Effective Governance and Policy Implementation in Governing High Seas Fisheries: A Comparative Study of Three Regional Fisheries Management Organizations

By

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Abstract

Two-thirds of fish stocks commercially fished on the high seas are either depleted or overexploited. Regional Fisheries Management Organizations (RFMOs) are key international actors having the legal competence to establish fishery conservation and management measures to improve the optimal and sustainable utilization of high seas fisheries resources. The literature suggests that their effectiveness is varied. While some RFMOs are making progress towards more sustainable fisheries, some are facing fish stock depletion. The literature indicates that organizational governance design and quality of implementation are central to the disparities.

Thus far, while most of the discussion has focused on the effectiveness, and how to enhance the transparency of RFMOs, very little research has explored the designs of governance arrangements and implementation of RFMOs. Accordingly, this study contributes to the literature on governance arrangements and policy implementation of the high seas by offering in-depth case studies of the selected RFMOs. It employs qualitative methods to analyze data collected from semi-structured interviews with 24 actors (i.e., officials, delegations, and fisheries experts), as well as a collection of published and unpublished documents regarding three selected RFMOs. The three selected RFMOs are the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), the Western and Central Pacific Fisheries Commission (WCPFC), and the South Pacific Regional Fisheries Management Organization (SPRFMO).

The findings show that it is possible to apply Ostrom's (1990) design principles to uncover how RFMOs can be designed for higher performance in governing high seas fisheries. However, adjusted and additional design principles are necessary to have a better understanding of the factors that contribute to sustainable high seas fisheries. For example, the design principles should include policy learning and adaption, particularly in the regional and global contexts, so as to address complexities and uncertainties. Furthermore, the research reveals a number of critical factors of RFMO policy implementation, such as strong political will and commitment, the availability of proper resources and coalitions. This study concludes with recommendations for policymakers of the RFMOs to better achieve their overarching objectives.

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List of Acronyms

ACAP	Arrangement with the Agreement on the Conservation of Albatrosses and Petrels
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CMM	conservation and management measures
EEZ	exclusive economic zone
FAO	Food and Agriculture Organization
FFA	South Pacific Forum Fisheries Agency
IAD	institutional analysis and development
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
IGO	intergovernmental organization
IOTC	Indian Ocean Tuna Commission
IUU	Illegal, Unreported and Unregulated
MCS	monitoring, control and surveillance
NGO	non-governmental organization
OECD	Organization for Economic Co-operation and Development
RFMO	Regional Fisheries Management Organization
SPRFMO	South Pacific Regional Fisheries Management Organization
TAC	total allowable catch
UN	United Nations
VMS	vessel monitoring system
WCPFC	Western and Central Pacific Fisheries Commission

Chapter 1: Introduction

1.1 Overview

Fisheries around the world are important socially and economically. They are an essential animal protein and food source, contributing significantly to sufficient nutrition and food security. Also, they provide livelihoods and incomes for approximately 56.6 million people FAO (2016b, p. 32).

Nevertheless, the depletion of fishery resources has intensified over the past four decades. According to the United Nations Food and Agriculture Organization (hereafter UN Food and Agriculture Organization), currently over 90 percent of global marine stocks are estimated to be fully exploited, overexploited or depleted (FAO, 2014, 2016b). In addition, Worm et al. (2006) projected that if current fishing patterns continue, global wild fish stocks will collapse by 2048.

Maritime zones include territorial seas, exclusive economic zones, and high seas. Maritime nation-states manage fisheries in their territorial seas and exclusive economic zones. High seas fisheries are managed by Regional Fisheries Management Organizations (RFMOs) which are regional bodies with the legal competence to establish binding fisheries conservation and management measures (FAO, 2001; Gilman, Moth-Poulsen, & Bianchi, 2007; Gilman, Passfield, & Nakamura, 2014).

RFMOs are intergovernmental organizations bringing together countries with interests in the relevant fish stocks (FAO, 2001; Gilman et al., 2007). By their membership of RFMOs, these countries agree to adopt common binding management rules that apply to them. In other words, RFMOs are established by international agreements or treaties when states recognize common interests in overcoming collective-action problems, such as fish stock depletion, overfishing, and overcapacity (Barkin & DeSombre, 2013a; Brown, 2016; Kristina M. Gjerde, Currie, Wowk, & Sack, 2013; Sydnes, 2001).

RFMOs play a pivotal role in promoting international cooperation for the conservation and management of fish stocks, *inter alia*, for protecting high seas and migratory marine fishery resources. Such fish stocks, including around 200 species, account for about 12 percent of the world's capture fishery harvests (Munro, Van Houtte, & Willmann, 2004; Rogers, Sumaila, Hussain, & Baulcomb, 2014).

Despite their efforts for decades, some of the RFMOs have failed to achieve their objective of sustainable fisheries management, as two-thirds of fish stocks commercially fished on the high seas are either depleted or overexploited (Cullis-Suzuki & Pauly, 2010; Maguire, 2006). The problem is quantitatively large in the Atlantic and Pacific oceans where the capture production constitutes over 80 percent of the global annual average marine fisheries catch (FAO, 2005, 2011, 2014).

This chapter gives a background and the rationale for the study, including the research questions.

1.2 Statement of the problem

The global fisheries governance structure consists of the United Nations General Assembly, UN Food and Agriculture Organization's Committee on Fisheries and various RFMOs (Hayashi, 2005) (see Figure 1.1). The Committee on Fisheries is the highest global body in fishery matters that can direct member states of the UN Food and Agriculture Organization to address all questions pertaining to fisheries. The United Nations General Assembly sets out principles and global standards of behavior for responsible fishing practices to states as well as regional and global organizations.

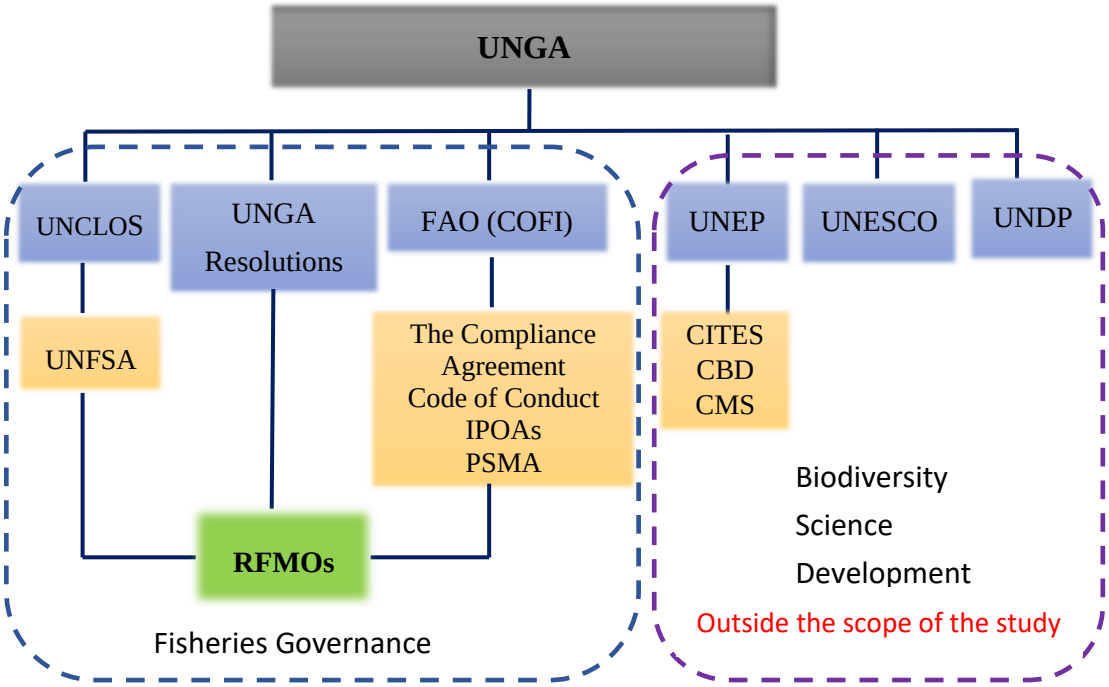

Figure 1. 1 The global ocean governance structure

UNGA: United Nations General Assembly; UNCLOS: The United Nations Convention on the Law of the Sea; UNFSA: The United Nations Fish Stocks Agreement; FAO (COFI): Food and Agriculture Organization (Committee on Fisheries); IPOAs: International Plans of Action; PSMA: Port State Measures Agreement; RFMOs: Regional Fisheries Management Organizations; UNEP: United Nations Environment Programme; CITES: The Convention on the International Trade in Endangered Species; CBD: The Convention on Biological Diversity; CMS: The Convention on Migratory Species; UNDP: United Nations Development Programme; UNESCO: United Nations Educational, Scientific and Cultural Organization

RFMOs are the primary mechanisms that allow for cooperation between coastal states and fishing nations in line with the requirements and responsibilities under the United Nations Convention on the Law of the Sea (hereafter the UN Law of the Sea Convention) which came into force in 1994 and the United Nations Fish Stocks Agreement (hereafter the UN Fish Stocks Agreement) which came into force in 2001.

The objectives of RFMOs are contained in the UN Law of the Sea Convention and the UN Fish Stocks Agreement as well as in the United Nations General Assembly, ensuring the long-term conservation and sustainable utilization of fish stocks subject to their governance

(A. Cox, Renwrantz, & Kelling, 2009). They play a pivotal role in facilitating international cooperation for the conservation and management of fish stocks. As well, they present a means of governing fish stocks that occur either as straddling or shared stocks between zones of national jurisdiction, or between these zones and the high seas, or exclusively on the high seas.

There is a plethora of hard law and soft law instruments available for RFMOs to conserve and manage fish stocks (key international fisheries governance instruments are discussed further in Chapter 2.2). Nevertheless, despite the proliferation of RFMOs and the evolution of legal instruments aimed at empowering them, for high seas fisheries, most of them have failed to prevent over exploitation (Hilborn, 2007). Increasingly, in recent years, there has been a great deal of criticism concerning the effectiveness of RFMOs, which is to ensure and improve the optimal and sustainable utilization of fish stocks (Kristina. M. Gjerde, 2005; Kristina M. Gjerde et al., 2013; Lodge, 2007; McDorman, 2005; Rogers & Gianni, 2010; Sánchez, 2007; Small, 2005; Swan, 2004; Willock & Lack, 2006).

In response to declining high seas fisheries resources and the failure of RFMOs to address this problem, a global debate on governance of the high seas fisheries has emerged over the past two decades. Partly this is because many RFMOs were established prior to the UN Fish Stocks Agreement (see Table 2.4) and did not possess the mandates in their founding documents to be able to implement all the functions assigned to them (De Bruyn, Murua, & Aranda, 2013; Lodge, 2007).

Another further critical point is that many members of RFMOs have not ratified the UN Fish Stocks Agreement. Thus they have no legal obligation to consider the implementation of the UN Fish Stocks Agreement (Commission, 2014; A. Cox et al., 2009; Crothers & Nelson, 2007; De Bruyn et al., 2013; McDorman, 2005; Shotton, 2005). Some significant areas of the high seas are still not covered by any regional agreements. This leaves gaps within the RFMOs network (Ardron et al., 2013; Lodge, 2004; Rochette, Billé, Molenaar, Drankier, & Chabason, 2015). In brief, the academic and grey literature as mentioned above indicates that there are some implementation issues and governance gaps resulting in unsatisfactory outcomes.

According to the UN Food and Agriculture Organization, despite concerted efforts to improve RFMOs' effectiveness, some of them still struggle to fulfill their mandates. Some essential contributing factors have been identified in the institutional frameworks within which they operate, and the lack of political will by member states to implement decisions in a timely manner (FAO, 2008, p. 69).

Additionally, some have argued that the current governance arrangements for RFMOs are not capable of achieving desired objectives and goals (Crothers & Nelson, 2007). For example, recent literature on RFMOs has pointed towards governance issues, such as decision-making, mandates, accommodating new members and allocations (Ceo, Fagnani, Swan, Tamada, & Watanabe, 2012; FAO, 2008; Kristina. M. Gjerde, 2005; Kristina M. Gjerde et al., 2013; Lodge, 2007; McDorman, 2005; Rayfuse, 2007; Swan, 2000; Willock & Lack, 2006). From the above sketched problem, it can be argued that governance arrangements designs and policy implementation of RFMOs are crucial to the disparities of effectiveness.

In efforts to improve the RFMOs' effectiveness, there have been some studies of performance reviews, best practice guidance, and enhancing transparency. While most discussion has focused on effectiveness, and how to enhance the transparency of RFMOs, very little research has systematically explored the designs of governance arrangements and policy implementation of RFMOs. What are the critical governance factors producing different levels of effectiveness among RFMOs and how do they influence such effectiveness? What are the main factors affecting RFMOs' policy implementation? This leads to the following research purpose and questions.

1.3 Research purpose and research questions

The RFMOs are the linchpin of an important mechanism for managing high seas fish stocks. Although there is no "one-size fits all" solution for RFMOs, there is ample scope for cross-learning. In efforts to fill existing gaps in knowledge mentioned above, this research aims to contribute to the literature on governance arrangements and policy implementation of the high seas by offering in-depth case studies of the selected RFMOs. They are the Western and Central Pacific Fisheries Commission (WCPFC), the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), and the South Pacific Regional Fisheries

Management Organization (SPRFMO).

The overarching research question is: *How do governance arrangements and policy implementation affect organization effectiveness?*

The sub-questions are:

- What are the differences in the designs of the governance arrangements of RFMOs with significantly diverging effectiveness?
- What are the critical factors that constitute well-designed governance arrangements of RFMOs and how do they influence RFMOs' effectiveness?
- What are the central factors that affect RFMOs' policy implementation and how are they manifested?

In this study the term *governance arrangements* is reference to the rules that afford the means to help resolve collective action problems, such as governing access to common pool resources.

Recognizing that the term *effectiveness* can be defined across many dimensions such as outputs and outcomes, in this study the term *effectiveness* is defined and assessed in terms of *outputs*, i.e. the commitments of member states and their behavioral changes based on those commitments. A more detailed description of *outputs* is provided in the theoretical approach section.

1.4 Research methodology

This research uses a case study strategy for theory building, which is the primary aim of the study. This strategy allows the research questions to be adequately answered. The researcher adopted an interpretivist paradigm and employed a qualitative approach to collect and analyze data. Documents and semi-structured interviews were the main data sources. Triangulation across data sources was utilized to increase the validity and reliability of the research findings.

1.5 Thesis outline

This chapter has introduced the background information relating to the research. Further chapters contributing to the thesis are organized as follows. Chapter Two provides an overview of the global fisheries instruments applying to RFMOs, the status of world fish stocks, and the context of RFMOs' effectiveness studies. Chapter Three reviews research into governance and policy implementation. It identifies the gap in the literature and presents the theoretical approach to study the selected RFMOs. Chapter Four discusses the research design and methodology that was implemented to address the research questions. Chapter Five provides a general overview of the three case studies. The research findings of the three selected RFMOs are presented in Chapters Six and Seven. Chapter Eight discusses the research findings with extant literature. Chapter Nine summarizes the findings and explains their contribution to theory, empirical body of knowledge and policy; points out limitations to the research and provides recommendations for further study.

Chapter 2: Background

2.1 Introduction

This chapter presents the contextual background to the study. First, the issues discussed focus predominantly on the global fisheries instruments applying to RFMOs. These legislative instruments identify the key roles and responsibilities for RFMOs. Thereafter, it explores the status of world fish stocks to better understand the importance of RFMOs' effectiveness. Attention is then turned to the context of RFMOs' effectiveness studies underpinning the research.

2.2 International governance arrangements applying to RFMOs

The governance of global fisheries is influenced by various factors, such as resource features, socio-economic regional contexts, environmental constraints, technological development, biodiversity and ecological processes. Nevertheless, next to these contextual factors, RFMOs play an important role in governing global fisheries. Legally, they have the competence to establish fishery conservation and management measures, to improve the optimal and sustainable utilization of fisheries resources (Cullis-Suzuki & Pauly, 2010; Lodge, 2007). Based on current international law, all states engaging in fishing on the high seas, or fishing stocks which are managed by an RFMO, should be part of the relevant RFMOs, and should implement their management and conservation measures.

The existing legal and political frameworks for achieving sustainable fisheries management include fisheries-specific instruments and generic but relevant agreements (Palma, Tsamenyi, & Edeson, 2010, p. 55). Together, these instruments not only identify the key roles and responsibilities for RFMOs, but also highlight the wider legal and policy context for the establishment of RFMOs. Based on these legislative instruments, RFMOs are expected to implement effective management measures to achieve their objectives. The key instruments applying to RFMOs are summarized below in Table 2.1.

Table 2. 1 The major international fisheries specific instruments applying to RFMOs

Title	Legal status	Adopted and in force year
United Nations Convention on the Law of the Sea	hard law	adopted in 1982 in force 1994
the 1993 Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (hereafter "The Compliance Agreement")	hard law	adopted in 1993 in force 2003
the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (hereafter "UN Fish Stocks Agreement")	hard law	adopted in 1995 in force 2001
FAO Code of Conduct for Responsible Fisheries (hereafter "FAO Code of Conduct")	soft law	adopted in 1995
International Plans of Action for Reducing Incidental Catch of Seabirds in Long-line Fisheries	soft law	adopted in 1999
International Plans of Action for the Management of Fishing Capacity	soft law	adopted in 1999
International Plans of Action for Conservation and Management of Sharks	soft law	adopted in 1999
International Plans of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing	soft law	adopted in 2001
the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (hereafter "Port State Measures Agreement")	hard law	adopted in 2009 not yet in force (FAO, 2009)

As shown in Table 2.1, the international legal and policy frameworks regulating fisheries can be divided into two categories: hard law and soft law. Instruments are generally considered as *hard law* when they are legally binding obligations that delegate authority for "interpreting and implementing the law" to state authorities (Abbott & Snidal, 2000, p. 421). The term *soft law* is used to refer to international instruments that are non-binding in essence but still have legal relevance, such as the FAO Code of Conduct (Skjærseth, Stokke, & Wettestad, 2006). The primary legislative instruments directly related to RFMOs' high seas fisheries governance are discussed in the following context.

2.2.1 The United Nations Convention on the Law of the Sea

The UN Law of the Sea Convention establishes a regime for the conservation and management of fishery resources based on the maritime zones or the types of fish stocks that occur in these zones. According to Article 192 of the UN Law of the Sea Convention: "States have the obligation to protect and preserve the marine environment." This provision marked a turning point in the human stewardship of the ocean by recognizing the profound responsibility that all states have to govern the oceans in a manner that respects the marine creatures (Van Dyke, 2010).

The greatest impact of the UN Law of the Sea Convention on oceans governance has been in creating the 200-nautical mile exclusive economic zone from coastal states (Article 56 of the UN Law of the Sea Convention). It creates special rights and duties for coastal states in the exclusive economic zone. Within the exclusive economic zone, the coastal states are required to protect aquatic resources against overfishing and enjoy sovereign rights for the purposes of exploring and exploiting, conserving and managing the natural resources, whether living or non-living. Also, it has the right to set a total allowable catch based on the best scientific evidence available to it.

Meanwhile, according to the article 64.1 of the UN Law of the Sea Convention, the coastal states and other states fishing for highly migratory fish stocks in a region must cooperate with the international organization towards ensuring conservation and promoting the optimum utilization of highly migratory species. This regulation not only tackles the duty to cooperate but also addresses the role of RFMOs (E. A. Clark, 2011).

Regarding high seas fishing, articles 117 and 118 of the UN Law of the Sea Convention provide for the duty to cooperate, either directly or through sub-regional or regional fisheries organizations, in taking those measures necessary for the conservation of the fisheries resources concerned. The duty to cooperate has been reinforced in a number of post- the UN Law of the Sea Convention fisheries instruments, such as Chapter 17 of Agenda 21, the FAO Code of Conduct, the FAO Compliance Agreement, and the UN Fish Stocks Agreement (Palma et al., 2010, pp. 201-202).

2.2.2 The Compliance Agreement

The core objective of the Compliance Agreement is to address the practice of flagging and reflagging vessels in order to avoid compliance with conservation and management measures on the high seas by specifying the responsibility of the flag state and by reinforcing international cooperation and transparency. Enforcement measures under the Compliance Agreement are mainly left to the flag state (Cochrane & Doulman, 2005).

According to Article III (8) of the Compliance Agreement, each party should make contravention of this Agreement an offence under national legislation; in case of serious offences, applicable sanctions shall include refusal, suspension or withdrawal of the authorization to fish on the high seas (Orrego Vicuña, 1999, pp. 228-229).

Moreover, the Compliance Agreement requires states whose vessels are engaged in high seas fishing to improve transparency by collecting and disseminating data and the exchange of information on fishing operations (Cochrane & Doulman, 2005; Szigeti & Lugten, 2015).

Although the Compliance Agreement has contributed to the development of international law with respect to the responsibilities and rights of flag states in the field of high seas fisheries, it yet contains a number of deficiencies, such as the definition of a fishing vessel (Orrego Vicuña, 1999, p. 230).

2.2.3 United Nations Fish Stocks Agreement

In the early 1990s, a consensus among the UN Food and Agriculture Organization members emerged that conservation and management regulations of high seas fisheries needed

strengthening. Responding to this consensus, the UN Fish Stocks Agreement was adopted in 1995. This agreement builds upon two provisions of the UN Law of the Sea Convention: (a) all states have the duty to take, or to cooperate with other states in taking, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas (Article 117 of the UN Law of the Sea Convention); and (b) on the high seas, states have jurisdiction over vessels flying their flag (Articles 90-98 of the UN Law of the Sea Convention).

The implementation of the UN Fish Stocks Agreement provides a foundation for RFMOs with respect to rebuilding fish stocks. In Article 5 of the UN Fish Stocks Agreement, for example, there are general principles to be followed for the conservation and management of straddling fish stocks and highly migratory fish stocks. These principles are crucial because they shape RFMO's policies and implementation work. They include:

(a) adopt measures to ensure long-term sustainability of stocks and to promote their optimum utilization;

(b) ensure that such measures are based on the best scientific evidence available and are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield qualified by relevant environmental and economic factors;

(c) apply the precautionary approach;

(d) assess the impacts of fishing, other human activities and environmental factors on target stocks and species;

(e) adopt conservation and management measures for species belonging to the same ecosystem or associated with or dependent upon the target stocks;

(f) take measures to prevent or eliminate overfishing and excess fishing capacity; and

(g) implement and enforce conservation and management measures through effective monitoring, control and surveillance (MCS).

Under the UN Fish Stocks Agreement, all states fishing on the high seas are to apply the precautionary approach (Van Dyke & Broder, 2015; Worm & Vanderzwaag, 2007).[1] The

[1] The precautionary approach includes the application of prudent foresight, taking into consideration the uncertainties in fisheries systems and the need to take action with incomplete knowledge (FAO, 1996, p. 75).

application of the precautionary approach to fisheries management was elaborated with the requirement to be more cautious when information is uncertain, unreliable or inadequate. Meanwhile, all states shall use the best scientific information and implement improved techniques for dealing with risk and uncertainty, and with the adoption of target and limit reference points to support management objectives and to constrain harvesting within safe biological limits (Allen, 2010).

It is worth noting that in most international agreements the precautionary principle is barely defined, but the UN Fish Stocks Agreement includes several provisions regulating implementation of the precautionary approach. Most importantly, it has two innovations as follows: (a) the reference points being given a clearer binding effect[2]; and (b) the precautionary approach is integrated in the setting and use of the reference points (Henriksen, Hønneland, & Sydnes, 2006).

2.2.4 FAO Code of Conduct

During the period 1994-95, the Code of Conduct was negotiated under UN Food and Agriculture Organization auspices at the same time that the negotiations of the Fish Stocks Agreement were taking place. This process allowed the Code of Conduct to take into account the provisions of the UN Fish Stocks Agreement and facilitated consistency between the two instruments (Vicuña, 1999, pp. 230-231).

The Code of Conduct aims for providing an internationally agreed framework for national and international efforts to ensure sustainable exploitation of fisheries resources in harmony with the environment. It is voluntary in nature and has been accepted by all 188 members of the UN Food and Agriculture Organization. The Code of Conduct does not establish any legal rights or obligations. In other words, it has the same legal status as other non-binding instruments developed within the framework of the UN Food and Agriculture Organization. However, it represents the most complete expression of the principles and criteria of sustainable fisheries management (Hey, 1999, pp. 85-90). Also, it has been complemented by other binding instruments, namely the Compliance Agreement and the UN Fish Stocks Agreement (Hosch, Ferraro, & Failler, 2011).

[2] A reference point shows a particular state of a fishery indicator corresponding to a situation considered as desirable, dangerous or undesirable (Cochrane & Garcia, 2009, p. 493).

This Code of Conduct, *inter alia*, specifies flag states responsibilities for the activities of fishing vessels flying its flag and seeks to advance management measures that improve the sustainable use of fisheries resources. It demonstrates the commitment by all members of the UN Food and Agriculture Organization to the importance of rebuilding depleted fish stocks. In addition, the Code of Conduct identifies RFMOs as key players in the implementation of its objectives and principles, with roles for RFMOs regarding various aspects of fisheries management (Article 6 &7 of the Code of Conduct).

2.2.5 International Plans of Action

The International Plans of Action is a voluntary instrument elaborated within the framework of the Code of Conduct. Four International Plans of Action have been developed to date, including International Plans of Action for Reducing Incidental Catch of Seabirds in Long-line Fisheries (FAO, 1998), International Plans of Action for the Management of Fishing Capacity (FAO, 1999), International Plans of Action for Conservation and Management of Sharks (FAO, 2000) and International Plans of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (FAO, 2001).

The above International Plans of Action identify roles for RFMOs in addressing issues of mitigating seabird by-catch, managing fishing capacity, providing for the conservation and management of sharks, and managing illegal, unreported and unregulated fishing. In addition, a new specific definition of RFMO has emerged in the context of the International Plans of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. The UN Food and Agriculture Organization defines a RFMO as "an intergovernmental fisheries organization or arrangement, as appropriate that has the competence to establish fishery conservation and management measures" (FAO, 2001, p. 3).

2.2.6 Port State Measures Agreement

Recognizing the need for effectively combating illegal, unreported and unregulated fishing, the UN Food and Agriculture Organization Committee on Fisheries agreed to develop a legally binding agreement on port state measures. In 2009, the UN Food and Agriculture Organization Conference Resolution 12/2009 approved the Agreement on Port State

Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (hereafter "Port State Measures Agreement").

The main objective of the Port State Measures Agreement is to prevent, deter and eliminate illegal, unreported and unregulated fishing through the implementation of robust port state measures. The preamble to the Port State Measures Agreement recognizes "that port state measures provide a powerful and cost-effective means of preventing, deterring and eliminating illegal, unreported and unregulated fishing."

According to Article 29 of the Port State Measures Agreement, this agreement will enter into force thirty days after the date of deposit with the Depositary of the twenty-fifth instrument of ratification, acceptance, approval or accession. The ratification of the Port State Measures Agreement and its implementation will contribute to strengthening fisheries management and governance at all levels. Thus, if it gains wide ratifications, it will not only help to establish common procedures for inspection and agreed measures against illegal, unreported and unregulated fishing vessels, but also facilitate intra-agency cooperation across RFMOs (Palma et al., 2010).

2.2.7 The United Nations General Assembly

Since 2004, the United Nations General Assembly has adopted a series of resolutions on sustainable fisheries, which emphasizes the Code of Conduct, together with its associated instruments, sets out principles and global standards of behavior for responsible fishing practices.[3] The first Resolution 59/25 adopted in 2004 called on states, either by themselves or through RFMOs or arrangements, to take urgent action to protect vulnerable marine ecosystems from destructive fishing practices (UNGA, 2005, para.66). Resolution 61/105 committed fishing nations that authorize their vessels to engage in bottom fisheries on the high seas to adopt and implement measures, in accordance with the precautionary approach, ecosystem approach and international law (UNGA, 2005, para.83). In 2009, however, the United Nations General Assembly acknowledged that Resolution 61/105 had not been implemented sufficiently.

[3] See Res. 59/25 (UNGA, 2005), Res. 60/31 (UNGA, 2006b), Res. 61/105 (UNGA, 2007), Res. 62/177 (UNGA, 2008), Res.63/112 (UNGA, 2009), Res.64/72 (UNGA, 2010b), Res.65/38 (UNGA, 2011), Res.66/68 (UNGA, 2012), Res.67/79 (UNGA, 2013), and Res.68/71 (UNGA, 2014).

The following Resolution 64/72 further called for stock assessments and conservation and management measures to ensure the long-term sustainability of deep sea fish stocks and non-target species and the rebuilding of depleted stocks (UNGA, 2010b, para.119). After the UN Food and Agriculture Organization approved the Port State Measures Agreement, the follow-up Resolutions encouraged states and regional economic integration organizations to consider ratifying, accepting, approving or acceding to the Port State Measures Agreement with a view to its early entry into force (UNGA, 2011, 2012, 2013, 2014).

2.3 The status of world fish stocks

World marine fish stocks have decreased in abundance since 1974, when the first UN Food and Agriculture Organization assessment was accomplished. Of all the stocks assessed in 2013, fully fished stocks accounted for 58.1 percent and underfished stocks 10.5 percent (FAO, 2016b). This section briefly discusses the status of world fishery resources. Before attending to the fish stocks issues, some specific terms such as high seas and fish stocks are explained to clarify their meaning in this research (A glossary is also available in Appendix A).

2.3.1 High seas and shared fish stocks

The world's oceans cover nearly three-quarters of the surface area of the planet and account for around 80 percent of products taken by humankind from aquatic systems (Commission, 2014; Garcia & Hayashi, 2000). The UN Law of the Sea Convention divided maritime zones into different functional areas. With respect to fisheries, it distinguishes between internal waters, territorial seas, exclusive economic zones, continental shelves and high seas (see Figure 2.1).

The zones of national jurisdiction include internal waters and territorial seas not exceeding 12 nautical miles from low water baseline, which is under the sovereignty of the coastal states. In addition to natural resources, certain economic activities, marine scientific research and environmental protection, coastal states also enjoy sovereign rights and sole jurisdiction on their continental shelf and within a 200 nautical mile exclusive economic zone (S. Cole et al., 2012; Garcia & Hayashi, 2000).

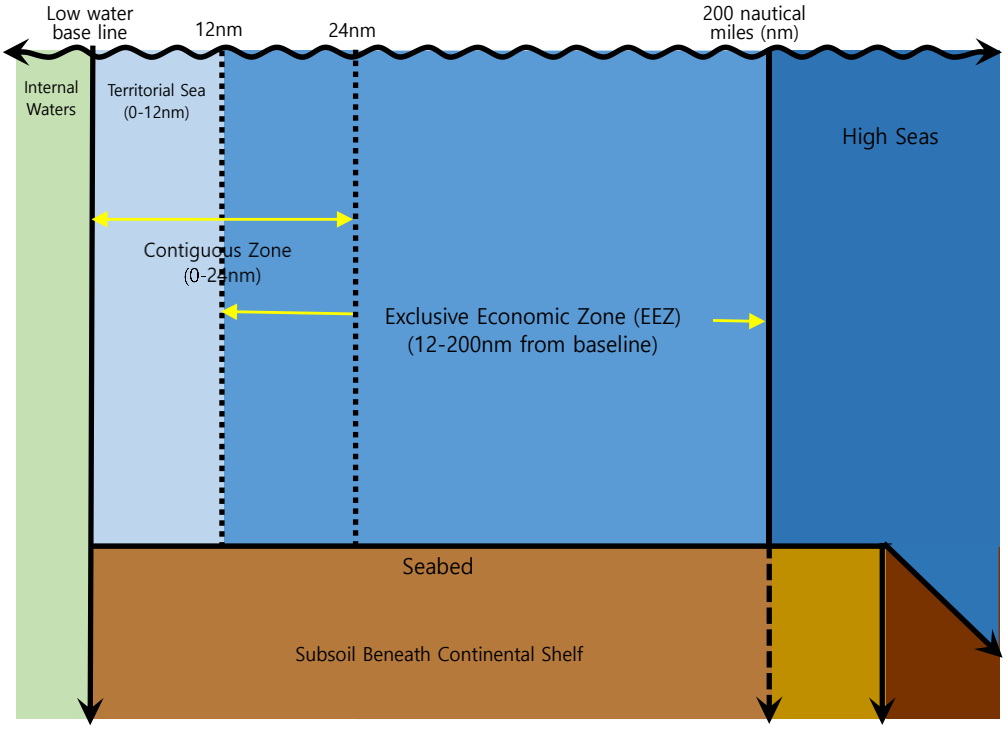

Figure 2. 1 Maritime zones under the UN Law of the Sea Convention

Source: (S. Cole, Ortiz, & Schwarte, 2012, p. 9)

The high seas, representing about 64 percent of the ocean's surface, are defined as ''all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a state, or in the archipelagic waters of an archipelagic state'' (Article 86 of the UN Law of the Sea Convention). The high seas are "the Area" (the deep seabed, ocean floor and subsoil) beyond the limits of national jurisdiction.

The Food and Agriculture Organization is the United Nations specialized agency with a global mandate for fisheries policy through its Committee on Fisheries. One of its main tasks is to provide a comprehensive, objective and global review of the fish stocks assessment. The definition of fish stock is: "the living resources in the community or population from which catches are taken in a fishery. Use of the term fish stock usually implies that the particular population is more or less isolated from other stocks of the same species and hence self-sustaining" (FAO, 1997). Furthermore, the UN Food and Agriculture Organization categorizes internationally "shared fish stocks" (see Figure 2.2) as follows

(Munro et al., 2004, p. 3):

(a) Transboundary fish stocks: fishery resources that cross the exclusive economic zone boundary of one coastal state into the exclusive economic zone (s) of one, or more, other coastal states;

(b) Highly migratory fish stocks: highly migratory species, as set forth in Annex 1 of the UN Law of the Sea Convention, consisting primarily of the major tuna species. Due to their highly migratory nature, these resources are to be found both within the coastal state exclusive economic zone and the adjacent high seas;

(c) Straddling fish stocks: all other fish stocks (with the exception of anadromous/catadromous stocks[4]) that are to be found both within the coastal state exclusive economic zone and the adjacent high seas;

(d) Discrete high seas fish stocks: fish stocks that are found wholly within the high seas.

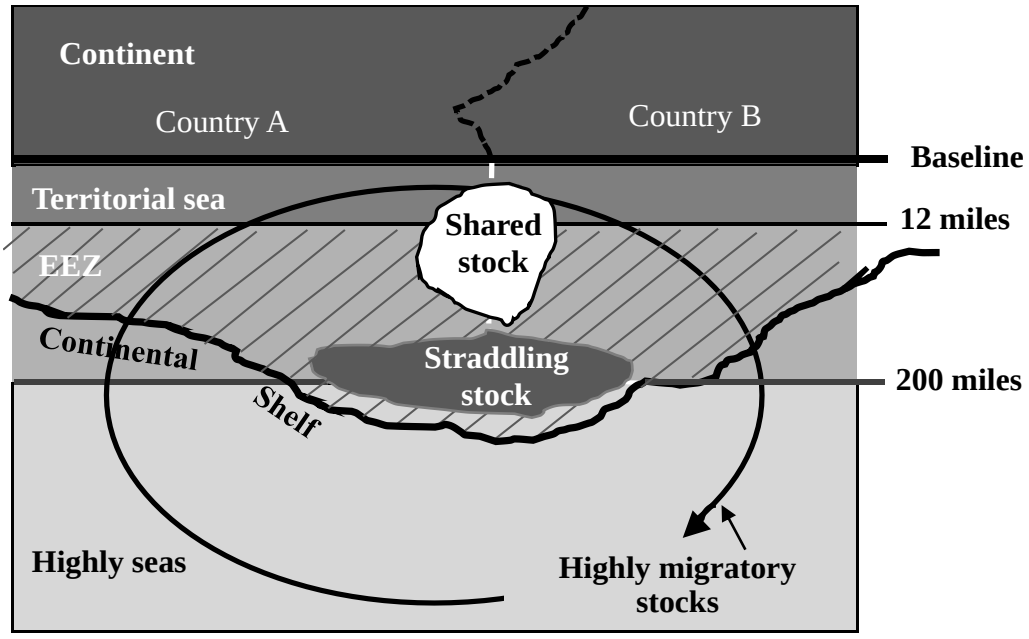

Figure 2. 2 Simplified sketch of maritime zones and distribution of shared, straddling and highly migratory fish stocks

Source: (Garcia and Hayashi, 2000, p.452)

[4] Anadromous stocks are those that spawn in rivers but otherwise occur mostly at sea, and catadromous stocks are those that spend the greater part of their life cycle in inland waters but spawn at sea. For details, see Article 66 & 67 of the UN Law of the Sea Convention.

2.3.2 The state of global marine fish stocks

The trend of fish stocks exploited beyond maximum sustainable yield levels can be divided according to major regions of the Atlantic and Pacific oceans. In particular, the fish stocks in the Northwest Atlantic, Northeast Atlantic, Southwest Atlantic, Western Atlantic, Southeast Atlantic, Northeast Pacific, and Southeast Pacific are identified by the UN Food and Agriculture Organization as falling into its "*worst category*", i.e. either fully exploited, overexploited or depleted (FAO, 2005).

In 2005, the UN Food and Agriculture Organization (FAO, 2005) estimated that as much as 76 percent of global marine stocks are fully exploited, overexploited or depleted (for definitions of stocks status, see Table 2.2). Of the 441 marine fish stocks with a known status, 77 percent are at a level where there is no room for further exploitation. Only three percent of the world fish stocks are underexploited and 20 percent are moderately exploited with some potential for further fisheries expansion (FAO, 2005, p. 11).

Table 2. 2 The definitions of fish stocks status

Fish stock status	Definition
Fully exploited	The fishery is operating at or close to an optimal yield level, with no expected room for further expansion.
Overexploited	The fishery is being exploited above a level which is believed to be sustainable in the long term, with no potential room for further expansion and a higher risk of stock depletion/collapse.
Depleted	Catches are well below historical levels, irrespective of the amount of fishing effort exerted.
Recovering	Catches are again increasing after having been depleted or a collapse from a previous high.
Underexploited	This means undeveloped or new fishery, which is believed to have a significant potential for expansion in total production.
Moderately exploited	This means exploited with a low level of fishing effort, which is believed to have some limited potential for expansion in total production.

Source: (FAO, 2005, p.213)

Over the past decades, in spite of concerted efforts, the depletion of fish stocks has intensified, particularly in the Atlantic and Pacific oceans (FAO, 2005). Currently, the fraction of fully exploited, overexploited and depleted fish stocks is around 90 percent – up from 87 percent in 2009, 84 percent in 2008, and 79 percent in 2006 (FAO, 2008, 2010, 2012, 2014, 2016b) (for details, see Table 2.3). Most of the stocks of the top ten species, which account in total for about 24 percent of the world marine capture fisheries production in 2011, are fully exploited, and therefore, have no expected room for increases in production. As for some stocks which are overexploited, only if effective rebuilding plans are put in place is there a possibility to increase their production (FAO, 2014, p. 38).

Table 2. 3 The state of world fish stocks

Fish stock status	Stock in percentages					
	2004	2006	2008	2009	2011	2013
Fully exploited	52	52	53	57.4	61.3	58.1
Overexploited	17	19	28	29.9	28.8	30.4
Depleted	7	8	3	N/A	N/A	N/A
Recovering	1	1	1	N/A	N/A	N/A
Underexploited	3	2	3	12.7	9.9	10.5
Moderately exploited	20	18	12			
Total	100	100	100	100	100	100
Note: In 2009, 2011 and 2013, there is no separated “Depleted” and “Recovering” fish stock data available. N/A = not applicable.						

Source: (FAO, 2016, 2014, 2012, 2010, 2008, 2005)

The state of exploitation is far worse for many fish stocks caught largely in the high seas (Kristina M. Gjerde et al., 2013; Maguire, 2006). As reported by Maguire (2006), one-third of highly migratory tunas and tuna-like species are either overexploited or depleted, and about half of the stocks are fully exploited. Whilst the state of exploitation of tunas and tuna-like stocks is similar to that of all fish stocks tracked by the UN Food and Agriculture Organization, the state of straddling stocks and of other high seas fishery resources seems to be more problematic, with nearly two-thirds of the stocks being overexploited or depleted.

Rogers et al. (2014) indicate that about ten million tons of fish are caught annually on the high seas, constituting over 12 percent of the global annual average marine fisheries catch. The landed value of this catch is estimated at approximately US$ 16 million per year, which makes up about 15 percent of the total global marine landed value. The majority of global marine catches are of species fished both in exclusive economic zones and in the high seas (54 million tons or 68 percent of global marine catches). [5] Accordingly, Rogers et al. (2014) concluded that overfishing on the high seas may cause negative impacts on fish catches within the exclusive economic zones of nation-states and vice versa.

