers.

While MSC certification is the guiding framework of this FIP, it is also one of its main objectives. It is assumed that the objectives are developed according to what needs to be done in order to achieve MSC certification. These goals which need to be achieved to move towards MSC certification are seen as

“improvements” in their own right. The following points are set out as the main objectives of the PPTST and these objectives have to be addressed to achieve change. To state it in terms of Continual Improvement the following points can be seen as strategic improvement.

|    | <b>Objectives</b>   |
|----|---|
| 1  | Organisational structure of the fishery and supply chains           |
| 2  | Scientific research and monitoring programme                        |
| 3  | Catch Documentation Scheme  |
| 4  | Data-base and Traceability Process                                  |
| 5  | Landing-site Improvement and Approval                               |
| 6  | Ensuring safety of life at sea                                      |
| 7  | Fishery co-management and fishery/coastal resources management plan |
| 8  | MSC assessment and Certification                                    |
| 9  | Improvement of quality and food safety                              |
| 10 | Value chain promotion and supply chain management                   |
| 11 | Strengthening BFAR capacity for tuna management                     |

Table 3: Objectives of the PPTST (Partnership Programme towards Sustainable Tuna, 2009)

The strategic goals/objectives set out what has to be done to “improve” the fishery. Consequently, tactical activities are set out to move towards these goals and indicators have been determined to assess the progress and process of moving towards improvement.

Several objectives are further elaborated here to give a better understanding of what the PPTST is doing to move towards more sustainable fisheries. The objectives can be split into MSC oriented objectives and value chain oriented objectives. The objectives that are further elaborated are linked to MSC certification. Objective 1 requires that all fishermen participating in the handline fishery are organized on both barangay, municipal as well as on regional level, based on the Philippine governance structure. The establishment of a clear and transparent organizational structure is a condition for the process of registration and licensing (R&L) of vessels and fishermen. On a regional level, fishermen from the municipalities are organized into a joint cooperation encompassing all fishermen and villages of the project site. The idea behind the formation of an umbrella organisation is that it will help follow-up on the project. Another important goal is to collect data which is required for moving towards MSC certification, since there is data deficiency. Consequently, objective 2, 3, and 4 aim to create several data-collection and monitoring systems. These data-collection systems are not solely geared towards scientific research on the biology of tunas, but also aim to collect data through the setup of a catch documentation scheme which provides crucial data for Chain of Custody certification and traceability systems. Moreover, the monitoring systems ensure compliance with registration and licensing. Objective 8 aims to have MSC pre-assessment carried out, helping the programme to identify key gaps in current environmental, ecological and management set-up of the fishery. Full assessment will be conducted after having improved the identified shortcomings during the pre-assessment, through meeting the set out objectives. By achieving MSC certification, the programme will be successfully implemented.

These objectives are very much MSC oriented in the sense that most of the objectives must be met in order to have any chance of achieving full assessment. What should be noted is that they should not be seen as sequential; objectives 1- 7 are planned to be implemented parallel to each other within a set time frame. For each of the objectives a table is made which summarises all the achievements, indicators, milestones as well as required activities for that objective for all phases of implementation. Figure 3 shows the way indicators and activities are set up to fulfil the strategic goals of the PPTST. This table/summary shows the approach of the PPTST to move towards its goals. This approach is quite systematic and it seems as if there is little room for flexibility in terms of implementation.

| Achievements/Indicators/Activities   | 2010 | 2011 | 2012 | 2013 |   |   |  |   |   |
|--|------|------|------|------|---|---|--|---|---|
| <b>I. Organizational Structure of the Fishery and the Supply Chain</b>   |      |      |      |      |   |   |  |   |   |
| <b>Achievement:</b>  |      |      |      |      |   |   |  |   |   |
| All stakeholders of the two fisheries, fish traders and processors are organized and structured within a functional and transparent organisational matrix. |      |      |      |      |   |   |  |   |   |
| <b>Indicator / Milestone 1:</b><br>Fishermen from the participating communities are organised on municipality level  |      |      | ●    |      |   |   |  |   |   |
| <b>Indicator / Milestone 2:</b><br>Fishermen from the participating municipalities are organised on regional level   |      |      |      | ●    |   |   |  |   |   |
| <b>Indicator / Milestone 3:</b><br>All fish traders and fish processors are organized as a stakeholder group   |      |      | ●    |      |   |   |  |   |   |
| <b>Indicator / Milestone 4:</b><br>The umbrella organisation encompassing all stakeholders in the supply chain is organized and regular meetings are held  |      |      |      | ●    |   |   |  |   |   |
| <b>Performed Activities:</b>   |      |      |      |      |   |   |  |   |   |
| 1 Elaboration of fishery profile (basic data on current status and stakeholders)   | ■    |      |      |      |   |   |  |   |   |
| 2 Awareness creation for the programme in all fishery communities  | ■    | ■    | ■    |      |   |   |  |   |   |
| 3 Organisation of fishermen on municipality level  | ■    | ■    | ■    |      |   |   |  |   |   |
| 4 Organisation of fishermen on regional level  |      | ■    | ■    | ■    | ■ |   |  |   |   |
| 5 Organisation of all fish traders and processors in the programme   | ■    | ■    |      |      |   |   |  |   |   |
| 6 Creation of the umbrella organisation and regular platform meetings  |      | ■    |      | ■    |   | ■ |  | ■ | ■ |

Figure 3. Indicators and Activities for Objective 1 (Partnership Programme towards Sustainable Tuna, 2009)

The approach of the PPTST uses indicators to show progress, and activities were determined to meet the goals. This methodology is similar to some of the methodologies set out in chapter 3 and can also be linked to the strategic and tactical improvement as set out by Continual Improvement. The approach

used by the PPTST to achieve their goals was conceptualised by actors (Blue you and WWF Philippines) who are not part of the fishery and thus the approach is externally conceptualised. What is typical of the CI approach is that environmental performance is evaluated (pre-assessment) by checking conformance with criteria (of MSC) and then a framework for tracking and measuring environmental performance is developed to move towards better environmental performance. Two tactical activities of the PPTST are further elaborated and the response of the fishermen to these activities is discerned in the context of upgrading. It should be kept in mind when reading this section that both CI as well as upgrading focuses on industrial scale production. This case study is different from many of the examples linked to these theories in the sense that the producers are unorganised, small scale, individual fishermen and not firms. Another aspect to keep in mind is that these two concepts come from business studies which seek to be as efficient as possible. In this case, the focus is on finding a balance between producing for the global market and at the same time doing this in a sustainable way so as to meet environmental standards.

While fishermen have been part of global value chains for a number of years already, at the time the research was carried out the PPTST was busy carrying out multiple activities. The new activities require that fishermen change certain aspects of their fishing practises as the PPTST wants the fishery to become more sustainable. It should be noted that the PPTST was conceptualised by consultants and WWF staff that were aware of the Lagonoy gulf fishery but who, at the time the project proposal was written, were not yet fully aware of the intricacies of this fishery. Staff from WWF the Philippines is implementing the PPTST, however, these PPTST staff are different from the WWF the Philippines staff that conceptualised the PPTST. Furthermore, this FIP was conceptualised, goals were set up and activities were planned without involving the fishermen in this process. At the time that this research was carried out the project had been running for 9 months. In many ways the project was still starting up several of the activities. As it was not possible to analyse what had been done already, the research focussed on determining strategies of various stakeholders with regard to the various aspects of the project.

#### **4.5 Tactical Improvement**

In this section two of the tactical improvement activities of the PPTST are elaborated and analysed using upgrading. Tactical improvement activities need to be carried out in order to achieve the strategic improvement objectives set out by the PPTST. What is interesting is how the tactical improvements from the PPTST are influencing the strategies of fishermen to upgrade. One should keep in mind that upgrading is not *per se* about moving up the value chain or about adding value to the product, but it is also about reducing risk and issues about inclusion and exclusion, as is explained in chapter 2 (Ponte and Ewert, 2009).

From the interviews it became clear that the fishermen's main priority is to get rid of illegal fishermen, maintain fish stocks, improve quality of tuna and improve their livelihood. These priorities will be discussed in detail in the next section but it is important to notice that a gap between the fishermen priority issues and the PPTST's objectives can cause difficulties in engaging fishermen in the program. While some of the aforementioned issues come back in the objectives of the PPTST, it is difficult to engage fishermen when they do not know what the goal and activities of the PPTST are. At the time that

this research was carried out 80% of the fishermen interviewed were not aware of the PPTST and they had not heard of the MSC (certification) before. When asked what they thought of when they heard the term sustainability there was a wide spread of answers ranging from “sustainability is to stop blindly consuming tuna” to “sustainability is about continuity” to “sustainability is about the need to preserve and maintain”. Most of the responses focussed on conservation and preserving resources for the future. It became clear that at that time the awareness creation among the fishermen has less priority than other activities set out in the PPTST. Furthermore, several fishermen and PPTST staff mentioned that both municipalities had multiple NGO projects that involved fishermen. Fishermen were aware of the fact that there were projects to help them, but they were not aware of what these separate projects aimed to do and what this meant for them. The issue with improvement is that in order for the PPTST to fulfil what it sets out in the project proposal, local stakeholders and particularly fishermen have to understand why a certain path is chosen. However, the fishermen indicated that they would like the municipality to set up clear rules and regulations and make sure that illegal fishing in municipal waters is addressed which indicates that they are willing to engage in improvement projects.