Although these high seas fishery resources represent a small fraction of the global marine fisheries catch, they provide a significant life support function for fisheries found in exclusive economic zones. Furthermore, what happens on the high seas can have a critical impact on the ecological health and productivity of exclusive economic zones (Commission, 2014; FAO, 2006; Maguire, 2006; Rogers et al., 2014). In this sense, better fisheries outcomes in the high seas not only can help mitigate the negative environmental impacts of human activities but also rebuild fish stocks in coastal state's exclusive economic zones.

It is evident that pressure on world fish stocks is growing, as there has been a consistent downward trend since the 1970s. Moreover, Worm et al. (2006) projected that if current fishing patterns continue, global wild fish stocks would collapse by 2048. Further efforts are needed to promote sustainable fisheries and enhance the implementation of existing instruments. Against this backdrop, calls to strengthen the effectiveness of RFMOs have steadily increased to address the growing global fisheries crisis.

2.4 The current effectiveness of RFMOs

2.4.1 The factors undermining the effectiveness of RFMOs

According to the UN Food and Agriculture Organization, there are now 51 regional fishery bodies worldwide.[6] These include 32 advisory bodies and 19 RFMOs. In general, regional fishery bodies are consultative or advisory bodies that have established a secretariat

[5] These numbers are not an exact science and different resources/actors may report different numbers (depending both on their methods or stakes); so these numbers are to be seen as approximation.

[6] Source: FAO, Search Fishery Governance Fact Sheets, available at: http://www.fao.org/fishery/rfb/search/en.

operating under a governing body of member states. They are distinguished from RFMOs, which have a management mandate empowering them to establish conservation and management measures that are binding on their members (Brown, 2016; Rochette et al., 2015; Sydnes, 2001).

The mandates, priorities and activities of RFMOs vary (FAO, 2007). Theoretically, the institutions of RFMOs constitute the governance framework to coordinate national management regimes and facilitate cooperation amongst sovereign states. They perform a number of roles in the fishery that at the minimum determine the following questions: (a) who has access to the fishing grounds? (b) what actions are permitted, forbidden, or required regarding the fisheries resources? (c) how much fish is harvested and by whom? (d) what kinds of pay-offs may be enjoyed by stakeholders?

The current 19 RFMOs (see Table 2.4) can be simply divided into those managing highly migratory species (i.e., tuna RFMOs) and those managing fish stocks by geographical area (i.e., non-tuna RFMOs). There are five tuna RFMOs that were explicitly established for conservation and management of tuna and tuna-like species. They are:

- Commission for the Conservation of Southern Bluefin Tuna;
- Inter-American Tropical Tuna Commission;
- International Commission for the Conservation of Atlantic Tunas;
- Indian Ocean Tuna Commission; and
- Western and Central Pacific Fisheries Commission

Table 2. 4 Marine regional fisheries management organizations (RFMOs)

Marine RFMO	Acronym	Region	Year established
RFMOs established pre-UN Fish Stocks Agreement			
Commission for the Conservation of Antarctic Marine Living Resources	CCAMLR	Trans-Ocean	1982
Commission for the Conservation of Southern Bluefin Tuna	CCSBT	Trans-Ocean	1994
General Fisheries Commission for the Mediterranean	GFCM	Mediterranean	1952

Inter-American Tropical Tuna Commission	IATTC	Pacific Ocean	1950
International Commission for the Conservation of Atlantic Tunas	ICCAT	Atlantic Ocean	1969
International Pacific Halibut Commission	IPHC	Pacific Ocean	1923
International Whaling Commission	IWC	Global	1946
Northwest Atlantic Fisheries Organization	NAFO	Atlantic Ocean	1979
North Atlantic Salmon Conservation Organization	NASCO	Atlantic Ocean	1983
North East Atlantic Fisheries Commission	NEAFC	Atlantic Ocean	1982
North Pacific Anadromous Fish Commission	NPAFC	Pacific Ocean	1993
Pacific Salmon Commission	PSC	Pacific Ocean	1985
RFMOs established post- Fish Stocks Agreement			
Convention on the Conservation and Management of the Pollock Resources in the Central Bering Sea	CCBSP	Pacific Ocean	1996
Indian Ocean Tuna Commission	IOTC	Indian Ocean	1996
Regional Commission for Fisheries	RECOFI	Indian Ocean	1999
South East Atlantic Fisheries Organization	SEAFO	Atlantic Ocean	2003
Southern Indian Ocean Fisheries Agreement	SIOFA	Indian Ocean	2006
South Pacific Regional Fisheries Management Organization	SPRFMO	Pacific Ocean	2009
Western and Central Pacific Fisheries Commission	WCPFC	Pacific Ocean	2004

Source: Adapted from FAO, available at: http://www.fao.org/fishery/rfb/search/en.

Recently, there has been a great deal of criticism concerning the effectiveness of RFMOs (Kristina. M. Gjerde, 2005; Kristina M. Gjerde et al., 2013; Lodge, 2007; McDorman, 2005; Rogers & Gianni, 2010; Sánchez, 2007; Small, 2005; Swan, 2000; Willock & Lack, 2006). According to some reports, the effectiveness of RFMOs is impaired by the following factors (FAO, 2008; Swan, 2000; Warner, Gjerde, & Freestone, 2014):

- the lack of willingness by member states to delegate sufficient decision-making;
- the failure by some member states to ratify and implement international instruments;

- time lagged implementation of management decisions;
- placing national interests ahead of good fisheries governance;
- an unwillingness of member states to fund research in support of management;
- some member states fail to provide complete data and information regarding their fishing operations;
- the lack of enforcement of management measures both at the national and regional levels;
- the failure of dealing effectively with non-member issues;
- the lack of an overarching global coordination mechanism;
- poor flag state control both by members and non-members;
- a focus on crisis management rather than everyday fisheries management; and
- an annual meeting based on diplomatic practice.

2.4.2 Current governance issues of RFMOs

Several governance issues are worth investigating in more detail, by means of a separate subsection: decision-making, mandate, compliance and enforcement, as well as accommodating new members and allocation.

Decision-making

In principle, RFMOs make two types of decisions: biological conservation decisions and allocation decisions. The former includes total allowable catch, fish size limitations, adoption of various management measures in terms of fishing methods, fishing gear, closed season, closed area and mesh size limit, whilst the latter includes allocation of each total allowable catch to the member states and access limitations.

With respect to RFMOs' decision-making procedures, there are several relevant provisions in the UN Fish Stocks Agreement. They identify the need for RFMOs to adopt robust decision-making processes to support the effectiveness of RFMOs (Swan, 2004). Nonetheless, the UN Fish Stocks Agreement offers member states a wide degree of autonomy of action in terms of the adoption and implementation of decision-making procedures. Not surprisingly, different RFMOs have different processes for the adoption of

decision-making (McDorman, 2005, p. 429):

- by majority (e.g., International Commission for the Conservation of Atlantic Tunas and Northwest Atlantic Fisheries Organization);
- by consensus or unanimous (e.g., Commission for the Conservation of Antarctic Marine Living Resources, Commission for the Conservation of Southern Bluefin Tuna, South East Atlantic Fisheries Organization, and Inter-American Tropical Tuna Commission);
- by two-thirds majority (e.g., North East Atlantic Fisheries Commission, Indian Ocean Tuna Commission, and General Fisheries Commission for the Mediterranean);
- by consensus in general rule otherwise by three-fourths majority (e.g., Western and Central Pacific Fisheries Commission).

These mechanisms are complemented by objection procedures that provide the chance for member states to "opt out" from RFMOs' decisions. This opt out clause enables states to reject the allocation decisions or not to implement those conservation measures that are finally adopted (Barkin & DeSombre, 2013a; Kristina. M. Gjerde, 2008; McDorman, 2005) and therefore result in the failure to meet the goal of sustainable management of the fish stocks.

More importantly, the decision-making mechanisms used in some contexts are not always viewed as suitable. In many instances, distant water fishing states continue to push for allocations of harvest rights based on existing entitlements and historical activities. Some have argued that such practices are discriminatory with respect to developing states (Campbell & Hanich, 2015; Rayfuse, 2007).

McDorman (2005) asserted that political will is the key ingredient and there is no one model process for decision-making that can be held out as the most appropriate for RFMOs. Thus, he suggested all RFMOs adopt consensus decision-making for allocation matters, without using an objection procedure. If the consensus cannot be reached in years, the quotas for each member decrease by a pre-set amount for each year non-consensus prevails.

Mandate

RFMOs have a management mandate to establish binding management measures for fishery resources and to carry out the stated objectives. In general, this mandate would reflect all relevant international instruments for management of target fish stocks, non-target and associated or dependent species and the marine ecosystem. Some argue that some RFMOs, however, have largely failed to meet the objectives of their own governing conventions, *inter alia*, the conservation and sustainable utilization of target fish stocks under their mandate (Cullis-Suzuki & Pauly, 2010; Kristina. M. Gjerde, 2005; Kristina M. Gjerde et al., 2013; Lodge, 2007; Sánchez, 2007; Swan, 2000; Willock & Lack, 2006). In many cases, the mandates of RFMOs do not extend to obligations pertinent to new management concepts, such as the ecosystem approach and the precautionary approach. Nor do they extend to currently problematic issues, such as illegal, unreported and unregulated fishing, fleet capacity and by-catch (Swan, 2000).

Another further critical point is that many members of RFMOs have not ratified the Fish Stocks Agreement (see Table 2.5), and therefore, have no obligation to consider the implementation of the UN Fish Stocks Agreement (Commission, 2014; A. Cox et al., 2009; Crothers & Nelson, 2007; McDorman, 2005; Shotton, 2005). The Indian Ocean Tuna Commission, for example, is empowered to adopt conservation and management measures for the fish stocks covered by the agreement based upon scientific evidence. Yet there is no provision for the precautionary approach or ecosystem-based management in the Convention, in recent resolutions or in practice (Warner, 2006, p. 201).

Table 2. 5 Fishing states which are members of RFMOs but not party to the UN Fish Stocks Agreement

Algeria	Comoros	Gabon	Malaysia	Sierra Leone
Angola	Côte d'Ivoire	Ghana	Mexico	Sudan
Argentina	Cuba	Guatemala	Nicaragua	Tanzania
Cape Verde	Ecuador	Honduras	Pakistan	Thailand
Chile	Egypt	Lebanon	Philippines	Tunisia
China	Equatorial Guinea	Madagascar	São Tomé and Príncipe	Vanuatu
Note: There are only 81 Parties to the UN Fish Stocks Agreement, compared with 166 Parties to the UN Law of the Sea Convention.				

Source: (Commission, 2014, p. 8)

Compliance and Enforcement

Within the international legal framework, as described above, and pursuant to their own constitutive agreements, some RFMOs have adopted a wide range of measures. These measures are aimed at ensuring compliance and enforcement by both member and non-member states, with conservation and management measures, as well as obligations to refrain from illegal, unreported and unregulated fishing (Rayfuse, 2005). Nevertheless, some RFMOs to date have taken very limited actions to strengthen their compliance and enforcement, which contributes to overcapacity and unabated illegal, unreported and unregulated fishing. The major challenges facing RFMOs are as follows (Ceo et al., 2012; Kristina. M. Gjerde, 2005):

- eliminate the economic drivers of illegal, unreported and unregulated fishing;
- reinforce the duties of flag states;
- strengthen strict fishing vessel monitoring, control and surveillance;
- apply port state measures; and
- increase cooperative mechanisms to detect and deter non-compliance.

Accommodating New Members and Allocation

As most RFMO member states have a direct economic interest in the fishery resources managed by that organization, they are reluctant to accept new members and allocate participatory rights to new members. However, according to Article 8 of the UN Fish Stocks Agreement, once the new entrant is prepared to accept the conditions that apply to existing members, then member states cannot deny the new entrant's right to participate (Kim, 2013).

Yet this Article causes a vital problem. That is, when faced with a choice of either reducing the allocation to existing member states or increasing the total allowable catch of a fish stock to accommodate new members, a number of RFMOs have chosen the latter (Lodge, 2007; Rayfuse, 2007; Willock & Lack, 2006). The International Commission for the Conservation of Atlantic Tunas and the Commission for the Conservation of Southern Bluefin Tuna are cases in point. This is of concern, given that the state of play in many fish stocks is already fully exploited. How to accommodate the interests of new members is still

one of the main impediments to RFMOs to secure effective allocation regimes.

2.5 Summary

This chapter has summarized the key contextual issues: the key instruments applying to RFMOs, the status of world fish stocks, and the current effectiveness of RFMOs. The review has found that while there are a variety of legal instruments available for RFMOs to achieve their goals, their effectiveness varies widely. In general terms, many have so far failed to live up to expectations. This is evident by the fact that depleted fish stocks fished on the high seas under RFMO management have increased over the past few decades. The review has also revealed that international instruments for governance and qualities of implementation are crucial to the RFMOs' effectiveness. This leads to the central research aim of this study, that is, to examine the critical factors influencing governance arrangements and policy implementation of RFMOs. In the next chapter, the research topic is situated within the relevant theoretical and research-based literature.

Chapter 3: Literature Review

In this chapter, the literature relevant to the research topic is reviewed to synthesize pertinent research and theory. It focuses on the two major topics of this study: governance arrangements and policy implementation. The literature review identifies gaps in the body of knowledge and highlights some key insights that drive the theoretical approach presented in the final section.

3.1 Literature review on governance

This section explores the literature streams on governance relevant to the research. First, it provides an introduction to the notion and modes of governance, followed by the literature on governance for sustainable development. It then discusses the comparison between fisheries management and fisheries governance. Following this, governing the fisheries commons and design principles for fisheries governance arrangements are presented. The rest of this section summarizes literature regarding the studies of high seas fisheries governance.

3.1.1 The conception and modes of governance

Definition of Governance

The term *governance* has a wide range of meanings. Broadly, it refers to the collective efforts of society to define and to pursue common societal goals (e.g., Chhotray & Stoker, 2009; Hyden, 1999; Kooiman, 2003; O'Toole, 2000; Pierre & Peters, 2000; Rhodes, 1996), whereas others focus on a specific instance of governance as well as different models of governance (e.g., Howlett, 2009; Kooiman & Centre for Maritime, 2005; Treib, Bähr, & Falkner, 2007).

A typical definition of governance from the World Bank (1992) is the "exercise of authority, control, management, power of government" (p.3). As for Rhodes (1996), who articulated the idea of new governance (governing without government; see Rhodes, 1996; Rosenau & Czempiel, 1992), governance refers to "self-organizing, interorganizational networks characterized by interdependence, resource-exchange, rules of the game, and significant

autonomy from the state" (p. 15).

Pierre and Peters (2000) conceived governance as the capacity of government to create and implement policy, while Hyden (1999) defined governance as those measures which involve setting the rules for the exercise of power and resolving conflicts over such rules. Briefly, governance is about "decision-making and implementation processes and the capacity underpinning these processes " (Allen, Schiavo-Campo, & Garrity, 2003, p. 63).

Moreover, according to Kooiman and Centre for Maritime (2005), "governance is the whole of public as well as private interactions taken to solve societal problems and create societal opportunities. It includes the formulation and application of principles guiding those interactions and care for institutions that enable them" (p. 17). They tend to define governance in a comprehensive way, which means that they use governance as the more inclusive term, followed by public policy or politics and finally by public management or administration (Bavinck et al., 2005; Kooiman & Centre for Maritime, 2005).

After synthesizing these different core features of governance, Bevir (2011) identified three distinctive features of new governance: (a) it combines established administrative arrangements with features of the market; (b) it is multijurisdictional and usually transnational (local, regional, national and global); and (c) it involves the increasing range and plurality of stakeholders (e.g., traditional authorities, private firms, local communities, non-governmental organizations (NGOs), regional and international bodies).

The aforementioned features reflect the fact that governance arrangements, different levels of governance, and multiple stakeholders are all linked together in *networks* (Bevir, 2011; McGuire, 2011; Provan & Kenis, 2008; Torfing, 2005). This suggests that studies of governance should pay attention to the interaction in *networks* that represent the different societal actor structures and interactions involved in negotiating and delivering policies in any given field (Berger, 2003). Considering that a combination of multi-level and multi-actor governance and the mix of both old and new types of governance is characteristic of fisheries governance (Kooiman & Centre for Maritime, 2005; Sbragia, 2000), "*networks*" is a significant concept in this research.

Modes of Governance and Governance arrangements

Empirically, there are a variety of modes of governance related to different forms of governmental action. Under the heading of modes of governance, Kooiman (2003) distinguished between three governance types: self-governance, co-governance, and hierarchical governance. Self-governance is an inherent capacity of social entities to govern themselves. In contrast, hierarchical governance, the most classical governance mode, represents governing interactions between the state and citizens. On the other hand, co-governance refers to utilizing organized forms of governing interactions to reach its goal, which basically includes five modes, i.e. communicative governance, public-private partnerships, co-management, networks and regimes (Kooiman, 2003, pp. 96-108). In fisheries governance, self-governance has been a common feature around the world with a basis in local communities, whereas co-governance is the most recently pursued governance style (Bavinck et al., 2005; Kooiman & Centre for Maritime, 2005; Symes, 2006; Wilson, Nielsen, & Degnbol, 2003).

By bringing together diverse disciplinary strands of governance research, Treib et al. (2007) proposed a typology of four modes of governance: coercion, targeting, framework regulation and voluntarism. This typology has two dimensions: the type of legal instruments applied (hard law or soft haw) and the approach to implementation (flexible or rigid) (see Table 3.1). With a structured conception of governance that encompasses institutional properties, actors, and policy instruments, they argued, this typology could shed new perspectives on differences in the way the political entities try to reach their goals in different policy areas. A significant benefit of the Treib et al. (2007) typology is its potential to analyze whether different types of governance or decision-making are likely to produce particular policy instruments.

Table 3. 1 A new typology of four modes of governance

		Legal Instrument	
		Binding	Non-binding
Implementation	Rigid	Coercion	Targeting
	Flexible	Framework regulation	Voluntarism

Source: (Treib et al., 2007, p. 14)

In a similar vein, Howlett and Rayner (2006) adopted a holistic approach of governance strategies that explores new governance arrangements of natural resources (see Table 3.2). In their study, the new governance arrangements combine new policy goals, objectives, instruments and settings in new ways. They, then, distinguished between four different governance strategies: integration, conversion, layering and drift. Layering often produces a costly regime to administer that is very hard to change. In terms of the conversion, a successful mix of policy instruments is altered to meet new policy goals, introducing conflict into the original goals. As for the context of policy drift, instruments are changed to adapt to different situations, which leads to a gap between instruments and policies. Accordingly, integrated strategies can be seen as an optimal form of governance arrangement and political entities should avoid creating sub-optimal outcomes from processes such as layering, conversion and drift (Howlett & Rayner, 2006, pp. 169-170; 2007).

Table 3. 2 Typology of new governance arrangements according to relationships with existing policy

		Instrument Mixes	
		Consistent	Inconsistent
Multiple Goals	Coherent	Integration/Design (Outcomes are expected to be optimal)	Drift (Outcomes are ineffective in terms of original goals)
	Incoherent	Conversion (Outcomes are misdirected from original goals)	Layering (Outcomes are accidental or otherwise sub-optimal)

Source: (Howlett & Rayner, 2006, p. 169)

3.1.2 Governance for sustainable development

The concept of sustainable development or sustainability represents a concern for the future, as well as an attempt to link environment with development (Kemp & Martens, 2007). The Brundtland report (Hurlem, 1987) first propelled the idea of sustainable development to international prominence, defined as "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*"

Besides, the concept of sustainability has also been embedded in fisheries literature and defined by the FAO Council as "the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment of continued satisfaction of human needs for present and future generations. Such sustainable development conserves (land,) water, plants and (animal) genetic resources, is environmentally non-degrading, technologically appropriate, economically viable and socially acceptable" (Garcia, 2000). Clearly, both of these definitions are strongly anthropocentric, focusing more particularly on the sustainable welfare of humans.

Sustainable development as such is now accepted everywhere as a fundamental normative idea and is one criterion for a good society that balances economic, ecological and social development goals (Meadowcroft, 2000; Voss, Bauknecht, & Kemp, 2006). Furthermore, sustainable development is a complex, contested and political concept, replete with governance questions (Farrell, Kemp, Hinterberger, Rammel, & Ziegler, 2005; Newig, Voss, & Monstadt, 2007). The example of these questions is as follows:

- What is the role of governance in the diverse dimensions of sustainability?
- How can sustainable development be implemented and through which modes of governance can it be achieved?
- What information and incentives are necessary for practical implementation?

As discussed at the outset of this section, governance has been defined and used in many ways in different contexts. The notion of governance is given descriptive (governance as theory) and normative (governance as prescription) weight (Jordan, 2008; Kemp, Parto, & Gibson, 2005). For the latter, a normative prescription, is the type and style of steering which should be adopted to achieve some preferred societal end-point (Baker, 2009; Jordan, 2008).

In a general sense, this conception can be referred to as governance for sustainable development, which is a goal-oriented activity that seeks not only to accomplish desired societal outcomes but to avoid other less preferred social futures (Meadowcroft, Farrell, & Spangenberg, 2005). More simply put, governance for sustainable development refers to "*processes of socio-political governance oriented towards the attainment of sustainable development. It encompasses public debate, political decision-making, policy formation*

and implementation, and complex interactions among public authorities, private business and civil society" (Meadowcroft, 2007, p. 299).

Recently, studies have begun to explore explicitly the issues of governance for sustainable development (see e.g., Baker & Eckerberg, 2008; Giljum, Hak, Hinterberger, & Kovanda, 2005; Kemp et al., 2005; Lafferty, 2006; OECD, 2001, 2002; Voss et al., 2006). Some scholars concentrated upon spatial scales of governance for sustainable development, such as the European Union (Meadowcroft et al., 2005) and regional governance (Ostrom, Burger, Field, Norgaard, & Policansky, 1999). Others highlighted particular aspects of governance for sustainable development, such as participation in governance (Meadowcroft, 2004), reflexive governance (Voss et al., 2006), sustainability of social-ecological systems (Ostrom, 2009), interactive governance (Bavinck et al., 2005; Kooiman & Centre for Maritime, 2005) and a complex adaptive systems approach (Mahon, McConney, & Roy, 2008).

In 2002, the Organization for Economic Co-operation and Development (OECD) produced a checklist for policy makers to enhance their longer-term governance for sustainable development. This checklist includes: (a) a common understanding of sustainable development; (b) clear commitment and leadership; (c) specific institutional mechanisms to steer integration; (d) effective stakeholder involvement; and (e) efficient knowledge management (Adger & Jordan, 2009, p. 18).

In a very similar manner, Meadowcroft et al. (2005) and Kemp et al. (2005) also identified certain prominent features and requirements of governance for sustainable development. According to Meadowcroft et al. (2005), these requirements are:

- developing political frameworks in place;
- adopting a long-term focus;
- developing a better understanding of ecological processes and of social/ecological interactions;
- integrating different kinds of knowledge;
- structuring engagement as a learning process;
- improving the resilience of social institutions;
- coordinating the economic, social and environmental dimensions of decision-making;

- evolving complex systems of multilevel governance;
- transforming unsustainable practices embedded in core economic sectors;
- maintaining political support for long term adjustment;
- incorporating sustainable development into educational and cultural practice, individual codes of conduct and popular morality (Meadowcroft et al., 2005, p. 7).

Given the perceived need to enhance governance of sustainable fisheries, some scholars have proposed different approaches and frameworks in response to this essential need (see e.g., Basurto & Nenadovic, 2012; Bavinck et al., 2005; D. H. Cole, Epstein, & McGinnis, 2014; Kooiman & Centre for Maritime, 2005; Mahon et al., 2008; Ostrom & Cox, 2010). For example, Kooiman and Centre for Maritime (2005) and Bavinck et al. (2005) suggested a holistic framework, the Interactive Governance Approach, to explore and address different dimensions of fisheries governance. From their perspective, fisheries are highly diverse, complex and dynamic, and therefore, three meta-principles are necessary to guide fisheries governance at different scales.

- Rationality for governing elements: Rationality calls for sustainable development as the guiding images (including goals, opinions, visions, norms and values). It also demands frugality (efficiency) in the choice of instrument and precautionary approach as the basis for action,
- Responsiveness for modes of governance: Responsiveness involves respect for self-governance, inclusiveness for co-governance, and equity for hierarchical governance,
- Performance for governance orders: Performance requires effectiveness for first-order governance, legitimacy for second-order governance, and moral responsibility for third-order governance (Kooiman & Centre for Maritime, 2005, pp. 268-281).

In attempting to help understand complex ecological systems and achieve better policy analysis, Ostrom (2009) developed a multidisciplinary and multi-tier framework for analyzing sustainable social-ecological systems. A social-ecological system is “an ecological system intricately linked with and affected by one or more social systems” (Anderies, Janssen, & Ostrom, 2004). Within the Social-Ecological System framework, resource systems, resource units, governance systems and actors are the first-tier variables that comprise multiple variables at the second tier and lower tiers. In practice, this framework has enabled scholars to establish a common vocabulary that crosses social and

ecological disciplines to analyze how interactions among a variety of components affect outcomes in "*focal action situations*". As well, it helps clarify why some social-ecological systems are sustainable while others are collapsing.

3.1.3 Comparison between fisheries management and fisheries governance

Before proceeding with a detailed review of governance by focusing on fisheries governance and fisheries governance arrangements, a clarification about the meaning between fisheries management and fisheries governance is necessary. According to the UN Food and Agriculture Organization (1995), fisheries management means the integrated process of information collecting, analysis, planning, decision-making, allocation of resources as well as formulation and enforcement of fishery regulations by which the fishery management authority controls the interested parties' behavior to secure the continued productivity of fisheries resources.

In light of the definition of governance by Kooiman and Centre for Maritime (2005) and Bavinck et al. (2005), governance is considered to be a comprehensive term, followed by policy (high level governance) and by management (medium to low level governance). Therefore, it can accurately be said that fisheries governance is a holistic perspective that not only focuses on technical management tools and design of institutions but pays particular attention to institutional arrangements for governing activities and to the main normative principles which guide them (Bavinck et al., 2005; Jentoft, 2006; Kooiman & Centre for Maritime, 2005; Suárez de Vivero, Rodríguez Mateos, & Florido del Corral, 2008). This concept is used in this study.

3.1.4 Governing the fisheries commons

A common pool resource is a natural or human-made resources system from which it is difficult and costly to exclude potential beneficiaries gaining benefits from its use (Ostrom, 1990). Governing a common pool resource such as fisheries poses special problems, conflicts of interest, for instance. While governments administer the global fisheries commons, they also defend the interests of their national fishery industry (Patrick, 2010, p. 137).

Furthermore, sovereign governments have an interest in displacing fishing efforts out of their territorial and management zones into the global common, so as to decrease pressures on domestic fish stocks. In other words, governance regimes arising in one area can influence the operations of similar regimes in other areas, and therefore arrangements developed at one level of social organization can have crucial impacts on arrangements operating at other levels (Barkin & DeSombre, 2013a; Brondizio, Ostrom, & Young, 2012).

Despite the UN Law of the Sea Convention specifying the rights, jurisdiction and duties of coastal states in their 200-nautical mile exclusive economic zones, prior to the establishment of the UN Fish Stocks Agreement, fishing vessels could travel the rest of the world's seas, that is to say high seas, and exploit those fishery resources relatively unhindered. Thus, high seas fisheries provide a worst-case example of how open access and regulatory failures can result in "the tragedy of the commons – over-exploitation of the fishery through unlimited access" (OECD, 2013, p. 26).

Well-known scholars of the common pool resources, such as Hardin (1968), Gordon (1954), and M. Olson (1965), presumed that when individuals jointly use such commons, common resources would be fated to a tragic situation in which individual rationality leads to an outcome that is not optimal from the perspective of the group (Gardner, Ostrom, & Walker, 1990). To solve this common pool dilemma, economists suggested two general responses to over-exploitation. The first is privatizing the commons *per se* with adequate means of measurement and control, whereas the second is government ownership and a tax on utilizing the resources (Patrick, 2010, p. 133).

Nonetheless, many researchers and practitioners have observed that neither a market mode nor a bureaucratic mode of governance could serve as a policy panacea for governing common pool resource dilemmas (Lam, 2010, p. 507). In many instances, over-exploitation of common pool resources is regarded as a governance failure. As a result, increased attention is being paid to study how institutions can be designed for higher effectiveness in governing common pool resources (e.g., Agrawal, 2003; Baland & Platteau, 1996; Feeny, 1989; Ostrom, 1990).

The institutional analysis and development (IAD) framework (see Figure 3.1) developed by Elinor Ostrom is one of the most productive and credible institutional analysis

approaches available in the common pool resources literature (Ostrom, 2005, 2007; Ostrom, Gardner, & Walker, 1994). It has been used as the vocabulary to develop a theory of common pool resources and to link formal models of appropriation and monitoring with empirical work. According to Ostrom, the IAD framework is a multi-tier conceptual map which shows how physical/material conditions, rules, and attributes of community affect the structure of action arenas, the incentives that individuals face, and the resulting outcomes (Ostrom, 2007, p. 41).

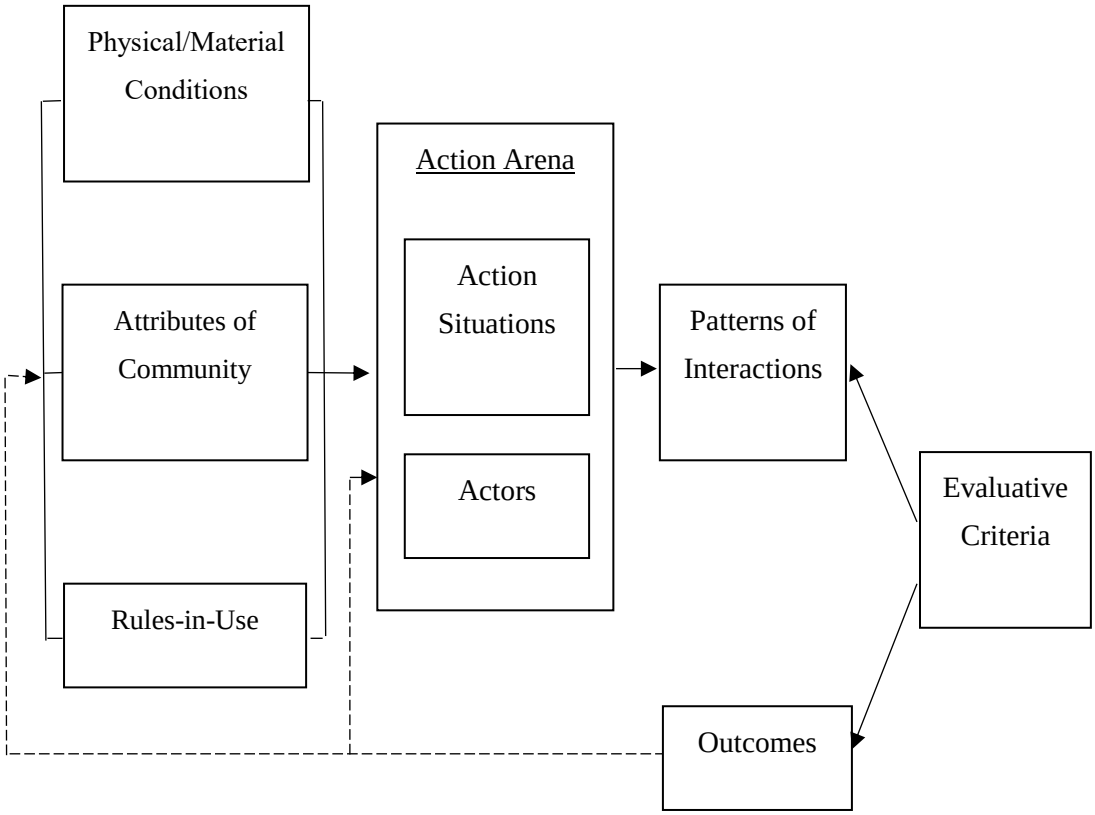

Figure 3. 1 A framework for institutional analysis

Source: (Ostrom, 2007, p. 42)

According to Ostrom (2007), the first step in analyzing a problem is to identify a conceptual unit, that is to say, the action arena which can be used to analyze, explain and predict behavior within institutional arrangements. An action situation and the actor in that situation are involved in the action arena. The action situations where policy choices are made is a central part of the IAD framework, which leads to interactions and outcomes (McGinnis, 2011).

The structure of an "action situation" can be characterized by means of seven variables: "(1) participants, (2) positions, (3) outcomes, (4) action-outcome linkages, (5) the control that participants exercise, (6) information, and (7) the costs and benefits assigned to outcomes" (Ostrom, 2007, p. 42). Seven broad types of rules can affect the structure of an action situation. These rules are (Ostrom, 2005, 2011; Ostrom et al., 1994):

- *Boundary rules* are often called entry and exit rules. They affect the number of actors, their attributes and resources, as well as specify how actors enter or leave these positions;
- *Position rules* create a set of positions, each of which has a unique combination of resources, opportunities, preferences, and responsibilities;
- *Choice rules* assign set of actions that actors in positions at particular points may, must, or must not take;
- *Scope rules* delimit the outcomes that could be affected and, working backward, the actions linked to specific outcomes;
- *Aggregation rules* specify how the decisions of actors at a point were to be mapped to intermediate or final outcomes, such as majority or unanimity rules;
- *Information rules* authorize channels of information flow among actors and what information may, must, or must not be shared;
- *Payoff rules* specify how benefits and costs are required, permitted, or forbidden to actors in positions.

The above seven types of rule specify the values of the structure of an action situation, and directly influence each of the internal working parts (Ostrom & Cox, 2010). The notion of layers of action is crucial to the IAD framework. It enables researchers to pose questions about what rules characterize an action situation and how those rules are formulated and changed over time (Blomquist & deLeon, 2011, p. 3).

However, some scholars criticized the framework for paying insufficient attention to the complexity of natural system and processes (Agrawal, 2003; Ostrom & Cox, 2010; Young, 2002). For example, Agrawal (2003) argued that it pays little attention to attributes of resources which affect sustainable governance. In addition, it also disregards the social,

political-institutional and physical environment. In order to advance our understanding of how institutional sustainability can be achieved on the common pool resources, Agrawal underscored that researchers have to utilize theoretically motivated comparative case analyses to identify the most crucial causal mechanisms and confine the scope to pertinent theoretical variables and their interactions.

Despite these criticisms, empirically, the IAD framework provides a useful way of studying the issues of governing the commons. It has been applied to a variety of important policy questions and, thus far, it has influenced the analysis of a wide diversity of problems, particularly in fisheries governance issues (see e.g., Garaway et al., 2006; Imperial & Yandle, 2005; Parris, 2010; Rahman, Hickey, & Sarker, 2012; Rudd, 2004; Yandle, 2008).

In recent years there has been a considerable appreciation of the great diversity and dynamic complexity involved in the fisheries commons, which has prompted the adoption of different approaches to the theme of fisheries governance. A social-ecological system approach (Basurto & Nenadovic, 2012; D. H. Cole et al., 2014; Ostrom & Cox, 2010), interactive governance approach (Bavinck et al., 2005; Kooiman & Centre for Maritime, 2005), and complex adaptive systems approach (Mahon et al., 2008) are cases in point.

3.1.5 Principles for fisheries governance arrangements

In order to help practitioners achieve good governance of natural resources, a growing literature on design principles for nature resources governance arrangements has emerged. In "*Governing the Commons*", Ostrom (1990) presented a set of eight design principles to characterize the most robust institutions for governing sustainable common pool resources. These principles can be used to direct the design of governance institutions that have clearly defined boundaries, congruence, collective choice arrangements, monitoring, graduated sanctions, rights to organize and nested enterprises (Ostrom, 1990, pp. 90-102). Moreover, there are six evaluative criteria for institutional performance, namely efficiency, equivalence, equity, accountability, conformance and adaptability (Ostrom, 2007, pp. 33-35).

Ostrom's design principles are generally well supported empirically and are seen as a good starting point for robust common pool resource institutions. Anderies et al. (2004) stressed that the clearly defined boundaries, congruence and collective-choice arrangements together help solve key problems associated with free riding as well as subtractability of use by employing the monitoring, graduated sanctions and conflict-resolution mechanisms. Given this, these principles coupled together can be seen as a feedback control for resource use. Anderies et al. (2004) argued that failed institutions tend to be characterized by a few of these design principles and those that are characterized by some of the design principles are fragile.

Yet, there is some doubt in relation to the utility of these design principles, for creating global governance structures (see M. Cox, Arnold, & Tomás, 2010). Stern (2011) indicated that although Ostrom's approach has considerable external validity, it needs some refinements to apply to global common resources. The fundamental design principles should include investing in science, establishing independent monitoring of the resource, ensuring meaningful participation, integrating scientific analysis, facilitating the involvement of lower-level actors, engaging a variety of institutional forms, planning for institutional adaptation and change.

Likewise, Johnson-Freese and Weeden (2012) asserted that Ostrom's principles as to sustainable common pool resources appear to provide a most useful road map to identify gaps in the current governance system and mechanisms. Nevertheless, while Ostrom provides multiple success stories at a local level for her model, success cases on a larger scale are elusive.

Following Ostrom's design principles, Costanza et al. (1998), Stratford, Davidson, Curtis, Lockwood, and Griffith (2010), and Mahon, Cooke, Fanning, and McConney (2013) shared the same view that an integrated governance approach is crucial to achieve sustainable governance. Consequently, they presented a set of governance principles for natural resource governance respectively (see Table 3.3).

Table 3. 3 Governance principles in the literature

Source	Design principles
Ostrom (1990)	efficiency, equivalence, equity, accountability, conformance and adaptability
Costanza et al. (1998) (The Lisbon Principles)	responsibility, scale-matching, precaution, adaptive management, full cost allocation and participation
Gibson (2001)	integrity, sufficiency and opportunity, equity, efficiency, democracy and civility, precaution and immediate and long-term integration
Abrams, Borrini-Feyerabend, and Gardner (2003)	legitimacy and voice (participation and consensus orientation), accountability (accountability and transparency), performance (responsiveness and effectiveness and efficiency), fairness (equity and rule of law) and direction (strategic vision)
Stratford et al. (2010)	legitimacy, transparency, accountability, inclusiveness, fairness, integration, capability and adaptability
Chang (2012)	rule of law, participatory, transparency, consensus-based decision-making, accountable, equitable and inclusive, responsive and coherent
Mahon et al. (2013)	accountability, adaptability, appropriateness, capability, effectiveness, efficiency, equity, inclusiveness, integration, legitimacy, representativeness, responsiveness and transparency

These principles are summarized below.

- Adaptability: Since some level of uncertainty always exists in environmental resources, institutional arrangements should be able to respond to changing environments and information. Decision-makers are expected to incorporate new knowledge and learning from experiences into decision-making and implementation (Costanza et al., 1998; Mahon et al., 2013; Ostrom, 2007; Stratford et al., 2010).
- Accountability: The agencies responsible for the governance processes can be held

accountable for their decisions and actions, as well as demonstrate whether and how these decisions and actions have been met (Abrams et al., 2003; Mahon et al., 2013; Ostrom, 2007; Stratford et al., 2010).

- Equity: Benefits and burdens that arise from the decision-making process are shared fairly and the decisions should result in an equitable distribution of resources (Mahon et al., 2013; Ostrom, 2007; Stratford et al., 2010).
- Efficiency: This principle can be viewed in different ways. By and large, institutions and processes produce results which meet needs while making good use of the money, time and human resources available (Abrams et al., 2003; Mahon et al., 2013). The notion of efficiency plays a key role in studies determining the economic feasibility or desirability of public policies (Ostrom, 2007).
- Inclusiveness: A significant principle is that all stakeholders who will be affected by governing processes should be engaged in the formulation and implementation of decisions. Full stakeholder awareness and a range of participation mechanisms contributes to accepted rules which identify the corresponding responsibilities appropriately (Costanza et al., 1998; Mahon et al., 2013; Stratford et al., 2010).
- Transparency: Institutions, decision-making processes and performance are accessible to stakeholders through information sharing (Abrams et al., 2003; Mahon et al., 2013; Stratford et al., 2010).
- Integration: The governing processes are well connected and coordinated with other related processes (Mahon et al., 2013; Stratford et al., 2010).
- Legitimacy: An important factor in the effectiveness of governance arrangements is legitimacy. It means the majority of people affected by a governing process see it as correct and accept it (Mahon et al., 2013; Stratford et al., 2010).
- Capability: The human and financial resources enabling organizations or arrangements to effectively deliver on their responsibilities are available (Mahon et al., 2013; Stratford et al., 2010).
- Precaution: It is essential to take uncertainty about potentially irreversible impacts into consideration by erring on the side of caution (Costanza et al., 1998).
- Scale-matching: Decision-making at the scale of governance should (a) has the most relevant ecological information, (b) consider actors, and (c) internalize costs and

benefits (Costanza et al., 1998).

- Full cost allocation: Identify and allocate all internal and external costs and benefits, including social and ecological, of alternative uses of resources (Costanza et al., 1998).