At the time of the research several activities of the FIP were happening simultaneously. Two of these activities are elaborated further, namely Registration and Licensing (R&L) of vessels and fishermen and the reinvigoration of the Barangay Fisheries and Aquatic Resource Management Council (BFARMC). In terms of upgrading these activities could provide the fishermen with opportunities to reduce risk and to add value to the products, which will be explored for both the examples. R&L is an objective necessary for MSC certification as it is important to know who has access to the fishing grounds, identify fishermen and also know how many fishermen are fishing in the areas. The second activity is the reinvigoration or start-up of BFARMC’s in all the coastal barangays along Lagonoy Gulf. MSC certification requires that fishermen become organised and have a sound management system. These two activities were chosen because they both are important to achieve an objective of the PPTST, they are different in terms of implementation and adoption and they were the main activity of the PPTST during the research period. The PPTST has invested in engaging the municipal governments in Tiwi and Tabaco, which can be seen in that both activities are implemented in collaboration with both the municipal governments. However, fishermen are not aware that the R&L being carried out in their municipalities is one of the main activities carried out in the PPTST. With the R&L this lack of awareness can be attributed to the fact that the Local Government Unit (LGU) carries out the R&L as it is their jurisdiction.

#### **4.5.1 Registration and Licensing**

As a consequence of the decentralisation of many responsibilities to municipal governments, all municipalities have a Municipal Fisheries Ordinance (MFO) which follows nationally set requirements for fisheries. This means that the municipalities have the responsibility to implement fisheries laws and to ensure that there is compliance with these laws and regulations. While the MFO has been around since 1998, its implementation has not yet fully happened. The MFO sets out that the municipal government has to ensure that all fisherfolk (i.e. fishermen, buyers/sellers) and their gears are registered. The Registration and Licensing (R&L) of vessels and fishermen has the main aim of identifying municipal fisherfolk who have the priority access to fish in municipal waters. While it is the jurisdiction of the

municipalities to implement the R&L, many municipalities do not follow what is set out in the MFO and do not move to R&L (and BFARMC creation) although they have the responsibility to do so. The PPTST team has played an active role in putting this issue on the agenda of the municipal governments. It has been members of the PPTST team who have gone to the various barangays to inform the fishermen of the importance of the R&L and reinvigoration of the BFARMC and they have also consulted and collaborated with various departments of the municipal government to ensure that their time and manpower is invested in the R&L. In Tiwi this is the second year that the R&L is carried out by the municipal government and in Tabaco it is the first time.

In Tiwi, the PPTST team coordinated closely with the Municipal Agricultural Office (MAO), the Municipal Fisheries and Aquatic Resource Council (MFARMC) and the various barangay councils to inform the fishers of the renewal of R&L. While the first round of R&L was successful with 100% of the fishermen being registered last year, this time around Tiwi did not do as well. An obvious reason for this was that, while the municipal government had communicated to the barangay councils when and where Registration & Licensing would take place, fishermen were not informed and, consequently, not aware of the R&L. Next to this, some fishermen indicated that they consciously choose not to register. One reason was that they thought the municipal government was not doing their job. Apparently, there are commercial fishermen from Camarines Sur operating in the municipal waters of Tiwi and the enforcement through patrolling that the municipality is supposed to do was not happening. It turned out that this was because the boat of the Fisheries Law Enforcement Team (FLET) was broken down. According to the FLET, they were patrolling at least once a week before this happened. The fishermen argued that if the municipal government was not doing their job in patrolling and enforcing regulations the registration is useless/does not make sense. Other complaints by the fishermen are the long time it took to receive their licenses to fish and the costs to get registered. Some fishermen suggested that the LGU should consider having a registration which would last for several years. Furthermore, the fishermen argue that the LGU should implement what is stipulated in the MFO and should take sanctions against the unregistered and unlicensed fishermen, in order to have more fishermen registered next year. Now not everyone is registered in Tiwi, so when the patrolling starts again the unregistered fishermen will be apprehended as illegal fishermen. Usually, the fishermen would get a fine for this, but this year the Municipal Agricultural Office (MAO) will only apprehend these fishermen and give them the opportunity to get registered there and then. This will go hand in hand with a big information education campaign. This lenience is also because the LGU is aware of their failure.

In Tabaco this was the first year that the R&L was taking place. Maybe a driver for them was that Tiwi (which is a smaller and neighbouring municipality) won an award for their efforts to address environmental issues in the municipality which was also based on their successful R&L. This year the City Agricultural Office (CAO) of Tabaco and the City Aquatic Resources Management Council (CFARMC) were well committed to ensure that as many fishermen as possible were registered. Members of the PPTST team joined the registration teams and helped fishermen fill in the questionnaires, measuring the boat and taking pictures for the ID cards. Lifelong ID cards were given to fishermen for free as an incentive to become registered. Not many fishermen have ID cards as it is very difficult for fishermen to get them. The fishermen were quite happy with the ID cards and the costs for R&L were not perceived as being too

high. Registration and Licensing in Tabaco is satisfactory this year in terms of effort and implementation by the LGU. But in terms of compliance with the rules there is still room for improvement. The main reason for the lack of compliance is assumed to be related to the lack of information provision which informs the fishermen about the reasons for R&L. According to one of the PPTST team members there is hope that, once there is better information to the fishermen, there will be more compliance.

While the PPTST set out the R&L as one of its activities to achieve objective 1, it coincides with one of the greatest concerns of the handline fishermen interviewed: the commercial fishermen operating in municipal waters. The commercial fishermen catch juvenile yellow-fin tuna as well as the fish that adult yellow-fin tuna prey on. According to one fisherman *“commercial fishermen are taking all the catch, the catch of one ringnet boat would be enough to satisfy all the handline fishermen fishing at the Fish Aggregating Device (FAD)”*. Besides the commercial fishermen, there is an issue with fishermen who fish illegally, because they are not registered and/or use illegal gears such as compressor fishing, cyanide fishing and spear guns. This means that municipal fishermen have to go out further (on the water) to be able to catch the amount of fish required to sustain their livelihood. The illegal gears are used at the FADs but also in Marine Protected Areas (MPA) around Tiwi and Bacacay. Noteworthy is that one fisherman stated that even some of the fishermen who are registered secretly use illegal gear. This also highlights the importance of clear regulations and awareness about fishing gear and the possible (environmental and ecological) consequences of using the ecosystem damaging gear. The handline fishermen look to the municipality to set out and implement the fisheries laws and to enforce these laws through better patrolling and stricter regulation. One fisherman stated he believes that it is the responsibility of the *“Bantaydagat”* - fishermen law enforcement team (FLET) of the local government unit (LGU) to address the illegal fishermen, as he is worried about his safety if he says something to these illegal fishermen. While the municipal governments aim to address illegal fishing and they state that artisanal fishermen are prioritised, some of the fishermen stated that nothing is being done because there are certain *“rich and influential”* people who finance commercial fishermen. According to several fishermen, these people have quite some influence on the municipal government and, consequently, nothing is being done about the issue.

Although not all fishermen interviewed were R&L this year, the fishermen interviewed see becoming registered as the responsibility and obligation of all fishermen. The fishermen interviewed that weren't registered choose not to, because of the commercial fishermen operating in the municipal waters. Becoming registered allows fishermen to *“officially”* fish in the municipal waters and to be officially acknowledged by the municipal government. R&L gives fishermen the right to call upon the municipal government to address the illegal fishing. In terms of upgrading, becoming R&L reduces the risks that come with not being registered which include fines and the possibility that the boat is impounded. Furthermore, R&L allows fishermen to fish outside their municipal waters and this means that they can identify themselves there as well. If illegal fishermen are systematically apprehended as a consequence of R&L and commitment of the municipal government, the pressure on the vulnerable juveniles may be decreased which is better for fish stocks and for the environment and ultimately also for the fishermen, as they have a healthier stock of tuna to fish. Consequently, if the municipal governments and the PPTST invest in creating awareness and the municipal governments keep up their end of the bargain, this R&L

will greatly increase the traceability of the tuna. Once the rest of the traceability scheme is in place as well, the scheme will enable buyers and consumers to check where the fish was caught which means the intrinsic value of the product is raised if this fishery is operating responsibly. The value of R&L is that it provides a sound basis from which the intensity of fishing, the gears and the amount caught can be noted down. This is crucially important for the achievement of MSC certification and at the same time it enables the municipal governments to be aware of what is happening in their municipal waters. Furthermore, R&L gives the fishermen a legal identity which enables them to ask the municipal government for help. From the observations and interviews with fishermen (and municipal government actors) in both Tiwi and Tabaco, it can be concluded that the success of the R&L activity depends on the commitment of the municipal governments and if the municipal governments do not keep up their end of the bargain, it is likely that the R&L will not be effective. The risk is that the commitment of the municipal government depends on the priority the issue is given as well as on who is in power. The fact that the PPTST is investing in the building up of a good relationship with the municipal governments can be seen as contributing to the success of the R&L.