3.1.6 Studies of high seas fisheries governance in RFMOs

High seas fisheries are managed on a regional basis, with each RFMO governed by a different convention. In other words, RFMOs are seen as the primary mechanisms for high seas fisheries governance. As mentioned in the introductory chapter and discussed in the background chapter, they are expected to implement conservation and management measures in accord with international instruments. However, literature suggests that some RFMOs have failed to deliver these legislative instruments to their governance arrangements, which undermines the effectiveness of RFMOs. In efforts to improve the effectiveness of RFMOs, evaluating and strengthening fisheries governance of RFMOs has been rigorously discussed (see e.g., Aranda, Murua, & de Bruyn, 2012; Bailey, Ishimura, Paisley, & Sumaila, 2013; N. A. Clark, Ardron, & Pendleton, 2015; Cullis-Suzuki & Pauly, 2010; Gilman & Kingma, 2013; Gilman et al., 2014; Hannesson, 2011; Lodge et al., 2007; Small, 2005).

Small (2005) evaluated the selected RFMOs based on their effectiveness in fulfilling the duties outlined in the FAO Code of Conduct and the UN Fish Stocks Agreement. The criteria she considers include the assessment of RFMOs in terms of participation and transparency, target fish data and assessment, measures to combat IUU fishing, measures to reduce by-catch of a wide range of species, by-catch data collection and by-catch mitigation. The results of these effectiveness assessments show that the CCAMLR was the best RFMOs scoring across almost all categories (see Table 3.4). Hence, Small concluded that the conservation measures undertaken by CCAMLR offer a model to other RFMOs, not only for reducing seabird by-catch but also for by-catch mitigation in general.

Table 3. 4 Summary of RFMO effectiveness in relation to criteria developed from UN Fish Stocks Agreement and the Code of Conduct (%)

	CCSBT	WCPFC*	IOTC	ICCAT	CCAMLR
A. Participation & transparency	58	82	78	82	70
B. Target fish data & assessment	55	64	36	57	100
C. Target fish management & status	41	-	14	39	82
D. Combating IUU fishing	31	62	58	62	90
E1. Commitment to reducing by-catch	60	53	33	55	88
E2. By-catch data collection	26	-	8	31	97
E3. By-catch mitigation	4	-	0	13	90
Total score (%)	35	-	27	44	89

* WCPFC could not be fully assessed since it only came into force in 2004.

Source:(Small, 2005, p. 4).

Cullis-Suzuki and Pauly (2010) developed an interesting approach to scoring the effectiveness of the World's 18 RFMOs quantitatively. They used a two-tiered system to assess the RFMOs' effectiveness on paper (i.e. adopting best practice management) and in practice (i.e. fish stocks conservation). The study shows low effectiveness of RFMOs for both the current best practices (57 percent) and the current state of the stock management (49 percent) (see Table 3.5 and 3.6). The latter result reflects that two-thirds of stocks fished on the high seas and under RFMO management are either depleted or overexploited. Thus, the authors claimed only if RFMOs reform themselves quickly is there an opportunity to halt the depletion of fish stocks.

Table 3. 5 Theoretical effectiveness of RFMOs

RFMO	Score (%)	RFMO	Score (%)
WCPFC	74	ICCAT	57
GFCM	64	SPRFMO	57
IWC	63	NPAFC	55
NAFO	63	IPHC	52
NEAFC	63	NASCO	52
SEAFO	63	SIOFA	47

IATTC	60	CCBSP	46
IOTC	58	CCSBT	44
CCAMLR	58	PSC	43
Average			57

Note: 0% being worst possible effectiveness and 100% being perfect effectiveness.
Source:(Cullis-Suzuki & Pauly, 2010, p. 4).

Table 3. 6 Effectiveness in practice of stocks managed by RFMOs

RFMO	Score (%)	RFMO	Score (%)
CCAMLR	100.0	CCBSP	33.3
IOTC	77.8	GFCM	33.3
NPAFC	77.8	IATTC	33.3
NEAFC	72.2	IPHC	33.3
WCPFC	66.7	IWC	33.3
NAFO	53.3	NASCO	33.3
ICCAT	37.5	CCSBT	0.0
Average			48.9

Note: 0% being worst possible effectiveness and 100% being perfect effectiveness.

Source:(Cullis-Suzuki & Pauly, 2010, p. 5).

With respect to the implementation of RFMOs, the OECD Committee for Fisheries conducted a study, reviewing the experiences of some RFMOs (OECD, 2009). A variety of directions were suggested to help policy makers create a political economy environment within which changes to RFMOs can be more easily addressed. For example, make agreed rules and processes in place for RFMOs through ratification of legal instruments and examine innovative policy directions in terms of alternative rights structures and tradable quotas.

Willock and Lack (2006) and Lodge et al. (2007) provided many best practice guidance for RFMOs on how their effectiveness in meeting those responsibilities might be improved. Their overarching recommendations aimed at addressing current deficiencies of RFMOs can be summarized as follows:

- strengthening the political will and capacity of RFMOs and their member States;
- promoting the adoption of the precautionary and ecosystem approaches to management;

- facilitating continuous improvement and accountability; and
- maximizing chances for collaboration and transparency.

Focusing on ecosystem approaches to fisheries governance, Gilman et al. (2014) assessed RFMOs' bycatch governance, including discards. The evaluation was assessed for 13 RFMOs against a suite of five broad criteria. The criteria for governing bycatch are: monitoring via regional observer programs, open access to regional observer program data sets, ecological risk assessment, conservation and management measures to control adverse ecological effects of bycatch and surveillance, enforcement and outcomes. The research findings expose large deficits in governance collectively amongst RFMOs, and reveal mixed progress for individual RFMOs, which enables RFMO Secretariats and member states to prioritize gradual improvements.

Gilman and Kingma (2013) provided a comprehensive assessment of an RFMO's transparency in information on compliance. They used the WCPFC, one of five tuna RFMOs, as a case study to validate a suite of 12 criteria. Findings show that there is a low degree of publicly available information on compliance with WCPFC obligations. The authors argued that the criteria suite can be used as a standardized method to assess whether there is open access transparency to information on compliance with RFMO obligations and to formulate benchmarks against which to track changes in transparency.

N. A. Clark et al. (2015) conducted the first global assessment of transparency in RFMOs. In their study, 11 RFMOs were evaluated using a standardized questionnaire consisting of 34 questions. The questionnaire divided transparency into three categories: availability of information, public participation in decision- making processes, and access to outcomes. Results reveal that there are some good practices among RFMOs. Nonetheless, all RFMOs still have room to ameliorate their transparency as there were not any RFMOs which exemplified transparency practices in every dimension.

3.2 Literature review on implementation

In this section the researcher reviews literature relating to policy implementation. It begins with the definitions of implementation, and then moves on to the evolution of policy implementation research, with a focus on different research models and approaches. The

policy implementation process and structure are briefly introduced, followed by the key factors affecting implementation.

3.2.1 The definitions of implementation

According to Hupe (2014), policy implementation refers to an examination of what happens between governmental agencies and their relationships with other actors while completing public tasks, and then asks how that does matter (p.166). Using a broad term, O'Toole (2000) identified policy implementation as: "what develops between the establishment of an apparent intention on the part of the government to do something, or to stop doing something, and the ultimate impact in the world of action" (p.266). In brief, it is the process of translating policy into action or carrying out an authoritative decision (Barrett, 2004; Berman, 1978; Victor, Raustiala, & Skolnikoff, 1998).

A more explicit definition is provided by Van Meter and Van Horn (1975): "policy implementation encompasses those actions by public and private individuals (or groups) that are directed at the achievement of objectives set forth in prior policy decisions" (p.447). Similar to Barrett (2004) and Berman (1978), they also viewed the policy implementation as a process that starts from an initial policy decision.

A definition that is widely accepted as well as being one of the most influential definitions of implementation is offered by Mazmanian and Sabatier (1981): "Implementation is the carrying out of a basic policy decision, usually made in a statute (although also possible through important executive orders or court decisions). Ideally, that decision identifies the problem(s) to be addressed, stipulates the objective(s) to be pursued, and in a variety of ways, 'structures' the implementation process" (pp.5-6). The process normally runs through the following stages.

- beginning with passage of the basic statute,
- followed by the policy outputs (decisions) of the implementing agencies,
- the compliance of target groups with those outputs,
- the actual impacts, including intended and unintended, of those outputs,
- the perceived impacts of agency decisions, and
- important revisions (or attempted revisions) in the basic statute.

3.2.2 The evolution of policy implementation research

On the whole, policy implementation research has evolved through three generations (Goggin, 1990; Winter, 2003): First-generation implementation focused on case studies (1970-80), second-generation developed the analytical frameworks (1980-90), and third-generation implementation research aims at explaining variation (1990-onwards).

First-generation Implementation: The Pioneers

The first-generation implementation research began with an implicit assumption that once policy has been made by a government, implementation would happen automatically (Smith, 1973, pp. 197-198). It made an important contribution to understanding the factors which facilitated or constrained the policy implementation, as well as directed research attention towards the outcome of a policy. Nonetheless, Schofield (2001) argued that it did not develop the construction of models, which could guide empirical analysis. Rather, it concentrated on the success or failure of policy goals and produced a typology of approaches so as to make implementation more effective (e.g., E. R. Bowen, 1982; P. Sabatier & Mazmanian, 1979).

Second-generation Implementation: Models Builders

In the second-generation implementation research, considerable attention was paid to describing and analyzing the relationships between policy and practice. The ambition of this generation was engaged in the development of analytical frameworks for predicting policy (Goggin, 1990, p. 13). As implementation research evolved, however, implementation models diverged according to whether evaluations were developed from the perspective of policymakers, field-level implementing officials, or private actors. Foremost were the debates between the top-down (e.g., G. C. Edwards, 1980; Mazmanian & Sabatier, 1981; Van Meter & Van Horn, 1975) and bottom-up (e.g., Barrett & Fudge, 1981; Berman, 1978; Elmore, 1979; Hanf & Scharpf, 1978; Hjern, Porter, Högskolan i, Internationella, & Ihh, 1981; Lipsky, 1978) perspectives on policy implementation.

- Top-down models: Focus on structuring programs or law in order to maximize the prospect of achieving their policy or legislative objectives (Ryan, 1995, p. 67). These models have tended to underscore policy-centered and legal mandates, as well as

represent the policymaker's views.

- Bottom-up models: Concentrate their attention on street-level delivery and outcomes. These models stress that looking at a policy from the view of the target groups and service deliverers enables them to obtain a more realistic understanding of policy implementation (Matland, 1995, p. 148).
- Hybrid models: While both top-down and bottom-up models draw attention to the implementation process, they tend to ignore the portion of implementation explained by the other (for a discussion of the main criticisms of both models, see e.g., Matland, 1995; Ryan, 1995; Schofield, 2001; Winter, 2003). Some have tried to synthesize these models, largely by picking out crucial ideas from each. For instance, the "Advocacy Coalition Framework" by P. A. Sabatier (1987) provides a causal theory of the policy process. Recent approaches focus on combining factors of the top-down and bottom-up models into an integrated perspective (O'Toole, 2011).

Third-generation Implementation: Test Theories

In this generation, the dynamism in implementation processes is addressed by using multiple locations and observations, more than one case study and paying more attention to research methodology than the first and second generations (Schofield, 2001, p. 250). These studies apply a wide range of approaches, including content analysis, social experimentation, network analysis and elite interviews and questionnaires.

It is notable that traditional implementation approaches emphasize how particular policies are fulfilled in studying their translation into practice. Conversely, most recently, a number of new insights in policy design and implementation have been advanced (Hamelin, 2010; Howlett, 2014; Howlett & Rayner, 2007; Jordan & Matt, 2014), studying implementation explicitly in terms of governance research (Hill & Hupe, 2009), and policy regime perspective for addressing implementation failures (Jochim & May, 2010; May, 2015; May & Jochim, 2013).

Thinking about policy implementation and policy failure in a more broad way, May (2015) suggested conceptualizing policy regimes as the governing arrangements for tackling policy problems to see how policy regimes either work to enhance or undermine political

commitments. The contours of a given regime can be broadly construed to include institutional arrangements, interest alignments, and ideas. Applying this conceptualization to study policy implementation and governing on a health care reform case, May concluded that governing arrangements can serve as the political and institutional tools so as to secure policy legitimacy, coherence, and durability. The roots of implementation problems are often found in the prior policy formulation process (Winter, 2003, p. 208) and "backward mapping" notion (Elmore, 1979), May's "policy regimes" approach is a useful means to advance the understanding of policy implementation and the interplay of policy and politics in governing.

3.2.3 The policy implementation process and structure: frameworks and models

A comparison between what is achieved with what was expected can usually result in the observation of an "implementation failure" (Hill & Hupe, 2002, pp. 10-11). The previous implementation studies indicate that implementation failures arise from insufficient specification of desired action as well as from failure to comprise features which overcome conflicts amongst the actors (May, 2015, pp. 2-3).

In recent decades, as discussed above, there has been a growing body of literature making contributions to the understanding of implementation problems and prospects for lessening them. By introducing a conceptual framework of the implementation process, Mazmanian and Sabatier (1981) formulated a set of six sufficient conditions for effective implementation, including implementing officials' commitment to the program's goals (pp.29-30). From their perspective, effective implementation through program design in place and a clear structure of the implementation process can lead to intended implementation and performance (Goel, 2014, pp. 300-301).

A widely quoted model of the policy implementation process comes from Van Meter and Van Horn (1975), which is based on three bodies of literature (i.e. organization theory, the impact of public policy, and intergovernmental relations). They suggested that there is a need to take into consideration the amount of change required and the level of consensus. Accordingly, they hypothesized that "*implementation will be most successful where only marginal change is required and goal consensus is high*" (Van Meter & Van Horn, 1975, p. 461). Their model posits six clusters of variables and the linkages between them that shapes

policy and performance. These variables are (Van Meter & Van Horn, 1975, pp. 462-474):

- the relevance of policy standards and objectives;
- the policy resources and incentives made available;
- interorganizational communication and enforcement activities;
- the characteristics of the implementation agencies;
- the economic, social and political environment; and
- the disposition or response of the implementers for carrying out policy decisions.

Another robust analytical framework for the implementation process has been developed by Dinica (2005) who suggested an actor-oriented framework based on the heuristic of Structure-Conduct-Performance. She argued that the implementation performance for a policy program can be analyzed through exploring the key components of implementation structure as well as the conduct of actors. Both implementation structure's components and actors' conduct are affected by policy-related and contextual factors (Dinica, 2005, p. 5). Within this framework, the implementation structure is analyzed with respect to the dimensions of governance configuration and the degree of complexity of the implementation structure. The dimensions of implementation structure include the following prominent factors:

- information structure;
- financing structure;
- technological-resource infrastructure;
- discretion types;
- actor-function structure;
- decision-making mechanisms (Dinica, 2005, pp. 6-7).

3.2.4 Key factors affecting implementation

Van Meter and Van Horn (1975) argued that successful implementation usually "requires institutional mechanisms and procedures whereby higher authorities (superiors) may increase the likelihood that implementers (subordinates) will act in a manner consistent with a policy's standards and objectives" (p.466). Numerous important factors associated

with successful implementation have been identified. While some scholars identified the major elements of successful implementation through comprehensive review of the previous implementation literature, others' identifications were based on the findings of case studies (e.g., Giacchino & Kakabadse, 2003; Najam, 1995; O'Toole, 1986). This section will explore these key factors, seeking to gain a better understanding of the most common factors affecting implementation from the existing literature.

By examining more than 100 items of implementation literature, O'Toole (1986) reported that approximately half of the published implementation studies identify "policy characteristics" as significant and about the same number consider "resources" as important. The other frequently identified categories of variables include implementing-actor or multi-actor structures, number of actors, attitudes and perceptions of implementing personnel, alignment of clientele, and timing. Additionally, O'Toole proposed his own list of crucial variables as follows: policy characteristics, resources, implementation structure, implementer disposition, implementer-client relationship, and timing.

Building on an extensive review of the implementation literature, Najam (1995) argued that implementation is "*a dynamic process of negotiation between multiple actors, operating and multiple levels, within and between multiple organizations*". He viewed implementation as a complex political process rather than a mechanical administrative one and then suggested a set of five interlinked critical variables which can explain implementation success or failure in a wide range of policy issues, types, political systems and levels of economic development.

- The "content" of the policy itself,
- The nature of the institutional "context",
- The "commitment" of those entrusted with carrying out implementation,
- The administrative "capacity" of implementers,
- The support of "clients and coalitions" (Najam, 1995, p. 35).

In efforts to shape the likelihood of implementation success and failure, Matland (1995) identified four implementation strategies based on an "ambiguity-conflict matrix", which focuses on the required resources that are necessary for successful implementation under different conditions of policy ambiguity and conflict (see Table 3.7). These four strategies,

i.e., administrative, political, experimental, and symbolic, are appropriate depending on the mix of policy features. Success of each strategy is assumed to be disproportionately affected by the level of availability of critical resources (Matland, 1995).

Table 3. 7 Ambiguity-conflict matrix: policy implementation processes

		Conflict	
		Low	High
Ambiguity	Low	Administrative Implementation Critical resource: Resources	Political Implementation Critical resource: Power
	High	Experimental Implementation Critical resource: Contextual Conditions	Symbolic Implementation Critical resource: Coalition Strength

Source: (Matland, 1995, p. 160).

Based on the case study, Giacchino and Kakabadse (2003) proposed 18 factors that are considered crucial to successful policy implementation. They particularly elaborated the relative importance attributed to these factors regarding their ability to influence policy implementation. These success factors derived from the case study are divided into four categories in accordance with their significance (Giacchino & Kakabadse, 2003, pp. 144-157):

- the “keystone” of success: commitment;
- the “moderators” generating the pressure of success: project team/management dynamic, location of political responsibility;
- the “springboards” for success: ownership, effective approach;
- the supporting “columns” of success: positive attitude, enthusiasm, leadership, management style, trust, values/beliefs, effective planning, effective resourcing role delineation, stakeholder involvement, use of networks.

3.2.5 Section summary: implementation

This section offered an overview of the evolution of policy implementation research, the implementation process, and the key factors affecting implementation. The review reveals that there is considerable diversity in implementation research because implementation varies in accordance with different contexts and policy areas. Studies have identified a list of conditions that should be present to enhance successful implementation. Nonetheless, it is important to note that no specific conditions or variables are likely to be present in all circumstances. The review has also uncovered new thinking in the relationship between policy implementation and governance.

3.3 Literature summary

This section has summarized a range of theoretical and research-based literature of relevance to the research question. Governance is the capacity of government to create and implement policy. Policy implementation is a process that puts commitments into action. As the implementation of governance measures is meant to address governance arrangements, it is important to step back and identify the conditions under which RFMOs will succeed in improving high seas fisheries governance. Thus far, while most of the discussion has taken place on the effectiveness, and how to enhance the transparency of RFMOs, very little research has systematically explored the designs of governance arrangements and implementation of RFMOs. This study addresses these gaps in knowledge.

3.4 Theoretical approach

The theoretical approach for this research draws on the literature reviewed previously, including governance theory, implementation theory, common pool resources theory and institutional analysis framework. In order to answer the research questions, the theoretical approach developed in this study consists of two main building blocks:

- The analysis of the designs of governance arrangements: Identifying the notable features of the designs of the governance arrangements of RFMOs, and how do they impact on RFMOs' effectiveness;

- The analysis of critical factors influencing implementation: Examining what are the central factors and how they affect an RFMO's implementation.

3.4.1 The analysis of the designs of governance arrangements

The literature review on governance has analyzed three different types of governance conceptualization: public policy and political science literature, sustainable development literature and common pool resources theory (see Table 3.8). The fundamental basis of this proposed research is the study of RFMOs which are established to solve collective-action problems, particularly for protecting the fish stocks in the high seas. As such, common pool resources theory is considered a suitable theory for the research.

Table 3. 8 Summary of literature streams on governance

Literature streams on governance	Descriptive	Normative
Public policy and political science literature	Modes of governance (Kooiman, 2003) A new typology of four modes of governance (Treib et al., 2007)	Typology of new governance arrangements according to relationships with existing policy (Howlett & Rayner, 2006, 2007)
Sustainable development literature		The Interactive Governance Approach (Bavinck et al., 2005; Kooiman & Centre for Maritime, 2005) The social-ecological systems (SESs) framework (Ostrom, 2009)
Common pool resources theory (including fisheries governance)		The institutional analysis and development (IAD) framework (Ostrom, 2005, 2007; Ostrom et al., 1994)

Based on evidence from the common pool resource theory literature, Ostrom's IAD framework is one of the most credible approaches that can help solve the governance of common pool dilemma. This framework is a multi-tier conceptual map (Ostrom, 2007). In principle, it takes researchers well beyond limiting the debates between the top-down and bottom-up perspectives on implementation (O'Toole, 2000, p. 275). It has its origins in a general systems approach to policy processes. The inputs (i.e., physical/material conditions, attributes of community, and rules-in-use) are processed by policymakers into outputs that have outcomes that are evaluated (McGinnis, 2011, p.172). In this study, the adapted IAD framework is used as a conceptual framework to help uncover how governance arrangements affect organization effectiveness in governing high seas fisheries (see Figure 3.2).

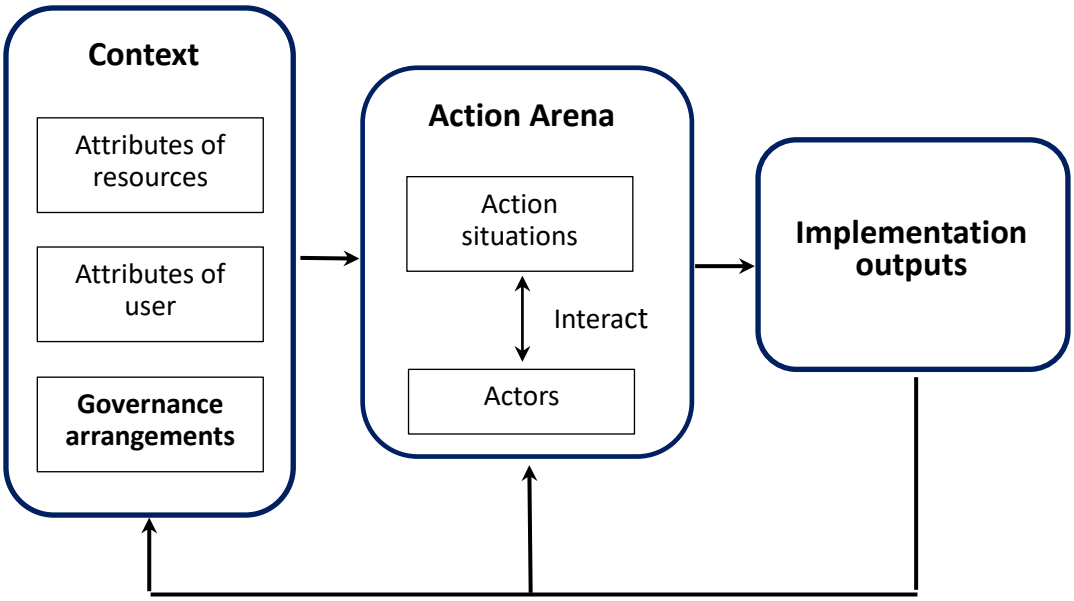

Figure 3. 2 The conceptual framework on governance arrangements and implementation outputs

The definitions and interpretations of *institutions* abound in social science literature. Ostrom (2007), for instance, defined institutions as "the shared concepts used by humans in repetitive situations organized by rules, norms, and strategies" (p.37). She attempted to distinguish between (Ostrom, 2007, p. 37):

- Rules: “shared prescriptions (must, must not, or may) that are mutually understood and predictably enforced in particular situations by agents responsible for monitoring conduct and for imposing sanctions”;
- Norms; “shared prescriptions that tend to be enforced by the participants themselves through internally and externally imposed costs and inducements”; and
- Strategies: “the regularized plans that individuals make within the structure of incentives produced by rules, norms, and expectations of the likely behavior of others in a situation affected by relevant physical and material conditions.”

Hall (1986) conceptualized institutions as the “formal rules, compliance procedures, and standard operating practices that structure the relationship between individuals in various units of the polity and economy” (p.19). John (1998) took a broader view defining an institution as “the arena within policy-making takes place” (p.38). North (1990) delineated institutions as the “rules of the game in a society or, more formally, the human devised constraints that shape human interaction” (p.3). Streeck and Thelen (2005) perceived institutions as regimes that encompass “a set of rules stipulating expected behavior and ruling out behavior deemed to be undesirable” (pp.12-13).

In most definitions of institutions, the primary focus is on regular patterns of behavior as well as the rules and norms that affect the behavior (Cairney, 2011, p. 74). Hence, the researcher follows Streeck and Thelen in defining institutions as a set of rules. The *rules* are prescriptions that define what actions the member states must (obligation), must not (prohibition), or may (permission) perform, as well as the sanctions authorized if the rules are not followed (Ostrom, 2007; Ostrom et al., 1994).

Often the terms ‘‘institutions’’ and ‘‘governance’’ are used interchangeably in different settings, and therefore, in this study, the researcher uses the phrases “institutional arrangements” and “governance arrangements” interchangeably. According to Kiser and Ostrom (2000), governance arrangements are the “rules used by individuals for determining who and what are included in decision situations, how information is structured, what actions can be taken and in what sequence, and how individual actions will be aggregated into collective decision” (p.56). In a word, governance arrangements are complex composites of rules which afford the means to help resolve collective action problems, such

as governing access to a common pool resource (Firmin-Sellers, 1995).

Ostrom studied hundreds of case studies and proposed eight design principles (Ostrom, 1990, 2005; Poteete, Janssen, & Ostrom, 2010), positing them to delineate robust institutions for governing common pool resources. Using these design principles as a typology could help identify and measure the presence and diversity of different linkages within common pool resource systems (Heikkila, Schlager, & Davis, 2011). Hence, the design principles are employed to disentangle the differences of the governance arrangements of RFMOs with varied effectiveness.

Nonetheless, as discussed above, one limitation of applicability of Ostrom's design principles is that success cases on a larger scale are elusive. Given the limitation, reformulation of design principles in the context of fisheries governance is necessary, so as to posit the characteristics of robust institutions. Consequently, one new design principle (policy learning and adaption) is embodied in this study based on the proposition of Dietz, Ostrom, and Stern (2003), Stern (2011), and Huntjens et al. (2012). Moreover, the seventh principle of Ostrom, minimal recognition of rights to organize, is not used. For the purposes of this study, this principle is not directly relevant. This principle requires higher-level authorities to allow resource users to devise their own rules and to have long-term tenure rights to the resource, which is difficult to apply in regional and global commons. Table 3.9, below, presents the adapted design principles with the researcher's examination, in lieu of Ostrom's original description.

In sum, these eight design principles are identified as a beginning point for conducting this study's empirical investigations. Assessing them enables the first and the second sub-question to be answered.

Table 3. 9 Design principles for RFMOs' governance arrangements in governing sustainable fisheries resources

Design principle	Examination
Boundaries	Clarity about who has rights to harvest fisheries resources, and who will participate in the governance (i.e. who has the responsibility and capacity to address the fish stocks depletion

	problem). Whether the appropriators are able to defend the fisheries resources from outsiders.
Proportional equivalence	Rules specifying the amount of fish products that a member state is allocated are reflected to equitable conditions.
Collective-choice arrangements	Most of the stakeholders affected by harvesting and protection rules are involved in the decision-making process. The extent to which the RFMO in question has enhanced the participation of the stakeholders.
Monitoring	Monitors are partially accountable to the member states and/or are the member states themselves. The extent to which the RFMO in question has established appropriate mechanisms and measures for monitoring, control and surveillance.
Graduated sanctions	Fishing vessels which violate laws and/or rules are likely to receive graduated sanctions in order to secure compliance and to discourage violations. Whether sanctions increase with numerous offenses.
Conflict resolution mechanisms	Whether conflict prevention and dispute resolution mechanisms are available to member states (or resource users). The degree to which the conflict-resolution mechanisms are effective at resolution.
Nestled enterprises	Whether institutional arrangements, such as appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are nested in a multi-level context.
Policy learning and adaption	Policy and institutional adjustments, based on the consequences of post policy and new information, should be able to deal with uncertainties. Also, Institutions must be designed to allow for adaption

	and change, *inter alia*, incorporating the best scientific evidence available into an institution updating process. Whether policy and institutional adjustments are able to adopt new knowledge and experiences to address complexity and uncertainty.

The concept of effectiveness of an international regime is complex and can be defined across many dimensions. Most scholars agree, however, that effectiveness should be judged relative to a regime's impact on the problems it sets out to address (Helm & Sprinz, 2000; Mitchell, 2008; Peterson, 1997; Raustiala, 2000; Stokke, 2001; Ward, 2006; Young, 2011). For instance, Underdal (2008) stated that it is common practice to assess a regime's effectiveness in terms of the triad of outputs (regime formation), outcomes (regime implementation), and impacts (alleviating the problems). Hill and Hupe (2002) argue that the focus of effectiveness is upon outputs (implementation behavior) and outcomes (goal achievement).

Peterson (1997) has a different approach and asserted that regime effectiveness can be assessed using the following two dimensions: compliance effectiveness and result effectiveness. The former exists when the relevant actors comply with regime prescriptions, whereas the latter exists when the behaviors changed and enhanced by the regime produce real environmental improvement (pp.115-116).

It is very attractive to focus on "outcomes" as aspects of RFMOs' effectiveness. Empirically, however, it is difficult to measure outcomes on the natural environment, and to collect reliable and consistent data (Bernauer, 1995; Greene, 1996; Skjærseth & Wettestad, 2002; Stokke, 2007; Young, 1997; Young & Gasser, 1999). This is particularly the case in the context of fisheries, the state of which is also significantly affected by natural and human induced environmental processes. Examples of contextual factors that may affect the sustainability of fish stocks are water temperatures, salinity, ocean pollution, and climate change (Stokke, 2007). In practice, disentangling them is a process affected by scientific uncertainties.

In this study, therefore, *effectiveness* is defined and assessed in terms of implementation outputs: "Are the specified activities established?" (Hill & Hupe, 2002, p. 145). The applied

standard of effectiveness is: (a) whether the RFMO provides adequate conservation and management measures to meet its primary governance task, i.e., ensuring and improving the optimal and sustainable utilization of fish stocks; and (b) whether regime outputs and implementation produce relevant member states' desired changes in behavior.

In other words, implementation outputs refer to the commitments of member states (namely the implementation behavior) and the behavioral changes based on the commitments of member states. It focuses on whether the conventions and other written texts of RFMOs reflect upon the international legal instruments, i.e., UN Fish Stocks Agreement, FAO Compliance Agreement and FAO Code of Conduct. The preliminary measurement and indicators that assess the implementation outputs are as follows:

- The extent to which the RFMO's Convention reflects the international legal instruments;
- The extent to which the RFMO's regulations (conservation and management measures) reflect the international legal instruments;
- The extent to which the RFMO's policy programs reflect the international legal instruments;
- The extent to which the RFMO's guidelines reflect the international legal instruments;
- The extent to which the RFMO is fulfilling its duties under the treaty establishing the RFMO;

3.4.2 The analysis of critical factors influencing implementation

The review on implementation section has highlighted a number of important factors that affect implementation, such as resources (capacity), commitments, context, coalitions, leadership, attitudes and perceptions, implementing-actors, and alignment of clientele (see Table 3.10).

Table 3. 10 The selection of factors from the implementation literature

The common factors affecting implementation	The current implementation issues of RFMOs	Candidate factors
Resources (capacity) (Matland, 1995; Najam, 1995; O'Toole, 1986)	• The lack of capacity	√
Commitments (Giacchino & Kakabadse, 2003; Najam, 1995)	• The lack of political will • The failure to ratify and implement legal instruments • The lack of adequate compliance and enforcement	√
Context (Najam, 1995)		
Coalitions (Najam, 1995; O'Toole, 1986)	• An unwillingness to establish cooperative mechanisms	√
Leadership (Giacchino & Kakabadse, 2003)		
Attitudes and perceptions (Giacchino & Kakabadse, 2003; O'Toole, 1986)	• The lack of willingness to fund research • The lack of a sound mandate	
Implementing-actor (O'Toole, 1986)		
Alignment of clientele (O'Toole, 1986)		
Note: (√) : selected		

In the background chapter, a review of the current effectiveness of RFMOs has exposed some factors undermining the effectiveness of RFMOs. They include the lack of political will and capacity, time lagged implementation, the failure to provide complete data and information, the lack of willingness to fund research, the failure to ratify and implement

legal instruments, insufficient decision-making, the lack of adequate compliance and enforcement, the lack of a sound mandate, and an unwillingness to establish cooperative mechanisms.

In light of this, the following factors emerging from the theoretical literature review are worthwhile, selecting for the implementation of international legal and policy instruments related to high seas fisheries of RFMOs: resources (capacity), commitments, and coalitions. The researcher uses these factors as point of departure for further investigations, which enables the third sub-question to be addressed. In this study, the following notions are included:

- Resources (capacity): A minimum condition for successful implementation is to have the "necessary resources" (financial and other). In other words, sufficient resources are very important for the implementing agency to conduct the technical analysis of regulations, the administration of programs, and the monitoring of compliance (Mazmanian & Sabatier, 1981). In short, the availability of proper financial resources is essential to the implementation of RFMOs.
- Commitments: This is a tangible and visible political will to carry out the implementation at various levels to the statutory objectives. More specifically, it concentrates on the extent to which the RFMO as a whole and its member states' demonstrate commitments to implement conservation and management measures.
- Coalitions: Coalitions of interest groups, opinion leaders and other actors who are likely to affect, or be affected by, the policy are imperative to any implementation process. In section 3.1.1, the researcher has argued that "*networks*" are an important concept to fisheries governance and to this research. In practice, non-governmental organizations (NGOs), especially the environmental NGOs, are actively involved with RFMOs. Legally, according to the UN Fish Stocks Agreement, representatives from other intergovernmental organizations and NGOs concerned with straddling and highly migratory fish stocks have the chance to participate in meetings of RFMOs as observers (Article 12 of the UN Fish Stocks Agreement). Relevant intergovernmental organizations include other RFMOs, scientific advisory bodies and the UN Food and Agriculture Organization (Henriksen et al., 2006, p. 41). This means the cooperation and coordination with all stakeholders is critical, because their interactions may influence an RFMO's implementation success.

Chapter 4: Research Design and Methodology

4.1 Introduction

This chapter justifies and explains the research design and methodology that provides a systematic means to tackle the research questions and underpins all of the research activities (Bloomberg & Volpe, 2008; Bryman, 2008; Walliman, 2006). It begins with the research philosophy in order to guide the study design. Following this, the selection of a case study approach is elaborated. It then discusses the data collection and the data analysis strategy selected, i.e., thematic analysis.

4.2 Research philosophy

A research (philosophical) paradigm addresses the source, nature, and development of knowledge. It is the researcher's interpretive framework, which is a fundamental belief system made up of consistent ontological, epistemological and methodological assumptions (Guba & Lincoln, 1994, p. 107). According to Guba and Lincoln (1994), these three paradigms are interrelated within inquiry paradigms. A response given to any one question limits how the others can be answered. The questions are (Guba, 1990, p. 18):

- Ontological dimension: what is the nature of "reality" or the "knowable"?
- Epistemological dimension: what is the nature of the relationship between the inquirer and the known?
- Methodological dimension: how do we know the world or go about finding out knowledge?

In the methodological literature of social science research, there are various ways to label different theoretical perspectives. Crotty (1998) categories research paradigms into six prominent streams: positivism, constructivism, interpretivism, critical inquiry, feminism, and postmodernism. Moses and Knutsen (2012) directly divide research paradigms into two schools, namely naturalism, and constructivism.

Constructivism sees reality as being complicated and socially constructed (Saunders, Lewis, & Thornhill, 2009, p. 117). Constructivism recognizes that people are intelligent and reflective. Consequently, they may have different perceptions when looking at the same things (Moses & Knutsen, 2012, p. 10). Also, knowledge is formed through diverse meanings that people attribute to complex reality rather than being a function of measurement (positivism).

This research aims to examine the key factors influencing governance arrangements and policy implementation of RFMOs in the context of high seas fisheries resources. It is grounded in a social context and seeks the critical factors which contribute to theory generation. New information is connected to previous knowledge, and personal practical experiences; therefore the research itself is rather subjective in nature. Hence, the researcher followed the constructivism view as the ontological position for this research.

According to Lather (2006), interpretivism is based on the belief that social reality is subjective as well as constructed. In line with the position of constructivism, the interpretivist position that helps the researcher to explore the subjective meanings motivating the actions of actors was used as the epistemological foundation for this study (Saunders et al., 2009). Adopting interpretivism enables the researcher to appreciate different viewpoints among people (Lather, 2006; Saunders et al., 2009).

Bryman (2008) outlines the fundamental differences between quantitative and qualitative research in terms of the research paradigms (See Table 4.1). Quantitative and qualitative research approaches represent very different ways of investigating and exploring the claims to knowledge.

Table 4. 1 Fundamental differences between quantitative and qualitative research strategies

	Quantitative	Qualitative
Principal orientation to the role of theory in relation to research	Deductive Testing of theory	Inductive Generation of theory
Epistemological orientation	Natural science model, in particular positivism	Interpretivism
Ontological orientation	Objectivism	Constructionism

Source:(Bryman, 2008, p. 22)

Quantitative research provides an objective measure of reality, which begins with a problem statement and involves the formation of hypotheses, literature review, and quantitative data analysis (Williams, 2011). The research *per se* is more emphasizing on "measurement, precisely and accurately capturing aspects of the social world" (King & Horrocks, 2010, p. 7). The research paradigms are predominantly objectivism and positivism (Bryman, 2008).

In contrast, qualitative research is an interpretive, naturalistic approach. Qualitative researchers seek to study things in their natural setting in order to understand and interpret the meanings that people attach to phenomena within their social world (Denzin & Lincoln, 2011, p. 3). More simply put, qualitative research concentrates on explanation and understanding of social phenomena and their contexts. The researcher's interpretive framework is usually built on constructivism and interpretivism (Bryman, 2008).

Some scholars have also highlighted other distinctive characteristics that make qualitative research more applicable to certain research (e.g.Denzin & Lincoln, 2011; Mason, 2002; M. B. Miles & Huberman, 1994). These characteristics include: not much research done on a particular issue; samples are small in scale; data collection methods involve close contact between the researchers and participants; analysis may produce detailed description and classification or develop typologies and explanations; and can look deeply at a problem or situation.

This study involves a complex, modern, and social phenomenon. The main purpose of the research is to discover new ideas by looking deeply at a real world problem (fish stocks depletion on the high seas), so as to contribute to the generation of theory. The overarching research question is a *how* question, which suits the philosophical approach of interpretivist epistemology (King & Horrocks, 2010). Based on the above discussion, therefore, the qualitative research approach was chosen for this study.

4.3 Research strategy

4.3.1 Case study research

Case study research centers upon one or few instances of a particular phenomenon so as to provide an in-depth account of events, experiences, relationships or processes occurring in those particular instances (Creswell, 2013; Denscombe, 2014; Yin, 2013). Moreover, case studies attempt to learn "more about a little known or poorly understood situation" (Leedy & Ormrod, 2005, p. 149). Bromley (1986) defines the case study research as a "systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest" (p.302). It can be considered a robust research strategy in social science when a comprehensive investigation is required (Zainal, 2007).

According to Yin (2013), case study research is the most appropriate research method when (a) *how* or *why* questions are being asked, (b) the focus of research is a contemporary set of events, and (c) the investigator has little or no control over events (p,13). The aforementioned conditions distinguish case study research from other types of social science research. All three of these situations are present in this research. First of all, the overarching research question guiding this study is the *how* question. Secondly, the context of the study is a contemporary phenomenon: enhancing the effective governance in RFMOs to help mitigate the real world problem - fish stocks depletion. Thirdly, the events to be investigated are associated with governance arrangements and policy implementation of RFMOs, from which the researcher is excluded and over which the researcher has no control.

When conducting case study research, researchers must consider using single or multiple case studies. A single case study is appropriate when a case is unique for some reason or

revelatory (Rowley, 2002; Yin, 2013). On the other hand, the multiple-case design usually is preferred as it enhances the validity of findings. This study aims to find the differences in the designs of the governance arrangements of RFMOs to uncover the critical factors affecting organization effectiveness. Accordingly, a multiple-case study method was chosen for this research.

4.3.2 Case selection

Case selection is likely to be crucial in many qualitative studies and can be made more efficient if more attention is paid to the selection criteria (Curtis, Gesler, Smith, & Washburn, 2000). In order to find key differences in the designs of the governance arrangements of RFMOs and contribute to theory-building, the rationale of sampling is theory-driven (M. B. Miles & Huberman, 1994, p. 27). To be specific, the sampling strategy should be relevant to the research questions addressed by the research, and the samples should be likely to make analytic generalizations (Curtis et al., 2000, p. 1003). Moreover, the sampling plan should ponder the feasibility in terms of time, budget, and access.