#### **4.5.2 Reactivation of BFARMC**

At the time of the research, and running parallel with the R&L, the PPTST team was focusing on reactivation of the Barangay Fisheries and Aquatic Resource Management Council (BFARMC) in each of the coastal barangays involved in the PPTST. The Philippine Fishery Code (section 73) of 1998 set out the establishment of Fisheries and Aquatic Resources Management Council (FARMC) at national, municipal and barangay level. The FARMCs are mandated to carry out management advisory functions in close collaboration with the municipal governments (Pomeroy *et al.*, 2010). During the time of the research, several consultation meetings were organised in the different barangays. These meetings focused on explaining what issues are set out in municipal fisheries ordinances particularly about the creation of a BFARMC and then stimulated the fishermen to elect a BFARMC. BFARMCs are specific for the different barangays and because they are in different barangays they address different issues (because there are different problems in different barangays). The BFARMC is responsible for ensuring that the barangay fishermen comply with the rules set out in the MFO.

While some municipalities and barangays have more active BFARMCs than others, it became clear that none of the barangays selected in this case study had functioning BFARMCs at the time of the research. The PPTST invested a lot of time into information provision in the various barangays so as to re-establish the BFARMCs or to create new ones. Most of the fishermen interviewed stated that they don't know what to expect from the newly establish BFARMC as most of them are new and still starting up. The barangays in Tiwi include Putsan, Lourdes and Sugod and the barangays in Tabaco are San Roque, Fatima and Rawis. In some barangays an organisation already exists which represents fishermen, this is called a Fisherfolk Organisation (FO). In Tiwi, barangay Putsan already has an FO which represents the fishermen and that strives to help fishermen find alternative livelihoods next to fishing. One fisherman stated that he doesn't attend meetings because they are taking place in peak season, when he is out at sea. In barangay San Roque and Fatima, Tabaco, there is a newly elected BFARMC, and fishermen are still waiting to see what these new BFARMC will do, but the fishermen did state that they trusted the

members of the BFARMC. According to one fisherman, the fishermen help each other but they need help from higher levels to properly address issues such as commercial fishing and maybe they can get this help through the BFARMC. Another fisherman stated that he hopes that this new BFARMC will succeed as there have been other BFARMCs before that failed to properly address issues and, consequently, have been disbanded. This fisherman keeps hope in the BFARMC, but he is sceptical that much progress will be made since the same person has been re-elected as BFARMC president. In barangay Lourdes, Tiwi, the FO is no longer active because the chairman had to step down, since he was elected as the barangay captain. Furthermore, the interviews indicated that fishermen think that the FO has too many requirements, which is why they do not participate in the FO. Fishermen stated that good leadership and commitment are needed to make the FO and the BFARMC useful and successful. It came clear from interviews in barangay Sugod and barangay Lourdes that it is difficult to find people that are suitable and willing to successfully lead cooperative initiatives like FOs and BFARMCs. Moreover, it seems that fishermen are somewhat naïve regarding these organisations as one fisherman stated that he feels that the people involved in the organisations are aware of his needs and priorities, and thus represent him well. Therefore, he sees no reason to be involved. Based on the interviews it can be concluded that the success of FOs and BFARMCs depends on the capabilities of the people that lead the organisations. Whether or not the fishermen are taking the organisations seriously is greatly influenced by their trust in the people involved in the organisations.

The organisation of fishermen in all the coastal barangays along the Lagonoy Gulf is crucial for the creation of a long-term management system with clear goals as the BFARMC directly represent the fishermen. In terms of the risks and opportunities that the BFARMC create for upgrading, there are several issues which can be addressed. The BFARMC addresses barangay specific issues and could be beneficial even beyond MSC certification as different barangays face different problems. There are many issues that influence the situation of the fishermen from bad weather, through not having alternative sources of livelihood to bad infrastructure. Having a specific organisation which represents fishermen and sets out issues which have to be addressed could provide opportunities for improvement. This is assuming that the BFARMC will take their task seriously, as this is one of the problems with many FO and BFARMC: they are started up with goodwill, but ultimately nothing is done. As mentioned before, this also depends on the people that become involved in the BFARMC and whether they are motivated to change something and have the drive to really get things done. Organising fishermen is crucial for the PPTST so that fishermen can move to achieve the various objectives within and outside the project. The FARMC is the structure set out by national law and thus officially sets out that each barangay must have such an organisation and that the municipal government has to listen to what they say. Thus the BFARMC are the *status quo* in the Philippines in terms of fishermen representation. While the idea behind the BFARMC is good, much can be said about how it is implemented; there is misgiving from the fishermen because many fishermen organisations have failed to change things. This approach of BFARM organisation allows the fishermen who are involved in the BFARMC to engage with functional upgrading. They have new functions in terms of representing fishermen and if their new function is carried out well and external factors are positive; these fishermen can contribute by addressing the problems in the fishery and, consequently, improve their situation as well as the situation of other fishermen.

What is essential for both the R&L and the BFARMC is the willingness of fishermen to participate and make the changes that are set out in the objectives. This depends very much on how they are involved and what they see that will change for them. The difficulty is that fishermen do not have an idea what the consequences of the PPTST are for them. When considering how the PPTST is approaching these two activities they are going above what is set out in the project proposal, they are engaging the municipal government and even actively taking over functions which are actually supposed to be done by the municipal government. This approach is quite practical and at the same time it is very much steering the situation in the direction that the PPTST wants to go. It is important to consider whether some of the changes required from fishermen are a consequence of becoming incorporated into global markets or whether they come from the PPTST. This approach shows that even in the local context, the PPTST behaves as an external agent, who steers the activities of the municipal government and helps to organise the fishermen, but they are not explicitly doing an activity to facilitate something to achieve their goal. This means that they are manipulating the local setting and actors (not negative) so that within the existing structure things will change enabling the project to achieve its goals.

#### **4.6 Conclusion**

The PPTST sets out strategic and tactical improvements which are geared to “*establish a sustainable fishery for Yellow- fin tuna...*” It is important to consider how the PPTST strives to achieve the goals it has set out as it is important to know whether the FIP approach is suitable to achieving improvements in fisheries. The strategic goals of the PPTST are either geared to achieving improvements required for MSC certification or requirements for the value chain. Each objective has a detailed plan and time frame within which the plan has to be achieved. Besides the plan, activities were elaborated which need to be carried out in order to achieve the goals. The two tactical activities elaborated showed that there are still some difficulties for the PPTST when implementing their activities. In the next chapter the upgrading strategies of fishermen are further explored to create a better understanding of what shapes fishermen behaviour.

## **Chapter 5 Upgrading strategies of fishermen in Lagonoy Gulf**

### **5.1 Introduction**

While the previous chapter identifies how certain activities of the Partnership Programme towards Sustainable Tuna (PPTST) are influencing the fishery practises in Lagonoy Gulf, it is important to consider what shapes the strategies of fishermen and this will be discussed in this chapter. Opportunities and constraints that fishermen face are examined in the local context and particular in the context of upgrading and GVC governance. Upgrading, as elaborated in the theoretical framework, is concerned with the risks and benefits producers in developing countries experience through being part of global value chains. GVC governance is concerned with how a value chain is steered and will be used to show how relationships in the value chain influence upgrading strategies. The focus in this section is on the bottom of the value chain and particularly on the fishermen and what enables and constrains their strategies to upgrade. Section 5.2 will present the strategies of the fishermen to deal with problems they face using upgrading as a guiding framework to present these strategies. 5.3 will present how the non-market relationships in the value chain affect the choices of fishermen and consequently their upgrading strategies. Section 5.4 will compare and contrast the external FIP (4.3) with the internal upgrading strategies of the fishermen (5.3).

### **5.2 Upgrading Strategies of Fishermen**

In this section the strategies of fishermen are described and reflected upon using the upgrading framework. It is interesting to see that only one of the 27 fishermen interviewed had been a fisherman for less than 10 years. Once a person is engaged in fishing, this often remains his occupation for the rest of his life. Furthermore, 21 out of 27 fishermen owned their boats while the other 6 operated boats owned by someone else. Tuna handline fishing has adapted to the monsoon patterns in the Bicol Region and has evolved in distinct type of operations. The typical handline fishery involves 1 to 2 fishers, a small outrigger boat and trip duration of 6 to 7 hours daily during favourable weather. The poorest fishermen do not catch tuna as tuna fishermen need motorised boats (and handline) to catch tuna and owning a motorised boat requires a certain capital investment. Furthermore, tuna is caught in the mornings but some fishermen go out to sea in the afternoon again to catch other species once they have landed the tuna. It should be noted that handline fishermen do not only catch yellow-fin tuna but also other species like skipjack tuna, marlins and dolphin fish. There is a multi-species fishery in the Lagonoy Gulf and high competition for the high value yellow-fin tuna. Tuna availability varies per season and is highly dependent on the weather, and since weather patterns fluctuate greatly it is very difficult to predict when the yellow-fin tuna will move into the gulf. One of the main issues for the fishermen interviewed is that there is currently much less tuna catch than there was 10 years ago. This statement is endorsed by the Tabaco CRM (2010) and ANCORS *et al.* (2010). One fisherman indicated that the decline in quantity and quality of yellow-fin tuna forced him to acquire new equipment to catch other species as well, since the income from yellow-fin tuna alone is not enough anymore to sustain his livelihood. As mentioned previously, one of the greatest concerns for the fishermen interviewed was the prevalence of illegal and commercial fishing in municipal waters. Besides this, fishermen are now mainly fishing at the Fish

Aggregating Devices (FAD) to be able to catch enough yellow-fin tuna, while previously there was no need to fish at the FADs. A FAD has approximately 50 boats tied up to it. Once they have caught something, they pull in the tuna by hand which takes approximately 5 hours, depending on the size of the tuna. Fishermen mostly use traditional methods of preserving the tuna which means that they hang the tuna from the boat in the water to keep the tuna cool. All fishermen interviewed land the tuna in their own barangays. There is no central point where tuna is landed. The fishermen who were interviewed all stated that they are fulltime fishermen, as fishing is their main activity. However, some fishermen have other sources of livelihood as well which they do in the time that they cannot fish and these alternative sources of livelihood vary greatly per barangay. For example barangay Putsan in Tiwi has a quite renowned ceramics industry and several of the fishermen interviewed are engaged in this industry to some extent. Other alternative sources of livelihood include farming, carpentry, making local crafts, keeping pigs and one fisherman also had a mini-shop which he ran with his wife and children.

In terms of upgrading, the multi-species fishery and the need for alternative livelihoods is a consequence of fishermen trying to reduce risks and spread their chances so as to be able to generate enough income to sustain their livelihood. The source of this problem for the fishermen is that there is less yellow-fin tuna available for catch in the Lagonoy Gulf as a consequence of several developments such as the fact that commercial fishermen are catching many juveniles in the ringnet, illegal fishermen are fishing in protected areas and using gears which destroys the ecosystem and that every year there are many new fishermen starting up. Fishermen do not see how they can address these problems, they see it as something out of their control and they look to the municipality to address this. Fishermen turn to other activities to ensure that they are still able to sustain their livelihood. The other fish species caught are sold on the local market for extra cash income or kept for personal consumption and alternative livelihoods generate extra food or income as well. Another issue which impacts the livelihood of the fishermen is the high number of typhoons and bad weather which influences their ability to go fishing. This is something out of their control but it influences the ability to deliver tuna to such a high extent that there can never be a guarantee of catch and this is a major risk to the income of the fishermen. Furthermore, typhoons often destroy boats and gear and pose a great threat to the safety of fishermen out at sea. While fishermen are experienced with coping with these disasters on the water, many accidents still happen.

In barangay Putsan there were concerns about the amount of new handline fishermen operating in Lagonoy Gulf. In peak season a lot of money can be earned in tuna fishing and consequently a lot of people see tuna fishing as a profitable business. This deteriorates the situation for existing fishermen as there is even more pressure on the fish stock. Even though fishermen are not thrilled by the fact that there are a lot of new fishermen, one fisherman who only started operating 3 years ago stated that he became a fisherman because of the money to be earned and because he doesn't have a boss to tell him what to do. He is free to work as he wants. He also stated that he is very happy that other fishermen taught him what to do. However, there are instances that fishermen do not help each other. One fisherman stated that he only recently discovered that one of the gears he uses is illegal, because he received no help from other fishermen. It is not clear what determines the inclusion or exclusion of a fisherman into the "group". Many of the fishermen come from the same family, so it can be that whole

families are engaged in fishing. Although there is a general perception that fishers are poor and continue to remain poor, the handline fishery of Lagonoy nuances this idea. During the PPTST workshop in February, data was presented which showed that the revenues of a handline fishermen is enough to provide for a family, and that income from tuna fishing is well over the poverty levels. However, this assumes that the fisher is a prudent manager of his finances. The annual net revenue of these handline tuna fishermen is higher than the per capita poverty threshold of Php 14,761 and is higher than seeking employment in the wage sector (Trinidad-Cruz, 2012).

Another issue is that while fishermen have a steady income during peak season which is quite a lot higher than what most other occupations earn, many fishermen do not save to tide them over the lean season. In lean season, many fishermen borrow money from their financiers and thus are incurring debt which could be avoided if they manage their finances more prudently. While some fishermen have an alternative source of income, the mentality of the fishermen is to ensure direct returns. In terms of upgrading, the issues with financial management and the lack of long-term vision is a major constraint to the opportunities of the fishermen. Fishermen are willing to learn new things, but are only pro-active in addressing matters within their control. If fishermen help each other they have more opportunities to improve their situation, it is not clear why in some situations fishermen are helping each other and why in other cases they are not. Fishermen are not actively pursuing process or product upgrading because they are not pro-actively addressing the main cause of the decline in catch. Considering the “production” of tuna, and sustainability of tuna stock, fishermen are looking to the municipal governments to do something about the problems they face. Fishermen “upgrade” their livelihood by diversifying their activities, but ultimately their goal, as the goal of the PPTST is ensuring that they (small-scale, registered & licensed fishers) can continue to catch tuna in Lagonoy Gulf and be involved in the sustainable yellow-fin tuna value chain. It is assumed that fishermen greatly value the ability continue fishing, but they are not upgrading their fishing practices.

### **5.3 GVC governance and Upgrading**

GVC literature puts much emphasis on explaining the connection between relationships in the value chain and upgrading (Humphrey and Smits, 2002). In this section the relationships in the yellow-fin tuna value chain in the Philippines are examined and linked to upgrading strategies of fishermen. While fishermen are the primary producers of the tuna, the relationships they have with the people that buy the tuna from them or who finance them are crucial to understand their strategies. There is an important distinction to be made between fishermen who have their own capital and who finance their own fishing costs, namely the freelance fishermen, and the fishermen who are associated to a casa. Often fishermen lack capital for operational expenses of fishing, or sometimes they do not own their own boat. Consequently, there are several enterprising individuals – “casa” – which in tagalog refers to someone who finances the operation costs or offer the fishermen their own boat to operate. In return, fishermen provide their financiers with a share of the catch, profit from sale or an agreed amount of money. Casas buy fish and invest in fishermen. Most casas finance multiple fishermen; the smallest casa interviewed supported 6 fishermen while the largest casa interviewed supports 60 fishermen. Of the 6 casas interviewed all have been financing fishermen for more than 10 years already. Casas

interviewed state that they have “personal” relationships with the fishers. Credit is extended and this includes not just credit for operational expenses such as gasoline and food used on board but also for basic household expenditures. Since handline fishing is a seasonal activity, most fishermen and their families rely on financiers/casa’s to tide them over when income is low and fishermen don’t have alternative sources of income or livelihood. The relationship between financiers and fishermen is often seen as mutually beneficial. Fishing is expensive and there is a consistent lack of capital. Some fishermen suggest that casas set unfair prices and the fishermen are duped. To give a good representation of the relationships in the yellow-fin tuna value chain a diagram was developed to shows various dynamics.

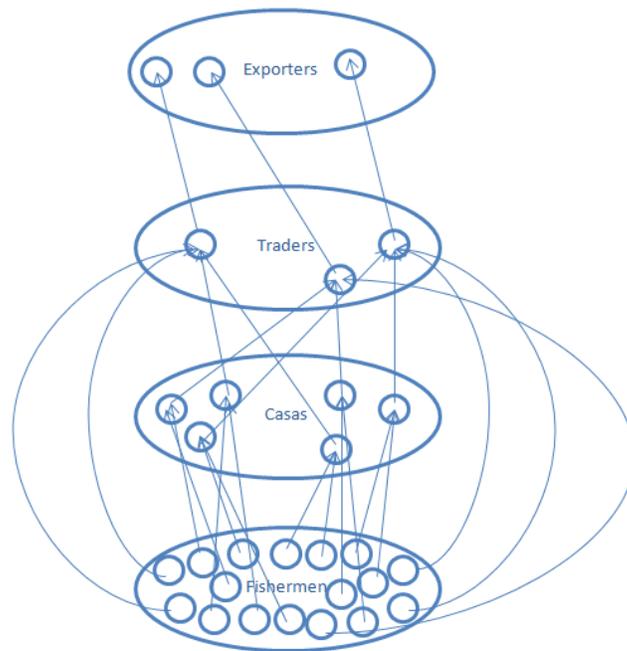


Figure 4: Representation of relationships along the yellow-fin tuna value chain (constructed by author)

Casas buy tuna and other species from “freelance” fishermen or from fishermen whom they finance and then sell these on the local market or to a trader/middleman. Most of the fishermen know that their casa sells the high quality tuna to traders, however, some fishermen are not aware and others do not care about this very much; *“I am not interested to know what happens after I sell to the casa. I catch my fish and get my money for it. That is all I’m interested in!”* There is always demand for all grades of tuna so casas never turn down tuna.

The market for the tuna depends on the grade (A, B or C) of the tuna. Grade C is sold on the local market. Grade A and B are sold to trader/middlemen who transport it to Manila where grade B is for national consumption in the capital and grade A is for export. Selling grade A tuna to Filipino exporters is lucrative, traders state that the prices they receive are far higher than prices on the local market, and there is a constant demand. According to the traders the price is set by the national market and the

choice of the fisherman or casa to sell to a particular trader is mostly dependent on price. While traders have a higher income than casas who sell on the local market, they also have to comply with more requirements and thus incur higher costs for transportation, ice and storage. There are differences between casas in buying strategies. Some casas practice quality buying, which means that different grades of tuna receive different prices, with grade A quality tuna receiving the highest price. One fisherman, whose casa practices quality buying stated that for grade A he receives 175 pesos per kilogram, for grade B 150 and for grade C 130. Other casas practice straight buying where there is no differentiation between different grades of tuna and where the price is set by the market. The casas who practice straight buying buys the tuna in the range of 100-120 pesos. Fishermen are aware of this, but they often cannot change to another casa because they have debts with the “straight buying” casa. In terms of returns for tuna there is a great difference between peak season and lean season as supply is the main determinant of the price.