As discussed in the Chapter Two Background, there are currently 19 RFMOs worldwide with differing effectiveness. To date, the most comprehensive study regarding the effectiveness of RFMOs was conducted by Cullis-Suzuki and Pauly (2010) (discussed in Chapter 3.1.6). In order to uncover the differences of RFMOs' governance arrangements that result in divergent effectiveness, the quantitative research results of Cullis-Suzuki and Pauly (2010) were utilized as one of the case selection criteria in this research.

According to the UN Food and Agriculture Organization (FAO, 2005), the fish stocks depletion in the Atlantic and Pacific oceans is graver than other oceans. The researcher's current study is in New Zealand, which has close relationships with Pacific Ocean RFMOs. Given the rationale and feasibility of sampling, the cases selected for comparison in this study are based on the criteria (in turn) of (a) the RFMOs being from the Pacific Ocean, and (b) the RFMOs having significantly diverging effectiveness. Consequently, the three RFMOs selected for analysis in this study are the CCSBT, the WCPFC, and the SPRFMO.

The CCSBT was established prior to the UN Fish Stocks Agreement whereas the WCPFC and the SPRFMO were created after it. In the Cullis-Suzuki and Pauly (2010)'s research

findings, the CCSBT gained the lowest score and the WCPFC earned the highest score among RFMOs. In addition, the CCSBT and the WCPFC manage highly migratory species (namely tuna RFMOs) while the SPRFMO manages fish stocks by geographical area (namely non-tuna RFMOs). These different characteristics among three selected RFMOs enable them to be comparable cases (Levy, 2008). A brief overview of the three cases is provided in Table 4.2.

Table 4. 2 A brief overview of the three RFMOs

	WCPFC	CCSBT	SPRFMO
Full name	Western and Central Pacific Fisheries Commission	Commission for the Conservation of Southern Bluefin Tuna	South Pacific Regional Fisheries Management Organization
Region	Pacific Ocean	Trans-Ocean	Pacific Ocean
Year established	2004	1994	2009
Established prior or after the UN Fish Stocks Agreement	Prior	After	Prior
Belong to tuna RFMOs	Yes	Yes	No
The location of the Secretariat	Kolonia, Federated States of Micronesia	Canberra, Australia	Wellington, New Zealand

4.4 Data collection

A qualitative approach involves the collection of a wide range of empirical materials (e.g. case studies, interviews, personal experiences and interactions) that describe “moments and meanings in people’s lives” (Denzin & Lincoln, 2011, p. 3). Collecting data from different sources and methods is one aspect of what is called triangulation. It is a recommended practice in data collection methods as it improves the validity and reliability of a study (Maxwell, 2012; Patton, 2002; Walter, 2009; Yin, 2013). Triangulation also allows researchers to gain a broader and more secure understanding of the issues that are being

investigated when they view it from different perspectives (Denscombe, 2014; Maxwell, 2012).

In efforts to eliminate the risk that the research findings and conclusions may reflect the systematic biases or limitations of a specific source or method, data triangulation was employed in this study. That is, multiple data sources were utilized to enhance the validity and reliability of the research project. These data sources include primary data and secondary data, as discussed in the following sections.

4.4.1 Documents

Documents and records (written materials) can serve a variety of purposes as part of a study. According to G. A. Bowen (2009), there are five specific functions of documents. This research benefits from all of them:

- giving background information and historical insight within which research participants operate;
- offering useful information to help generate new interview questions;
- giving supplementary research data to other sources, such as interviews and observation;
- affording a way of tracking change and development;
- helping confirm evidence from other sources or verify findings.

A variety of different kinds of documents and reports relevant to three cases were collected during the course of research. They encompass publicly available data from each RFMO's website and official documentation, as well as other documents or reports derived from other professional bodies (e.g. FAO). Also, supplemental information was obtained from the Secretariats of representative RFMOs during fieldwork. These documents provide rich information and complement the incomplete oral data. They include:

- the Convention Text;
- conservation and management measures (resolutions);
- guidelines, procedures, and regulations (e.g. rules of procedures);

- the Commission annual meeting reports and other sub-committee meeting reports;
- the relationships with other organizations (e.g. Memorandum of Understanding and Memorandum of Cooperation);
- the performance reviews of the organizations;
- formal studies and evaluations related to the RFMOs;
- the administrative documents;
- fish stocks assessment;
- other supplemental information from the Secretariat.

Alongside these data analysis, the researcher conducted supplementary interviews with selected participants to provide depth and breadth of evidence to support the study.

4.4.2 Interviews

Interviews are one of the most flexible and widely employed methods for obtaining qualitative information regarding respondents' perspectives, practical experiences, and feelings (R. Edwards & Holland, 2013; K. Olson, 2016). They are crucial to the success of the proposed research because they link research questions and initial theoretical notions with research findings. A semi-structured interview is a flexible interview which enables new ideas to be brought during the conversation. In contrast, the structured interview has a rigorous list of questions that do not allow the researcher to divert (R. Edwards & Holland, 2013).

Within the semi-structured interview, the interviewer typically has a clear set of issues that cover the main areas the interviewer believes will be significant and then spontaneously invents follow-up questions to draw out more specific information from the participants (J. Miles & Gilbert, 2005). Although this interview method relies more heavily on the prepared order of questions than unstructured interviews, it enables the interviewee to develop ideas and speak more widely on the questions raised by the research (Denscombe, 2014, p. 176). The respondents may talk about, for instance, their thoughts, views, feelings, and experiences so that the interviewer can obtain more different perspectives, practical knowledge and experiences.

Given this, in this study the researcher conducted an in-depth, semi-structured interview with the purpose of eliciting themes related to the research questions, using open-ended questions based on a script (namely the draft interview questions).

Sampling

The sampling of participants for interviews is vital in research. In qualitative research, a purposive sampling is usually recommended (Anderson, 2010; Guest, MacQueen, & Namey, 2012; M. B. Miles, Huberman, & Saldana, 2014). This type of sampling uses a strategic approach to sample participants such that the selected participants are chosen with characteristics relevant to the research questions that are being investigated (Anderson, 2010; Bryman, 2008). Maxwell (2008) argues that purposive sampling is a tactic where "particular settings, persons, or events are deliberately selected for the important information they can provide that cannot be gotten as well from other choices" (p.235). In order to sample the qualified key participants (informants), the researcher utilized the purposive sampling method for participant selection as it enabled the deliberate choice of a participant because of the qualities the participant possesses (Guest et al., 2012; Tongco, 2007).

In each RFMO's Commission meeting report, there is a list of participants. These participants include the delegations of member states, the delegations of cooperating non-members, the officials of representative RFMOs, as well as the observers (fisheries experts, the intergovernmental organizations and the non-governmental organizations). These participants are working closely on the high seas fisheries governance of the RFMOs. Their professional knowledge and practical experiences are invaluable to this study. More specifically, they would be able to provide rich descriptions of the governance arrangements and policy implementation of RFMOs and through their experiences and perspectives could further our understanding of the emergent themes (Guest et al., 2012). Thus, the researcher used the latest Commission annual meeting report of the selected RFMOs to locate the potential interviewees. These principal interviewees were divided into three groups:

- The official of representative RFMOs: In general, the Secretariat organizes the meetings, compiles information from individual members, prepares reports for the

RFMO, and publishes the decisions of the RFMO. Hence, the official staffs from the Secretariat are familiar with the function and operation of the RFMO. The executive secretary, data manager, compliance manager, and science manager from the RFMOs in question were selected as potential participants.

- The delegations of member states: Delegations on behalf of their respective countries engage in establishing conservation and management measures of the RFMOs. They regularly attend all kinds of RFMO's meetings and related workshops. The selection of the delegations of members was influenced by the researcher's background and the available resources and time. The delegations were selected from New Zealand, Australia, Japan, and Taiwan. Note that none of the Japanese delegations accepted the invitation to participate in this study.

- Fisheries experts and non-governmental organizations: The fisheries experts are from the RFMO's list of experts, which means that they are the crucial qualified informants. The non-governmental organizations have been consistently involved in the operation of the RFMO, and therefore their advisors were selected as potential interviewees.

Interview process

Well-informed interviewees can provide significant insights into case study research (Yin, 2013, p. 113). Prior to their interviews, the participants were informed about the three case studies, the research aim, and the specific focuses under research investigation via a personal email. In the meantime, the information sheet, consent form, and primary interview questions, which were approved by the Victoria University Human Ethics Committee, were sent to all of the potential interviewees to acquire their willingness to participate in this study (See Appendix B, C and D).[7]

From mid-August to late October is the busiest period for RFMOs in question. The researcher's time frame for fieldwork happened to overlap the annual meeting schedules of the selected RFMOs. Initially, the researcher received many responses that said they were unavailable for the interview during that time, even though they were willing to take part

[7] The information sheet, consent form, and primary interview questions that were sent to the delegations of Taiwan included a Chinese version.

in this research project. In order to enhance the willingness of participation, the researcher informed all of the potential interviewees regarding the interview schedule of this study and the possible time and venue for interviewing.

During fieldwork the researcher attended the 23rd Annual Meeting of the CCSBT in Taiwan and the 13th Regular Session of the Commission of the WCPFC in Fiji, as well as visited the CCSBT's Secretariat in Canberra, Australia and the SPRFMO's Secretariat in Wellington, New Zealand. The participants were told that they could be interviewed in either their own countries or the countries that hosted the Commission annual meeting.

Before commencing the interview, the researcher briefly introduced the objective of this study and the two major parts of interview questions. All of the interviewees were informed that they only had to answer the questions that are relevant to their specialization. They could go into as much detail as they wished with their answers. Depending on the position and role of each interviewee, the researcher adjusted her interview questions. All interviews were carried out over the period from 15 August to 16 December 2016 and were confidential and anonymous (see Table 4.3).

Table 4. 3 Interview schedule for three case studies

Time frame	Activity	Location
15 August - 19 September 2016	Semi-structured interview	Taipei, Taiwan
20 September -5 October 2016	Semi-structured interview	Wellington, New Zealand
6 -19 October 2016	Semi-structured interview The 23rd Annual Meeting (10-13 October) of the CCSBT	Kaohsiung, Taiwan
20 October -10 November 2016	Semi-structured interview	Canberra, Australia
11 November -1 December 2016	Semi-structured interview	Wellington, New Zealand
2 -10 December	Semi-structured interview	Denarau Island, Fiji

2016	The 13th Regular Session of the Commission of the WCPFC	
11-16 December 2016	Semi-structured interview	Wellington, New Zealand

As mentioned above, the potential interviewees in each case study were selected because they have been closely involved in the RFMOs in question. Field interviews were conducted with 24 participants in four countries. The number of interviews for each RFMO varied from five to ten. Table 4.4 outlines the research's sources of respondents.

Table 4. 4 Overview of the participants for three case studies

	WCPFC	CCSBT	SPRFMO
The officials of representative RFMOs	1	1	2
The delegations of member states	4	7	7
The fisheries experts and the NGOs	0	1	1
Total number of participants for each RFMO	5	9	10
Total across the three cases - 24 participants interviewed in New Zealand, Australia, Taiwan, and Fiji.			

Interviews took place in participants' offices, a hotel lobby or a coffee shop and lasted between 40 minutes and three hours. Audio-recording data collection compensates for limitations of human memory and note-taking capacity (Guest et al., 2012). Hence, the interviewees were asked to consent to the interviews being recorded, consistent with the ethics approval from the Victoria University Human Ethics Committee.

All of the participants agreed to be recorded, and therefore the researcher recorded all but one interview to ensure the accuracy of these data. The exception happened because the interviewee's office did not allow the researcher to use recording devices due to security

reasons, so the detailed notes were taken during the interview accordingly. The interviews were conducted mostly in English; eight of them were accomplished in Chinese and then were translated into English by the researcher.

4.5 Data analysis

Analyzing qualitative data has many approaches such as semiotic analysis, thematic analysis, grounded theory, discourse analysis, content analysis, and narrative analysis (see e.g., Bryman, 2008; Creswell, 2013; Denzin & Lincoln, 2011; King & Horrocks, 2010; Schutt, 2011). Thematic analysis is the most commonly used method for analyzing answers to open-ended questions that were used in this research. It focuses on identifying significant patterns or themes across the full data set, and emphasizes what interviewees have in common as well as how they differ (Boyatzis, 1998; Guest, MacQueen, & Namey, 2011; King & Horrocks, 2010).

Yin (2013) argues that the best preparation for analyzing case study data is to create an overall analytic strategy (p.142). In this study, the researcher employed a mixed approach of thematic analysis that incorporated both the theory-driven (deductive) and data-driven (inductive) to develop codes and themes (Boyatzis, 1998; Braun & Clarke, 2006). Using the mixed approach enables the researcher to generate a start list (codebook) for coding based on the research questions and theoretical approach and construct additional codes from the raw data concurrently.

Drawing upon the guidelines offered by Braun and Clarke (2006), King and Horrocks (2010), and Fereday and Muir-Cochrane (2006), the researcher broke down the process of thematic analysis into a series of phases. These phases often need back and forth movement during the analysis process. Figure 4.1 shows an analytic strategy in data analysis of the study.

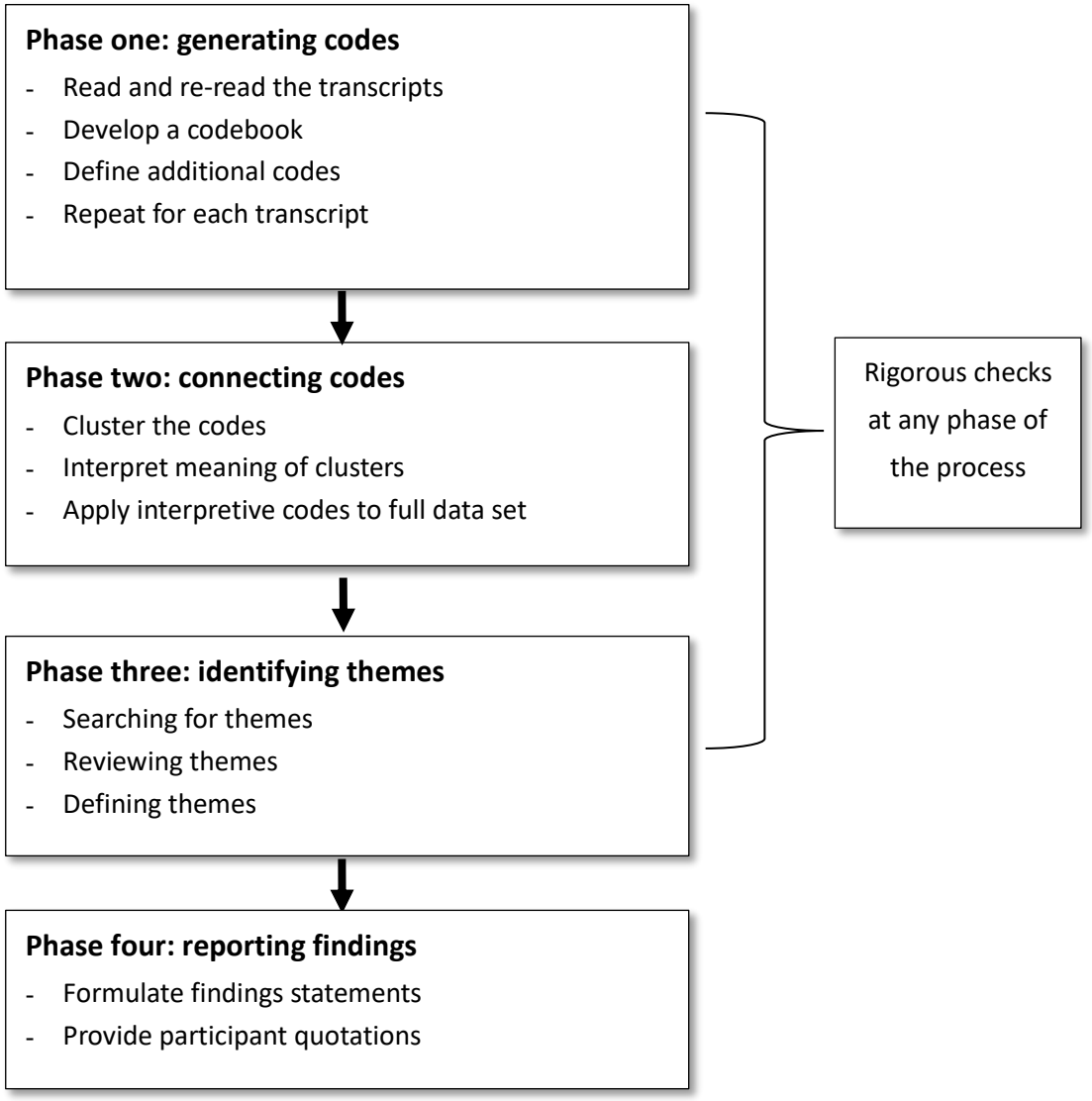

Figure 4. 1 Phases in the process of thematic analysis

Source: Adapted from (Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006; King & Horrocks, 2010).

4.5.1 Generating codes

At phase one, the main goal is to become familiar with the transcript data and identify those parts of the data that will be helpful in answering the research questions. Although extraordinarily time-consuming and tedious, transcribing the interviews is one way of immersing in the data and becoming familiar with it (Bloomberg and Volpe, 2008). Furthermore, translation of the Taiwanese participants' narratives into English provided further familiarity and immersion for the researcher.

Afterwards, the researcher started to read and re-read the data to become more familiar with the data (Braun and Clarke, 2006). At the time, she began to grasp general ideas from the interviewees' experiences and views with respect to the issues they mentioned. Next, the researcher created a codebook based on the theoretical approach to identify meaningful units of text. Table 4.5 presents an example of codes from the codebook.

Table 4. 5 An example of theory-driven codes

Code	Definition
Access	Information about who has rights to harvest fisheries resources and whether the appropriators are able to defend the fisheries resources from outsiders.
Policy learning	Incorporate new knowledge and experiences in relation to measures and activities.

Also, the researcher highlighted the relevant ideas and comments which may help her understand the interviewee's perspectives. Then the researcher used these ideas and comments to define additional codes in a whole transcript while re-reading through each transcript to refine additional codes (King and Horrocks, 2010) (see Table 4.6). The computer-assisted qualitative data analysis tool, NVivo software, was used to manage the data collected.

Table 4. 6 An example of data-driven codes

Data extract	Coded for
"The organization is not just to explore the fishery resources and to sell the fish and earn a lot of money from them. It is also an important platform for networking, making sure you have developed and deepened the links and relationships that behind other nations." (an official of the SPRFMO)	The function of the organization
"It is noteworthy that the EU has the IUU task force to against IUU fishing, including the yellow card and the red card. The former means warning, using trade	Trade-related countermeasures

barrier and trade block to force the countries to improve their fishery management systems." (a delegation of member states of the WCPFC)	

4.5.2 Connecting codes

At phase two, the researcher reviewed the codes first, as the data analysis is an iterative and reflexive process, with movement back and forth between different phases. She then clustered together descriptive codes that share some common meaning and created the interpretive codes that capture the meanings offered by the text (King & Horrocks, 2010). The researcher sorted the different codes into potential themes. It is noteworthy that the coding was amended concurrently to incorporate new or different themes emerging from the data at this phase.

4.5.3 Identifying themes

At the third phase, after considering how different codes can combine to create an overarching theme, the researcher reviewed and further refined the themes for her analysis. That is, she identified the essence of what each theme is about and what aspect of the data each theme captures (Braun & Clarke, 2006). A thematic map was used to help the researcher gain the overarching ideas and visualize the relationship between themes and sub-themes. For instance, the theme "clearly defined boundaries" was divided into two sub-themes, namely "the rules for fishing" and "fishing allocations or total level of fishing effort."

4.5.4 Reporting findings

At the fourth phase, a number of overarching themes were identified for the three case studies by considering interpretive themes from the theoretical and practical stance. The researcher chose the traditional approach to write up the research findings, i.e., separating the findings and discussion chapters (Burnard, 2004; Burnard, Gill, Stewart, Treasure, & Chadwick, 2008). She reported key findings of the three cases under each main theme respectively, using proper verbatim quotes to illustrate those critical findings. The quotes represent the particular idea, process or concept.

Chapter 5: An Overview of the Selected RFMOs

5.1 Introduction

This chapter provides a general overview of the three case studies: The Commission for the Conservation of Southern Bluefin Tuna (CCSBT), the Western and Central Pacific Fisheries Commission (WCPFC), and the South Pacific Regional Fisheries Management Organization (SPRFMO). This is the background context for understanding these RFMOs' objectives, management of fishery resources, memberships, structures, and functions of the commission.

5.2 The CCSBT

Southern bluefin tuna (*Thunnus maccoyii*) were heavily fished in the 1960s, which resulted in a significant decline in the fish stock. In 1985, Australia, New Zealand, and Japan being the main countries fishing southern bluefin tuna stipulated a voluntary agreement on tuna fishing to enable the southern bluefin tuna stock to rebuild. However, the voluntary management agreement proved to be inadequate because it was nonbinding (Cassese, 2004, p. 664).

In 1993, Australia, New Zealand, and Japan signed the Convention for the Conservation of Southern Bluefin Tuna, which went into force in 1994. The Convention established the CCSBT, which is an intergovernmental organization responsible for the management of southern bluefin tuna throughout its global distribution.

The Convention has no specific area of jurisdiction. The CCSBT has the competence to regulate fishing activity for southern bluefin tuna wherever they may be found, which historically has been within the Convention Areas of the ICCAT, the IOTC, and the WCPFC (FAO, 2016a; Szigeti & Lugten, 2015). Southern bluefin tuna is the only species managed by the CCSBT. It is a valuable, highly migratory species of pelagic fish which live mainly in the open seas. They are found throughout the high seas of the southern hemisphere and in the exclusive economic zones of coastal states including Australia, New Zealand, Indonesia and South Africa (OECD, 2012).

5.2.1 Objective

The objective of the CCSBT, as expressed in its founding agreement, is to ensure, through appropriate management, the conservation and optimum utilization of southern bluefin tuna. Recently, the Commission has reached an agreement that rebuilding of the fish stock to the spawning biomass at maximum sustainable yield is the objective of the Commission (Aranda, de Bruyn, & Murua, 2010, p. 15).

5.2.2 Membership

In the CCSBT, membership is only open to states, whose vessels engage in fishing for southern bluefin tuna, or other coastal states through whose exclusive economic or fishery zones southern bluefin tuna migrates (Article 18 of the CCSBT Convention). In attempting to facilitate the participation of entities or fishing entities, the Commission established the Extended Commission and the Extended Scientific Committee in 2001(CCSBT, 2001, 2013).

The Resolution to establish an Extended Commission and an Extended Scientific Committee (hereafter referred to as the 2001 Resolution) declares that the organization should "be comprised of the Parties to the Convention and any regional economic integration organization, entity or fishing entity, vessels flagged to which have caught southern bluefin tuna at any time in the previous three calendar years, that is admitted to membership by the Extended Commission pursuant to this Resolution." Therefore, the CCSBT at present has two types of memberships and a Cooperating status for Non-Members:

- Membership of the Commission
- Membership of the Extended Commission
- Cooperating Non-Member of the Extended Commission

It should be noted that members of the Extended Commission have the same obligations as members of the Commission. Also, all members of the Extended Commission have equal voting rights. The 2001 Resolution specifies that the Extended Commission should perform the same tasks as the Commission. The decisions of the Extended Commission, which

report to the Commission, should become decisions of the Commission unless the Commission decides to the contrary (CCSBT, 2001). In practice, the main decision-making body of the CCSBT has become the Extended Commission (Owen, 2007).

In addition, according to the 2001 Resolution, the members of the Commission are automatically members of the Extended Commission (CCSBT, 2001). The current membership of the CCSBT is shown in Table 5.1.

Table 5. 1 Membership of the CCSBT

Members of the Extended Commission	Australia, the European Union, the Fishing Entity of Taiwan[8], Indonesia, Japan, Korea, New Zealand and South Africa.
Cooperating Non-Members	the Philippines

Source: the CCSBT, https://www.ccsbt.org/en/content/home.

5.2.3 Structure of the CCSBT

The Convention established the Commission for the conservation of southern bluefin tuna, which is assisted by several subsidiary bodies and a Secretariat located in Canberra, Australia. These subsidiary groups include the main sub-committees and some working groups (CCSBT, 2016a):

- Scientific Committee and Extended Scientific Committee (including two technical working groups, namely Catch per Unit Effort Working Group and Operating Model and Management Procedure);
- Compliance Committee (including Compliance Committee Working Group);
- Finance and Administration Committee;
- Ecologically Related Species Working Group;

[8] Some international fisheries instruments, starting with the UN Fish Stocks Agreement, have made the legal basis for the participation of fishing entities in the conservation and management of the global fisheries resources (Djalal, 2006; Hu, 2006; Lodge, 2006; Tsamenyi, 2006). In the CCSBT, Taiwan is a member of the Extended Commission in the capacity of a fishing entity and under the designation of "Fishing Entity of Taiwan."

- Strategy and Fisheries Management Working Group.

5.2.4 Functions of the Commission

In pursuit of these objectives the CCSBT performs the following tasks:

- decides on a total allowable catch and allocates it among the members;
- collects information;
- conducts and coordinates scientific research;
- considers and administers regulatory measures to meet its objectives;
- decides on additional measures including monitoring, control, and surveillance measures to achieve effective implementation of the Convention;
- fosters activities directed towards the conservation and management of ecologically related species and bycatch;
- encourages accession by other states;
- agrees on an annual budget; and
- cooperates with other tuna RFMOs.

5.3 The WCPFC

The Western Central Pacific Ocean is characterized by a complex geomorphology, making this ocean one of the most highly diverse marine areas worldwide. Distant water fleets of Japan, Korea, Taiwan and the United States fish for tuna and tuna-like species in this region under fishing arrangements with the Pacific Island Countries and territories (Aqorau, 2001; Hanich & Tsamenyi, 2009). Despite these arrangements, there are a number of regional bodies dealing with fishery issues in the Western Central Pacific Ocean, although none of them have the mandate for regional fisheries management.[9] Under the United Nations initiative, some Pacific Island Countries in this region, as well as some distant water fishing nations have engaged in the establishment of a new RFMO, i.e., the Western and Central

[9] These regional bodies include: World Fish Center (WFC), Southeast Asian Fisheries Development Center (SEAFDEC), Association of Southeast Asian Nations (ASEAN) Fisheries Working Group, Asia-Pacific Economic Cooperation (APEC) Fisheries Working Group, and the FAO Asia-Pacific Fishery Commission (APFIC).

Pacific Fisheries Commission (WCPFC) (FAO, 2005).

5.3.1 Objective

The WCPFC is the first RFMO for the management of tuna and other highly migratory fish stocks that was established after the adoption of the UN Fish Stocks Agreements. Therefore, it is the first comprehensive conservation and management organization for highly migratory fish stocks to reflect the modern principles of the UN Fish Stocks Agreements (Weidemann, 2014). The WCPFC Convention entered into force in 2004. The overarching objective of the WCPFC is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the UN Law of the Sea Convention and the UN Fish Stocks Agreement (Article 2 of the WCPFC Convention).

5.3.2 Membership

In the WCPFC, membership is limited by the terms of the Convention (Article 34). Currently, the membership comprises 26 member countries, eight participating territories and seven cooperating non-members (collectively, CCMs) under the Convention. It is worth noting that out of a total of 32 members and participating territories of the WCPFC, half of them are the members of the South Pacific Forum Fisheries Agency (so-called FFA members). The Forum Fisheries Agency members are from the Pacific Islands, including Australia and New Zealand. (see Table 5.2). The WCPFC has a very elaborate chamber system, namely the FFA chamber and non-FFA chamber.

Table 5. 2 Membership of the WCPFC

Members	*Australia*, China, Canada, *Cook Islands*, European Union, *Federated States of Micronesia*, *Fiji*, France, Indonesia, Japan, *Kiribati*, Korea, *Marshall Islands*, *Nauru*, *New Zealand*, *Niue*, *Palau*, *Papua New Guinea*, Philippines, *Samoa*, *Solomon Islands*, Chinese Taipei [10], *Tonga*, *Tuvalu*, America and

[10] In the WCPFC, Taiwan is a member of the Commission in the capacity of a fishing entity and under the designation of "Chinese Taipei."

	Vanuatu.
Participating territories	American Samoa, Commonwealth of the Northern Mariana Islands, French Polynesia, Guam, New Caledonia, *Tokelau*, Wallis and Futuna.
Cooperating non-members	Ecuador, El Salvador, Mexico, Panama, Liberia, Thailand and Vietnam.

Note: The FFA members are *italicized* in the table.

Source: WCPFC, https://www.wcpfc.int/about-wcpfc.

5.3.3 Fishery resources

The WCPFC has the mandate and authority to implement the Convention for the UN Fish Stocks Agreement in the western and central Pacific Ocean. The WCPFC is managing one of the world's largest fishing grounds for four major tuna-stocks, namely skipjack tuna, albacore tuna, yellowfin tuna and bigeye tuna, as well as other valuable pelagic fish stocks. Unlike many other RFMOs, the major part of the WCPFC Convention Area is under national jurisdiction. Approximately 65 to 70 percent of the total catches of tuna are caught within the exclusive economic zones of the coastal states, mainly the developing Pacific Island Countries (Hanich & Tsamenyi, 2009; Warner et al., 2014; Willock, 2006).

5.3.4 Structure of the WCPFC

Under Article 11 of the WCPFC Convention, the Commission created three subsidiary bodies: the Scientific Committee, the Technical and Compliance Committee, and the Northern Committee. Each committee meets as often as is required for the efficient exercise of its functions. In practice, the meetings of these subsidiary bodies are held once a year, followed by the Commission annual meeting. The work of the Commission is also assisted by a Secretariat and the Finance and Administration Committee (WCPFC, 2012d).

5.3.5 Functions of the Commission

The functions of the WCPFC, according to Article 10 of the WCPFC Convention, include:

- determining the total allowable catch or total level of fishing effort, within the Convention Area for certain highly migratory fish stocks and adopt such other conservation and management measures (CMMs)[11] as needed to ensure the long-term sustainability of those fish stocks;
- promoting cooperation and coordination between members of the Commission so that the CMMs for highly migratory fish stocks in areas under national jurisdiction and measures for the same stocks on the high seas are compatible;
- adopting CMMs and other recommendations for non-target species and species dependent on or associated with target stocks to maintain or restore populations so that their reproduction does not become seriously threatened;
- adopting standards for collection, verification and for the timely exchange and reporting of data;
- obtaining and evaluating scientific advice, reviewing the status of stocks, promoting the conduct of relevant scientific research and disseminating the results;
- establishing cooperative systems for monitoring, control, surveillance and enforcement (such as a vessel monitoring system).

Furthermore, the WCPFC develops conservation and management measures using the advice and recommendations provided by its subsidiary bodies – the Scientific Committee, Technical and Compliance Committee, and Northern Committee, as well as being guided by the principles contained in Article 5, 6, 7 and 30 of the Convention (see Figure 5.1 below.)

[11] Regarding the decisions of the WCPFC, CMMs describe binding decisions relating to conservation and management measures whilst Resolutions describe non-binding statements and recommendations addressed to members of the Commission and Cooperating non-members.

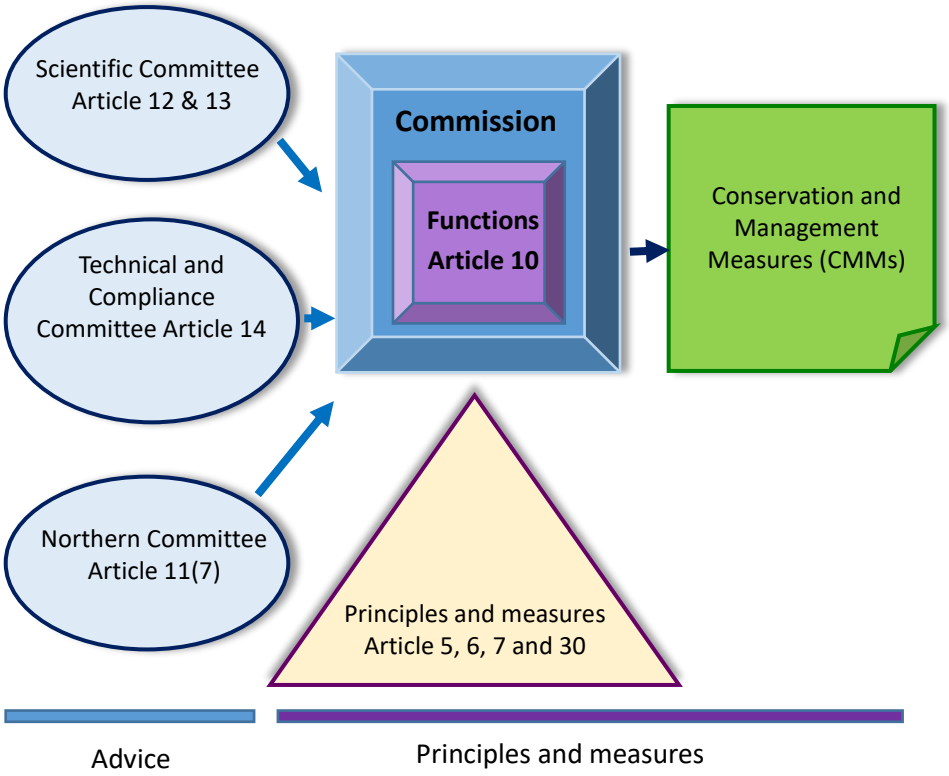

Figure 5. 1 The WCPFC Commission process for developing CMMs

Source: (Cartwright, Ianelli, & Allen, 2014, p. 5)

5.4 The SPRFMO

The South Pacific is well known for experiencing large changes in the abundance and species composition of its main fish stocks. According to the UN Food and Agriculture Organization, all the main fish stocks in the Southeast Pacific are heavily exploited by national fleets operating within their exclusive economic zones and land-based foreign fleets operating under a license or fisheries agreement with a coastal State (FAO, 2011). For example, Patagonian grenadier, South Pacific hake and Chilean jack mackerel are now overexploited whilst Southern hake, Patagonian toothfish, anchoveta, Pacific thread herring, South American pilchard and Chub mackerel are fully exploited (FAO, 2011, p. 323). As a consequence, there is a consensus of establishing proper management regimes through international cooperation within the context of an RFMO in an effort to address the fish stocks depletion in the Southeast Pacific.

In November 2009, the Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean was adopted at the eighth negotiation session to establish the South Pacific Regional Fisheries Management Organization (SPRFMO) which is based in Wellington, New Zealand. The SPRFMO Convention entered into force on 24 August 2012, which is a newer generation document attempting to avoid some of the problems that have vexed other RFMOs (Schiffman, 2013).

5.4.1 Objective

The objective of the SPRFMO Convention is simply stated in Article 2: "through the application of the precautionary approach and an ecosystem approach to fisheries management, to ensure the long-term conservation and sustainable use of fishery resources and, in so doing, to safeguard the marine ecosystems in which these resources occur." It is clear that both the precautionary approach and ecosystem-based management approach are adopted as its objectives.

In giving effect to the objective of the Convention and carrying out decision-making under the Convention, the SPRFMO applies a set of principles (Article 3 of the Convention). For instance, these include:

- protection of the marine environment;
- application of the precautionary approach and an ecosystem approach;
- prevention of overfishing and excess fishing capacity;
- the use of best scientific and technical information and advice;
- compatibility of measures
- recognition of the interests of developing states.

5.4.2 Membership

The SPRFMO has currently 15 Members from Asia, Europe, the Americas, and Oceania (see Table 5.3). In addition, the SPRFMO has established rules to allow recognition of the status of Cooperating non-Contracting Parties. For the present, the Cooperating non-Contracting Parties status has been granted to the Republic of Liberia and the Republic of

Panama.[12]

Table 5. 3 Membership of the SPRFMO

Members	Australia, Chile, China, Cook Islands, Cuba, Ecuador, European Union, Kingdom of Denmark in respect of the Faroe Islands, Korea, New Zealand, Peru, Russian Federation, Chinese Taipei[13], America, and Vanuatu.
CNCPs	Liberia and Panama.

Source: SPRFMO, https://www.sprfmo.int/participation/.

5.4.3 Fishery resources

Unlike other treaties establishing RFMOs, the SPRFMO Convention does not list the specific species under its mandate (Schiffman, 2012, p. 188). Article 1 of the SPRFMO Convention defines the fishery resources as being all fish within the Convention Area, including molluscs, crustaceans, and other living marine resources as may be decided by the Commission. Nonetheless, there are some exceptions:

- sedentary species subject to the national jurisdiction of coastal states pursuant to Article 77.4 of the UN Law of the Sea Convention;
- highly migratory species listed in Annex I of the UN Law of the Sea Convention (such as tuna);
- anadromous and catadromous species;
- marine mammals, marine reptiles, and seabirds

At the present time, there are three main fisheries managed by the SPRFMO, namely jack mackerel, jumbo flying squid and deep-sea species such as orange roughy.

[12] Source: From the SPRFMO's website, available at: https://www.sprfmo.int/participation/.

[13] In the SPRFMO, Taiwan is a member of the Commission in the capacity of a fishing entity and under the designation of "Chinese Taipei."

5.4.4 Structure of the SPRFMO

According to Article 9 of the SPRFMO Convention, the Commission should at least establish the following five subsidiary bodies; the Scientific Committee, the Compliance and Technical Committee, the Eastern Sub-regional Management Committee, the Western Sub-regional Management Committee and the Finance and Administration Committee. Currently, apart from the Western Sub-regional Management Committee, the other four committees are working in assisting the Commission. In addition, the work of the Commission is supported by a Secretariat. It facilitates the compilation and dissemination of data and information, and publishes the Commission's decisions, among other administrative functions.

5.4.5 Functions of the Commission

As set forth in Article 8 of the SPRFMO Convention, the Commission operates in areas beyond national jurisdiction and its main functions are as follows:

- adopting conservation and management measures to achieve its objectives, including appropriate measures for particular fish stocks;
- determining the nature and extent of participation in fishing for fishery resources, including particular fish stocks;
- cooperating and exchanging data with members and with relevant organizations, coastal states, territories, and possessions;
- promoting compatibility of conservation and management measures in the Convention Area and adjacent areas;
- developing and establishing effective monitoring, control and surveillance, compliance and enforcement procedures, including non-discriminatory market-related and trade-related measures;
- developing processes by international law to assess flag state performance concerning the implementation of their obligations under the SPRFMO Convention and adopting proposals to promote implementation of such obligations;
- adopting measures to prevent, deter and eliminate IUU fishing.

Chapter 6: The Key Principles for RFMOs' Governance Arrangements

6.1 Introduction

This chapter and the next chapter present the research findings of the three case studies emerging from documents analysis and participant narratives [14]. The research was conducted in accordance with the methodology described in Chapter Four. As the aim of this study is to explore the factors affecting governance arrangements and policy implementation of RFMOs, there were two major stories running through the research. The first story was the key factors of governance arrangements of RFMOs as told through the modified Ostrom's design principles. The second story was focusing on examining the key factors that influence the policy implementation. These two stories align with the research questions first posed in Chapter One. In the following sections, the research findings in each case study of key principles for RFMOs' governance arrangements will be presented.

6.2 Clearly defined boundaries

RFMOs are established to address the common pool resources aspect of international fisheries, particularly to ensure the long-term conservation and sustainable utilization of straddling fish stocks and highly migratory fish stocks. The UN Law of the Sea Convention and the UN Fish Stocks Agreement stipulate the jurisdiction framework for accessing fishery resources. There are two dimensions in this regard. That is, the rules for fishing (mainly the duties of the flag states) and the rules for getting access to the regulatory area of an RFMO (the allocation of allowable catch). A durable common pool resource institution needs to define these rules clearly. The following sections examine to what extent the selected RFMOs have tried their best efforts to establish boundaries with respect to their management areas.

[14] Participant narrative extracts are indented and *italicized*.

6.2.1 The CCSBT

6.2.1.1 The rules for fishing

The major responsibility of the member state as a flag state is to ensure that their fishing vessels are not engaging in any activity that undermines the effectiveness of international conservation and management measures. In the CCSBT, the members and the Cooperating Non-Members must require a fishing authorization for their fishing vessels, and only the fishing vessels which are authorized by the members and the Cooperating Non-Members are granted permission to catch southern bluefin tuna (SBT). These vessels are listing on the so-called whitelist.

Thus far, the CCSBT has established two Resolutions to ensure that all vessels under members' registry do not engage in illegal, unreported and unregulated (IUU) fishing activities for southern bluefin tuna. They are the "Resolution on a CCSBT Record of Vessels Authorized to Fish for Southern Bluefin Tuna" and the "Resolution on Establishing a Program for Transshipment by Large-Scale Fishing Vessels". Accordingly, almost all the interviewees believed that the CCSBT has clearly defined rules for members and the Cooperating Non-Members to follow. The following quotation made by the respondent was obviously pertinent:

> *"In the CCSBT, only the fishing vessels that are authorized by members and cooperating non-members are permitted to fish the Southern Bluefin Tuna. If a nation wants to apply for the membership, it has to negotiate the quota with the CCSBT... In my view, the CCSBT has already put plenty of efforts on managing the Southern Bluefin Tuna, which is very good. In short, I think it is fair to say that the rules of access are well defined in the CCSBT."* (a delegation of member states of the CCSBT)

However, in spite of the well-defined rules established by the CCSBT, a few interviewees claimed that managing access at the international level on the high seas is still challenging. How to stop or prevent fishing vessels that are not authorized by members and the Cooperating Non-Members to access the fish stocks is very difficult. The non-member catching problem is a case in point.

6.2.1.2 Fishing allocations or total level of fishing effort

The rules for getting access to resources is about the allocation of catch. When it comes to the well-defined access for fishery resources, the majority of interviewees recognized that the CCSBT has very well-developed overarching rules and flexible policy for the resource users. The reason they mentioned is that the CCSBT is unique from other RFMOs as it only manages one single species, i.e. the southern bluefin tuna.

According to the Article 8 of the CCSBT Convention, the Commission should decide upon the total allowable catch and its allocation among the members and the Cooperating Non-Members, taking into account the following considerations:

- relevant scientific evidence;
- the need for sustainable development of southern bluefin tuna fisheries;
- the interest of members through whose exclusive economic zones southern bluefin tuna migrates;
- the interest of members whose fishing vessels engage in fishing for southern bluefin tuna;
- any other appropriate factors.

A number of interviewees stressed the importance of establishing the sustainable total allowable catch. Under the allocated quotas system, the total allowable catch is subdivided into shares (namely the percentage converted to a tonnage of catch) for nations, fleets, or fishing vessels. In the CCSBT, the Extended Scientific Committee assesses the fish stock every year and then gives advice to the Extended Commission to set the southern bluefin tuna global total allowable catch. This global total allowable catch has been reduced twice since 2004 due to serious depletion of the southern bluefin tuna stock. At the CCSBT's 18th annual meeting, the Extended Commission agreed to use a management procedure to set the global total allowable catch (CCSBT, 2011) (see Figure 6.1).

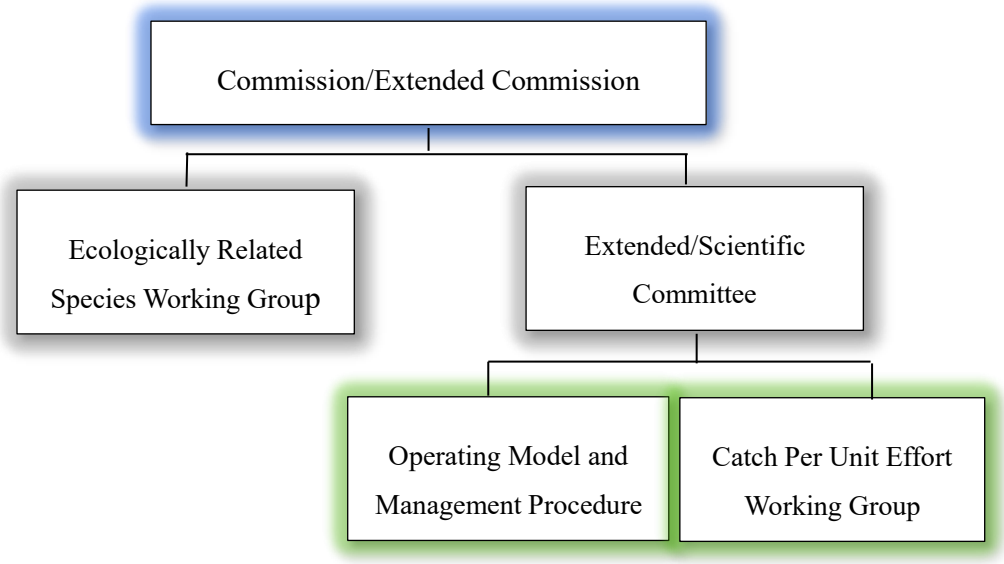

Figure 6. 1 The CCSBT's current institutional arrangements for the global total allowable catch

Source: Adapted from the CCSBT's annual meeting report Annex 1 (CCSBT, 2016d)

These allocations are set in three-year periods, which is following the *Resolution on the allocation of the Global Total Allowable Catch* that was adopted in 2011 (Garcia & Koehler, 2014). If there is no change to the total allowable catch, each member's allocation will remain unchanged. However, if there is an increase or a decrease to the total allowable catch, each member's allocation will increase or decrease based on the nominal percentage level that is set out in the Annex to this Resolution.

According to some respondents, owing to the character of managing one species and a small number of members, the management and conservation measures are well designed in the CCSBT compared to other RFMOs. The management procedure is a good example, which is based on the scientific perspectives. The external scientists and members' scientists make recommendations to help members set the reliable total allowable catch and to manage the fishery resources. In adopting the management procedure, the CCSBT stressed the need to take a precautionary approach to enhance the chances of the spawning stock rebuilding in the short term and to reduce the possibility of future total allowable catch decreases (CCSBT, 2014a). One respondent highlighted the value and importance of this management procedure by stating that:

> *"TAC (total allowable catch), for example, is so detailed and therefore the CCSBT spent years to develop management procedure (MP). We thought it would be a good way to go for managing the fish stock and would be a precautionary way of going. As you may know, this Commission used to have problems agreeing with what the TAC should be…Moreover, it is precautionary. Because you test it to against all of the uncertainty you can think of and you come up with a procedure that would adjust the TAC."* (an official of the CCSBT)

Nonetheless, several interviewees observed that in practice the means to allocate national allocations or to distribute shares are mostly based on the historical catches and are a highly political concern. In the CCSBT, the allocation of total allowable catch is based on the historical catches (particularly proven catch history) and subject to negotiations. As the Commission decisions are taken by consensus, compromise is an inevitable part of negotiations for members to reach an agreement. This point was echoed by most interviewees, which is illustrated in the comment below.

> "*From a more technical point of view, the equation and how the decision made, look at the rules of procedures that have been talked about earlier. There may be rules for the percentage; however, at the end of the day, it has to be agreeable to all members as any member can block consensus.*" (a delegation of member states of the CCSBT)

6.2.2 The WCPFC

6.2.2.1 The rules for fishing

The Convention regulates the specific management area in the WCPFC. Each member's fishing vessels flying its flag should comply with the provisions of the WCPFC Convention and the conservation and management measures (CMMs) to fish in the Convention Area. Also, the members' vessels are not allowed to conduct unauthorized fishing within areas under the national jurisdiction of any member. The fishing vessels can conduct fishing activities within areas under the national jurisdiction of other members only where the vessel holds any license, permit or authorization that may be required by such other

members (Article 24 of the WCPFC Convention).

All of the fishing vessels that are permitted to fish in the WCPFC Convention Area are listed on the whitelist. Those fishing vessels that are not listed on the whitelist are recognized as illegal, unreported and unregulated fishing. In the WCPFC, there is a countermeasure against illegal fishing activities, namely asking members to take appropriate measures to penalize the illegal fishing vessels. In general, the interviewees all reckoned the WCPFC has well identified the rules for fishing. The following comment describes this:

> *"… Only the members can have vessels fishing in the Convention Area. These fishing vessels have to be flagged to a member country, such as New Zealand or China… For example, Russia is not the member of the WCPFC, so their vessels cannot fish in the western and central Pacific. If they wanted to fish, they would need to become a full member or cooperating non-member which is kind of membership…I believe the rules of access are well defined in the WCPFC."* (a delegation of member states of the WCPFC)

6.2.2.2 Fishing allocations or total level of fishing effort

In the WCPFC, one essential function of the Commission is to determine the total allowable catch or total level of fishing effort within the Convention Area for highly migratory fish stocks. Although the Commission has not yet adopted a formal procedure to allocate fishing opportunities to its members, Article 10.3 of the WCPFC Convention explicitly sets out ten factors for the Commission to consider in developing the allocation criteria. These factors are even more comprehensive than the requirements in Article 11 of the UN Fish Stocks Agreement. In particular, the UN Fish Stocks Agreement does not directly address the allocation of participatory rights among the existing members but the WCPFC Convention does. They are as follows:

(a) the status of the stocks and the existing level of fishing effort in the fishery;
(b) the respective interests, past and present fishing patterns and fishing practices of participants in the fishery and the extent of the catch being utilized for domestic consumption;
(c) the historic catch in an area;

(d) the needs of small island developing states, and territories and possessions, in the Convention Area whose economies, food supplies and livelihoods are overwhelmingly dependent on the exploitation of marine living resources;
(e) the respective contributions of participants to conservation and management of the stocks, including the provision by them of accurate data and their contribution to the conduct of scientific research in the Convention Area;
(f) the record of compliance by the participants with conservation and management measures;
(g) the needs of coastal communities which are dependent mainly on fishing for the stocks;
(h) the special circumstances of a state which is surrounded by the exclusive economic zones of other states and has a limited exclusive economic zone of its own;
(i) the geographical situation of a small island developing state which is made up of non-contiguous groups of islands having a distinct economic and cultural identity of their own but which are separated by areas of high seas;
(j) the fishing interests and aspirations of coastal states, particularly small island developing states, and territories and possessions, in whose areas of national jurisdiction the stocks also occur.

Nevertheless, in practice, the regulations with respect to the allocation for the countries without historical catches (Article 10.3 (c)) are very ambiguous in the WCPFC. Many interviewees thought that the regulation indicates a restriction for members to enter fisheries where they have no historic catches, or they cannot demonstrate their catches' records and fishing practices. The following comment made by one of the informants was probably the most typical:

"Personally, I think the WCPFC's rules of access are well defined for the most resource users. This means that there are specific rules of access for the members and the cooperating non-members in the Convention. However, there is a small part of resource users that do not have well defined rules.

That is the developing countries without historical catches." (a delegation of member states of the WCPFC)

Currently, the WCPFC has adopted allocated catch or effort limits for four main tuna species, namely skipjack, yellowfin, big eye, and albacore. In addition, there is a Vessel Day Scheme to control fishing effort through the allocation of fishing days. A number of interviewees believed that the WCPFC has already defined access for its fisheries, in accordance with the international legal framework. Nevertheless, the Commission still needs to work out the detailed allocation arrangements in the near future and the allocation distributions to different members. As one interviewee commented:

"The UNCLOS (the UN Law of the Sea Convention) and the UN Fish Stocks Agreement, both of which set down the jurisdiction framework for accessing fishery resources. In that sense, they (meaning the rules of access) are well defined in the WCPFC. It should be noted, however, that there are a number of areas where the Commission has to decide how much of efforts of the catch is limited to different countries. In that area which is related to the access, the Commission is going to, and should, discuss further this week." (an official of the WCFC)

To date, the harvest strategy has clarified agreed management objectives for the four species it covers. Besides, the WCPFC has undertaken substantial work on reference points and collaborates on the adoption of target reference points for the major fish stocks. The Recommendations from the Review of the WCPFC, which is circulated by the Secretariat, indicated that, apart from the albacore, the other three tuna species have made several improvements compared to previous years (WCPFC, 2012c) (see Table 6.1).

Table 6. 1 The recommendations on conservation and management section for main tuna species in the WCPFC

Main tuna species	Recommendations
Southern albacore tuna	• Despite the apparent appropriateness of the 2011 southern albacore assessment, the resultant conclusions are somewhat more pessimistic than

	previous assessments. • The South Pacific albacore stock is neither currently overfished, nor is overfishing occurring. Current biomass levels appear sufficient to support contemporary catch levels.
Bigeye tuna	• The WCPFC is to be commended for the several improvements forthcoming from the 2011 bigeye assessments compared to previous years. • Such improvements would benefit further through the tabulation of annual bigeye Purse Seine catch estimates, along with the estimation methods used.
Skipjack tuna	• The WCPFC is to be commended for the several improvements forthcoming from the 2011 skipjack assessments compared to previous years. • The Commission is encouraged to again address concerns raised by the 2010 and 2011 Scientific Committee statements on reduction of skipjack availability at high latitudes as a result of high catches in the equatorial region.
Yellowfin tuna	• The WCPFC is to be commended for the several improvements forthcoming from the 2011 yellowfin assessments compared to previous years. • The Commission is encouraged to give serious consideration to the WCPFC Scientific Committee's advice that yellowfin fishing mortality in the western equatorial region should not increase.

Source: Extracted from The Recommendations from the Review of the WCPFC (WCPFC, 2012c)

6.2.3 The SPRFMO

6.2.3.1 The rules for fishing

Regarding the rules for fishing in the SPRFMO, they are rather similar to the WCPFC's regulations. The main reason for this is that the SPRFMO is a very new organization and has learned invaluable experiences from other RFMOs. As one interviewee said:

> *"In the SPRFMO, we have not started from scratch. Rather, we are building on learning experiences with fishery management and other areas around the world. Especially, the experiences gained by the North Atlantic Fisheries Organization (NAFO) which reflect on the UN Law of the Sea Convention and the UN Fish Stocks Agreement. I feel the rules in the SPRFMO has implemented because they built on these past experiences which have already been well tested in other environments and have been proven to be very effective."* (an official of the SPRFMO)

The rules for fishing, which is the set of regulations, stipulate fishing vessels need to be authorized by the member countries, and they must be included in the SPRFMO. According to Article 25 of the SPRFMO Convention, each member should maintain a register of fishing vessels entitled to fly its flag and authorized to fish for fishery resources. Moreover, each member should take all necessary measures to ensure that fishing vessels flying its flag:

- comply with the provisions of the Convention and the conservation and management measures adopted by the Commission;
- do not conduct unauthorized fishing within waters under national jurisdiction adjacent to the Convention Area;
- carry and operate equipment sufficient to comply with the SPRFMO's vessel monitoring system standards and procedures;
- land or transship fishery resources caught in the Convention Area in accordance with the SPRFMO's standards and procedures.

Notwithstanding the rules for fishing are well defined in the SPRFMO, the national regulations of the members have been established differently. For example, one respondent

remarked that:

> *"The fishing in the SPRFMO is limited to the members... So there are definitely rules around the access. However, I do feel the flag states need to make sure they publicize these rules to their fishery industries. My opinion is that some of the flag states have been doing better than others. They are actually taking these rules down to their fishery industries. It is very difficult for the organization to contact all of the industries around the world as there are so many different languages."* (an official of the SPRFMO)

6.2.3.2 Fishing allocations or total level of fishing effort

As mentioned above, currently the three major fisheries managed by the SPRFMO are jack mackerel, jumbo giant squid, and bottom fisheries (deep-sea species such as orange roughy). The jack mackerel and jumbo giant are pelagic and located in the East Pacific, off the coast of Latin America, whereas the orange roughy is in the international waters off New Zealand and Australia.

To establish a total allowable catch or total allowable fishing effort for any fishery resource managed by the SPRFMO, the Article 20.3 of the Convention provides the following factors for the Commission to take into consideration:

(a) the status and stage of development of the fishery resource;
(b) fishing patterns of the fishery resource;
(c) catch of the same fishery resource within areas under national jurisdiction where relevant;
(d) an allowance for discards and any other incidental mortality;
(e) catch of non-target and associated or dependent species and impacts on the marine ecosystems in which the fishery resource occurs;
(f) relevant ecological and biological factors limiting the nature of fishery resources that may be harvested;
(g) relevant environmental factors, including trophic interactions which may have an effect upon the fishery resource and non-target and associated or dependent species; and
(h) as appropriate, relevant conservation and management measures adopted

by other intergovernmental organizations.

When taking decisions in terms of participation in fishing in the SPRFMO Convention Area, including the allocation of a total allowable catch or total allowable fishing effort, the Commission should consider the fishery resource and the existing level of fishing effort for that fishery resource, as well as the following criteria:

(a) historic catch and past and present fishing patterns and practices in the Convention Area;

(b) compliance with the conservation and management measures under this Convention;

(c) demonstrated capacity and willingness to exercise effective flag state control over fishing vessels;

(d) contribution to the conservation and management of fishery resources, including the provision of accurate data and effective monitoring, control, surveillance and enforcement;

(e) the fisheries development aspirations and interests of developing states, especially small island developing states and of territories and possessions in the region;

(f) the interests of coastal states, and in particular developing coastal states and territories and possessions, in a fishery resource that straddles areas of national jurisdiction of such states, territories and possessions and the Convention Area;

(g) the needs of coastal states and of territories and possessions whose economies are dependent mainly on the exploitation of and fishing for a fishery resource that straddles areas of national jurisdiction of such states, territories and possessions and the Convention Area;

(h) the extent to which a member of the Commission is utilizing the catch for domestic consumption and the importance of the catch to its food security;

(i) contribution to the responsible development of new or exploratory fisheries in accordance with Article 22; and

(j) contribution to the conduct of scientific research with respect to fishery resources and the public dissemination of the results of such research.

For the time being, the SPRFMO has only established the total allowable catch for jack mackerel (*Trachurus murphyi*) and the limitation of fishing effort for bottom fishing. Therefore, when it comes to the rules of accessing fishery resources, the interviewees have very different opinions. A few interviewees claimed that the rules of accessing the resources, in the main, are well defined in the SPRFMO Convention and in the conversation and management measures. Nonetheless, jumbo giant squid is still in the open access resources, which is not very well defined at present.

On the other hand, most of the interviewees believed that the SPRFMO have already defined access for their fisheries. They emphasized that the SPRFMO is a very new organization and it is putting much effort into working on other fisheries. Furthermore, they pointed out that the SPRFMO's Convention regulates new or exploratory fisheries rules for members and the Cooperating non-Contracting Parties (CNCPs) so that they would be able to add that allocation to the new fishery in the near future. Table 6.2 shows summary information about the currently well-developed conservation and management measures regarding the managed fisheries by the SPRFMO.

Table 6. 2 The conservation and management measures for the SPRFMO fisheries

CMM number and name	In accordance with which Article of the Convention
CMM 4.01 Conservation and management measure for *Trachurus murphyi*	Article 8 and 21
CMM 4.03 Conservation and management measure for the management of bottom fishing in the SPRFMO Convention Area	Article 8 and 20 and with reference to Annex III
CMM 4.14 CMM for exploratory fishing for toothfish in the SPRFMO Convention Area	Article 8,20 and 22

6.3 Proportional equivalence

Open access to fishery resources is the leading cause of overexploitation of fish stocks. Under the UN Fish Stocks Agreement, open access to high seas fisheries is no longer an expectation from freedom of fishing on the high seas. Instead, a state is constrained with a duty to participate in and cooperate with the regional or sub-regional fisheries management organizations, if any, as a condition of access to the fishery resources. In other words, a state that is fishing on the high seas must join the relevant RFMOs and therefore agrees to apply its conservation measures. If a nation wants to become a member of the RFMO, it must:

- have an interest in the relevant fish stocks; or
- be the coastal state in the region regardless of the involvement of their fishing vessels in the high seas fisheries concerned; or
- have historic catches or past and present fishing activities in the Convention area.

According to Article 11 of the UN Fish Stocks Agreement, once a new member or new entrant accepts the conditions that apply to existing members, then the member states cannot deny their rights to participate in the RFMO. In practice, however, the majority of interviewees mentioned that accommodating new members has been one of the key challenges for every RFMO.

6.3.1 The CCSBT

6.3.1.1 The pathway to participate in the CCSBT

The state, whose vessels engage in fishing for southern bluefin tuna, or the coastal state through whose exclusive economic or fishery zone southern bluefin tuna migrates, can become a member in the CCSBT by acceding to the Convention (Article 18 of the CCSBT Convention). Alternatively, the state, entity, or fishing entity, whose flagged vessels have caught southern bluefin tuna at any time in the previous three calendar years, can become a member or a cooperating non-member by applying the Resolution regarding the Extend Commission (CCSBT, 2001, 2003b).

The cooperating non-member will have the right to participate actively in meetings of the Extended Commission, the Extended Scientific Committee, and their subsidiary bodies. With the status of a cooperating non-member, it has the right to make proposals and the right to speak, but not to vote. Also, the Extended Commission may decide to limit the participation of a cooperating non-member in a particular agenda (CCSBT, 2001). Figure 6.2 illustrates the process to gain full membership in practice in the CCSBT.

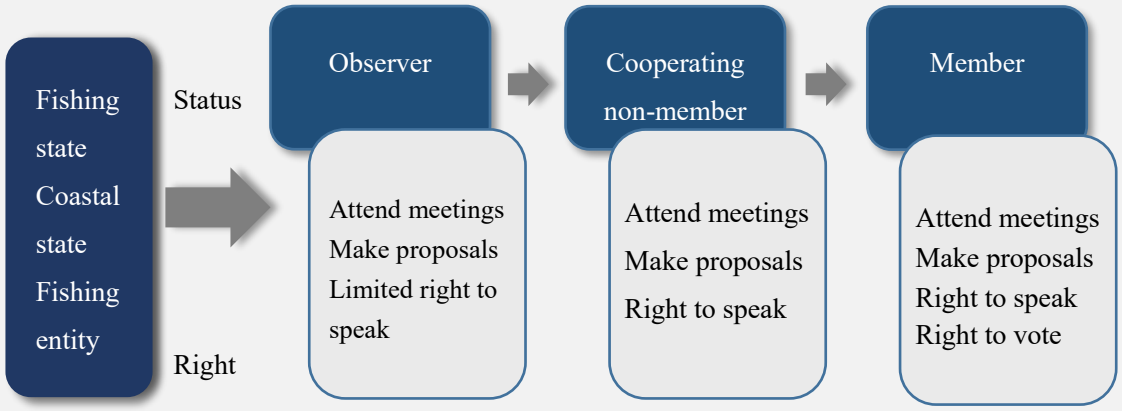

Figure 6. 2 The process to become a member in practice in the CCSBT

In addition, the Commission may invite a state or entity to the CCSBT Convention, whose nationals, residents or fishing vessels harvest southern bluefin tuna, and the coastal state through whose exclusive economic or fishery zone southern bluefin tuna migrates, to send observers to meetings of the Commission and of the Scientific Committee (Article 14 of the CCSBT Convention). Several interviewees reckoned that the participation of the fishing entity of Taiwan is a case in point. As one of them said:

> "*Actually, I think the CCSBT has the necessary information of states whose fishing vessels engage in fishing for the southern bluefin tuna. For instance, earlier the CCSBT noticed that Taiwan has vessels which participate in fishing southern bluefin tuna, and therefore, they invited Taiwan as an observer to attend its meetings.* " (a delegation of member states of the CCSBT)

Although at the time Taiwan was not a member of the CCSBT, Taiwan cooperated with the CCSBT by submitting the catch records of southern bluefin tuna. Moreover, Taiwan reported its fishery management systems and catch records at the CCSBT Commission meetings. In order to incorporate Taiwan into the CCSBT's governance system, the Commission established the 2001 Resolution to create an Extended Commission to give Taiwan (a fishing entity) full membership. This can be seen as a successful approach to encourage accession by other states.

6.3.1.2 The allocations rely on the negotiations

In the CCSBT, the allocation of the global total allowable catch is subject to negotiations. There are no formal rules for the total allowable catch determination. Arguably, it is a political decision. In practice, past catch history plays a major role in this regard. When a new member wants to join the CCSBT, it must negotiate very hard to get the expected allocation. This reality has been existing for a long period. In the case of Korea, the main reason it did not join the CCSBT until 2001 is because of an inappropriate allocation (OECD, 2009).

Another more recent case is Indonesia. Indonesia joined the Commission in 2008 and has asked for increasing allocation for several years. At the 23rd annual meeting of the Commission, Indonesia argued that its current allocation is too small compared to its fishing capacity. Furthermore, it is a developing nation with many small-scale fishers, and it is a range state for southern bluefin tuna. Indonesia emphasized that it has created a new quota management system which can ensure its catch does not exceed its allocation.

The CCSBT's members conceive that it is important to include Indonesia in the CCSBT as the juvenile southern bluefin tuna is in its exclusive economic zone. In other words, securing the membership of Indonesia will enhance the chance of achieving sustainability. In 2016, Indonesia successfully increased its allocation as Japan was willing to provide a voluntary transfer of 21 tons to Indonesia (CCSBT, 2016d). Table 6.3 shows the allocations of southern bluefin tuna to members for 2015 to 2020.

Table 6. 3 Current effective allocations (tons) to the CCSBT's members for 2015-2020

	2015	2016-2017	2018-2020
Japan	4,847	4,737	6,117*
Australia	5,665	5,665	6,165
Republic of Korea	1,140	1,140	1,240.5
Fishing entity of Taiwan	1,140	1,140	1,240.5
New Zealand	1,000	1,000	1,088
Indonesia	750	750	1,023*
South Africa	40	150	450*
European Union	10	10	11

Note: *These figures reflect the voluntary transfers of 21tons that Japan is providing to Indonesia and 27 tons that Japan is providing to South Africa for the 2018 to 2020 quota block.
Source: the CCSBT, https://www.ccsbt.org/en/content/total-allowable-catch

According to the strategic plan of the CCSBT, the Commission will continue to implement the "Resolution on the Allocation of the Global Total Allowable Catch" to set up the allocation. In the meantime, based on the advice of the performance review, the Commission has started to establish principles for allocation to members, following Article 8.4 of the Convention. The primary goal is to develop options for long term allocation arrangements for all members, including new members, and apply to total allowable catch increases or decreases (CCSBT, 2015d).

6.3.1.3 The key factors for new member's allocation

There are two critical factors for a new member to enhance the possibility of obtaining a desirable allocation. Those are negotiation skills and the timing for joining.

As the allocation is very much relying on negotiations, success depends on the quality of the argument that the new member is putting forward. Put differently, how the delegations of the new member try to persuade other members to increase its allocation is vital. The allocation to South Africa for 2018 to 2020 is a good example. At the 23rd annual meeting of the Commission, South Africa requested to increase its allocation. It claimed that it is a developing country seeking the additional allocation to create job opportunities and develop their fishery industry. The current allocation is insufficient for its fishing capacity. Hence, South Africa explicitly indicated there is a chance that South Africa may exceed its

allocation because of its small allocation. After extensive discussion and negotiation, South Africa's allocation has been increased from 150 tons to 450 tons for 2018 to 2020 (CCSBT, 2016d). It will be seen that the negotiation skills of the delegations are imperative for the new member's allocation.

At present, under the adopted management procedure, the global total allowable catch is set in three-year periods, which means the members have the same allocations within three years. In 2016, for example, the CCSBT has set the allocations for 2018 to 2020. If a new member comes along in 2019 and wants some allocation in 2019 or 2020, that allocation must come from the existing members. That is, the existing members must reduce their allocation to accommodate the new member. The existing members will be extremely reluctant to reduce their allocations for the new member due to the enormous pressures from their fishery industries. This is highlighted by one of the interviewees who stated that:

> *"So the existing members have to reduce their allocation, and they do not like to do so. What is more is the fishery industries of the members really dislike that. To be honest, the government might be generous (namely willing to reduce its allocation), but the industries are not very generous. They will fight as hard as they can with their governments to prevent that from happening."* (an official of the CCSBT)

Given the circumstances, chances are that the new member may not gain the allocation when it negotiates with the current members. Nevertheless, if a new member joined the CCSBT in 2019 and wanted to get the allocation from 2021, it would be able to obtain the allocation. Therefore, the timing of participating the CCSBT is critical for the new member.

6.3.1.4 Existing member's attitude towards accommodating new members

The CCSBT Convention requires members to cooperate with one another and encourage accession by other states to join the CCSBT where the Commission considers this to be desirable (Article 13). Most of the interviewees assumed that the CCSBT has a positive attitude towards accommodating new members. The primary driver of embracing new members is because the current members believe the new members could help rebuild the fish stock and enhance the ability of achieving sustainability. The following was a typical

comment made by the respondents:

> *"One of the drivers is that the status of fish stock needs careful managing. So the best way to make sure the stock can be rebuilt according to the rebuilding timeframe is to make sure everybody who is catching the fish is involved in the management system. In the CCSBT, the membership is very open to including all members who are catching southern bluefin tuna."* (a delegation of member states of the CCSBT)

Also, most of the interviewees reckoned the CCSBT has given particular attention to the subject of non-members catching for the purpose of enhancing their participation in the governance process. This is reflected in the early recognition of the need to encourage the membership of Korea, Taiwan, and Indonesia, as well as in the recent contact with China.

In the mid-1990s, the CCSBT's attempts to expand its membership were driven mainly by the overexploitation of southern bluefin tuna fish stock and the influence of non-member catches on the stock. At the time, the CCSBT noticed that the number of non-member catching nations was increasing, which restrained its efforts to rebuild the fish stock. The main non-member countries active in the southern bluefin tuna fishery were Korea, Taiwan, and Indonesia. With the view to attaining the objective of the Convention and improving the effectiveness of the members' conservation and management measures, the CCSBT has encouraged the membership of these three countries (A. Cox et al., 2009).

More recently, the CCSBT has invited China to participate in its Commission meetings given the evidence of its involvement with southern bluefin tuna. The CCSBT wanted China to attend the meetings and make a statement regarding whether they are fishing the southern bluefin tuna. Even though China never replied to the CCSBT's invitation, it still tries to find a way to encourage a response from China.

On the other hand, a few interviewees also said that having a positive attitude towards welcoming new members is rather tricky in the CCSBT. Although the organization *per se* has established measures to encourage states to become members, the existing members are reluctant to provide appropriate allocations to new members. In a sense, the CCSBT is perfectly willing to invite other countries to join if they are involved in fishing southern

bluefin tuna. When the new members arrive, however, the existing members are not very good at giving them fair access to fishery resources. Indonesia and South Africa are cases in point. Briefly, the current allocation method falls far short in their ability to tackle the new member issue:

> *"At the moment, Indonesia wanted to increase at least 300 tons more, and South Africa wanted to have at least 1000 tons. But, do they get what they want? As far as I know, Indonesia has been requesting this increase since 2013. So, the truth is that the existing members are very happy to have the new members at the table, but they are not glad to give away their fish. So there is a tension there, and I don't think they handle it well."* (an advisor of the international non-governmental organization)

6.3.2 The WCPFC

6.3.2.1 The principal advantage in accommodating new members

The respondents indicated that when it comes to accommodating new members, the WCPFC has a number of advantages compared to other RFMOs. One of the main advantages is that most of the important coastal states and distant water fishing nations, for highly migratory species are already the members of the Commission.

Concerning the admission requirements, the WCPFC's membership is limited by the terms of the Convention. In the Convention, there is a list indicating which countries are able to rectify at any time (Article 34 and 35). The only country (group countries) that is outside the list is the European Union, which has been through the process and became a member of the WCPFC. Therefore, many of the WCPFC's members believe that the players who should be active members of the Commission are present members of the Commission. As one interviewee said:

> "*In terms of access, I think that is a probability or potential for countries that would like to be members not to be permitted to be members. Something like membership in the Commission needs to be considered very carefully. But at this stage, most of, or almost all, the countries that have direct fishery*

interests in the region are represented in the Commission." (a delegation of member states of the WCPFC)

6.3.2.2 Existing member's attitude towards cooperating non-members

As the spectrum of current membership is broad, it is evident that the WCPFC will need to give more attention to the issue of cooperating non-members.

For the moment, there are seven cooperating non-members in the WCPFC. Several South America countries, such as Ecuador, El Salvador, and Mexico, have indicated their interests in membership. However, until the 13th Regular Session of the Commission Meeting in 2016, the Commission has only circulated the application of Ecuador and El Salvador to the members requesting consideration of their prospective membership.

Moreover, in 2016, America proposed to establish a set of forms for potential new members to complete but the members could not reach an agreement on this matter. Hence, this proposal will wait until the next Commission meeting. As such it can be argued that most of the existing members do not want the cooperating non-members to obtain full membership shortly.

Based on the interviewees' opinions, three major reasons are leading to the negative attitude towards cooperation with non-members. First of all, the current status of the fish stocks in the Convention Area has been overexploited or depleted. Under the circumstances, the WCPFC will not increase the total allowable catch to allocate quotas to new members. In practice, it will reduce the current members' allocations to accommodate new members.

Secondly, in the WCPFC, a huge part of the Convention Area is inside the Pacific Island Countries' exclusive economic zones. Consequently, the Pacific Island Countries have recognized standing in the Commission. At present, the Pacific Island Countries are not satisfied with the little contributions from the cooperating non-members. For that reason, they seem to prefer non-member countries to stay as cooperating non-members.

Thirdly, some members do not want to change the current balance between the Pacific Island Countries (FFA members) and the distant water fishing nations, such as Japan, Korea,

and Taiwan. From these members' point of view, once South America countries become members, they will be forced to change their strategies to negotiate with distant water fishing nations. It will change the dynamic of how the Commission makes its decisions, that is to say. The following remark can help enlighten us on this:

> *"At the moment, it works quite well, because the FFA can negotiate with the distant water fishing nations. But if you allow South American countries in, which they are close to, and this would change the strategies. That's why some members are reluctant to accept new members to join in as it might upset the ways how work is done."* (a delegation of member states of the WCPFC)

6.3.3 The SPRFMO

6.3.3.1 The pathway to participate in the SPRFMO

In the SPRFMO, the Commission is very open to new members. To encourage non-member countries whose fishing vessels fish in the SPRFMO Convention Area to join the SPRFMO, the Commission has established rules to allow recognition of the status of cooperating non-Contracting Parties (CNCPs) (SPRFMO, 2016e).

According to these rules, every year, the Executive Secretary should contact all non-member countries whose vessels fish in the Convention Area and request them to join the SPRFMO as a member or a cooperating non-Contracting Party. The non-member countries with an interest in the fishery, or whose vessels fish or intend to fish in the Convention Area, can also apply for the status of a cooperating non-Contracting Party in the SPRFMO. To become a cooperating non-Contracting Party, the non-member countries should meet the following requirements:

- explain the reason for seeking the status of cooperating non-Contracting Party;
- demonstrate a commitment to cooperate fully in the implementation of conservation and management measures;
- demonstrate an explicit commitment to accept high seas boarding and inspections;
- provide all the data and information as required by the Commission;
- make a statement on how they tackle previously identified compliance issues;

- make a statement of intent to make voluntary financial contributions commensurate.

6.3.3.2 Current members have a commitment to embrace new members

All of the interviewees stressed that the existing members of the SPRFMO have a positive attitude to embrace new members. As the members sincerely want to achieve sustainable fisheries management, they believe that allocated quotas would encourage the new members to adopt and implement effective conservation and management measures. Furthermore, many respondents pointed out that several cooperating non-Contracting Parties attained full membership within a very short period. As one interviewee stated:

> "*The SPRFMO is a very new organization. Over the last three years, the members who were thinking of joining the SPRFMO were Peru and Ecuador, and before them were Vanuatu and America. After three years, they all became full members. So the SPRFMO is extremely welcome new members and encouraging membership.*" (an official of the SPRFMO)

More significantly, a new member, Ecuador, was obtaining a new allocation on the high seas. Ecuador has jack mackerel inside its exclusive economic zones, but it did not catch jack mackerel outside its fishery zone before joining the SPRFMO. This shows the commitments of the members to invite new members and to allow new members to access the fishery resources. One interviewee shared the case:

> "*Earlier Ecuador was a cooperating non-Contracting Party…And then Ecuador moved from the CNCP to being a member. During that process, it expressed its desire to receive the quota for jack mackerel outside the zone in the high seas. And it was given a quota of 1,100 tons two years ago. It is a new member getting a new allocation of new quota in the high seas fisheries.*" (an official of the SPRFMO)

Additionally, some interviewees claimed that the members do not want to have the risk of non-member catching. They pointed out that the international fisheries law and policy tend to include as many countries as possible into the regional and global fisheries governance. Under the UN Fish Stocks Agreement, therefore, the RFMOs should be allowing new

members to participate. In other words, there is an expectation for RFMOs to welcome new members even though there are many hurdles they have to go through in practice.

6.4 Collective-choice arrangements

The UN Fish Stocks Agreement requires states to strengthen and improve their effectiveness in establishing and implementing conservation measures (Article 13 of the UN Fish Stocks Agreement). It identifies the need for states to adopt effective decision-making mechanisms to enhance the effectiveness of RFMOs. These requirements are:

- States should cooperate with RFMOs by agreeing "on decision-making procedures which facilitate the adoption of conservation and management measures in a timely and effective manner". (Article 10 (j))
- States should provide for "transparency in the decision-making process and other activities" of RFMOs. (Article 12)
- States should agree on "efficient and expeditious decision-making procedures" within RFMOs in order to prevent disputes. (Article 28)

The decision-making mechanisms among RFMOs vary. In general, the Commission (decision-making body of the RFMO) decisions are taken by consensus (unanimous) or majority vote. The following section will discuss the decision-making mechanisms of the selected RFMOs and to what extent the stakeholders are involved in the decision-making process.

6.4.1 The CCSBT

6.4.1.1 Decision-making: The level of requisite support

According to the CCSBT Convention, decisions of the Commission should be taken by a unanimous vote of the members present at the Commission meeting (Article 7). Some interviewees pointed out that recently the trend in the CCSBT has been relying on consensus, which involves considerable deliberation and discussion that takes into account various notions to reach a collective decision.

When it comes to the decision-making process, only the members of the Commission and the Extended Commission have right to vote. Each member has one vote in the Commission and the Extended Commission. The cooperating non-members are not entitled to participate in decision-making, but they can offer recommendations for the Commission and the Extended Commission. More specifically, the cooperating non-members have the rights to attend meetings and to be given an opportunity to express their views.

6.4.1.2 The main advantages of consensus-based decision-making

The Commission decisions are taken by consensus in the CCSBT. From some interviewees' views, decisions taken by consensus is more feasible for the RFMOs, especially those with relatively few members. They argued that the RFMOs should not take the majority, particularly the simple majority, as their decision-making mechanism because of their nature. Also, they pointed out that there are two significant advantages of taking a consensus, i.e., ensuring equity and inclusiveness.

To begin with, the consensus-based decision-making can ensure each member has a fair chance to sufficiently express its concerns, as well as to voice its perspectives and maintain its rights. More importantly, the decisions involve the allocation of fishery resources in the CCSBT. As the capacity of members varies, taking consensus can assure each member has equal right to protect its interests.

Furthermore, taking a consensus-based system allows each member to feel included. In simpler words, everyone is part of it. This could increase the likelihood that decisions will be complied with and implemented by the member states. For example, one interviewee commented:

> "*The problem with going to non-consensus process is that if members don't agree, they still have to implement these decisions. Well, the thing is if they don't agree with it, are they going to implement it as their domestic policy?*"
> (a delegation of member states of the CCSBT)

6.4.1.3 The main disadvantages of consensus-based decision-making

Consensus takes time and effort to reach an agreement, which results in slowing down the decision-making. The majority of interviewees expressed that the conservation and management measures should be adopted in a timely and effective manner, which is required by the UN Fish Stocks Agreement and the Kobe criteria. Nonetheless, the consensus is somewhat challenging in this regard. Specifically, the more members the organization has, the more challenging it is. Therefore, the organization must consider additional mechanisms when the decision mechanism is making by consensus. For example, they can make different devices for procedure issues and substantial issues.

In addition, most of the interviewees argued that a consensus mechanism is an ineffective approach in the decision-making when the interests among members are different. In practice, some necessary and helpful measures cannot be adopted because one or two members are against these measures. For instance, the Compliance Committee tries to recommend or enforce compliance policy and then the target members disagree with them. As a result, the policy will not be adopted. In such instances, the consensus mechanism cannot be effective and timely, and that is why it is criticized from time to time.

6.4.1.4 The possible reform of consensus-based decision-making

In the CCSBT, there is an increasing tendency for members to revise the decision-making mechanism in the Convention. The CCSBT's 2008 Self-Assessment of Performance Review suggested that the consensus-based system resulted in some decision making being delayed and has given rise to some sub-optimal outcomes for the members (CCSBT, 2008b).

Since any change in the CCSBT's decision-making mechanism would require amending the Convention, no specific recommendations are offered by the CCSBT's 2014 Independent Review of Performance. Nonetheless, this performance report has pointed out the potential for the CCSBT to embark on a process to evaluate and modify its Convention (Garcia & Koehler, 2014).

As noted in the CCSBT's "Strategic Plan for the Commission for the Conservation of Southern Bluefin Tuna 2015-2020", members should assure the CCSBT's decision-making

mechanism is fit for the UN Fish Stocks Agreement. Also, the CCSBT has noted that RFMOs established after the UN Fish Stocks Agreement have adopted alternative models for decision-making. Some interviewees expressed that several other RFMOs have amended their Convention to improve the timeliness and effectiveness of decisions, such as Northwest Atlantic Fisheries Organization, North East Atlantic Fisheries Commission, International Commission for the Conservation of Atlantic Tunas, and Inter-American Tropical Tuna Commission. Based on those precedents, the CCSBT's members could have a more substantial deliberation and discussion on amending the Convention.