According to the fishermen, because there is less supply in lean season prices should be high. However, in past years the price has been falling. Freelance fishermen, who can freely choose who to sell to, state that they are happy that they are not affiliated with a casa (anymore) because then they would receive less money for the tuna they catch. Freelance fishermen have built up their own capital (often from other sources of income besides fishing) which allows them to operate without requiring a casa to finance operating costs. The casas interviewed stated that they are satisfied with the income from the tuna fishing in comparison to what other occupations earn; there is enough fish to keep their livelihood at a high level. During the PPTST workshop it was insinuated that casas “make a killing” by selling the high quality tuna. According to the participants in the workshops the casas are keeping the prices lower than the actual market price because of the indebtedness of the fishermen to the casa and because the quality of the tuna is not factored in when determining the price. On the other hand, casas countered this by stating that the fishers, while earning a sizeable income especially during peak periods, do not practice financial prudence and simply waste away the money on drinking binges. No savings are kept for the lean season. One casa states that the relationship with fishermen she finances is not always good. According to her they are very demanding and sometimes they go to other casas to sell their tuna, so there is less trust between them. However, she will continue to finance them because of long-standing relationships.

The coordination between the fishermen and their casa is characterized by relational value chain governance which implies complex interactions between the buyer and supplier as there is a high degree of mutual dependence and the relationships are built up over a long time. Casa- fishermen dealings used to be focused on the local market and now are shifting towards more export oriented. The casas who practice straight-buying are not as favoured as casas who practice quality buying. Fishermen prefer to have a casa who practices quality buying because they are aware that they can earn more money in this way. The upgrading strategies of fishermen who are associated with a casa are very much influenced by the relationship that they have with the casa and consequently there is a difference in strategies between fishermen who are associated with a straight-buying casa and those associated with a quality-buying casa. This difference is clear in the fact that fishermen who are associated with straight-buying casas have fewer opportunities to learn new techniques, or to gain more income as the agreements with

the casa are set. It became clear from interviews with fishermen and casas that the quality buying casa is more oriented to the export market and, consequently, also more open to new changes that are occurring from the fact that exporters are sourcing from Lagonoy Gulf. What should be kept in mind is that exporters started sourcing from Lagonoy Gulf in the last 15 years, before this production was focussed on the local market and there were other types of demand. Freelance fishermen also show other strategies than fishermen associated with a casa. It became clear that freelance fishermen have their own capital and don't need casas to finance them. Many of the freelance fishermen have alternative sources of income/livelihood and because they are not affiliated with a casa they can choose who they sell their fish to, which allows them to get the best price for the tuna. The freelance fishermen sell directly to the traders. While the relationships between fishermen and the casa are characterised by relational governance, the relationship between freelance fishermen and traders is based on more market governance, where there are relatively loose linkages between actors even though there are repeat transactions.

The casas who are situated in Tabaco sell their grade A tuna to a trader on the pier in Tabaco and other species and other grades of tuna that are brought in by the fishermen, are sold on the local market of Tiwi or Tabaco. One of the casas stated that she is not officially affiliated to one trader, who she chooses to sell to depend on the prices as well as on the good relationship with the traders. In total there are three traders in Tabaco who have contracts with Filipino exporters in Manila. Two of these traders function as both a casa and a trader, selling to both local markets and exporters, while the third solely sells high quality tuna to his exporter. The same casas have operated in both Tiwi and Tabaco for multiple years; they consider themselves to be constant factors. The oldest casa/trader stated that casas stay the same; the exporters sourcing from Lagonoy have changed though.

According to all the casas and casa/traders there are no conflicts amongst casas or traders in Tabaco and Tiwi. While there is no formal organisation for casas, they collaborate informally; there is a verbal agreement to keep in touch about issues that come up as fluctuations in price and catch. Some of the casas interviewed see benefits in collaborating even further. The relationships amongst the traders are good; one trader stated that all of them deal with a different exporter which is why there is no unhealthy competition between them and they live next to each other so it is important to get along. As one casa states, she has a good relationship with traders in Tabaco and she would be willing to work with new traders but she is wary about how this will affect the local relationships. The traders tell the casas what the exporter wants. The relationship between traders and exporters is focussed on transaction. It became clear that only one of the traders in Tabaco had actually met the exporter they are working with. The other traders usually deal with their agents, and although they have had a relationship with the exporters for several years, they have not met them personally (until a moment during the research period).

The value chain is buyer-driven since the supply is not stable and thus prices are dictated by the buyer. However, there are differences between the non-market relationships between the fishermen and the casa and between the casa – trader – exporter – retailer. These non-market relationships configure around trust and loans. The relationships between the casa-trader-exporter- retailers can be described

as a combination of market relationships and captive value chain governance. Captive value chain governance implies that there is dependence of small suppliers (casas) and relatively large buyers (retailers). Ultimately the lead firms are the European retailers who source from the exporters and who set requirements for participation. However, particularly in the local setting where the relationships between casa–trader–exporter are not fixed, there are instances that a casa often sells to the same trader while it is relatively easy to switch to another trader. There are loose ties between them although there are repeat transactions; price determines who the casas sell to. The relationships between traders and exporters are based on captive governance where the traders are dependent on the exporter to set out terms of participation. This will be elaborated further in the next paragraph.

Some traders have taught casa and freelance fishermen how to handle the tuna and some of these casas have taught the fishermen whom they finance how to properly handle the tuna, which affects the quality and therefore, fetches a higher price. While not all fishermen are taught these techniques by their casas they do see other fishermen using new methods, and these fishermen who have not been taught “proper” handling techniques are very much interested in learning these new techniques. One fisherman stated that he would like to learn how to grade the tuna and preserve its quality beyond using styrofoam boxes and ice to keep the tuna in. It is important to him to do this so that they can all benefit from the better quality tuna. These “new” handling practices come from the traders who learn it from the exporters, who demand that the tuna is good quality and comply with hygiene and food safety standards so that the tuna can be exported to Europe. There are some fishers that state that they have so many years of experience already that they know how to do things, but that they would come to the trainings anyway. While the traders are all aware of how to properly handle the tuna as set out by the exporters, this knowledge has not trickled down to all the casas and fishermen yet. A possible reason for this is that the casas do not have fixed relationships with the traders, since price is the main determinant of whether there will be a transaction. Furthermore, the traders teach some of the fishermen new techniques but this has not yet been done on a large scale. These techniques include proper handling such as not cutting the tail off, not removing the insides and putting the tuna in ice directly after catching the tuna.

Most casa are not aware of quality requirements, casas interviewed stated that they would be very interested in receive training and that training should be for all casas as well as fishermen. Exporters, traders and some casas urge fishermen to preserve the quality of the tuna. In Tabaco, most fishermen carry styrofoam storage boxes containing ice on board to keep the tuna in after it is caught. Sometimes the fisherman owns the styrofoam and ice and sometimes it is provided by the casas. Tiwi is a problematic situation because the boats are too small to carry storage boxes with ice. Many fishermen use the traditional preservation techniques for tuna, which means hanging the tuna from the boat in the water. Traders do not favour this way of preservation. It becomes clear that requirements like hygiene and food safety standards which are required to be able to export to Europe trickle down from the exporter to the fishermen. These standards are the terms of participation in the chain because if the tuna does not meet these standards then it will not be exported. Fishermen can see the new quality requirements as an opportunity to ensure that if they comply with these requirements they will add value to the product because it will be exported.

## 5.4 Fishermen Constraints and Opportunities

As a consequence of the FIP, new activities are emerging which create new requirements for the fishermen. These externally conceptualised ideas are made to fit into a complex local situation where there are many factors influencing the strategies of fishermen.

The FIP sets out a detailed plan to achieve improvement in the fishery. This improvement methodology uses the standards set out by the MSC as a guiding framework. While the PPTST aims to address all these issues simultaneously it became clear that in practice it is not possible and consequently, the PPTST is not as rigid as is set out in the improvement methodology. The FIP is implementing the improvement through engaging actors in the local setting and things need to be organised through the existing mechanisms to establish a fishery that complies with MSC certification. The PPTST is guiding improvement but are not initiating great new changes, they remain external actors. It can be seen that the PPTST is highly dependent on the willingness of stakeholders to move to change. The project itself is an opportunity according to the PPTST, but the question is if the approach of the project fits with the local situation. Fishermen are open-minded but risk-averse and uninformed when it comes to these new activities. In the previous section it became clear that the relationship between fishermen and the casas/traders greatly influences their strategies. Besides this, a high trust is placed in local governments to provide for the fishermen and they expect things from the local government. Fishermen comply with rules set out by the local government when they feel that the local government is doing a good job. Furthermore, there are many issues outside the control of the fishermen which affect their strategies.