6.4.1.5 Stakeholders' involvement

The CCSBT is an intergovernmental organization, and the Commission's decisions are made by the Commissioner of members. At the CCSBT's Commission meetings, apart from members' delegations, the cooperating non-members, the industry representatives of members, the intergovernmental organizations (IGOs), and the non-governmental organizations (NGOs) are allowed to attend (see Figure 6.3) (regarding who may participate in meetings and how they take part is discussed in next Chapter).

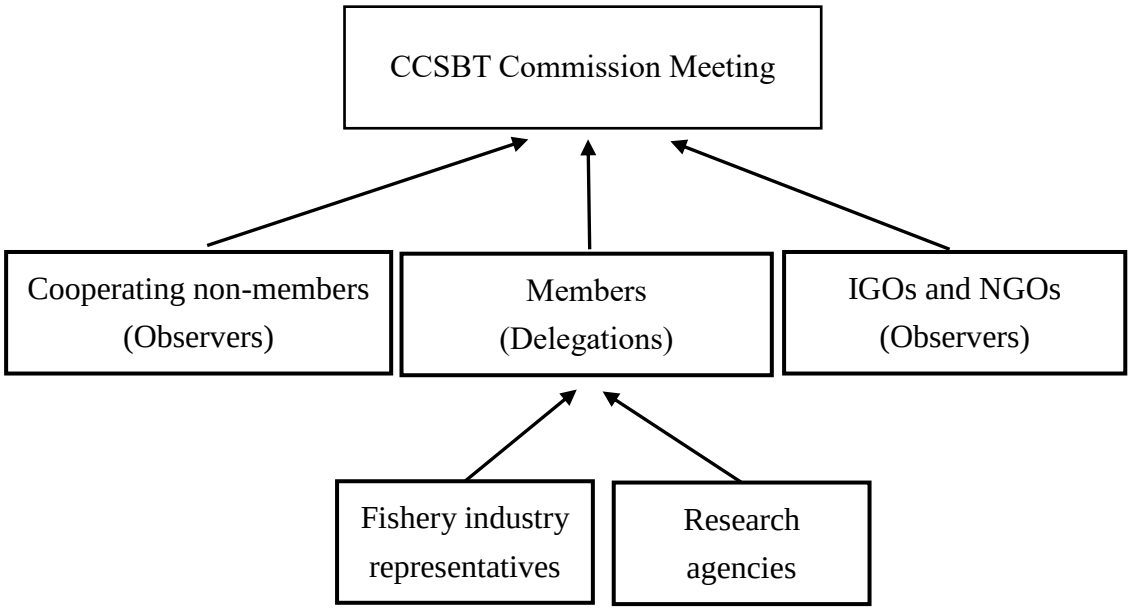

Figure 6. 3 The stakeholders involved in the CCSBT Commission Meeting

It is important to note that the cooperating non-members, the intergovernmental organizations, and the non-governmental organizations do not have voting rights as their positions are observers. Usually, they can make a statement at the Extended Commission meeting. Nevertheless, there is no guarantee that they always have a right to deliver their perspectives. In the CCSBT, according to the interviewees, their chances to express opinions very much depend on the Chair, which would normally give them opportunities to talk about essential issues.

In the CCSBT, one thing that has been criticized and needs to be ameliorated is the issue of transparency, particularly in the decision-making process. First, because of its arrangement limitation, the reports and papers from the Scientific Committee are unavailable until after the Commission meeting. Also, some reports and documents are not put up on the CCSBT's website; they are only available upon the request. This makes it more difficult to engage with stakeholders as the organization does not provide robust information for the stakeholder in advance. The asymmetric information could lead to the unfair outcome.

Another issue, the most critical one, is to have the Heads of Delegation meeting during the decision-making process. The decision of total allowable catch is one of the most important decisions for the Commission. In the CCSBT, member states do not like discussing the allocation issue in the Primary meeting. Instead, they hold the Heads of Delegation meeting (closed meeting) to address the thorny agendas, including the allocation distribution. As one interviewee said:

> "*In the CCSBT, there is a tendency to have many discussions in the Heads of Delegation meetings. The discussion on the floor and the Primary aren't always very productive. So many decisions are taken between Heads of Delegation, which then report to the floor and adopt it through the consensus decision-making process.*" (a delegation of member states of the CCSBT)

In a sense, the Heads of Delegation meeting could speed up the negotiation among members as the delegations can discuss freely in this kind of closed meeting. Nevertheless, in taking the Heads of Delegation meeting, the CCSBT excludes the cooperating non-members and the observers from the decision-making process. Under this circumstance, it is hard for some stakeholders to understand what has happened, let alone to engage in the process

thoroughly. Due to the transparency issue, most of the interviewees reckoned the degree of stakeholder involvement in the CCSBT is not as high as it should be.

6.4.2 The WCPFC

6.4.2.1 A decision-making: The level of requisite support

Decision-making in the WCPFC is made by consensus (i.e., without any formal objections when the decision was taken). On certain matters of substance, such as setting the allocation of the total allowable catch or the total level of fishing effort (including decisions relating to the exclusion of vessel types), admission of new members and amendments to the Convention, passed by consensus is a mandatory requirement (WCPFC, 2004).

A distinctive feature of the decision-making in the WCPFC is chambered voting on matters of substance. According to Article 20 of the WCPFC Convention, if all efforts to reach a decision by consensus have failed, decisions by voting on questions of the procedure can be taken by a vote of three-fourths of the members of the Commission voting and present (see Table 6.4). This majority must include a three-fourths majority of the members of the South Pacific Forum Fisheries Agency (FFA) present and voting and a three-fourths majority of non-members of the South Pacific Forum Fisheries Agency (non-FFA) present and voting. In no circumstances should a proposal be defeated by two or fewer votes in either chamber. The Commission decisions become binding on all members 60 days after the date of its adoption. In a sense, the decision-making processes of the WCPFC reflect a delicate compromise between the interests of the Pacific Island Countries and the distant water fishing nations.

Table 6. 4 The decision-making procedure of the WCPFC

The type of decision	The matter of substance
Consensus required	• Decisions on the TAC or fishing effort, including the exclusion of vessel types (Article 10.4) • Rules of procedure for the Commission (Article 9.8) • Financial regulations (Article 17.2) • Adoption of the budget (Article 18.1)

	• The budget and formula for contributions (Article 18.2) • Amendments to the Convention (Article 40.2) • Admission of new members (Article 35.2)
Three-fourths majority vote (3/4 FFA members and 3/4 non-FFA members), if consensus cannot be reached.	Questions of substance (Article 20 and Annex II)

Article 20.6 of the WCPFC Convention provides that any member who has voted against a decision or was absent during the meeting at which the decision was made may seek a review of the Commission decision by a review panel. The application for review of the Commission decisions should be submitted within 30 days of the adoption of the decision. In addition, the objector should offer a statement of the grounds for its objection, specifying the decision being inconsistent with the WCPFC Convention, the UN Fish Stocks Agreement, or the UN Law of the Sea Convention, or the decision unjustifiably discriminates against the member concerned. In other words, the objector must prove that the decision is either incompatible with legally binding international fisheries law or is discriminatory.

Afterward, the Executive Director will circulate the objector's statement to all members of the Commission (Annex II of the WCPFC Convention). If the review panel finds that the decision does not need to be modified, amended or revoked, it becomes binding on all members. If the review panel, nevertheless, recommends that the Commission modify the decision, the Commission should modify its decision to conform to the findings and recommendations of the review panel. The Commission may also decide to revoke the decision. If so, a special meeting of the Commission will be convened to do this (Article 20.9 of the WCPFC Convention).

6.4.2.2 The decision-making aims to achieve consensus

The WCPFC is empowered to adopt the measures for conservation and management of its Convention Area, which reflect the fundamental principles in the UN Fish Stocks Agreement. Almost all of the interviewees argued that the WCPFC has the comprehensive

regulations to make sure each member has fair and equal opportunity to express its perspective. Moreover, it ensures that the cooperating non-members and observers have decent chances to make statements. Therefore, they believed the WCPFC has established an efficient decision-making mechanism.

Although the decisions of some matters of substance can be made by a majority vote if the consensus is not reached, in practice, members always try to achieve a consensus. It is a sense of failure of the consensus-based decision-making mechanism if they resort to the voting procedure. Also, having a voting procedure can greatly help arrive at consensus (discussed at length in below). Thus, the Commission has not yet taken a vote on any substantial issues. The decision by voting only happened on the election of Chairman, as illustrated by the following quote.

> "*They were taking votes on election of Chairs, but not on the conservation and management measures. I think what is needed is that countries need to spend more time talking and working together, finding ways to work through.*" (an official of the WCPFC)

6.4.2.3 Voting procedure helps reach consensus

Some respondents claimed that having a voting procedure could help to reach more consensus since a vote obviously puts lots of pressure on members who are holding out. The adoption of the observer safety proposal at the 13th Regular Session of the Commission Meeting provides an excellent example of this.

The WCPFC adopted the Regional Observer Program at the 4th regular session of the Commission in 2007 (WCPFC, 2007a). The primary functions of observers include collecting catch data and other scientific data, as well as monitoring the implementation of the conservation and management measures adopted by the Commission. Observers play a critical role in meeting the Commission's responsibilities for fisheries management and supporting effective management outcomes. It is therefore imperative to make sure that measures are in place to ensure their safety while undertaking their tasks.

At the Commission Meeting in 2016, America brought the draft measure for observer safety

to plenary for adoption (WCPFC, 2017g). The draft measure protects fisheries observers from assault and intimidation and requires that immediate help be made available to fisheries observers. One after another the members supporting the draft measure gave moving statements in relation to the importance of the fisheries observers' safety. They argued that fisheries observers are human beings, not objects; therefore, the Commission should try its best to protect them. For instance, the delegation of Australia stated that "People doing work on the Commission's behalf should be able to go to their jobs and come home to their families at the end of a trip knowing that everything that can reasonably be done is being done to keep them safe" (WCPFC, 2017g, pp. 15-16).

Nevertheless, Japan opposed the adoption of the draft measure because the delegation claimed that it did not have instructions to support it. Many members were disappointed that a consensus could not be reached on this crucial matter. After reasonably extensive discussions, Nauru suggested that members should take adoption of the draft measure to a vote. Some members stated that they preferred consensus, not a vote and requested Japan to reconsider its position.

As the delegation of Japan insisted it had no authority to decide on the matter, some members believed that all efforts to reach a decision by consensus had been exhausted and asked that a time be fixed for a vote. The Commission Chair accepted the request and fixed time for the vote to take place one hour later. However, minutes before the vote was to be held, Japan announced that it had just received the approval from Tokyo and would join the consensus to adopt the draft measure. In the end, the Commission agreed to adopt "Conservation and Management Measure for the Protection of WCPFC Regional Observer Program Observers" (WCPFC, 2016c, 2017a). If Japan had refused to join the consensus and members had gone to a vote, this would have been the first case of the WCPFC voting on a measure. Thus it can be seen that the threat of voting could increase pressures to reach an agreement.

6.4.2.4 Effective stakeholder involvement

In the WCPFC, like other RFMOs, the members often come to the Commission meeting along with their national fishery industries representatives and relative stakeholders. In addition, the cooperating non-members, the intergovernmental organizations, and the non-

governmental organizations are all allowed to participate in the decision-making process without the voting right. They are able to express their concerns and protect their rights and interests in general. All of the interviewees expressed that from their practical observation, the stakeholders are well involved in the decision-making process in the WCPFC. They believed that the involvement of the stakeholders is very high in the WCPFC, which means the degree of transparency is high.

> "*I think that the WCPFC is doing very well with regard to the transparency. They allow and invite the NGOs, in particular, the non-governmental organizations ocean-related, to attend their meetings, and there are always a lot of NGOs attending their meetings and sharing their opinions. Apparently, they have a high degree of involvement in the WCPFC.*" (a delegation of member states of the WCPFC)

Several respondents also referred to the attendance of the intergovernmental organizations (IGOs) and the non-governmental organizations (NGOs) at the WCPFC's Commission meetings. The WCPFC has the highest number of NGOs attending its meetings compared with the CCSBT and the SPRFMO. As shown in Table 6.5, there were 23 non-governmental organizations (91 attendees) that participated in the WCPFC's Commission meeting in 2015. With regard to the CCSBT and the SPRFMO, there were two non-governmental organizations (two attendees) and nine non-governmental organizations (15 attendees) that respectively took part in their Commission meetings.

Table 6. 5 Attendance at the Commission meetings of the three cases in 2015

RFMO/No.	Non-Parties	Non-Party attendees	IGOs	IGO attendees	NGOs	NGO attendees
WCPFC	7	10	9	27	23	91
SPRFMO	4	28	3	3	9	15
CCSBT	3	6	1	1	2	2

Source: (SPRFMO, 2015b; WCPFC, 2017g)

6.4.3 The SPRFMO

6.4.3.1 A decision-making: The level of requisite support

Similar to other RFMOs, the decision making of the SPRFMO is by consensus. According to Article 16.1 of the Convention, consensus means "the absence of any formal objection made at the time the decision was taken." Nevertheless, if all efforts to reach a decision by consensus have been exhausted, the Convention provides two approaches to decision making. On matters of procedure, a majority of members voting takes decisions. A three-fourths majority can take decisions on questions of substance.

In the SPRFMO, the members have the right to object to the substantive decisions of the Commission. The only exception to this is the decision for emergency measures to be implemented by the Commission. These measures can apply when fishing presents a serious threat to the sustainability of fishery resources or the marine ecosystem or when a natural phenomenon or human caused disaster has, or is likely to have, a significant adverse impact on the status of fishery resources. In that event, the decision is binding on all members, subject to dispute settlement procedures, and no objection procedure is allowed (Article 20.5 of the SPRFMO Convention).

It is worth noting that the objection procedure of the SPRFMO Convention has raised the standard for its use. According to Article 17 of the SPRFMO Convention, decisions on matters of substance adopted by the Commission should become binding on all members in the following manner: (a) the Executive Secretary should promptly notify each decision to all members; and (b) the decision should become binding upon all members 90 days after the date of transmittal specified in the notification. Following the notification of the decision, a member may present to the Executive Secretary an objection to a decision within 60 days, and then the decision will not bind on this member. At the time of objection, an objecting member must:

- specify in detail the grounds for its objection;
- adopt alternative measures that are equivalent in effect to the decision to which it has objected and have the same date of application; and
- advise the Executive Secretary of the terms of such alternative measures.

There are only two legitimate grounds for an objection. These are either that the decision unjustifiably discriminates in form or fact against the member or that the decision is inconsistent with the provisions of the UN Law of the Sea Convention or the UN Fish Stocks Agreement. Most RFMOs do not impose the above requirements on objecting states to come forward with the grounds for the objection.

As per Article 17.5 of the SPRFMO Convention, the lodging of the objection begins a review process. A review panel must be established within 30 days after the end of the objection period. If two or more members present objections based on the same grounds, those objections are dealt with by the same review panel. Objections based on different grounds, under the consent of the concerned members, may be dealt with by the same review panel. Otherwise, a separate review panel should deal with those objections.

Then within 45 days after its establishment, the review panel must transmit to the Executive Secretary its findings and recommendations regarding the following two questions. First of all, whether the grounds specified for the objection presented by the member or members are justified or not. Secondly, whether the alternative measures adopted are equivalent in effect to the decision provoking objection. Afterward, the Executive Secretary should promptly notify all members of the findings and recommendations of the review panel.

As discussed above, the SPRFMO's decision-making process has complex and detailed objection procedures for members. In 2013, on the SPRFMO's first Commission meeting, Russia objected to the conservation and management measure Trachurus murphyi (CMM 1.01) adopted by the SPRFMO in accordance with the objection procedure. The objection has been solved, with Russia achieving its main outcome and agreeing not to undermine the adopted measures. Many interviewees argued that the decision-making process has been well tested because of the objection by the Russian Case. They further asserted that the SPRFMO's decision-making mechanism could be the best model for RFMOs. The following quotes made by two of the respondents were pertinent.

> "*I think the SPRFMO has an excellent decision-making mechanism…it doesn't rely exclusively on consensus and that view was established at the time by the Commission…It provides a voting procedure if consensus cannot be reached. It also has quite detailed objection procedures where the states can object to*

the measure that they are unable to implement." (a delegation of member states of the SPRFMO)

"*I think the decision-making process in the SPRFMO is fascinating. If the CCSBT is going to revise the decision-making in the Convention, the first thing it should do is to have a look at the SPRFMO's decision-making mechanism.*" (an official of the CCSBT)

6.4.3.2 Stakeholders' involvement

In the SPRFMO, the delegations of member states come to the Commission meeting representing their governments to participate in the decision-making process and make sound decisions. The cooperating non-members, the intergovernmental organizations, and the non-governmental organizations are allowed to participate in the decision-making process without the voting right. They can make statements to express their concerns with chairperson's approval. Several interviewees pointed out that from their experiences, the chairperson will allow them to make a statement if they want to do so. At the regional level, the majority of interviewees believed that most stakeholders affected by the decision-making mechanism are well engaged in making decisions. At the national level, the degree of stakeholder involvement varies, depending on the relationships between the member's government and fishery industries and the local non-governmental organizations.

6.5 Monitoring, control and surveillance

By and large, monitoring, control and surveillance is all about compliance and enforcement of fisheries governance measures. The UN Food and Agriculture Organization broadly defines its elements as follows (Cochrane, 2002, p. 176):

- monitoring - the continuous requirement for the measurement of fishing effort characteristics and resource yields (and catches);
- control - the regulatory conditions under which the exploitation of the fisheries resources may be conducted; and
- surveillance - the degree and types of observations required to maintain compliance with the regulatory controls imposed on fishing activities.

The principal objective of monitoring, control and surveillance mechanisms in RFMOs is to strengthen the effective exercise of member states' responsibilities for fishing vessels flying their flags. Conservation and prevention of illegal fishing cannot be attained without efficient monitoring, control and surveillance. To ensure long-term conservation and sustainable use of fishery resources, monitoring, control and surveillance measures adopted by RFMOs must be implemented fully by their member states. The following sections discuss these measures and mechanisms in the three case studies as they are crucial to RFMOs' effectiveness.

6.5.1 The CCSBT

Robust monitoring, control and surveillance measures at both the RFMO and national levels are fundamental to quantify and control the catch for total allowable catch-based management. In the CCSBT, agreements have been reached on monitoring, control and surveillance components and compliance policy, including the specification of minimum performance requirements. These essential mechanisms and measures of monitoring, control and surveillance are discussed as follows.

6.5.1.1 The authorized vessels register

The CCSBT has an authorized vessels register, namely authorized farms, fishing vessels and carrier vessels (CCSBT, 2015c, 2017c). Each member must submit its authorized fishing vessels list to the CCSBT (making the whitelist). Members and cooperating non-members will not allow the landing or trade of southern bluefin tuna caught by fishing vessels or transshipped to carrier vessels which are not on the whitelist.

That is vital for the CCSBT because it has a global mandate and does not have a Convention area. The authorized vessels list, to a large extent, determines whether the fishing vessels are legal or illegal. In practice, the CCSBT deems that any fishing of southern bluefin tuna by a vessel that is not on the whitelist is illegal, unreported and unregulated fishing, as explained by one of the interviewees:

> "*For other fisheries, you could have bigeye on board if you are not in the IOTC Convention area, as it might be ICCAT. The CCSBT doesn't care it*

is in Antarctic or Atlantic, as long as the fishing vessel has southern bluefin tuna on board and it is not on the whitelist, and then it is illegal." (an official of the CCSBT)

Once the CCSBT detects the unauthorized vessels, it might put them on the blacklist that is the IUU fishing list. Some interviewees emphasized that the authorized vessels register is a very important mechanism because it has implications for trade. As just mentioned, if the fishing vessels are not on the authorized vessels list, they cannot trade with any members and cooperating non-members. Moreover, the states cooperating with the catch documentation scheme will not accept these vessels' fish and fishery products.

6.5.1.2 The Vessel Monitoring System

The vessel monitoring system is one of the essential monitoring, control and surveillance measures to deter illegal fishing in the Course of Actions adopted at the Kobe Joint Meeting of Tuna RFMOs. This system transmits the positions of fishing vessels via satellite to a monitor center on the land, which enables accurate and effective monitoring of vessels. In the CCSBT, all fishing vessels that engage in fishing for southern bluefin tuna are required to adopt and implement a satellite-linked vessel monitoring system to locate the vessels. The fishing vessels must report their location every four hours. Currently, the measure is even stricter, which requires vessels to install the e-logbook system.

In addition, for the conservation, management and optimum utilization of southern bluefin tuna, the CCSBT members and cooperating non-members' vessel monitoring system should be in accord with the following RFMOs' systems (CCSBT, 2017d):

- vessels fishing in the IOTC Convention Area should comply with IOTC "Resolution 15/03 on the Vessel Monitoring System (VMS) Programme";
- vessels fishing in the WCPFC Convention Area should comply with WCPFC Conservation and Management Measure 2014-02 "Commission Vessel Monitoring System";
- vessels fishing in the CCAMLR Convention Area should comply with CCAMLR Conservation Measure 10-04 (2015), "Automated Satellite-Linked Vessel Monitoring System (VMS)";
- vessels fishing in the ICCAT Convention Area should comply with ICCAT

Recommendation 14-09, "Recommendation by ICCAT concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area"; and

- vessels fishing in any other high seas area outside the IOTC, WCPFC, CCAMLR, and ICCAT Convention Areas should comply with IOTC "Resolution 15/03 on the Vessel Monitoring System (VMS) Programme".

The main reason that the CCSBT requires southern bluefin tuna fishing vessels to conform to other RFMOs' vessel monitoring systems is that almost all of the CCSBT vessels are simultaneously fishing under the jurisdiction of two RFMOs (Garcia & Koehler, 2014; Koehler, 2016). Some interviewees indicated that to avoid a situation where the fishing vessel may have to implement the different monitoring system to meet its obligations, the CCSBT members so far have not reached an agreement to establish a centralized CCSBT vessel monitoring system.

> "*We have VMS (vessel monitoring system), requirements just related to the national system. Nothing is reporting centrally. However, there is a requirement about the minimum VMS.*" (a delegation of member states of the CCSBT)

> "*It relies on other tuna RFMOs. They don't have centralized VMS. All of these are very basic in the modern monitoring fishing arrangements. However, the CCSBT doesn't have it.*" (an advisor of the international non-governmental organization)

> "… *But there is no centralized and coordinated patrol among members, even the VMS, on the high seas. The VMS is done through the WCPFC and other RFMOs.*" (a delegation of member states of the CCSBT)

Without a centralized vessel monitoring system, all authorized fishing vessels report back to national administrations and not to the CCSBT. Nevertheless, it is suggested that the lack of a centralized vessel monitoring system in place has limited the effectiveness of the monitoring scheme (CCSBT, 2008a, 2008b). The Kobe Process recommends tuna RFMOs establish standards for the format, content, structure, and frequency of vessel monitoring

system messages. Consequently, the CCSBT should either create a centralized monitoring system promptly (CCSBT, 2008a) or agree that their fishing vessels operating in other RFMOs' Convention areas would transmit their vessel monitoring system reports to the CCSBT Secretariat (Garcia & Koehler, 2014).

6.5.1.3 The catch documentation scheme

In the CCSBT, all the Members and cooperating non-members must implement the catch documentation scheme for southern bluefin tuna to document the movement of all southern bluefin tuna (CCSBT, 2014c, 2014d). The catch documentation scheme replaced the Trade Information Scheme that had been implemented since 2000. It is a unique mechanism, which makes the CCSBT different from other RFMOs. This catch documentation scheme, which links quite closely to the authorized vessels list, came into effect on 1 January 2010. It provides for the tracking and validation of legitimate product flow from catch to sale on both domestic and export markets. That is, when the fishing vessels are landing their fish, there must be a tag on the fish, otherwise it will be reckoned as illegal fishing. The CCSBT Secretariat collects the catch documentation from both exporter and importer so it can do the cross-checking of data.

6.5.1.4 Monitoring of southern bluefin tuna transshipments

In efforts to combat illegal, unregulated and unreported fishing activities as they undermine the effectiveness of the conservation and management measures, the CCSBT established the transshipment monitoring program. This program applies to transshipments at sea from a tuna longline fishing vessel with freezing capacity. It requires carrier vessels that receive southern bluefin tuna transshipments at seas from tuna longline fishing vessels with freezing capacity must be authorized to receive such transshipments (CCSBT, 2017c). In addition, a CCSBT observer must be on board during the transshipment.

6.5.1.5 The regional observer program

In 2003, the CCSBT adopted a set of scientific observer program standards. These standards provide the framework for the operation of the Scientific Observer Program by members (CCSBT, 2015a). This program established a target scientific observer coverage

of ten percent for catch and effort monitoring for each fishery. Additionally, it is specified that observer coverage should be representative of different vessel-types in distinct areas and times.

6.5.1.6 The need for high seas boarding and inspection

The UN Fish Stocks Agreement stipulates that each RFMO member has the obligation to ensure that fishing vessels flying its flag accept high seas boarding and inspection by authorized inspectors according to the procedures set out by that organization (Article 21 and 22 of the UN Fish Stocks Agreement). The CCSBT, nonetheless, has not yet adopted rules for implementing this requirement. The Self-Assessment of the CCSBT suggests that the absence of a Convention area makes the rules for boarding and inspection complex as they would cover all oceans (CCSBT, 2008b). The following quotes by two delegations of the CCSBT shared similar opinions:

> "*Like I said earlier, the CCSBT does not have a Convention area, and therefore it is very hard for them to implement the boarding and inspection on the high seas.*" (a delegation of member states of the CCSBT)

> "*It would be very hard to go out doing southern bluefin tuna patrol. It's not realistic. You have to rely on the factor that related to other RFMOs.*" (a delegation of member states of the CCSBT)

The independent experts of the performance reviews, nevertheless, pointed out that the lack of a Convention area is not a good reason to not fulfill the requirements of the UN Fish Stocks Agreement. Moreover, the WCPFC was able to adopt procedures for the unique circumstances of fishing entities, which means there is no real obstacle for the CCSBT to establish rules and procedures for boarding and inspection on the high seas (Garcia & Koehler, 2014, p. 68). At some point in the near future, the CCSBT has to meet the need for high seas boarding and inspection.

6.5.2 The WCPFC

One of the primary functions of the WCPFC Commission is to implement and enforce conservation and management measures through effective monitoring, control and surveillance, including a vessel monitoring system (Article 10.1 of the WCPFC Convention). Thus far, the WCPFC has established integrated mechanisms and measures for effective monitoring, control, surveillance and enforcement. These include primary mechanisms, such as a fishing vessel register, a vessel monitoring system, high seas boarding and inspection scheme, regional observer program, and transshipment verification and regulation (see Table 6.6).

Table 6. 6 The monitoring, control, surveillance measures in the WCPFC

Title	Reference
Record of Fishing Vessels and Authorizations to Fish on the High Seas in the Convention Area	CMM 2013-10
Procedures for Cooperating Non-members	CMM 2009-11
High Seas Boarding and Inspection Procedures	CMM 2006-08
Regional Observer Program	CMM 2007-01
Centralized Vessel Monitoring System	CMM 2011-02
WCPFC IUU List	CMM 2010-06
Prohibition on use of large-scale driftnets	CMM 2008-04
Regulation on Transshipment	CMM 2009-06
Rules for FAD and purse seine catch retention in high seas	CMM 2009-02
Charter Notification Scheme	CMM 2012-05
Compliance Monitoring Scheme	CMM 2013-02
Standards, Specifications and Procedures for the Record of Fishing Vessels	CMM 2013-03
Conservation and Management Measure for WCPFC Implementation of a Unique Vessel Identifier	CMM 2013-04

Source: Adapted from the WCPFC, available at: https://www.wcpfc.int/wcpfc-monitoring-control-and-surveillance-mcs-scheme.

6.5.2.1 The vessel registry and authorizations

As per Article 24 of the WCPFC Convention, all member states should maintain a record of fishing vessels entitled to fly its flag and authorized to fish in the Convention Area beyond its area of national jurisdiction and should ensure that all such fishing vessels are entered in that record. On the other hand, the WCPFC Commission should establish and maintain its own record of fishing vessels authorized to fish in the Convention Area beyond the national jurisdiction of the member whose flag the vessel is flying. This record is known as the WCPFC Record of Fishing Vessels (whitelist). The fishing vessel must be on the WCPFC list of authorized vessels prior to harvesting within the WCPFC Convention Area. The member states should prohibit unregistered vessels to fish in the Convention Area because such vessels are eligible to be considered for the illegal, unreported and unregulated list (WCPFC, 2009f).

6.5.2.2 The vessel monitoring system

Article 24.8 of the WCPFC Convention stipulates that member states should require their fishing vessels that fish for highly migratory fish stocks on the high seas in the Convention Area to use near real-time satellite position-fixing transmitters while in such areas. The Convention also demands that the Commission should establish standards, specifications and procedures for the use of such transmitters. To implement this requirement, in 2006, the Commission adopted a Commission Vessel Monitoring System (CMM 2006-06, which was amended in 2014 (CMM 2014-02)), with the following features (WCPFC, 2006a):

- the system was activated on 1 January 2008 for vessels in excess of 24 meters in length, and from 1 January 2009 for all other vessels in the area of the Convention Area south of 20°N, and east of 175°E in the area of the Convention Area north of 20°N;
- a stand-alone system with the added capability that it can accept vessel monitoring system data forwarded from the Forum Fisheries Agency Vessel Monitoring System so that the fishing vessels operating on the high seas in the Convention Area will have the option to report data via the Forum Fisheries Agency Vessel Monitoring System; and
- several standards were adopted for a draft minimum Automatic Location Communicator and Mobile Transmitting Units.

Also, the WCPFC adopted a set of standards, specifications and procedures and standard operating procedures for the operation of the Commission Vessel Monitoring System (WCPFC, 2016d). This system operates through an agreement with the Pacific Islands Forum Fisheries Agency, which provides vessel monitoring system services to the WCPFC. Under the Commission Vessel Monitoring System, fishing vessels can either directly report to the WCPFC Vessel Monitoring System or report through the Forum Fisheries Agency Vessel Monitoring System to the WCPFC. Since 2009, the WCPFC has operated a centralized Vessel Monitoring System for all vessels that are authorized to fish for highly migratory fish stocks on the high seas in the Convention Area.

6.5.2.3 The high seas boarding and inspection scheme

High seas boarding and inspection are the most noticeable parts of the fisheries monitoring, control and surveillance regime to monitor and ensure compliance with conservation and management measures on the high seas, as required by the UN Fish Stocks Agreement. In 2006, according to Article 26 of the Convention, the WCPFC adopted a High Seas Boarding Inspection Scheme to establish procedures for boarding and inspection activities on the high seas (WCPFC, 2006b). Fishing vessels flying a flag of members must accept boarding and inspection by a duly authorized inspector in accord with these agreed procedures.

As per these procedures, the authorized inspection vessels shall fly, in clearly visible fashion, the WCPFC inspection flag and pennant as designed and approved by the Commission (see Figure 6.4). The intended use of the flag is for inspection vessels, and the pennant is for boarding launches.

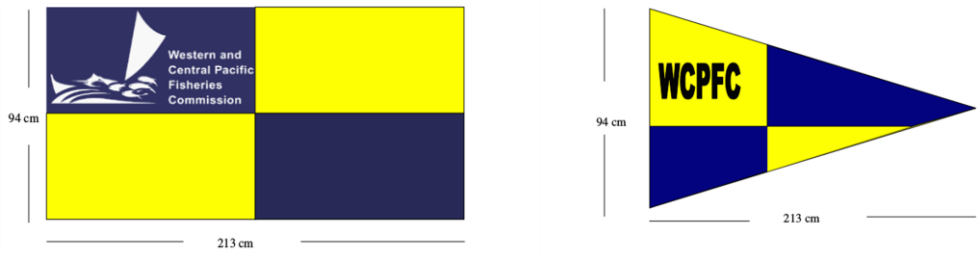

Figure 6. 4 The WCPFC inspection flag and pennant

Source: (WCPFC, 2007b)

Additionally, in carrying out boarding and inspection, the authorized inspection vessel and authorized inspectors should make their best efforts to communicate with the captain and crew of the fishing vessels in a language that they can understand. To facilitate communications between the inspectors and the captain and crew of the vessel inspected, a multi-language questionnaire was developed at the third WCPFC Commission meeting.

For the time being, the members with authorized inspection vessels listed on the WCPFC High Seas Boarding and Inspection Register are Australia, Canada, Cook Islands, Federated States of Micronesia, France, Japan, Kiribati, Korea, New Zealand, Papua New Guinea, Chinese Taipei, Tuvalu, and America. From January 2015 to August 2016, 153 high seas boarding and inspections had taken place under the High Seas Boarding Inspection Scheme (WCPFC, 2016b). The frequency of boarding and inspection has increased recently. Some members, such as France and New Zealand, conducted boarding and inspection onboard the vessels other than their own. Chinese Taipei conducted boarding and inspection mainly for the vessels flying its flag.

6.5.2.4 The regional observer program

The observer programs have long been regarded as a fundamental component of monitoring, control and surveillance mechanisms. The UN Fish Stocks Agreement requires the measures to be taken by a state regarding vessels flying its flag should include the implementation of national observer programs and sub-regional and regional observer programs in which the flag state is a participant (Article 18.3 of the UN Fish Stocks Agreement). Recognizing the above requisite and the importance of observer programs, the

WCPFC Convention stipulates that the Commission should develop a regional observer program to collect verified catch data, other scientific data and additional information related to the fishery from the Convention Area and to monitor the implementation of the conservation and management measures (Article 28.1 of the WCPFC Convention).

The Conservation and Management Measures for the Regional Observer Program (CMM 2006-07) was adopted in 2006 and entered into force on 15 February 2008. A significant outcome of the Regional Observer Program was the requirement of members and cooperating non-members to achieve five percent coverage of the fishing effort in each fishery under the jurisdiction of the Convention by no later than 30 June 2012. Also, the CMM 2008-01 requires 100% observer coverage for purse seine vessels fishing in the area bounded by 20º north and 20º south (WCPFC, 2008). Fishing vessels which fish exclusively for the fresh fish market in the area north of 20º were required to be subject to observer coverage no later than 31 December 2014 (WCPFC, 2012d).

More recently, the observers' safety at sea issue has been highlighted at the Commission meetings. Many members have emphasized cases of assault, obstruction, intimidation, unsafe work conditions, and even murder of observers for undertaking their duties. As mentioned previously, observers play a critical role in helping the Commission to collect catch data and monitor members' implementation to obtain effective management outcomes. Hence, it is important that measures are in place to assure observers' safety while conducting their duties. In 2016, the WCPFC adopted the conservation and management measure for the protection of WCPFC regional observer program observers and the Agreed Minimum Standards and Guidelines of the Regional Observer Program (WCPFC, 2016a, 2016c). The former created an emergency action plan for observers to specifically handle instances of intimidation, harassment, assault, and other safety issues. The latter established the measures to improve the safety and working conditions for observers aboard fishing vessels participating in the WCPFC's Regional Observer Program.

There is a shared agreement among interviewees that the monitoring, control and surveillance mechanisms are well developed in the WCPFC. They indicated that all of these mechanisms are established at an early stage and are in a manner wholly faithful to the requirements of the relevant UN Fish Stocks Agreement Articles. At the moment, the Commission is focusing on getting the Secretariat to spend more time putting all the data

together and doing the data analysis. In doing so, the Commission can make all these data and information go into the mechanisms and make them more useful. The following was a typical comment made by the respondents:

> "*I think they are well developed. From 2004 to 2009, the Commission spent a lot of time building and agreeing what the framework of these measures would be. Since then, they have been fully implemented and well operated.*" (an official of the WCPFC)

6.5.3 The SPRFMO

The SPRFMO Convention stipulates the Commission should create appropriate cooperative procedures for effective monitoring, control and surveillance of fishing and to ensure compliance with the Convention and the conservation and management measures. These measures and procedures include: (a) the establishment and maintenance of a Commission record of vessels authorized to fish in the Convention Area; (b) an inspection program for members, both at sea and in port, including procedures for members to board and inspect each other's vessels in the Convention Area; (c) regulation and supervision of transshipment; (d) non-discriminatory market-related measures to monitor transshipment, landings, and trade; and (e) the establishment of an observer program (Article 27.1 and Article 28 of the SPRFMO Convention).

With regard to monitoring, control and surveillance, they rely on the flag states, which means the flag states are doing the monitoring to ensure a more efficient control of the fishing vessels. The member states must provide related information to the Compliance and Technical Committee so as to review their implementation of cooperative measures for monitoring, control and surveillance. Notwithstanding that some procedures and specific schemes are still being established, the SPRFMO has made significant steps in this regard. The Commission has set up the Commission record of vessels, minimum standards of inspection in port, vessel monitoring system, regulation of transshipment, and boarding and inspection procedures. Details of each measure and procedure are presented below.

6.5.3.1 The Commission record of vessels

In the SPRFMO, the government authorities of members and cooperating non-contracting parties can only authorize fishing vessels flying their flag to fish in the Convention Area where they can exercise their responsibilities effectively. Each member and cooperating non-contracting party should maintain a register of fishing vessels and inform the Executive Secretary of these vessels flying their flag authorized to fish in the Convention Area. A summary of the Record of Vessels is now publicly available at the SPRFMO website, indicating which of the licensed vessels have been actively fishing for each year (SPRFMO, 2016d).

6.5.3.2 The Vessel Monitoring System

The implementation of a Vessel Monitoring System is one of the means through which members and cooperating non-contracting parties could act to fulfill their concurrent obligations to develop rules and procedures for effective monitoring, control and surveillance of fishing activities. There is no vessel authorized for fishing in the SPRFMO Convention Area that is not equipped with vessel monitoring system.

In 2017, the SPRFMO established its own regional vessel monitoring system, i.e., the Commission Vessel Monitoring System. This system covers the area as defined in Article 5 of the SPRFMO Convention and has a buffer zone of 100 nautical miles outside the Convention Area. Besides, at the request of a Cooperating non-Contracting Party, the water under its national jurisdiction may be included within the area covered by the Commission Vessel Monitoring System. This system will be activated on the date agreed in the contract between the SPRFMO and its chosen provider (SPRFMO, 2017c). As of this writing, the Commission is still looking for the provider. The quote below elaborates the current situation in this regard:

> "*... for example, we have regional VMS that will be implemented after the company has been selected. We have a list of companies and are seriously tending to choose the company during the next Commission meeting to develop regional VMS for the SPRFMO.*" (an official of the SPRFMO)

6.5.3.3 The regulation of transshipment and other transfer activities

Transshipment at sea is a common global practice. However, the unregulated and unreported transshipment of catches of fishery resources, in particular on the high seas, contributes to distorted reporting of catches of such fish stocks and supports illegal, unreported and unregulated fishing. Consequentially, the member has to take all necessary measures to ensure that fishing vessels flying its flag land or transship fishery resources caught in the Convention Area comply with standards and procedures adopted by the Commission. In view of this, the SPRFMO adopted the "Conservation and Management Measure for the Regulation of Transshipment and Other Transfer Activities" in 2015 (SPRFMO, 2017d). Under this measure, the member states must notify the Secretariat in the case of jack mackerel or deep seas species transshipment in advance, as well as to send them a report immediately. A majority of interviewees believed that the SPRFMO's transshipment reporting is very close to real-time.

6.5.3.4 The boarding and inspection procedures

The SPRFMO Convention requires the Commission to adopt an at sea inspection program for members. However, it has not yet been possible for the Commission to establish an at sea inspection measure specifically for the SPRFMO Convention Area because of political and capacity issues. As a result, the SPRFMO is now following the regulations of the UN Fish Stocks Agreement (SPRFMO, 2015c). This is highlighted by two of the respondents who stated that:

> "*The SPRFMO has some problems for finalizing inspection at seas. In particular, because of some political problems, we have in the Asian, you know, the problems between the People's Republic of China and Chinese Taipei. So there are a lot of questions that have not been able to be resolved. That's why we adopted the inspection at sea of the Fish Stocks Agreement.*" (an official of the SPRFMO)

> "*In the SPRFMO, it doesn't have its boarding and inspection procedure, and therefore it refers to the Article 21 and 22 of the UNFSA. This is a very hard issue because not all of the members have the ability to have Navy abroad,*

particularly in the high seas. " (a delegation of member states of the SPRFMO)

6.6 Manifestation of accountability

The UN Fish Stocks Agreement requires the flag states to ensure that fishing vessels flying its flag and fishing on the high seas comply with the conservation and management measures established by RFMOs (Article 19.1 of the UN Fish Stocks Agreement). It also places a series of obligations on flag states to enforce measures irrespective of where violations occur and investigate any alleged violation of conservation and management measures immediately and thoroughly. If the fishing vessel is proven to have committed a serious violation of the RFMO's conservation and management measures, the flag state must not allow the fishing vessel to fish on the high seas until the flag state has complied with the sanctions imposed. Furthermore, the flag states must ensure that applicable sanctions are to be adequately severe in order to effectively secure compliance, to discourage violations and to deprive offenders of the benefits accruing from their illegal fishing activities (Article 19.2 of the UN Fish Stocks Agreement). The selected RFMOs have primarily implemented the above regulations to improve their organization's effectiveness. The following sections discuss the applied sanctions mechanisms in the three case studies.

6.6.1 The CCSBT

6.6.1.1 The practice of pay back penalty

Under the CCSBT Convention, there is no provision for penalizing infringements of its conservation and management measures by members and cooperating non-members. Rather, the Convention only requires the members to take appropriate steps to prevent their registered vessels from transferring registration to avoid compliance with the provisions of CCSBT Convention or measures adopted by the Commission (Article 15.3 of the CCSBT Convention). Before the "Corrective Action Policy" was adopted in the CCSBT, if members or cooperating non-members overfish their national catch allocations, they have to pay back those over-catches from their national catch allocation in following years. Some interviewees asserted that this practice could effectively deter members from infringing the management measures.

This quota pay back sanction has been applied to Japan once. In 2006, the Australian Fisheries Management Authority accused Japan of harvesting up to three times its legal quota for southern bluefin tuna for the past 20 years. The Japanese government Fisheries Agency admitted that bluefin tuna was overfished by its fishing vessels. After taking into account the findings of the review panel on the Japanese market anomalies, the CCSBT Commission adopted punitive action by reducing the Japanese national allocations by half, from 6,065 tons to 3,000 tons. The CCSBT Commission also agreed that the allocated catch of Japan should remain fixed at 3,000 tons for at least five years beginning from 2007 (CCSBT, 2016a). Since 2007 until now, Japan has not recovered to its original allocations.

6.6.1.2 The Corrective Action Policy

As mentioned above, in 2011, the CCSBT adopted the "Corrective Action Policy" as part of a suite of policy guidelines to enhance the CCSBT compliance review component. This policy aims to establish fair, transparent and non-discriminatory procedures for penalties and incentives to promote compliance. It is worth noting that its primary response focus is to help members to achieve the capacity to comply with the CCSBT obligations rather than penalize non-compliance effectively. The quote below can help enlighten us on this:

> "*The corrective action is focused on providing a system for compliance rather than penalize non-compliance, which is just putting things under the table so they cannot hide the problem. The priority of the policy is trying to assist members and to help overcome the problems so that they can ensure compliance in the future. This is more assistance approach than a big stick approach.*" (an official of the CCSBT)

According to the "Corrective Action Policy", non-compliance with members' obligations can appear because of the following three major reasons: (a) administrative failings, including not fully implementing effective systems and processes to support obligations; (b) failure by members to take action against non-compliance by fishers, farmers, processors, exporters or importers within their jurisdiction; and (c) deliberate actions by members to avoid meeting obligations (CCSBT, 2016b).

Depending on the particular circumstances and degree of non-compliance, the Compliance Committee can suggest the following corrective actions for consideration by the Extended Commission: (a) compliance assistance/capacity building programs (such as skills training, systems development, analytical assistance or technology purchase); (b) quota pay back; (c) quota reductions in national catch allocations; (d) increased monitoring requirements (such as placement of observers, increased inspection requirements or restrictions on transshipment or landings); (e) public disclosure; and (f) trade or market restrictions consistent with international law (CCSBT, 2016b).

In 2012, the Compliance Committee recommended that where over-catch by a member or cooperating non-member had been established, the "Corrective Actions Policy" should be applied. Australia deducted its slight over-catch for the 2009 - 2011 fishing season from its 2012 allocation in accordance with the "Corrective Actions Policy" (CCSBT, 2012b). In 2014, Australia exceeded its allocation for the 2013-14 fishing season and paid back its excess catch in the following year at a 1:1 ratio (CCSBT, 2014b).

However, as shown in Table 6.7, South Africa, Indonesia, and the Philippines have exceeded their national allocations over a few years. They have not yet paid back the excess catch, and the Extended Commission levied no sanction on these members and cooperating non-member. Some interviewees indicated that under these circumstances, the best way to solve this problem is to apply trade or market restrictions against these non-compliance members. As one interviewee commented:

> "*If some members and cooperating non-members do continue to exceed their allocations in this consensus organization, and they decide to vote not being penalized, I am not sure what we can do about it. Maybe trade action could be imposed. That is, members are not going to accept products from the non-compliance members. But in practice it is not so simple to act against non-compliance members.*" (an official of the CCSBT)

Table 6. 7 Non-compliance with national allocations of the global TAC for southern bluefin tuna

Relevant CCSBT Meeting	Quota Year		Member/ cooperating non-member	Catch taken in excess of allocation (tones)	Correction action taken*
	Start	End			
CCSBT 21	1-Jan-15	31-Dec-15	South Africa	14.7	N
CCSBT 20	1-Jan-14	31-Dec-15	Indonesia	313.3	N
CCSBT 20	1-Jan-14	31-Dec-15	South Africa	10.3	N
CCSBT 20	1-Dec-13	30-Nov-14	Australia	107.2	Y
CCSBT 19	1-Jan-13	31-Dec-14	Indonesia	673.3	N
CCSBT 19	1-Jan-13	31-Dec-14	South Africa	25.6	N
CCSBT 19	1-Jan-13	31-Dec-14	Philippines	0.5	N
CCSBT 18	1-Dec-11	30-Nov-12	Australia	34.6	Y
CCSBT 18	1-Jan-12	31-Dec-12	Indonesia	224.8	N
CCSBT 18	1-Jan-12	31-Dec-12	South Africa	36.6	N
CCSBT 18	1-Jan-12	31-Dec-12	Philippines	0.5	N
* For the purpose of this table, corrective actions have been classified as: "Y" for full corrective action where the Member paid back its excess catch in the following year at a 1:1 ratio; and "N" being no pay back of the excess catch.					

Source: (CCSBT, 2016c)

6.6.1.3 Little attention has been paid to non-member catching

At the regional and international governance level, stopping or preventing fishing vessels that are not authorized by the members from accessing the fish stocks is still difficult. This is the so-called non-member catching problem that is also known as illegal, unreported and unregulated fishing. The CCSBT Convention requires all member states to cooperate in taking appropriate action, consistent with international law and their respective domestic laws, to deter fishing activities for southern bluefin tuna by non-members whose fishing activities could adversely affect the attainment of the objective of the Convention (Article 15.4 of the CCSBT Convention). Hence, the CCSBT has established the "Resolution on Establishing a List of Vessels Presumed to have Carried Out Illegal, Unreported and Unregulated Fishing Activities for Southern Bluefin Tuna (SBT)" to prevent, deter and

eliminate illegal fishing. This Resolution identifies the southern bluefin tuna illegal fishing actives as follows (CCSBT, 2017b):

- harvested southern bluefin tuna and were not authorized by a member or cooperating non-member to fish for southern bluefin tuna, or;
- did not record or report their southern bluefin tuna catches or catch-related data according to the CCSBT reporting requirements, or made false reports, or;
- used prohibited or non-compliant fishing gear in a way that undermines the CCSBT's conservation and management measures, or;
- transshipped with, or participated in joint operations such as re-supplying or re-fueling vessels included in the CCSBT Illegal, Unreported and Unregulated Vessel List, or;
- harvested southern bluefin tuna in the waters under the national jurisdiction of the coastal state or entity without authorization or committed a serious infringement of its laws and regulations directly related to the southern bluefin tuna fishery, without prejudice to the sovereign rights of the coastal state or entity to take measures against such vessels, or;
- engaged in fishing activities for southern bluefin tuna, including transshipping, re-supplying or re-fueling, contrary to any other CCSBT conservation and management measures.

It is evident that the non-member catching will undermine the effectiveness of the RFMO's conservation and management measures. Nonetheless, a few interviewees believed that the CCSBT had not addressed this issue very well so far. They indicated that the CCSBT does not pay enough attention to illegal fishing and it has established the resolution to address the illegal, unreported and unregulated fishing list only quite recently. As one respondent stressed that:

> "*The interesting thing for me is that the CCSBT doesn't really understand with the non-member fishing, namely IUU fishing. In other organizations, they talk about IUU fishing and non-member catch a lot. But in the CCSBT, what they care about is how to distribute quota to members, and they don't talk about non-member fishing. So I think that's a problem.*" (an advisor of the international non-governmental organization)

Under the UN Fish Stocks Agreement, transparency is one of the critical guiding principles for member states participating in RFMOs. However, in the CCSBT, attempts to tackle non-

member or illegal, unreported and unregulated fishing have been hindered because of a lack of transparency and denial of the existence of any problems. Some interviewees suggested that one need only have a look at the RFMOs' illegal, unreported and unregulated vessel lists that are published on their respective websites, and then people can understand why the non-member fishing issue needs careful consideration in the CCCSBT. Table 6.8 presents the current illegal, unreported and unregulated vessel lists of the three cases. There is no illegal, unreported and unregulated vessel list on the CCSBT currently.

Table 6. 8 Illegal, unreported and unregulated vessel lists of the three cases in 2016

RFMO	Number of IUU vessel	Current name of vessel
WCPFC	3	Neptune, Fu Lien No 1, and Yu Fong 168
SPRFMO	3	Tavrida, Dmanzaihao, Mys MarII
CCSBT	0	

Source: From the three RFMOs' websites respectively.

6.6.2 The WCPFC

6.6.2.1 The applicable sanctions for non-compliance members

With respect to the compliance and enforcement, according to Article 25 of the WCPFC Convention, each member of the WCPFC is obligated to enforce the provisions of the Convention and any management measures that are adopted by the WCPFC. When non-compliance is suspected, all relevant investigations and judicial proceedings should be carried out swiftly. At the request of any other member of the WCPFC and when provided with the relevant information, a member must investigate fully any alleged violation by fishing vessels flying its flag of the provisions of the WCPFC Convention or any conservation and management measures adopted by the Commission. If there is sufficient evidence of an alleged violation, members should refer the case to member's authorities to institute proceedings without delay by its laws and detain the vessel concerned.

Moreover, each member should establish procedures in its national law to ensure that a fishing vessel flying its flag committing a serious violation of the provisions of the WCPFC will cease fishing activities and not engage in such activities in the Convention Area until there has been full compliance with all sanctions imposed by the flag state. If the vessel concerned has conducted unauthorized fishing within areas under the national jurisdiction of any coastal state member to the WCPFC Convention, the flag state should, in accordance with its national laws, ensure that the vessel complies promptly with any sanctions imposed by the coastal state according to its national laws and regulations or impose appropriate sanctions itself.

The majority of respondents believed that the WCPFC has comprehensive regulations and procedures concerning the applicable sanctions for non-compliance members and cooperating non-members. Nonetheless, there is room for the WCPFC to improve in their follow up on infringements, including the review of the penalties imposed by flag state members. The deterrent penalties and sanctions depend on the members whose enforcement actions vary in their national laws. As a consequence, it is essential to watch over whether the members are able or willing to impose sanctions that will effectively halt the illegal fishing activities. As one interviewee remarked:

> "*It is a very tricky problem as the WCPFC relies on the member states to take actions. Those members don't really have a lot of actions. Like I said, some members will take strong actions, but some members have got the reputations not taking action very much.*" (a delegation of member states of the WCPFC)

6.6.2.2 The blacklist of members and non-member vessels

Given that illegal, unreported and unregulated fishing activities in the WCPFC Convention area undermine the effectiveness of the conservation measures adopted by the Commission, the WCPFC adopted "Conservation and Management Measure to Establish a List of Vessels Presumed to Have Carried out Illegal, Unreported and Unregulated Fishing in the Western and Central Pacific Ocean" (CMM 2006-09) at its third Commission meeting in 2006. This measure created a process ranging from initial proposals to list vessels in a draft illegal, unreported and unregulated vessel list.

In 2010, the WCPFC agreed to establish a clear procedure relating to other vessels under the control of the owner of any vessel on the WCPFC IUU Vessel List and therefore revised this measure and adopted the "Conservation and Management Measure to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the WCPO" (CMM 2010-06) (WCPFC, 2012d). Under this conservation measure, the illegal, unreported and unregulated fishing activities are identified as follows (WCPFC, 2010a):

- harvest species covered by the WCPFC Convention in the Convention Area and are neither on the WCPFC record of authorized vessels nor a fishing vessel fishing exclusively in waters under the jurisdiction of its flag state; or
- conduct fishing activities in waters under the jurisdiction of a coastal state, without permission of that state, or in contravention of its law and regulations; or
- do not record or report their catches made in the Convention Area consistent with WCPFC measures, or make false reports; or
- take and land undersized fish in a way that undermines WCPFC conservation measures; or
- fish in a closed area or during a closed season in a way that undermines WCPFC conservation measures; or
- use prohibited fishing gear in a way that undermines WCPFC conservation measures; or
- transship with, participate in joint fishing operations with, support or re-supply vessels included in the WCPFC IUU Vessel List; or
- are without nationality and harvest species covered by the WCPFC Convention in the Convention Area; or
- engage in any other fishing activities that undermine the provisions of the WCPF Convention or any other WCPFC conservation measures; or
- are under the control of the owner of any vessel on the WCPFC IUU Vessel List.

Every year, the WCPFC members can nominate fishing vessels found illegally fishing to the WCPFC IUU Vessel List, namely the blacklist. The Commission will then identify those vessels which have engaged in fishing activities that undermine the effectiveness of the WCPFC Convention and measures, as well as establish and amend in subsequent years a list of such vessels. The quote below illustrates the process in practice:

"*If we inspect the vessels and find any illegal activities, what we do is to package it up and give it to the member (the flag state). They have the obligation under the Commission to take actions to that vessel. They can fine them, suspend the license. If a member, for instance, New Zealand argues that you haven't taken strong enough actions against the vessel, we can then propose the IUU vessel listing. Every RFMO has IUU listing. If the measures taken by the flag state or member state is not strong enough and the next step is put them on the IUU list.*" (a delegation of member states of the WCPFC)

Since 2007, the Technical and Compliance Committee has established a Provisional IUU Vessel List, and the Commission has agreed on the status of each vessel listed on the Provisional List and established the WCPFC IUU Vessel List. It is noteworthy that the decision-making in the WCPFC is made by consensus in general. As a result, there are not many members that have agreed to put their fishing vessels on the blacklist. Table 6.9 presents the number of the Provisional IUU Vessel List established by the Technical and Compliance Committee and the WCPFC IUU Vessel List agreed by the Commission from 2007 to 2017.

Table 6. 9 Number of vessels in the Provisional and the WCPFC IUU Vessel Lists

year	The Provisional IUU Vessel List	The WCPFC IUU Vessel List
2007	4	3
2008	13	3
2009	15	5
2010	4	5
2011	4	4
2012	3	3
2013	3	3
2014	3	3
2015	6	3
2016	5	3
2017	4	3

Source: (WCPFC, 2011c, 2012b, 2012d, 2012e, 2013d, 2013e, 2014c, 2014d, 2015c, 2015d, 2016e, 2016f, 2017f, 2017g)

6.6.2.3 The compliance monitoring scheme

The second joint meeting of the tuna RFMOs recommended that all RFMOs should introduce a robust compliance review mechanism by which the compliance record of each member is examined in depth on an annual basis. In response, the WCPFC adopted the "Conservation and Management Measure for Compliance Monitoring Scheme" (CMM 2010-03 replaced by CMM 2011-06) to ensure that members, cooperating non-members, and participating territories fully and effectively implement the provisions of the Convention and the conservation and management measures adopted by the Commission.

The Compliance Monitoring Scheme is designed to (a) assess members, cooperating non-members, and participating territories' compliance with their obligations; (b) identify areas in which technical assistance or capacity building may be needed to assist members, cooperating non-members, and participating territories to attain compliance; (c) identify aspects of conservation and management measures which may require refinement or amendment for effective implementation; (d) respond to non-compliance through remedial options that include a range of possible responses that take account of the reason for and the degree of non-compliance, and include cooperative capacity-building initiatives and, in cases of serious non-compliance, such penalties and other actions as may be necessary and appropriate to promote compliance with conservation and management measures; and (e) monitor and resolve outstanding instances of non-compliance (WCPFC, 2012a). In short, the Compliance Monitoring Scheme improves an understanding among the member countries and identifies implementation gaps to assist them to take steps to respond to and rectify non-compliance actively.

6.6.2.4 Measures taken by the members

The WCPFC Convention authorizes the Commission to develop procedures to allow for non-discriminatory trade measures to be taken against any state or entity whose fishing vessels undermine the effectiveness of the measures adopted by the Commission (Article 25.12 of the WCPFC Convention). The Commission *per se* has not established any trade or market-related restrictions to enforce compliance. In practice, however, there are other mechanisms and measures that the member states have taken to deter illegal fishing activities. For instance, the EU has the IUU task force against IUU fishing, including the

yellow card and the red card (Leroy, Galletti, & Chaboud, 2016). The former means warning, using trade barrier and trade block to force the countries to improve their fishery management systems.

Under the IUU task force, six months will be given to the countries in question to enhance their fishery management systems in general. If a country cannot improve their systems within six months, the EU will then give it a red card, which means the sanctions will be imposed by the EU, such as the prohibition of fish products importation into the EU market. Both Taiwan and South Korea had received the yellow card from the EU. In order to access the EU market again, the Taiwanese and Korean fishery agencies tried very hard to strengthen their fishery management systems. Because of the EU's sanctions, their fishing vessels are performing better now. The quote below can help enlighten us on this:

> "*South Korea had very bad records for their vessels several years ago; the vessels go fishing illegally. So the EU gave South Korea yellow card, like a suspension and a warning, saying that Korea, if you don't put yourself up, we will block all your seafood from importing into the EU. So they take the Union market records against Korea. This is not in the RFMOs, but this works. This gives the flag state a warning that if you don't comply the rules in the RFMO, you cannot export your seafood to our countries until you can show us that your vessels have started to compliance. Korea has done an amazing job for the following next years.*" (a delegation of member states of the WCPFC)

6.6.3 The SPRFMO

6.6.3.1 The blacklist of members and non-member vessels

At the present time, most of the RFMOs have used the illegal, unreported and unregulated (IUU) fishing vessel list efficiently to govern the illegal fishing activities worldwide, and the SPRFMO, a very young RFMO, is no exception. Article 27 of the SPRFMO Convention stipulates that members should address IUU fishing activities and establish appropriate cooperative procedures for effective monitoring, control and surveillance of fishing and ensure compliance with the Convention. This includes the establishment of an IUU vessel list so that owners and operators of vessels engaging in such IUU activities are deprived of

the benefits accruing from them.

With this requirement in mind, the Commission adopted the "Conservation and Management Measure Establishing a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing activities in the SPRFMO Convention Area" to deter and eliminate IUU fishing. According to this measure, fishing vessels are presumed to have carried out IUU fishing activities when they (SPRFMO, 2017b):

- engage in fishing for fishery resources and are not registered on the SPRFMO list of vessels authorized to fish in the Convention Area;
- engage in fishing for fishery resources whose flag state has exhausted or has no quotas, catch limit or effort allocation, including, if applicable, those received from another member or cooperating non-contracting party under relevant SPRFMO conservation and management measures;
- do not record and/or report their catches or catch related data made in the Convention Area, or make false reports;
- take on board, transship or land undersized fish in a way that undermines SPRFMO conservation and management measures;
- engage in fishing during closed fishing periods or in closed areas, without or after exhaustion of a quota or beyond a closed depth, in contravention of SPRFMO conservation and management measures;
- use prohibited or non-compliant fishing gear in a way that undermines SPRFMO conservation and management measures;
- transship with, or participate in joint operations such as re-supply or re-fueling vessels included in the IUU vessels list;
- are without nationality and engage in fishing for fisheries resources in the Convention Area; and
- engage in fishing activities contrary to any other SPRFMO conservation and management measures.

If a fishing vessel is found to have conducted one or more of the above activities, the Secretariat will provide the evidence and information to the flag state. The flag state has a chance to provide evidence and to explain before the fishing vessel in question is put on the draft IUU vessel list. The evidence must show that the listed vessels have neither fished

in contravention to SPRFMO conservation and management measures nor had the possibility of fishing for fishery resources in the Convention Area.

Once the vessel is listed on the current IUU list by the Commission, it cannot undertake any fishing activities in the SPRFMO's management area. More specifically, the vessel will not be authorized to fish, transship or land species caught in the SPRFMO Convention Area. Also, its entry into SPRFMO members' ports will be prohibited. The flag state has to report and explain what kind of effective action has been taken in response to the IUU fishing activities in question so as to be removed from the IUU list (SPRFMO, 2017b).

The SPRFMO IUU vessel list is shared with the other RFMO and vice versa. Currently, there are three fishing vessels on the IUU vessel list (see Table 6.10). Several interviewees indicated that the IUU list is an effective means to halt the IUU fishing in SPRFMO management area. Naming the Damanzaiho (previously named Lafayette) on the IUU vessel list proves this point. The SPRFMO accused the Damanzaihao's operators of "prolonged presence in the SPRFMO Area without authorization and providing support to five authorized Peruvian trawlers according to evidence provided by Chile and Peru." This vessel has been put on the SPRFMO IUU list over three years (from 2015 until now) (SPRFMO, 2015e, 2016a, 2017f). The Damanzaihao is a huge threat for oceans not only due to its enormous storage capacity but also because it is continuously involved in IUU fishing activities. One interviewee emphasized that banning its operations in the SPRFMO Convention Area is a tremendous success for sustainable fishery management. There is no doubt that the SPRFMO's blacklist has contributed to improved environmental policies and effectiveness at a regional level.

Table 6. 10 The final IUU list in the SPRFMO in 2017

Name of vessel	Tavrida (Aurora) (Pacific Conqueror)	Damanzaihao (Lafayette)	Mys Marii
Flag of vessel	Russian Federation (Peru)	Peru (Russian Federation)	Russian Federation
Owner's name	Albatros Company Limited	Sustainable Fishing resources	LLC Transit DV
Vessel Operator			LLC Transit DV

Date the vessel was first included in the IUU List	6 February 2015	6 February 2015	29 January 2016
Summary of IUU activities			
Tavrida	Fishing in the SPRFMO Convention Area without authorization (air photographs from New Zealand) and prolonged unauthorized presence in the SPRFMO Area (evidence from Chile).		
Damanzaihao	Prolonged presence in the SPRFMO Area without authorization and providing support to five authorized Peruvian trawlers according to evidence provided by Chile and Peru.		
Mys Marii	In response to information received through AIS data, the New Zealand Government deployed a surveillance aircraft on 21/2/2015 to the approximate location of the MYS MARII in the SPRFMO Convention Area to the east of the New Zealand exclusive economic zone. Photographic evidence was gathered which showed that the MYS MARII was fishing at the time. The MYS MARII had not been authorized to fish in the SPRFMO Convention Area by its flag state.		

Source: (SPRFMO, 2017f)

6.6.3.2 The compliance and monitoring scheme

The SPRFMO Convention requires each member to implement any conservation and management measures adopted by the Commission (Article 24 of the SPRFMO Convention). Additionally, it stipulates that members should apply effective compliance with conservation and management measures by implementing appropriate sanctions to deprive offenders of the benefits accruing from their illegal activities (Article 3.1 and Article 25.3 of the SPRFMO Convention). In an effort to ensure that members and cooperating non-contracting parties implement and comply with obligations arising under the Convention and conservation and management measures adopted by the Commission, the SPRFMO established a Compliance and Monitoring Scheme. This scheme is designed to (SPRFMO, 2016c):

- assess compliance by members and cooperating non-contracting parties with their obligations under the Convention and conservation and management measures;
- identify areas in which technical assistance or capacity building may be needed to assist members and cooperating non-contracting parties to achieve compliance;
- identify aspects of conservation and management measures which may require

improvement or amendment to facilitate or advance their implementation. These findings and subsequent actions should not necessarily replace any review procedure established by Article 30 of the Convention.

- take action against non-compliance through preventive and remedial options that should include a range of possible responses that take into account the reasons for and degree of non-compliance.

Under the Compliance and Monitoring Scheme, the Commission should take a graduated response to non-compliance, depending on the type, severity, degree and cause of the non-compliance in question. Also, the Commission should develop a process to complement this scheme that identifies a range of specific responses to non-compliance events that may be applied by the Commission through the implementation of this scheme. This includes penalties and any other actions as may be necessary to promote members and cooperating non-contracting parties' compliance. One respondent specifically pointed out that the Compliance and Monitoring Scheme is an excellent instrument in the SPRFMO. It goes through the requirements among members to fulfill all the conservation and management measures. Additionally, this is a public record, and therefore there is much pressure on the members, which in a way enhances the members' implementation and ensures compliance with their commitments.

6.7 Nestled enterprises (Compatibility)

The obligation to ensure compatibility between conservation and management measures established for the high seas and those adopted for areas under national jurisdiction arises under the UN Law of the Sea Convention and the UN Fish Stocks Agreement. Nevertheless, the provisions (Article 63.2 and Article 64) on compatibility in the UN Law of the Sea Convention are not specific and comprehensive enough to achieve its aim (Örebech, Sigurjonsson, & McDorman, 1998). In view of this, the provisions in the UN Fish Stocks Agreement stipulate more specific and detailed guidance to address the achievement of compatible conservation and management measures.

Article 7.2 of the UN Fish Stocks Agreement stipulates that coastal states and states fishing on the high seas have a duty to cooperate in order to achieve compatible measures with regard to straddling fish stocks and highly migratory fish stocks. Although the UN Fish

Stocks Agreement does not define the term "compatible," it provides the guidance for establishing compatible measures in two ways. It defines the objective to be met by adopting compatible conservation and management measures and indicates a number of factors to be considered in determining such measures (Oude Elferink, 1999, 2001). The following sections discuss the compatibility issues among three selected RFMOs.

6.7.1 The CCSBT

In the CCSBT, neither the Convention nor the conservation and management measures adopted by the Commission provide for the requirement of compatibility. There is the view that this may not be necessary since the capacity of the members is somewhat similar in general, and therefore the consideration of compatible measures among member states is not needed. As one interviewee commented:

> "*Most of the members in the CCSBT are distant water fishing states, such as Taiwan, Japan, and South Korea. The capacity of the members is quite similar, so there is no need to consider the various capacity between members. Having said that, the CCSBT will take the compatibility into account if necessary*." (a delegation of member states of the CCSBT)

Given that the conservation and management measures are binding to all members, each member has to raise its concerns during the discussions at the meeting. The majority of interviewees argued that when it is time to establish and adopt the conservation and management measures, all of the members' recommendations are given due consideration. For example, in New Zealand and Australia, the fishing efforts for recreational fisheries must count into their allocations, but there is no necessity to require their recreational fisheries to comply with the conservation and management measures adopted by the Commission. One interviewee specifically pointed out that if a member is unable to implement the measure in question, it must explain its situation at the meeting. Otherwise, once the Commission adopts the measure, the member is highly likely to face any non-compliance issues.

Although the CCSBT has not adopted any compatible measures, it has different requirements for developing members to follow in practice. The data collection

requirements for Indonesia is a case in point. In the CCSBT, the Scientific Committee produces a data exchange requirement for members to comply. It specifies what kind of data the members and cooperating non-members must provide and when they should submit. In Indonesia's case, it does not need to provide as much data as other members. One interviewee shared the case:

> "*There is a basic requirement that every member has to comply. In the meantime, there is an additional requirement for some members to follow, and others don't. In Indonesia's case, the Scientific Committee only asks it to abide by the least requirement… There is no point to require a member to submit the data that it cannot provide.*" (an official of the CCSBT)

Apart from the different requirements for the developing members, the developed members also try to help and cooperate with developing members. For instance, Australia has been working with Indonesia for over 20 years on monitoring tuna. It has been a robust collaboration with each other. This is because the members recognize that including Indonesia into the CCSBT as a participant member is vital for the sustainability of southern bluefin tuna. Hence, tremendous assistance has been given to Indonesia.

6.7.2 The WCPFC

Article 8 of the WCPFC Convention acknowledges the need and importance for compatibility between measures on the high seas and in areas under national jurisdiction. Article 8.1, which mirrors the UN Fish Stocks Agreement regulations, provides some factors for the determination of compatible conservation and management measures. These include: (a) the biological unity of the stocks, fisheries, and geographic particularities of the region concerned; (b) the need for measures established for the Convention Area do not undermine the effectiveness of measures adopted and applied according to Article 61 of the UN Law of the Sea Convention; (c) previously agreed measures adopted for the highs seas; (d) previously agreed measures adopted by a sub-regional organization or an RFMO; (e) the respective dependence of the coastal states and high seas fishing states; and (f) ensuring that measures do not have any harmful impact on the living marine resources.

It is noteworthy that the compatibility requirement of the UN Fish Stocks Agreement is applied differently within the WCPFC. Except for the factors that the Commission should consider in determining the compatible measures, the WCPFC Convention also requires coastal states to ensure that measures adopted for a national jurisdiction do not undermine the effectiveness of measures adopted by the Commission. Additionally, where there are areas of high seas in the Convention Area entirely surrounded by the members' exclusive economic zones, the Commission should pay particular attention to ensuring compatibility between high seas conservation and management measures and measures established by the surrounding coastal states.

To date, the WCPFC has established some compatible conservation and management measures in the Convention Area. These compatible measures for the high seas and exclusive economic zones mainly focus on tropical tunas to maintain levels capable of producing their maximum sustainable yield. Those tropical tunas include bigeye tuna, yellowfin tuna and skipjack tuna (WCPFC, 2008, 2014a).

Several interviewees indicated that although the WCPFC plays a lead role in the operationalization of the principle of compatibility compared to other RFMOs, it still faces the difficulties of promoting compatible measures in some fish stocks. This is because the Pacific Island developing countries and distant water fishing nations often cannot reach an agreement on these management measures. The Pacific Island developing states emphasized that the fish stocks could not be adequately managed within areas under national waters alone. The Commission has to ensure that flag states whose vessels fish on the high seas comply with the same management measures. In other words, the management measures cannot inappropriately favor high seas fishing states. For example, one respondent remarked that:

> "*One of the big issues that came up is that the small island developing states are worrying about the burden to achieve more conservation and management measures and sustainability than other members. So the Pacific island states are pushing very hard to make sure the vessels fishing on the high seas are subject to the same sort of measures.* " (a delegation of member states of the WCPFC)

Some interviewees also indicated that different capacity among the Pacific Island developing states hinders the adoption of compatible measures. For instance, in Tonga, most fishing vessels are engaged in small-scale commercial fishery. Those vessels may not have the capacity to implement all kind of management measures. In which case, it is hard for the Commission to adopt a new management measure as the member is not willing to support and agree with that measure.

In addition, the divergent interests and different interpretations of compatibility provisions among members prevent compatible measures from being established. For example, two interviewees commented:

> "*One of the challenges to adopt the compatible measure is because the members have different interests. Some members are willing to support more restrictive management measures so that they can make sure the fishery resources are sustainable. However, some members may oppose those measures to protect their interests in fisheries.*" (a delegation of member states of the WCPFC)

> "*There is always a tension between the coastal states and distant water fishing nations when it comes to the interpretation of compatibility… The coastal states always claim that the management measure cannot diminish their sovereign rights. On the other hand, the distant water fishing nations argue that they need to adopt measures to manage the fish stocks throughout their range.*" (a delegation of member states of the WCPFC)

Since the adoption of the CMM-2008-01, there has been little change in the implementation of compatibility due to the different positions among members. In 2014, the Commission adopted a harvest strategy approach (CMM 2014-06) to manage key fisheries and stocks within the Western and Central Pacific Ocean. This harvest strategy is a framework that specifies the pre-determined management actions to achieve defined and agreed biological, ecological, economic and social objectives in the fisheries. The harvest strategy approach identifies six essential elements to be developed for managing key fisheries: (a) defined operational objectives (including timeframes); (b) target and limit reference points; (c) acceptable levels of risk of not breaching limit reference points; (d) a monitoring strategy

using best available information to assess performance against reference points; (e) harvest control rules; and (f) management strategy evaluation (WCPFC, 2014b). Some interviewees claimed that in a way, this approach provides an opportunity for member states to promote the principle of compatibility in the WCPFC.

6.7.3 The SPRFMO

The main fisheries managed by the SPRFMO are straddling fishery resources. Therefore, cooperation and coordination among members should be promoted to ensure that conservation and management measures adopted by the Commission and those applied to the same fishery resources in areas under national jurisdiction are compatible (Article 3.1 of the SPRFMO Convention). Given this, Article 4 of the SPRFMO Convention articulates the requirement of Compatibility, which is consistent with Article 7 of the UN Fish Stocks Agreement.

In developing compatible measures for straddling fishery resources, Article 4.2 requires the member states to take into consideration the following three factors: (a) biological unity of the fishery resources, the fishing activities and the geographical particularities of the region concerned; (b) the respective dependence of the coastal states and the states fishing on the high seas; and (c) ensuring that measures do not result in harmful impact on the living marine resources.

Moreover, the Commission's initial conservation and management measures should consider existing measures established by coastal state members under their national jurisdiction and by flag state members whose vessels fish in the adjacent high seas. Also, the SPRFMO should ensure that the measures adopted by the Commission do not undermine the effectiveness of such existing management measures, which implies that the commission cannot adopt measures that are less effective than those already in position (Mossop, 2009).

It is worth noting that the principle of compatibility can be applied to establish a total allowable catch in the SPRFMO. According to Article 20.4 of the SPRFMO Convention, where a fishery resource straddles the Convention Area and an area under the national jurisdiction of the coastal state member or members, with the express consent of those

members, the Commission can establish a total allowable catch that applies throughout the range of the fishery resource. Under this circumstance, the Commission can manage the entire fishery resources, which in a sense solves the compatibility problem (Mossop, 2009).

All of the respondents believed that the SPRFMO had recognized the need to ensure compatibility of conservation and management measures adopted for straddling fish stocks. The following was a typical comment made by the interviewees:

> "*Jack mackerel, for example, some are on the high seas, while others straddle the high seas and member states' EEZ, such as Chilean stock. So it is important to consider Chilean management measures when the Commission establishes its management measures… I believe that the SPRFMO clearly understands the importance to cooperate with coastal state members and not to undermine their national conservation measures with comparable measures.*" (a delegation of member states of the SPRFMO)

In order to rebuild the stock of jack mackerel (*Trachurus murphyi*) and ensure its long-term sustainable management objective, the SPRFMO has adopted the "Conservation and Management Measure for *Trachurus murphyi*" (SPRFMO, 2017e). Every year, the Commission decides the total allowable catch for the area of application of the jack mackerel measure and its distribution among members and Cooperating non-Contracting parties.

As mentioned earlier, the coastal state members can consent that the Commission sets a total allowable catch throughout the range of the fishery resource. From 2014 to 2017, Chile has given its express consent to apply the Commission established total allowable catch for jack mackerel in areas under its national jurisdiction. So far, Chile is the only coastal state that has consented to a shared total allowable catch with the SPRFMO. Several interviewees pointed out that the stock of jack mackerel continues a steady recovery and will reach levels supporting a maximum sustainable yield soon thanks to the recovery plan put in place.

6.8 Conflict resolution mechanisms

The UN Law of the Sea Convention requires all parties to settle disputes by peaceful means of their own choice (Article 279 and 280). The dispute settlement regime of the UN Fish Stocks Agreement inextricably links to the dispute settlement provisions of the UN Law of the Sea Convention, which provides a binding dispute settlement mechanism for states to resolve conflict in a peaceful manner (McDorman, 1998). This regime, along with the conservation and management principles and the enforcement and compliance provisions, had been seen as the three most important pillars of the UN Fish Stocks Agreement. This is because for disputing parties, the regime provides an option for resolving and managing disputes. Also, the binding nature of the dispute settlement regime could accelerate the negotiation solutions or change the negotiating dynamics of states concerned (Örebech et al., 1998, p. 133). The following section discusses the availability of the dispute settlement mechanism in the three case studies.

6.8.1 The CCSBT

Article 16 of the CCSBT Convention stipulates the dispute settlement procedures for members to deal with disputes. It requires members to resolve their differences and conflicts by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice. If members are not able to resolve the dispute through means as mentioned above, the dispute should be referred for settlement to the International Court of Justice or to arbitration with the consent in each case of all members to the dispute.

In the CCSBT, the disputes usually arise when members discuss the allocation of the total allowable catch. Thus far, the dispute settlement procedure has only been applied once regarding over catch limits between Australia and New Zealand on the one hand and Japan on the other (Bialek, 2000). In 1999, Australia and New Zealand requested the dispute settlement procedure in accordance with Article 16.1 of the CCSBT Convention after a series of unsuccessful negotiations with Japan. On 4 August 2000, the arbitral tribunal decided four judges to one that it did not have jurisdiction to rule on the merits of the dispute and revoked an earlier order for provisional measures made by the International Tribunal for the Law of the Sea. The arbitral tribunal then encouraged the members to solve the issue

within the framework of the CCSBT (Bialek, 2000; Mansfield, 2004).

After the decision of the arbitral tribunal, the members agreed to develop the Management Procedure to set the global total allowable catch for the southern bluefin tuna. Following ten years of negotiations, the Management Procedure was finally adopted by the Extended Commission in 2011. A few interviewees indicated that the southern bluefin tuna dispute case proved that the dispute settlement mechanism of the CCSBT is insufficient. As one respondent commented:

> "*The regulations of Article 16 are only in principle. Rather, it doesn't have detailed rules. Therefore, I don't think the provisions of dispute settlement are robust enough for members. Let's have a look at the dispute case of Australia, New Zealand, and Japan. If the dispute settlement mechanisms are well developed, the above case didn't have to go through the process of the International Tribunal for the Law of the Sea.* " (a delegation of member states of the CCSBT)

Many interviewees expressed that in the CCSBT many disputes and conflicts that arose between members were resolved through bilateral or diplomatic negotiation as well as within the context of annual Commission meeting discussions in practice. The latter implies the important role of Chairman in the RFMOs. The following remarks can help enlighten us on this regard:

> "*Generally, the conflicts usually occur before the adoption of the proposal. In which case, members will proceed with bilateral negotiation to reduce their disagreement. If they cannot reach an agreement, the proposed member might need to resubmit its revised proposal, where necessary.*" (a delegation of member states of the CCSBT)

> "*If there is a dispute, sometimes the Chair can take a mediation around. If he sees something occurred in the meeting, he can follow that up and try to get some resolutions between the members.*" (an official of the CCSBT)

To date, there has been no further progress in amending the rules of dispute settlement in the CCSBT. Some interviewees pointed out that the CCSBT has already created a mechanism in place for setting global total allowable catch. Accordingly, the disputes are rarely seen, and the members are not thinking about refining the provisions of dispute settlement of the Convention. Nevertheless, the independent experts of the performance reviews suggested that given the growth in the membership and the poor status of the southern bluefin tuna stock, establishing an effective dispute settlement mechanism is crucial for the CCSBT (Garcia & Koehler, 2014, p. 76).

6.8.2 The WCPFC

The procedures of dispute settlement in the WCPFC Convention are identical to those of the UN Fish Stocks Agreement. Part IX (peaceful settlement of disputes) of the WCPFC Convention stipulates that the provisions specified in Part VIII of the UN Fish Stocks Agreement apply, mutatis mutandis, to any dispute between members of the Commission, whether or not they are also parties to the UN Fish Stocks Agreement. In view of this, the WCPFC members must settle their disputes by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice according to Article 27 of the UN Fish Stocks Agreement.

So far, no formal dispute settlement procedure has been triggered to resolve conflicts between members in the WCPFC. Similar to the CCSBT, WCPFC members usually solve their disputes by diplomatic negotiations or bringing the issues to the Commission meeting to discuss and communicate. Sometimes, the Executive Director from the Secretariat also gets involved to help address conflicts between members. As one interviewee said:

> "*In practice, members will try to solve their conflicts through the bilateral way. Sometimes it comes to the floor of the Commission Meeting. People like the Executive Director in that capacity is often put forward as an independent party to discuss and resolve conflicts between countries*." (an official of the WCPFC)

6.8.3 The SPRFMO

In the SPRFMO, the dispute settlement procedures first require the members to cooperate to prevent disputes and use their best endeavors to resolve any disputes by amicable means, which may include referring the dispute to an *ad hoc* expert panel if a dispute is of a technical nature (Article 34.1 of the SPRFMO Convention). If a dispute cannot be resolved through the means stated above, the provisions relating to the settlement of disputes set out in Part VIII of the UN Fish Stocks Agreement should apply, mutatis mutandis, to any dispute between the members (Article 34.2 of the SPRFMO Convention).

Like other RFMOs, the members of the SPRFMO also try to settle their differences and conflicts through a bilateral negotiation or discussion and communication at the Commission meeting so that they do not need to use the dispute settlement procedures. In practice, the disputes often happen when members have differences with regard to the allocations. It must be emphasized that unlike the CCSBT and the WCPFC, which are competent to adopt allocation decisions only by consensus, the SPRFMO can make allocation decisions by a majority vote if the consensus is not reached. Under this circumstance, if a member disagrees with the allocation decisions, it can initiate the objection procedure to solve its dispute. As mentioned earlier, the objection procedure has been successfully used by Russia, which has subsequently been allocated a quota of the allocation of jack mackerel. To date, no formal dispute settlement procedure has been needed to resolve disputes in the SPRFMO.