Fishermen indicated that their greatest concern is the commercial and illegal fishermen operating in the municipal waters who are decreasing the catch of the handline fishermen. The FIP does not explicitly do anything about this. Through the R&L, the FIP ascertains who has access to the municipal waters, rather than addressing the problem of illegal fishing. The municipal government is responsible for addressing these illegal fishermen and it becomes clear that some fishermen do not participate in the PPTST if the municipal government does not address illegal fishing. Thus through prioritising R&L on the agenda of the municipal government and through the call from fishermen to address illegal fishing, possibly the illegal fishermen could be addressed. The municipal government is the means through which problems can be addressed. Fishermen do not address the problem, because they see it as something outside their control, but they do try to reduce the risks associated with less tuna catch by catching other species and also taking up alternative livelihoods (diversification). Indebtedness to a casa is another issue raised by the fishermen. The PPTST's objectives and activities do not contribute to the solution of this problem. Fishermen's internal upgrading strategies vary depending on whether the fishermen think they can do something about the problem or not. Also it depends on what the risk is or whether there is an opportunity. What could be seen from how fishermen manage their financial situation is that they are not used to pro-actively doing something to change their situation. The indebtedness is something that all fishermen want to avoid but they are not actively seeking to change this by managing their money more carefully. However, when they notice that something is changing in their situation and their ability to fish, like the decline in income from tuna fishing, some fishermen try to find other ways of sustaining their income like fishing other species or looking for alternative livelihoods.

## 5.5 Conclusion

The PPTST strives for a sustainably managed fishery, which would then ensure that the fish is caught responsibly and has a high intrinsic value, because it could achieve MSC certification. However the issue is that all the objectives are geared to MSC certification and oriented to exporting the product. The question is whether this is beneficial for the fishermen. Furthermore, fishermen have to change practices to be able to participate in the PPTST, the question is whether this will ultimately reduce their risk and improve their situation.

The main difference between the FIP and the strategies of the fishermen is the way they address external (outside their control) problems. Fishermen do not directly address these problems but the FIP does directly address issues if they are related to achieving its goals. The value chain of yellow-fin tuna facilitates the PPTST particularly in term of quality requirements. The demand for MSC certified yellow-fin tuna comes from the European retailers who source from the Filipino exporters. What became clear is that the higher end value chain is characterised by captive value chain governance and new requirements trickle down from exporters to traders to casas & freelance fishermen and from casa to fishermen they work with.

## Chapter 6 Discussion

The aim of this thesis was to investigate the role of modern type Fisheries Improvement Project (FIP) in improving the fisheries, using the structure and activities of the PPTST in the Lagonoy Gulf, the Philippines as a case study. This was done to be able to discuss the suitability of FIPs for addressing problems in fisheries, and consequently discuss the strengths & weaknesses and the opportunities & threats.

### 6.1 Reflections on the case study

As was shown in chapter 3, FIPs have emerged gradually over time as a response to the ever-growing problems in fisheries. While there are many projects that aim to improve fisheries, there is no clear origin of the FIP concept, since early FIPs had different objectives. More recently there has been a trend to use market-based governance arrangements, like eco-labelling schemes, to address problems in fisheries and a result of this and various other trends is that this new type of “Fisheries Improvement Project” is now often used and implemented to address problems in fisheries. These projects are distinct in how they follow the best-practice in fisheries governance and in that they bring together stakeholders to improve a certain aspect of a fishery. This type of FIP uses the criteria set out by the MSC to guide its improvement process and the approach that these FIPs use is quite distinct. The PPTST, the SFP and the Seafood Conservation Alliance all apply a similar approach to improvement but they differ in terms of the goals set. Continual Improvement (CI) can only be used as a theoretical approach based on the assumption that FIPs are actually setting out a process of improvement. The methodology of the PPTST is similar to the strategic and tactical improvement concepts which are used by CI. Therefore, using CI for analysing the improvements that FIPs set out is a relevant approach. System performance and conformity with rules are central to this methodology. The activities of the PPTST are similar to tactical improvement in the sense that they are what has to be done in order to achieve the strategic goals. The two examined activities of the PPTST showed that there are a lot of underlying dynamics which influence the response of the stakeholders to the activities. This shows that while the FIP can set out a guideline towards improvement, actually achieving results depends on the ability to address issues as they come up, which requires a high degree of flexibility. One can argue that the project simply needs some time to get fishermen persuaded and involved. Change is simply not achieved within a short time by setting new rules; it requires a change of mind-set.

The question that remained was how the distinct approach that these FIPs set out is suited to addressing problems in fisheries. This was investigated in chapter 4 with the case study of the PPTST. The PPTST approach is that every one of its (8) objectives is assigned several milestones which are to be achieved by carrying out activities in a predefined time frame. The improvement plan of the PPTST is geared to establish a sustainable fishery for yellow-fin tuna in Lagonoy Gulf by making the fishery more manageable. The idea is that a better-managed fishery is key to establishing sustainable fisheries. From literature and the empirical results it is clear that there is indeed a lack of structure and failing management at the core processes of the fishery. As a result, there is also a lack of information on the fishermen’s practices, and whether these comply with the standards for sustainability. The examination

of the two PPTST tactical activities, which aim to address this issue, indicated that the need for change is not fully achieved. This is mainly due to the fishermen's lack of confidence that activities are effective and beneficial for them. Therefore, it is hard to say whether the PPTST's method of becoming sustainable is effective, since the plan is affected by the lack of local coordination and involvement as well as by external factors. The choice for the Lagonoy Gulf as the project site was based on the idea that it would be more manageable, because the fishermen have limited operational capacity, but this does not seem to be a valid assumption. While there is limited operational capacity, it became clear that the numerous and remote coastal barangays where fishermen live, portray complex and diverse characteristics. The question remains if well-managed fisheries are consequently leading to more sustainable fisheries and also whether fishermen will really benefit from being part of a well-managed fishery as conceptualised by the PPTST.

An important matter to reflect on is that the PPTST was not conceptualised by the people who are implementing it and fishermen were also not involved in this process. The conceptualisers were not aware of the intricacies of the local situation or the dynamics that affect fishermen behaviour while they were conceptualising the FIP. This becomes clear from the fact that fishermen were not consulted in the conceptualisation of the project. Consequently, the implementers are faced with a situation where they have to implement activities that are set out by people who are not aware of local dynamics. This suggests that involvement of local level actors is crucial in conceptualising and implementing the FIP. While this was set out in the project proposal of the PPTST it did not happen. It would seem crucial for successful implementation of FIPs to engage with the stakeholders that are needed to bring about change. At the time the research was being carried out, fishermen were not aware that they were part of the FIP. The fishermen are not informed about what the FIP is trying to achieve and what the benefits of the project would be for them. The PPTST went about achieving improvement by mainly engaging and generating goodwill with municipal governments. The initial activities of the PPTST were executed in collaboration with the municipal governments. Engagement with municipal governments is also crucial for the FIP, particularly in the Philippines, where fisheries decisions are made on a decentralized level. The issue is that municipal governments sometimes lack the capacity and the means to fulfil their role as the main managing body of municipal fisheries. The PPTST can play a role in creating awareness for the improvements required in fisheries, and guide the municipal government in the right direction. It became clear that the PPTST is guiding actors like the municipal governments to bring about the changes required to achieve improvement. This means that the PPTST, even in this process of improvement, is an external actor as it guides a fishery in a specific setting towards improvement.

Because fishermen are not yet aware of the PPTST it was difficult to see how the fishermen value the PPTST, however, fishermen were asked to comment on the two activities of the PPTST. Fishermen indicated that they are greatly concerned with the trespassing of commercial fishermen and the operation of illegal fishing gears in municipal fishing areas which are officially reserved for them. While the Registration & Licensing (R&L) identifies who can and who cannot fish in municipal waters, the lack of enforcement is what has affected fishermen's trust in the municipal government to regulate the access to municipal waters. While fishermen see it as their obligation to participate in the R&L, for some of them the failure of the municipal government to manage access to the municipal waters is a reason

not to participate. The establishment of BFARMCs is greatly influenced by the failure of previous fishermen/fisherfolk organisations and the lack of local leadership in fishing communities. Fishermen do not have high expectations of the BFARMC as a consequence of this. These issues are outside the control of the PPTST, but it became clear that preconceptions greatly influence the fishermen responses to the FIP. Andrew *et al.* (2007) states that failures in fisheries management are often attributed to failing fisheries management systems, while the failure of these management systems more often lies in the failure to manage the interface between fisheries and the wider external environment. This can also be seen in this thesis; fisheries are affected by broader political, institutional and economic drivers. Fishermen upgrading strategies are influenced by the problems they face, the relationships they have with other fishermen and their casa, as well as by the process of improvement set out by the FIP. With so many factors influencing fishermen strategies, setting out requirements which are only addressing specific goals of the PPTST ignores the complexity of the fishery. The empirical data from the case study shows that this process of improvement is not as straightforward as set out by the PPTST. While this project is still in its start-up phase it remains to be seen how it is able to engage the fishermen.

The MSC eco-label guarantees consumers that the seafood with their label is “sustainable seafood”. The question is what FIPs are doing to contribute to this. FIPs set out many tactical steps to be able to meet its strategic goals. This is also why a FIP is often not only about achieving MSC certification. There are also other goals, which are considered to be in between steps to achieve certification which are just as relevant and important to make the fishery more manageable. Particularly, the small-scale developing country fisheries are characterised by a lack of organisation, and proper regulatory systems which control the levels of catch. The process of the FIP is making small steps to improve the management of the fishery and to collect data. This is also why the SFP and the PPTST state that achieving MSC is not the only desirable end-result. Even if a fishery is not able to achieve certification, the process of improvement is considered to be relevant and contributing to improving fisheries. The question remains what will happen once MSC certification is (not) achieved and whether there will still be some form of improvement project for the fishery beyond that. At this point it remains to be seen how manageable fisheries are.

## **6.2 Reflections on the Theoretical Concepts**

In this thesis the concepts of Continual Improvement (CI) and upgrading were combined in order to analyse FIPs. These two concepts share certain theoretical assumptions, the main overlap being that they are both concepts which originally were used in a business context and have now been adapted to management of fisheries.

Upgrading was considered as a useful concept to study the social organisation of production and to see how new requirements from the value chain are influencing strategies of fishermen. In compiling more information about FIPs it appeared that the approach used by FIPs was the core of this research’s issues, and therefore the concept of CI was applied. This concept is considered the best approach to describe and present the more business-like methodology the FIPs are using to outline their goals (strategic) and how they move towards these goals (tactical). GVC analysis has some examples where environmental

standards are affecting producer strategies. However, because FIPs are a new governance arrangements in fisheries, there has to date been no attempts to analyse FIPs using upgrading.

While CI is a methodology, upgrading is a framework of understanding. CI methodology shows how FIPs approach achieving improvement and enables understanding of this novel approach. While upgrading is linked to environmental standards and CI is used by ISO 14001 in their EMS approach, the application of both concepts here is quite novel. The advantage of this approach is that the two concepts complement each other as two angles of one phenomenon are presented: the CI methodology enables analysis of the external factors, namely the FIP, and the upgrading framework enables analysis of the internal setting, namely the upgrading strategies of fishermen. This allows for new insights into implications of new governance arrangements in fisheries.

Most of the work which uses the concept of CI focuses on processes of improvement within a company and according to the authors' knowledge and literature review, this concept has not previously been used to address processes of improvement in small-scale fisheries, nor has it previously been used to evaluate the process of improvement as set out by third-party certification schemes like MSC. CI is often used within companies to internally address issues related to efficiency. However, in this thesis the concept is used to describe an externally conceptualised process of improvement which impacts on a particular complex local situation. In terms of tactical improvement, it seems that the methodology is a bit too rigid. As was stated in chapter 3, following Ponte (2008) it seems that the focus is more on making sure that all requirements are met rather than on actually driving improvements. Furthermore, tactical improvements in the case of the PPTST are not elaborate enough to ensure that the goals are met. The implementers of the PPTST go beyond what is stated in the activities to ensure that the desired result is achieved. The value chain is key to both these concepts. The ultimate goal of the FIP is to achieve MSC certification, which adds value to the product and thus enables access to new markets. The implementation of FIPs influences fishermen who, as producers in the (sustainable) value chain, are required to comply with new requirements. This adds an extra dimension to factors that influence producer strategies.

No other empirical research could be found that refers to upgrading strategies of (small-scale) producers which are part of a value chain seeking to move towards MSC certification. Upgrading enabled understanding of factors that shape fishermen behaviour and this created a greater understanding of how fishermen are responding to the PPTST. Following from the idea that natural resources are increasingly governed by private actors, the global value chain approach and particularly upgrading proved to be useful to understand how the stakeholders in this fishery are responding to the new demand for sustainable seafood products and ultimately how this affects fishermen behaviour. It became clear that the many different factors influence the upgrading strategies of fishermen, and that the knowledge, communication and relationships that the fishermen have are the most influential factors determining strategies of fishermen with regard to reducing risks and seeking to add value to their products. Improvement for fishermen is about reducing risks they face, sustaining their livelihood and ensuring that they are able to catch tuna in the future. It is important to reflect upon what influences the behaviour of fishermen and their upgrading strategies. Upgrading strategies can be

identified for how fishermen improve their livelihood, for how fishermen upgrade their position in the yellow-fin tuna value chain, for how fishermen are upgrading practises of fishing, and for how fishermen are upgrading through the FIP. There is a conflict between upgrading strategies that are moving towards improvement of the fishery and those which are upgrading the livelihood of fishermen. Many fishermen have a “live for today” mentality, meaning they want to catch enough fish to feed their family at the end of the day. Most fishermen do not save for the lean season, and there is no prudent financial management. Fishermen are willing to learn and do new things to improve their situation and some fishermen are more pro-active in bettering their situation than others. What should be considered is that while the PPTST requires the fishermen to change their practises, it is difficult to see how the fishermen will ultimately benefit from the project. It became clear that the relationships the fishermen have with their casa or trader they sell to also greatly influence their knowledge, possibilities, strategies and well-being.

What should be noted is that both CI and upgrading can be external and internal at the same time. Upgrading is external in the sense that changes in higher parts of the value chain influence the situation of fishermen, and at the same time upgrading is about how fishermen address problems and take up opportunities to reduce risk and add value to their products. These problems or opportunities come from both internal and external sources and this is how upgrading is linked to CI. CI methodology as used by the FIP, impacts the upgrading strategies of the fishermen. This includes the tactical improvement activities, but also the strategic improvement goal which, if achieved, can affect the fishermen. Furthermore, CI can also be seen as what fishermen are doing to upgrade; fishermen continuously seek to reduce risk and to improve their livelihood, and this is an internal process of improvement as well.

The fact that CI and upgrading are used to analyse FIPs in a real life context is one of the main strengths of this research. The thesis contributes both analytical and empirical insights, which helps to understand FIPs. Hopefully, these insights will be used for further analyses of FIPs. Analysing FIPs should always be considered as something that is context-specific. This research creates a snapshot in time, as at the time of research the PPTST was still in its start-up phases and it was continually evolving, which means that the research findings depend on the moment of analysis. The research tried to capture the complexity inherent to fisheries.

The analytical framework presented in the theoretical framework is not a blueprint of FIPs; it is an assumption of how FIPs are manifested as can be derived from the theories used. There is also a relevant difference between the analytical framework and the actual situation with the PPTST. Because this research only analyses one case study no general conclusions can be drawn. However, this research does contain empirical observations, which contribute to a better understanding about the actual implications of FIPs.

### **6.3 Reflecting on the hypothesis**

The hypothesis presented in the theoretical framework is that (1) FIPs use CI methodology to move towards sustainably managed fisheries, (2) but fisheries are so complex, that the FIP approach will (3) not be suitable to address problems in fisheries and (4) FIPs will not provide fishermen with opportunities

to upgrade their situation. There are four assumptions in this hypothesis and the main insight is that externally conceptualised FIPs are difficult to apply to complex local situations, confirming the second and third assumptions of the hypothesis. The suitability of FIPs in moving fisheries towards improvements is not refuted as the strategic vision towards improvements is needed in order to improve a fishery. However, the implementation of this particular case study was faced with various challenges and it became clear that although the strategic vision triggers action, the practical aspects of using this systematic approach sometimes did not help the process along the way. The particular approach utilised by the FIP is very similar to the CI methodology as a distinct strategic and tactical improvement stages are discerned.

While FIPs try to reconcile the gap between market oriented mechanisms and developing countries, the systematic approach on its own is not enough for FIPs to succeed in meeting their goals. The people that conceptualise the FIP process should incorporate specific local context considerations into the plans as differences between values of conceptualisers and the local context influences the applicability of the FIP. From the case study it became clear that FIPs are not incorporating specific local considerations into the plans, FIPs do not address to the broader issues that challenge the fishery. The FIP is purely focusing on the improvements needed for the FIP to meet the goals that it has set. While it would be difficult to include all the issues facing a fishery into a FIP, ignoring issues that are greatly affecting the fishery does not improve a fishery. The FIP goal is to ensuring that market actors can source sustainable seafood from the fishery and in order to do this the fishery has to meet the requirements of the MSC. While this is a novel approach in this context, it seems that meeting the goals of the FIP is not perfectly aligned with really improving the fishery. As this is only a snapshot of the FIP at the time of research, the possible benefits of the FIP approach should not be ignored. The systematic approach is useful to gradually bring about change and be able to monitor progress. This approach makes it easier to determine which part of the plan works and whether implementation is going according to plan. However, it became clear from R&L and the BFRAMC reinvigoration that it is important to consider *how* plans should be implemented and by *whom* for the project to be successful.

The question remains what improvement in fisheries is and for who. The boundaries of the new type of FIPs are seen in the methodology to achieving improvement as well as in the orientation towards governing through the value chain, however, FIPs are still a relatively new concept and thus are subject to change.

## Chapter 7 Conclusion

The goal of this thesis was to create an understanding of how the introduction of Fisheries Improvement Projects is contributing to the enhancement of sustainable fisheries governance, particularly by considering what improvement is in FIPs. This thesis analysed the emergence of FIPs by 'exploring' the suitability of the FIP approach to achieve improvement and portrayed the various aspects which shape upgrading strategies of fishermen, particularly de PPTST that was concerned with the yellow-fin tuna fishery in the Lagonoy Gulf. This chapter presents the conclusions of this research. The results of the empirical findings and discussion of subsequent analyses are used to answer the research questions which were elaborated in chapter 1.

FIPs are still in an early phase of development and their emergence has received a lot of attention in the fisheries world. The theoretical framework devised in chapter 2 captures the methodology FIPs use, as well as the response of fishermen to opportunities and risks. The analytical framework was successfully applied to the case study and it guided the analysis in chapter 4 and 5. This identified the main opportunities and constraints of FIPs as well as the main determinants of fisherman behaviour. As a consequence of increasing concerns about the state of world fisheries many projects evolved which aimed 'to do something' about the problems facing fisheries. What is actually considered a problem in fisheries and the approach to solving this problem is context specific, but FIPs are characterized by a systematic approach towards improvement where MSC criteria and principles are used as a guiding framework. This systematic approach is used to improve a fishery by making it more manageable. As mentioned in chapter 5, these FIPs see MSC certification as a desirable goal. MSC through certifying a fishery ensures that a fishery is well-managed and sustainable. This then implies that FIPs consider that MSC certification is improvement. However, there are FIPs that, while using MSC as a guideline to improvement, do not become certified because it is just not possible in these cases a well managed fishery is also seen as improvement. Large retailers are increasingly demanding sustainable fish, which means fishermen are triggered to adapt their practices. However, in developing countries there are many obstacles preventing fisheries from meeting sustainability requirements. This is the drive of FIPs to guide fisheries towards sustainable fishing practices. Consequently the answer to the first research question '*what are Fisheries Improvement Projects and how do they formulate strategies for improvement in fisheries?*' is: that FIPs are projects that aim guide a fishery towards specific improvements using a systematic approach.

FIPs are a novel governance arrangement that use a business-like approach to achieve sustainable fisheries. The different examples of FIPs showed that the strategies and implementation of a FIP depends on the organization that guides the project. While the PPTST and the SFP FIPs are similar in that they use a systematic approach, there are differences in how they apply this approach to improvement. However, this also depends on the context as FIPs are all inherently different from each other. FIPs are still so new that there is not a lot of legitimacy for its approach to deal with complex problems in fisheries which many other approaches have failed to resolve. Furthermore, this thesis shows that the FIP approach is not perfectly suited to achieving the improvements it sets out to achieve. In order to achieve its goals, the people involved in the FIP have to go beyond what was set out in the FIP approach

to actually achieve objectives. It becomes clear from the case study that pre-existing relations and practises shape fishermen behaviour and for a FIP to be successful these factors have to be considered and included in order to achieve its goals.

Consequently the answer to the second research question '*how do Fisheries Improvement Projects use notions similar to Continual Improvement to make fisheries change their practises?*' is: that FIPs set out a process of improvement that is very similar to CI as there is a clear distinction between strategic goals and tactical activities. FIPs use notions similar to CI to determine what improvements/ steps are needed in order to make the fishery more sustainable. The idea is that by setting goals and corresponding activities, a plan is set out to guide a fishery for improvement. The PPTST plan adresses issues related to data-deficiency and particularly about insufficient management in the fishery. In order to change this, the PPTST collaborated with municipal governments. FIPs approach improvement as something which is controllable. "This is the issue, this is what has to be done to fix it". The plans and related activities are all set out before the project was started at a certain location. The FIP approach is useful as it provides a "longterm/strategic" vision for the fishery. Indicators are set out to measure the success of achieving certain improvements and a time frame to monitor progress in time. This approach shows where a fishery wants to go, but not *per se* how to achieve this. Although activities are set out, the main problem with the PPTST was lack of stakeholder engagement. This neglect has great consequences for how fishermen view the PPTST.

Fishermen respond differently to issues depending on whether it is something within their control or not. If they can do something about it, they are quite creative with coming up with new ideas to bring this to their advantage. However, if they see it as something outside their control, they take up a fatalistic attitude and do not seek to adress the issue at hand. This may also be related to the fact that many fishermen are tied to casas, which negatively influences their ability to take up new opportunities. It became clear that the value chain is the means through which fishermen's behaviour is most affected. This, because fishing is the main source of livelihood for these fishermen and the value chain ( local or export) affects their income directly. Besides this, the relationship with their casa is usually a long term one and is something which is deeply embedded in society. Consequently the answer to the third question '*Which upgrading strategies do fishermen employ to upgrade their livelihood and fishing practises and what factors are the most influential in determining their behaviour?*' is: that fishermen aim to improve their situation but do not achieve this by upgrading their fishing practises, to improve their situation fishermen goes outside their fishing activities to ensure their livelihood.

### **Further implications of this research**

To improve the theoretical framework, an option would be to include the livelihood approach, this would enable a better understanding of what drives fishermen strategies and this would provide useful insights which could strengthen the upgrading findings. This study only focuses on one case study; it would be interesting to apply the methodology and concepts of this thesis to other FIP cases. If more consistent findings are found over multiple cases, this would improve the accuracy and validity of theoretical assumptions. This is why a broader analysis is needed to understand the fundamentals of FIPs.

FIPs are linked to the sustainable seafood movement as they are aiming to guide fisheries towards sustainability with the goal of establishing a sustainable seafood market for a particular fishery. The sustainable seafood movement encourages consumers (in developed countries) to make their consumption patterns more sustainable by buying sustainably sourced seafood. Considering that a high percentage of seafood caught in developing countries is exported to developed countries, it seems that the sustainable seafood movement has major implication for developing country fishermen. FIPs are an externally driven process, which often originates with retailers in developing countries, as demand for sustainable seafood is a developed country phenomenon. The question remains whether the sustainable seafood movement is benefitting the sustainability of the developing country fisheries. As FIPs are geared towards providing sustainable seafood for the international market, there is a chance that fishermen will not really benefit from being more sustainably managed. Ecolabelling provides consumers at the other end of the spectrum with the choice to buy sustainable seafood and at the same time enable retailers and processors to show their commitment to environmental improvements. FIPs are responding to the lack of good management in fisheries to achieve change. While there may be good initiatives like the MSC standard for environmental improvement, some fisheries are facing difficulties in meeting these environmental standards by themselves. This is why FIPs have emerged, as a guide for fisheries to achieving improvement.

It becomes clear that the focus of value chains and FIPs is concerned with improving the fishery, and this is achieved by delivering a highly valuable product for consumers in the developed countries. It is questionable whether the FIPs really improve a fishery as FIPs only focus on meeting their goals. Many aspects like the livelihoods of the fishermen are not considered.

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## Appendix I Interviewees

### Interview FIP experts

| Organisation                       | Name           |
|------------------------------------|----------------|
| Fish and Wildlife Service, Nevada  | Lisa Heki      |
| Discovery Bay Marine Laboratory    | Ian Sandeman   |
| Food and Agricultural Organisation | Rolf Willmann  |
| Sustainable Fisheries Partnership  | Braddock Spear |
| Poseidon Consultancy ltd           | Tim Huntington |

### Interviews Fishermen

| Municipality | Barangay       | Name                  |
|--------------|----------------|-----------------------|
| M1 - Tabaco  | B1 - San Roque | Carlos Brittanico     |
| M1 – Tabaco  | B1 - San Roque | Leonardo Bordeus      |
| M1 – Tabaco  | B1 - San Roque | Rodolpho Bayonito     |
| M1 – Tabaco  | B1 - San Roque | Ronnie Butial         |
| M1 – Tabaco  | B1 - San Roque | Ruben Botalon         |
| M1 – Tabaco  | B2- Rawis      | Celedunio Bural       |
| M1 – Tabaco  | B2- Rawis      | Abelino Borleus       |
| M1 – Tabaco  | B3 - Fatima    | Loreto Ballosa        |
| M1 – Tabaco  | B3 - Fatima    | Nestor Ballosa        |
| M1 – Tabaco  | B3 - Fatima    | Rogelio Bursea        |
| M1 – Tabaco  | B3 - Fatima    | Eduardo Ballosa       |
| M1 – Tabaco  | B3 - Fatima    | Winifredo Burseo      |
| M2 - Tiwi    | B4 - Sugod     | Cesar Cericos         |
| M2 - Tiwi    | B4 - Sugod     | Roel Bragais          |
| M2 - Tiwi    | B4 - Sugod     | Manuel Camota         |
| M2 - Tiwi    | B4 - Sugod     | Simplicio Bragais     |
| M2 - Tiwi    | B5 - Naga      | Wilfredo Chavenia Sr. |
| M2 - Tiwi    | B6 - Putsan    | Amaro Colipano        |
| M2 - Tiwi    | B6 - Putsan    | Andres Dacullo        |
| M2 - Tiwi    | B6 - Putsan    | Mariano Cilot         |
| M2 - Tiwi    | B6 - Putsan    | Olfindo Colipano      |
| M2 - Tiwi    | B6 - Putsan    | Roberto Cilot         |
| M2 - Tiwi    | B7- Lourdes    | Romeo Condat          |
| M2 - Tiwi    | B7- Lourdes    | Prisco Monteveros     |
| M2 - Tiwi    | B7- Lourdes    | Oscar Gaité           |
| M2 - Tiwi    | B7- Lourdes    | Rene Competente       |
| M2 - Tiwi    | B7- Lourdes    | Sabido Condat         |

**Interviews with Casa & Middlemen**

| Municipality | Casa or Trader | Name             |
|--------------|----------------|------------------|
| Tiwi         | Casa           | Lutgarda Cardano |
| Tiwi         | Casa           | Sofrino Kallos   |
| Tiwi         | Associate Casa | Ninita Clet      |
| Tabaco       | Casa           | Wilfredo Burac   |
| Tabaco       | Casa & Trader  | Joey Piol        |
| Tabaco       | Casa & Trader  | Marlon Briza     |
| Tabaco       | Trader         | Lordwill Medrano |

**PPTST Staff**

| Function                                   | Organisation    | Name                  |
|--|-----------------|-----------------------|
| Site Manager PPTST Lagonoy Gulf            | WWF Philippines | Joann Binondo         |
| Site Coordinator Tiwi PPTST Lagonoy Gulf   | WWF Philippines | Maria Corazon Sofrino |
| Site Coordinator Tabaco PPTST Lagonoy Gulf | WWF Philippines | Rose Bubuli           |