6.9 Policy learning and adaption

The concept of establishing effective performance review mechanisms for RFMOs to further modernize themselves has been endorsed in many international fora, such as the Committee on Fisheries, the UN General Assembly Resolution on Sustainable Fisheries, and the Kobe meeting of joint tuna RFMOs (Lugten, 2010; Szigeti & Lugten, 2015). Through regular performance reviews, the RFMOs can assess the adoption and implementation of management measures and even examine the effectiveness of the provisions of the Convention. As such, the review mechanism affords a means for RFMOs to enhance their policy learning abilities, which reflects a deliberate attempt to adjust policy in terms of past experience, new information and policy-relevant knowledge (Hall, 1993).

The following section discusses the performance review mechanisms in the three RFMOs.

6.9.1 The CCSBT

The CCSBT used to confront serious overfishing and under-reporting of southern bluefin tuna catches, which undermines the health of the fish stock. Also, it had experienced severe crises regarding the allocation of the total allowable catch between members. In 1997, 2002, and 2005, the members were unable to reach agreement on a total allowable catch and national allocations (Szigeti & Lugten, 2015). At the thirteenth meeting of the CCSBT in 2006, the Commission decided to conduct a performance review using a recommended common set of criteria and a methodology agreed at the Kobe I meeting.

In 2008, the CCSBT decided to split the review process into two: an internal panel comprising the representatives of its members and the executive secretary to conduct a Self-Assessment, and then an external independent expert would review the Self-Assessment and other relevant information. The Self-Assessment indicated that the CCSBT has struggled to fulfill its obligations to conserve and manage southern bluefin tuna sustainably (CCSBT, 2008b). On the other hand, the independent expert's report revealed that the CCSBT was facing "very significant challenges and meeting with only limited success" (CCSBT, 2008a, pp. 3-4). In response, the CCSBT has changed its functioning and institutional structure. An overarching document, their strategic plan, was adopted by the Commission in 2011 to attain effectively their conservation and management objectives by setting high priority tasks to implement the review reports' recommendations. Moreover, at the same year, the Commission agreed that the management procedure, known as the Bali Procedure, would be used to guide the global total allowable catch for southern bluefin tuna to ensure that the southern bluefin tuna spawning stock biomass achieves the interim rebuilding target of 20% of the original spawning stock biomass.

Some interviewees emphasized that the decision on whether or not to implement recommendations arising from performance reviews rests with the Commission. In the CCSBT, members had made a significant effort to carry out those recommendations. This fact has also been reflected in the CCSBT's second performance review in 2014. The independent review suggested that even though some further endeavors are needed, the progressive improvement of the CCSBT has made this organization into a modern RFMO

(Garcia & Koehler, 2014).

6.9.2 The WCPFC

The performance review of the WCPFC was conducted in 2011 as a response to the recommendations of the first joint tuna RFMOs meeting. The review found that the WCPFC Convention was consistent with the UN Law of the Sea Convention and the UN Fish Stocks Agreement. Although the Convention is on the cutting edge of international fisheries governance, several shortcomings concerning the management measures have been revealed by the independent performance reviews (WCPFC, 2012d).

After receiving the performance review, the executive director categorized and prioritized the recommendations by using a matrix and according to each committee's areas of competence (WCPFC, 2013c). In so doing, the members can discuss promptly those aspects they should try to strengthen and how to address each issue. According to the executive director, the top three priority items that the Commission must tackle are transparency, ensuring that conservation and management measures are legally sound, and transshipment (WCPFC, 2013e, p. 22).

As discussed previously, the WCPFC adopted the Compliance Monitoring Scheme to assess members' compliance with their obligations and to identify implementation gaps to help enhance members' compliance. Since 2011 the Commission has been implementing this scheme through a series of management measures. In 2014, the Commission agreed that the Compliance Monitoring Scheme should be reviewed and audited at some point. The review tasks include an analysis of what impacts and what difference, if any, has the Compliance Monitoring Scheme made regarding any trends in compliance (WCPFC, 2014c, p. 93). At the 13th Commission meeting in 2016, the Commission approved the terms for the Independent Review of the Compliance Monitoring Scheme which was to occur in 2017 (WCPFC, 2016f). Many interviewees stressed that conducting performance reviews is a meaningful way to strengthen the organization's effectiveness.

6.9.3 The SPRFMO

Recognizing the significance of the performance review, the SPRFMO Convention stipulates that the Commission should provide for a regular review of the effectiveness of the conservation and management measures adopted by the Commission in meeting the Convention objective and the consistency of those measures with the principles and approaches in Article 3. Such performance reviews may include examination of the effectiveness of the provisions of the Convention itself and should be undertaken at least every five years (Article 30.1 of the SPRFMO Convention). After conducting the performance review, the Commission should take account of the recommendations arising from such review, including through the appropriate amendment of its conservation and management measures and the mechanisms for their implementation (Article 30.3 of the SPRFMO Convention).

The SPRFMO Convention came into force in August 2012, and the first Commission meeting was held in January 2013. At the 5th Commission meeting in 2017, the Secretariat prepared a background paper for members to discuss the possible aspects of the performance review (SPRFMO, 2017a). In the following year's annual meeting, the Commission agreed on carrying out its first performance review during the 2018 inter-sessional period (SPRFMO, 2018).

6.10 Summary

This chapter has presented the research findings of fundamental design principles of governance arrangements in the selected three RFMOs. These principles include clearly defined boundaries, proportional equivalence, collective-choice arrangements, monitoring, manifestation of accountability, compatibility, conflict-resolution mechanisms, and policy learning and adaption. These findings will be compared and discussed in Chapter Eight to help answer the first two research sub-questions. That is to discover the differences of RFMOs' governance arrangements that lead to diverging effectiveness and to identify the critical factors that constitute well-designed governance arrangements of RFMOs and how they affect RFMOs' effectiveness.

Chapter 7: The Central Factors Affecting RFMOs' Policy Implementation

7.1 Introduction

Well-designed policies and conservation and management measures are necessary and essential for RFMOs. Nevertheless, passing policies and adopting measures do not guarantee implementation success if policies and measures are not implemented well by implementers. This chapter presents the research findings on the main factors that affect RFMOs' policy implementation.

7.2 Strong political will and commitment

RFMOs are member-driven organizations. The conservation and management measures adopted by an RFMO only bind its members. The empirical evidence shows that the lack of political will to make tough decisions and comply fully with the measures adopted has been the most prominent factor undermining the successful policy implementation of an RFMO. Having the high-level political commitment is crucial for RFMOs to manage fish stocks effectively and sustainably.

7.2.1 The CCSBT

The implementation of the RFMOs relies heavily on the membership's commitment to actually cooperate. According to the interviewees, the political will is the most crucial factor for the CCSBT's implementation outputs as the Commission's decisions are taken by consensus. The Commission needs the members' political will to reach the agreements. Without political will, the CCSBT cannot be directed towards the sustainable fisheries governance. As one interviewee said:

> "*Political will is the key because it's a consensus body. I mean between the members, they always have to come to some agreements, and that requires a lot of political will. I think, to some extent, people do move from the position, but sometimes they don't. That does show a lack of political will.*" (a

delegation of member states of the CCSBT)

Furthermore, strong political commitment and willingness are required to enable members and cooperating non-members to implement the conservation and management measures adopted by the Commission so as to achieve its objective. Without the commitment by members and cooperating non-members to provide the necessary monitoring, control and surveillance of vessels, there will be little compliance with the measures and obligations contained in the CCSBT. As a result, it will undermine the effectiveness of the CCSBT.

One respondent highlighted that in a way, the members display their willingness to conserve and manage fishery resources when they decide to participate in the organization. In addition, the CCSBT's members are well aware of the fact that the fishery resources have been severely depleted. Under this circumstance, they must take actions and make a commitment to conserve and manage fish stocks effectively. However, the southern bluefin tuna is a very high commercial value species. Therefore it can be very tempting for members to lose their sights of the conservation of fish stocks when they think of their own self-interest.

The assessment of the Scientific Committee suggested the southern bluefin tuna spawning biomass is at a very low fraction (nine percent) of its original biomass. At present, the CCSBT's primary goal is to ensure sustainable use of southern bluefin tuna and, more specifically, to rebuild the fish stock to 20 percent of its virgin biomass by 2035. Reaching this goal depends on members' commitment and behavior, which involves high-level will and massive efforts to reduce the allocations and share the fishery resources.

7.2.2 The WCPFC

The first and foremost significant factor for successful policy implementation is having a high-level of political commitment and institutional capacity that will enable suitable conservation and management measures to be developed and enforced. According to the UN Law of the Sea Convention and the UN Fish Stocks Agreement, the management of fishing vessels depends on the flag states. Boarding and inspection on the high seas, for instance, rely on the members rather than the WCPFC *per se*. Therefore, whether the members are able and willing to comply and enforce the measures is critical to the WCPFC.

As mentioned earlier, the WCPFC manages highly migratory fish stocks in the Western and Central Pacific Ocean. The management area, on the one hand, involves a lot of coastal states that are the South Pacific Forum Fisheries Agency (FFA) members, but on the other hand, there are plenty of vessels of distant water fishing states operating in the Convention Area. The conflicts of core interests between the FFA members and distant water fishing states is one of the major challenges facing the WCPFC, which requires the members' strong political will to address.

Another challenge is regarding the allocations and rebuilding overfishing stocks. The depletion of fish stocks has intensified over the past decades. In the Pacific, the overfishing of bigeyes tuna and Pacific bluefin tuna is extremely serious. Despite this being a well-known problem in the WCPFC, there are no universal views across members concerning how to resolve the overfishing puzzle. Some members suggested the Commission should close the overfishing fish stocks until they recover to the sustainable level. However, some members opposed this recommendation as from their perspectives the overfishing problem is not as severe as those members thought. How to reallocate the decreasing fishery resources and rebuild the fish stocks are still the thorny problems ahead of the Commission.

All of these concerns underpin the strong advocacy by interviewees that political will must be strengthened in order to move from rhetoric to action in conserving and managing the declining health of fish stocks.

7.2.3 The SPRFMO

The political will of the flag state members in the SPRFMO is vital. Without their political will, the proper conservation and management measures will not be adopted in a timely manner, and will not be implemented fully and effectively. As a consequence, in spite of the comprehensive Convention with a broader ecosystem focus and precautionary principles, the organization's effectiveness will be limited.

Most of the interviewees emphasized that commitment can only be effective if the members adhere to all aspects of management measures, rules, and schemes rather than those aspects that may be convenient or comfortable for them. As one interviewee remarked:

> "*The burden of scientific issues has been put on some members. Because some members are not interested in scientific issues, they don't want to provide the support. The thing is that they might have relative experts in this area. So we hope we can get more representatives from the members.*" (an official of the SPRFMO)

Like other RFMOs, the members have their own self-interest in the SPRFMO. On the other hand, they clearly recognize that the organization needs their commitments to be effective and to achieve its goal. The majority of respondents believed that most members, or maybe all members, are very committed in the SPRFMO.

For instance, by the middle to late 2000s, the jack mackerel fishery was severely overfished and headed for collapse. During the negotiation of the SPRFMO Convention, there was a rush to fish jack mackerel by the distant water fleets in the high seas and vessels authorized by the coastal states within their exclusive economic zones. As a result, the jack mackerel collapsed to an estimated five percent of the unfished biomass, which makes it one of the most depleted fish stocks in the world (SPRFMO, 2015a). At the time, the members were willing to accept the advice of the scientists and committed to restraining overall catches to a level that the fish stock could be rebuilt. Due to the rebuilding plan put in place, the jack mackerel continues a steady recovery at present.

7.3 The availability of proper resources

The decisions made by the Commission cannot be carried out successfully if the RFMO lacks the required resources to conduct its tasks. These resources include sufficient financial budget and skillful officials. The empirical evidence reveals that the proper resources being available to the RFMO are crucial to ensure the organization's implementation success.

7.3.1 The CCSBT

7.3.1.1 How the budget is funded

The funding arrangements are a significant part of RFMOs. The CCSBT arranges its budget report on an annual basis, including Secretariat operational cost, hosting meetings, research

programs, and scientific research. Each member has to contribute a certain amount. According to Article 11 of the CCSBT Convention, the contributions towards the annual budget are calculated as follows:

- 30% of the budget shall be divided equally among all the members; and
- 70% of the budget shall be divided in proportion to the nominal catches of southern bluefin tuna among all the members.

Paying the assessed contributions in full and on time is a fundamental obligation of the members of RFMOs. In the CCSBT, any member that has not paid its contributions for two consecutive years will no longer have the right to participate in the decision-making process in the Commission until it has fulfilled its obligations unless the Commission decides otherwise.

In 2003, the CCSBT agreed it is desirable that the contributions required of members be kept stable. Thus, the increase in members' contributions to the annual budget should be maintained within ten percent of the previous year's contribution (CCSBT, 2003a). The general operating budget agreed for the contributions from members in 2017 is US$2,283,703 (CCSBT, 2017a). This is a 9.95 percent increase in members' contributions from 2016 (see Table 7.1) (CCSBT, 2016d).

Table 7. 1 Contributions from members of the CCSBT in 2016-2017

Member	Revised budget in 2016	Revised budget in 2017
Japan	$624,880	$669,146
Australia	$624,880	$669,146
New Zealand	$183,606	$188,641
Korea	$196,849	$203,061
Fishing Entity of Taiwan	$196,849	$203,061
Indonesia	$159,958	$162,890
European Union	$89,959	$101,089
South Africa	$91,939	$102,147

Total	$2,076,981	$2,283,703
Note: South Africa's contribution is not added to the total contributions from members for the 2016 revised budget, because it becomes an advance for other members to their contributions for a future year in accordance with the Financial Regulations in relation to members that join after approval of the budget.		

Source: (CCSBT, 2016d, 2017a)

7.3.1.2 The problem of the increased percentage of the contributions

All of the respondents suggested that having the financial and human resources in place is essential to the CCSBT's effectiveness. Asked whether the financial resources put at the disposal of the CCSBT by its members is sufficient to operate the conservation and management measures adopted, the answers were different. Half of the interviewees believed the CCSBT has robust financial resources to function. However, the other half of interviewees begged to differ. From their views, the financial resources are somewhat limited, particularly in the scientific aspects. The following quotes made by the respondents were pertinent:

> "*We do have these varied sources. However, the resource is still very tight…We would like to have electronic CDS, but because of the cost, we are going to stick with the paper system for a while.*" (an official of the CCSBT)

> "*The science budget is the percentage of the catch, which is minimal. I think the assumption was that members would conduct a lot of research. And to a large extent, some members are… People are looking to find more scientific research. But I think it's going to be a tough question for this Commission.*" (a delegation of member states of the CCSBT)

> "*I think it's disgraceful that they don't have more financial or human resources available to do what should be done.*" (an advisor of the international non-governmental organization)

Several interviewees pointed out that the root of the problem is the increased percentage of the contributions. As just mentioned, the members' contributions cannot increase more than

ten percent in one year, which is an informal rule that has been applied consistently in the CCSBT. Nevertheless, when the CCSBT increases its research budget on scientific work, it needs more money to get things done. Some members have been trying to increase the percentage of the contributions for several years, but they have not reached an agreement.

For instance, the management procedure requires specific data input. The CCSBT has conducted the scientific aero-survey and gene-tagging simultaneously for several years. The aero-survey provides the juvenile recruitment index and has been funded by Australia for many years. At present, Australia is not going to support the aero-survey, which means the expenditure of this survey must be paid by the CCSBT itself. Many members claimed that they do not want to raise their contributions to continue the aero-survey. Instead, they are going to only use the gene-tagging for the management procedure, which could result in the risk of failing the management procedure. This is a huge problem facing the CCSBT on the financial side.

7.3.1.3 Exploring funding sources to support the Extended Commission

Given the reluctance to increase members' contributions, the CCSBT is currently exploring funding sources to support the work of the Extended Commission. In late 2016, the Secretariat proposed the following four potential funding source options for members to consider after examining other RFMOs' funding arrangements (CCSBT, 2016d):

- establishing an environment that facilitates and encourages voluntary contributions from members and cooperating non-members;
- encouraging host members to fund the venue, catering and equipment costs of Extended Scientific Committee meetings and of Compliance Committee and Extended Commission meetings;
- establishing a southern bluefin tuna quota allocation for funding of research and monitoring; and
- creating a working group on strengthening CCSBT financing.

7.3.1.4 Voluntary contributions

There are three types of voluntary contributions that could be made in the CCSBT. They

include voluntary contributions to projects, voluntary contributions to meeting costs; and voluntary contributions to a Special Purpose Fund. Apart from the members and cooperating non-members, voluntary contributions can be accepted from non-members, such as the World Bank and non-government organizations. The voluntary contributions in 2017 comprised $175,000 for the Pilot Gene-Tagging Project from Australia and $105,386 for Long-Term Gene Tagging from the European Union (EU). The EU plans to make another voluntary contribution of 80,000 euros and to pay for the meeting costs in 2018 (CCSBT, 2017a).

7.3.1.5 The role of Secretariat

According to Article 10.3 of the CCSBT Convention, the Secretariat functions should be prescribed by the Commission, and should include the following: (a) receiving and transmitting the Commission's official communications; (b) facilitating the collection of data necessary to accomplish the objective of this Convention; and (c) preparing administrative and other reports for the Commission and the Scientific Committee.

The above definition of the Secretariat is rather administrative. Many interviewees indicated that the CCSBT Secretariat plays a more proactive role in practice. It organizes and participates in relevant meetings as appropriate. In addition, it manages the database and is responsible for delivery of some science projects, such as the gene-tagging program. Although the scale of the Secretariat is quite small compared to other tuna RFMOs, all staff have done their best to assist and support the work of the Commission (Extended Commission) and other committees. In short, the Secretariat has run efficiently and effectively to date.

7.3.2 The WCPFC

7.3.2.1 How the budget is funded

The WCPFC Convention gives guidance as to the nature of the scheme of contributions to the budget. It provides as follows: "… due consideration shall be given to each member being assessed an equal basic fee, a fee based on national wealth, reflecting the state of development of the member concerned and its ability to pay, and a variable fee. The variable fee shall be based, *inter alia*, on the total catch taken within exclusive economic

zones and in areas beyond national jurisdiction in the Convention Area of such species as may be specified by the Commission, provided that a discount factor shall be applied to the catch taken in the exclusive economic zone of a member of the Commission which is a developing State or territory by vessels flying the flag of that member" (Article 18.2 of the WCPFC Convention).

Under the WCPFC Financial Regulation, the funds of the Commission should include: (a) assessed contributions made by members according to Article 18.2 of Convention; (b) voluntary contributions made by members or other entities; (c) a fund to facilitate the effective participation of developing states members; and (d) such other funds to which the Commission may become entitled or may receive, including income from investments (WCPFC, 2013b).

The formula adopted by the Commission takes into consideration not only the national wealth and development status of member states but also their capacity to pay contributions. The formula for assessed contributions is as follows (WCPFC, 2013b):

- a 10 percent base fee divided in equal shares between all members;
- a 20 percent national wealth component based upon an equal weighting of proportional gross national income (calculated on a three-year average) per capita and proportional gross national income (calculated on a three-year average); and
- a 70 percent fish production component based upon a three-year average of the total catches taken within exclusive economic zones and in areas beyond national jurisdiction in the Convention Area of all the stocks covered by the Convention for which data are available, subject to a discount factor of 0.4 being applied to the catches taken within the exclusive economic zone of a member which is a developing state or territory by vessels flying the flag of that member.

All of the interviewees believed that the WCPFC has robust financial arrangements. They pointed out that the WCPFC has a sufficient budget because the members are willing to contribute money annually to the budget. In 2017, the WCPFC eventual budget is US $7,774,392 and indicative budgets for 2018 and 2019 are $8,174,205 and $8,201,857 respectively (WCPFC, 2017e). Almost 90 percent of the budget comes from members' contributions, including the assessed contributions, voluntary contributions, and trust funds.

Consequently, the Commission does not have to rely on additional donations to attain its objective. Presently, the WCPFC has eight funds other than the General Account Fund, including (WCPFC, 2017d):

- the Chinese Taipei Trust Fund: aiming to support the projects for capacity-building in small island developing countries;
- the CNM Contributions Fund: holding funds from the cooperating non-members' contributions;
- the FAO's Area's Beyond National Jurisdiction Project Fund: managing funds for the UN Food and Agriculture Organization's Area's Beyond National Jurisdiction Project;
- the Japan Trust Fund: supporting the WCPFC Project on Capacity-Building in Fisheries Statistics, Regulation and Enforcement for Small Island Developing States;
- the Special Requirements Fund: assisting developing states members and small island developing state members of the Commission, as well as building capacity for activities in key areas such as the effective exercise of flag state responsibilities, monitoring, control and surveillance, data collection and scientific research;
- the Voluntary Contributions Fund: established to manage the voluntary contributions from members or other organizations, for instance, the contribution from Korea for the Tuna Tagging Project;
- the West Pacific East Asia Project Fund: created to finance the Western Pacific East Asia Project; and
- the Working Capital Fund: accommodating normal operating expenditures prior to receipt of assessments from members and to adapt extenuating circumstances as approved by the Commission.

7.3.2.2 The role of Secretariat

As per Article 15.4 of the WCPFC Convention, the Secretariat functions include the following: (a) receiving and transmitting the Commission's official communications; (b) facilitating the compilation and dissemination of data necessary to accomplish the objective of Convention; (c) preparing administrative and other reports for the Commission and the Scientific and Technical and Compliance Committees; (d) administering agreed

arrangements for monitoring, control and surveillance and the provision of scientific advice; (e) publishing the decisions of and promoting the activities of the Commission and its subsidiary bodies; and (f) treasury, personnel and other administrative functions.

The WCPFC Convention Area covers nearly 20 percent of the Earth's surface. It is evident that the Commission needs enough staff to help and support its work. There are two categories of the WCPFC Secretariat staff assisting the Commission and reporting directly to the Executive Director:

- Professional staff: i.e., compliance manager, science manager, finance and administration officer, observer program coordinator, Vessel Monitoring System manager, information communications and technology manager, assistant manager (science program), system development officer, and Japan Trust coordinator; and
- Support staff: i.e., data quality officer, data entry assistant (Vessel Registry), Vessel Monitoring System operator, office manager, executive assistant, treasury assistant, secretary, and receptionist.

There is common agreement among respondents that the Secretariat functions very well in assisting and supporting the Commission and other Committees. In other words, their organization of various meetings and workshops, production of required documentation and communication of essential information are fulfilling members' expectations. Nevertheless, one interviewee specifically indicated that the members' requests are increasing, which is rather challenging for the Secretariat to sustain a high service-delivery standard under the current staff structure. Additional human resources should be considered and placed by the Commission in the near future.

7.3.3 The SPRFMO

7.3.3.1 How the budget is funded

In the SPRFMO, each member of the Commission should contribute to the budget. The SPRFMO Convention stipulates that the amount of the annual contributions from each member should comprise a combination of a variable fee based on its total catch of such fishery resources as may be specified by the Commission and a basic fee. Additionally, the Commission should adopt a formula for the calculation of contributions, which takes

account of the member's economic status (Article 15.2 of the SPRFMO Convention). At the moment, the SPRFMO financial contribution formula, which is set out in the financial regulations, consists of the following three parts (SPRFMO, 2016f):

- a base fee of ten percent divided in equal shares between all members. Developing countries are eligible for a base fee reduction provided that they have not fished in the previous financial year;
- a national wealth component of 30 percent (subdivided into 15 percent gross national income, and 15 percent gross national income per capita); and
- a catch component of 60 percent; subdivided into 45% for pelagic and 15% for demersal fishery resources.

Several interviewees suggested that the members' contributions resulting from the adopted financial contribution formula have proven to be volatile and uneven. Hence, the Commission is seeking to find a new budget formula that ends in an equal share of individual contributions and provides a balance between stability and predictability (SPRFMO, 2016f). It is expected that the Commission will be completing this arduous task within two years.

7.3.3.2 More resources are needed for the Secretariat

The availability of appropriate resources is critical to the SPRFMO's implementation success because all of the conversation and management measures need financial and human resources. Put differently, if the organization lacks resources, it is difficult to implement the necessary measures. The majority of respondents reckoned that the SPRFMO has reasonable, or even sufficient, resources to operate. Also, they believed that the Secretariat has made considerable progress in the compilation of data and information and is well-managed.

It is important, however, to keep in mind that the SPRFMO is a relatively new RFMO, and many programs and measures are still being established. Thus, it is inevitable that the Secretariat will be requiring more financial resources and staff to perform the functions delegated to it by the Commission. As two interviewees commented:

"*Without the robust resources, they cannot implement rules, and it becomes hard. For example, the vessels monitoring system, they just adopted this policy. Having people really to run the database and run the system and implement it is going to take a lot of money.*" (a delegation of member states of the SPRFMO)

"*The organization has all goals, supporting 14 members and 4 CNCPs, without considering the NGOs. We are struggling to do everything required by the Commission regarding policy implementation. This is because of the people not necessarily because of money*." (an official of the SPRFMO)

7.4 Cooperation and coordination

In governing high seas fisheries, for conservation and management measures to be effectively implemented, cooperation and coordination are essential across sectors and states. The coordination and harmonization of efforts and capacities among intergovernmental organizations and non-governmental organizations have been an important factor in RFMOs' policy implementation.

7.4.1 The CCSBT

7.4.1.1 The cooperation and coordination with other RFMOs

The CCSBT Convention obliges the Commission to cooperate with other inter-governmental organizations having similar objectives to obtain the best available information to further the objective of the Convention and to avoid duplication with respect to their work (Article 12 of the CCSBT Convention). Also, the Convention stipulates that the CCSBT can make arrangements with inter-governmental organizations to these ends.

There is a shared agreement among interviewees that the CCSBT has close relationships with other intergovernmental organizations, in particular, the tuna RFMOs. The cooperation and coordination among the tuna RFMOs is essential because of the similarities and sharing of the fishery resources, the fishing vessels, owners, flag states, and the markets (Garcia & Koehler, 2014). Therefore, at the Secretariat level, the tuna RFMOs

work together closely and share information with each other.

So far, the CCSBT has signed a Memorandum of Understanding (MOU) or Arrangement with the Agreement on the Conservation of Albatrosses and Petrels (ACAP), the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), the ICCAT, the IOTC, and the WCPFC.

The CCSBT has signed the Memorandum of Understanding with the ICCAT, the IOTC, and the WCPFC with respect to its at-sea or in-port transshipment monitoring programs. In 2008, the CCSBT adopted a program for transshipment by large-scale fishing vessels (entered into force on 1 April 2009)(CCSBT, 2017c). The program has harmonized and operated in conjunction with those of the ICCAT, the IOTC and the WCPFC to avoid duplicating the same measures. That is, the ICCAT, the IOTC or the WCPFC observers on a transshipment vessel that is authorized to receive southern bluefin tuna are considered to be CCSBT observers if the CCSBT standards are met. The following comments can help enlighten us on this:

> "*We use the ICCAT and the IOTC's observers to be our observers so as to make sure the rules are complied with and then send us a report.*" (an official of the CCSBT)

> "*The IOTC is in charge of the India Ocean and has developed the regional observer program. For the CCSBT, there is no necessity to develop another regional observer program in India Ocean. Hence, they cooperate with each other by signing the MOU. Based on the MOU, the IOTC will share its information with the CCSBT.*" (a delegation of member states of the CCSBT)

In addition to the transshipment monitoring cooperation, the CCSBT has been working on a Memorandum of Cooperation on the exchange of data with the WCPFC. The Memorandum of Cooperation was developed by the WCPFC and the CCSBT Secretariats to enhance the exchange of certain aggregated catch and effort information which are not in the public arena (CCSBT, 2016d). In 2017, both Memoranda of Cooperation were signed by the CCSBT and the WCPFC's Chair. The Memorandum of Cooperation focuses on (CCSBT, 2017a):

- the exchange and release of data; and
- the endorsement of the WCPFC regional observer program for observing transshipments of southern bluefin tuna on the high seas of the WCPFC Convention Area.

In terms of the general cooperation, the CCSBT has developed the Memoranda of Understanding with the Agreement on the Conservation of Albatrosses and Petrels as well as the Commission for the Conservation of Antarctic Marine Living Resources. The primary objective of the former Memorandum of Understanding is to facilitate cooperation between the CCSBT Secretariat and the ACAP Secretariat for the purpose of supporting efforts to minimize the incidental by-catch of albatrosses and petrels caused by fishing for southern bluefin tuna (CCSBT, 2015b). The ACAP has played an important role in providing relevant data and information on the population status of seabirds that interact with southern bluefin tuna (Aranda et al., 2010).

As for the cooperation with CCAMLR, one interviewee specifically pointed out that the CCSBT has an excellent relationship with the CCAMLR at the secretarial level. For one thing, the headquarters of the Commission for the Conservation of Antarctic Marine Living Resources is also located in Canberra Australia, and for another, there are many similarities between them.

Most members of the CCSBT are members of other RFMOs, such as New Zealand, Australia, and the EU are members of the WCPFC. Also, many of them are members of the IOTC, the ICCAT, and the IATTC. In reality, the CCSBT Secretariat and members act as observers at other RFMO meetings of interest and provide reports to the Commission on matters of relevance to facilitate coordination and cooperation with other RFMOs. As one respondent remarked:

> "*Often you find you have a staff of Secretariat comes to another RFMO's meeting. They need to update what is going on. A lot of members are quite aware of what is going on in other RFMOs. Later this week, there is a report regarding members attended other RFMOs' meeting. This is one way you can link to different RFMO's process.*" (a delegation of member states of the CCSBT)

Since 2011, the CCSBT members have regularly attended the CCAMLR and other tuna RFMO meetings as observers on behalf of the CCSBT (CCSBT, 2011, 2012a, 2016d). For example, the members' observer duties for 2016 and 2017 are as follows (CCSBT, 2016d):

- Australia acts as an observer to CCAMLR;
- Japan acts as an observer to ICCAT;
- Korea acts as an observer to WCPFC;
- Taiwan acts as an observer to IATTC; and
- Indonesia acts as an observer to IOTC.

Likewise, under the Memoranda of Understanding, these intergovernmental organizations also attend the CCSBT's meetings as observers. They all have been granted long-term observer status to attend the Extended Commission meetings. As for other sub-committee and working group's meetings, they have different long-term observer status (see Table 7.2). The WCPFC, for instance, has long-term observer status to attend all of the CCSBT's meetings, including meetings of two working groups. As to other organizations, they have not been granted long-term observer status to attend meetings of the Strategy and Fisheries Management Working Group.

Table 7. 2 Intergovernmental organizations provided with long-term observer status for the CCSBT meetings

	Strategy and Fisheries Management Working Group	Ecologically Related Species Working Group	Extended Scientific Committee	Compliance Committee	Extended Commission
ACAP		Yes	Yes		Yes
CCAMLR		Yes	Yes	Yes	Yes
ICCAT		Yes	Yes	Yes	Yes
IOTC		Yes	Yes	Yes	Yes
WCPFC	Yes	Yes	Yes	Yes	Yes

Source: the CCSBT website, available at https://www.ccsbt.org/en/content/attendance-meetings-observers.

7.4.1.2 An active participant in the Kobe Process

Cooperation and coordination among tuna RFMOs on a broad range of issues is seen as necessary to increase their effectiveness and efficiency and provide improved management of all tuna resources. In the first joint tuna RFMO meeting, the five tuna RFMOs achieved 14 commitments, such as sharing and dissemination of data and stock assessments, ensuring management measures are based on the best scientific advice, ensuring compliance through establishment of integrated monitoring, control and surveillance, applying penalties and sanctions to deter illegal fishing (Anonymous, 2007). This process, also known as the Kobe process after its initial meeting location, seeks to harmonize the activities of the five tuna RFMOs (Barkin & DeSombre, 2013b; Hoel, 2010).

The Kobe process has created many recommendations for the tuna RFMOs, including undertaking independent performance reviews and establishing priorities for cooperation in technical work. Several interviewees expressed that the CCSBT has been actively involved in the Kobe process, including attending the workshops. At the CCSBT's 20th annual meeting, the Executive Secretary reported that the CCSBT had made progress on all of the Kobe III recommendations except two low priority items (CCSBT, 2013).

Through the Kobe process, the CCSBT works closely with other tuna RFMOs, especially at the secretarial level. Besides, there is regional secretarial level cooperation under the UN Food and Agriculture Organization (FAO). The CCSBT has representation at the FAO coordination meeting for RFMO Secretariats. Every two years the CCSBT conducts the meeting in association with the FAO Committee on Fisheries. Some interviewees indicated that the CCSBT benefits from these meetings tremendously because they bring different stockholders together as well as facilitate the regional dialogue. As one respondent commented:

> "*…we get together as part of that process and get together with tuna RFMOs to discuss our joint issues and to cooperate. This is excellent cooperation between Secretariats of five tuna RFMOs. It varies from secretarial administration aspects through to more policy aspects.*" (an official of the CCSBT)

7.4.1.3 Cooperation and coordination with NGOs

In accordance with Article 14 of the CCSBT Convention, the executive secretary may, with the approval of all the members, invite the following states, entities or organizations to send observers to attend meetings of the CCSBT (CCSBT, 2017e):

- any state or entity not the party to the CCSBT Convention, whose nationals, residents or fishing vessels harvest southern bluefin tuna, and any coastal state through whose exclusive economic or fishery zone southern bluefin tuna migrates: and
- any intergovernmental or, on request, non-governmental organizations having special competence concerning southern bluefin tuna or competent to help attain the objectives of the CCSBT Convention.

In addition, the Commission may approve long-term observer status to specific states, entities, inter-governmental organizations and, on request, non-governmental organizations, specifying the types of meetings to which the approvals apply. The approvals will remain in force until cancelled by the Commission. Currently, four non-governmental organizations have obtained long-term observer status in the CCSBT, namely BirdLife International, Humane Society International, TRAFFIC International, and WWF-Australia[15]. They all have long-term observer status to attend meetings of the Extended Commission and the Ecologically Related Species Working Group. In relation to other sub-committee and working group's meetings, they have different long-term observer status as shown in the table below.

Table 7. 3 Non-governmental organizations provided with long-term observer status for the CCSBT meetings

	Strategy and Fisheries Management Working Group	Ecologically Related Species Working Group	Extended Scientific Committee	Compliance Committee	Extended Commission
BirdLife International		Yes			Yes
Humane		Yes		Yes	Yes

[15] WWF stands for "World Wide Fund For Nature".

Society International					
TRAFFIC International		Yes		Yes	Yes
WWF-Australia		Yes		Yes	Yes

Source: the CCSBT, https://www.ccsbt.org/en/content/attendance-meetings-observers.

Several interviewees claimed that the cooperation and coordination with non-governmental organizations is driven by the members. Therefore, in the CCSBT, on condition that the non-governmental organizations submit their requests not less than 50 days before the meeting of the Commission, they will receive the approval to attend the Commission meeting. For instance, one respondent remarked:

> "*When it comes to the NGOs, as long as they apply for the position as an observer, they will have a chance to attend the CCSBT's meeting. That's for sure.*" (a delegation of member states of the CCSBT)

Sometimes the Secretariat might work with non-governmental organizations on the project. At the moment, the CCSBT is cooperating with TRAFFIC International. It entrusts TRAFFIC International to investigate the market trading of the southern bluefin tuna, with a view to finding out who the consumers are and how much is being traded to conserve and manage the southern bluefin tuna. One respondent highlighted that the cooperation with non-governmental organizations in the CCSBT is issue-driven, as illustrated by the quote below.

> "*When there is an obvious topic, such as bycatch and market study, they often reach out and find support back from the NGOs. Only when it has specific needs from the organizations.*" (a delegation of member states of the CCSBT)

Almost all of the interviewees reckoned that the CCSBT is willing to cooperate and coordinate with non-governmental organizations and believe the results of research programs from non-governmental organizations will help enhance its management effectiveness. Nonetheless, a few interviewees also mentioned that the CCSBT would not allow non-governmental organizations to involve themselves too much in the decision-

making process. After all, the position of non-governmental organizations (especially the environmental non-governmental organizations), more often than not, is different from some of the CCSBT's members.

7.4.2 The WCPFC

7.4.2.1 Cooperation and coordination with relevant intergovernmental organizations

Under Article 22 of the WCPFC Convention, the WCPFC has the mandate to cooperate and collaborate with the FAO and with other specialized agencies and bodies of the United Nations. In addition, the Commission should make suitable arrangements for consultation, cooperation, and collaboration with other relevant intergovernmental organizations that may contribute to the attainment of the objective of the WCPFC Convention, especially with other RFMOs.

The WCPFC maintains formal relations with ten inter-governmental institutions and agencies at the present time. The major objectives of these relationships are to enhance cooperation and collaboration in areas of common interest. Besides, the WCPFC Convention emphasizes that the Commission should be run in a cost-effective manner. The Commission and its subsidiary committees, therefore, are supposed to use the services of existing regional organizations as well as consult with other fisheries management or scientific organizations.

So far, the WCPFC has signed Memoranda of Understanding or Agreement with the following organizations (WCPFC, 2011a, 2015b): Secretariat of the Pacific Community (SPC), Pacific Islands Forum Fisheries Agency (FFA), International Scientific Committee for Tunas and Tuna-like Species in the North Pacific Ocean (ISC), Secretariat of the Pacific Regional Environment Programme (SPREP), Indian Ocean Tuna Commission (IOTC), Inter-American Tropical Tuna Commission (IATTC), Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), Commission for the Conservation for Southern Bluefin Tuna (CCSBT), Agreement for the Conservation of Albatross and Petrels (ACAP), and North Pacific Anadromous Fish Commission (NPAFC).

According to the interviewees, the WCPFC has a very successful collaboration with three

tuna RFMOs and the Pacific Islands Forum Fisheries Agency (FFA). Areas of cooperation include data and information exchange, research relating to stocks and species of mutual interest, and conservation and management measures. They are discussed in detail in the following section.

The CCSBT

The Memorandum of Understanding between the WCPFC and CCSBT was signed in 2009 and recorded the following understanding (WCPFC, 2009d):

- the appropriate body to develop and implement southern bluefin tuna conservation and management measures;
- the CCSBT will provide a report each year to the WCPFC covering the stock assessment for southern bluefin tuna for that year, and the latest catch data classified by ocean, gear and catching country;
- the WCPFC will provide a report to the CCSBT each year detailing the catches of southern bluefin tuna by vessels fishing for highly migratory species within the WCPFC Convention area by flag and gear; and
- the CCSBT and the WCPFC agree to exchange data and scientific information on an annual basis, exchange information on fisheries management on an annual basis, cooperate in investigations and studies of mutual interest, grant permanent reciprocal observer status at meetings, and consider methods of recognizing each other's conservation and management measures.

In 2017, based on the above Memorandum of Understanding, the WCPFC and the CCSBT signed two Memoranda of Cooperation (WCPFC, 2017b, 2017c). The first Memorandum of Cooperation confirms the conditions for the exchange and release of data from fisheries which capture highly migratory fish species while the second one confirms the conditions for the endorsement of WCPFC Regional Observer Program observers to operate on authorized vessels that are involved in high seas transshipments of southern bluefin tuna in the WCPFC Convention area.

Inter-American Tropical Tuna Commission (IATTC)

The WCPFC and IATTC signed the Memorandum of Understanding in 2009. They agreed to establish and maintain consultation, cooperation and collaboration in respect of matters of mutual interest to the two organizations, including, but not limited to, the following aspects (WCPFC, 2009c):

- exchange of data and information, in a manner consistent with the information-sharing policies of each Commission;
- collaboration on research efforts relating to stocks and species of mutual interest, including Pacific-wide stock assessments; and
- conservation and management measures for stocks and species of common interest.

Following up the Memorandum of Understanding, a Memorandum of Cooperation on the exchange and release of data between the two Commissions was signed at the end of the Commission meeting in December 2009 (WCPFC, 2009a). Afterward, the WCPFC signed another Memorandum of Cooperation with IATTC aimed at establishing Cross Endorsement of Regional Observers between the two organizations (WCPFC, 2011b).

Indian Ocean Tuna Commission (IOTC)

In view of an overlap of the geographical area and the fish stocks covered by both the WCPFC Convention and the IOTC Agreement, the WCPFC and the IOTC signed a Memorandum of Understanding to promote the conservation and sustainable use of species that are within the competence of both organizations. The WCPFC and the IOTC agreed to establish and maintain consultation, co-operation and collaboration regarding their common interest. These include, but are not limited to, the following areas (WCPFC, 2009b):

- exchange of data and information consistent with the information-sharing policies of each Commission;
- collaboration on research efforts relating to stocks and species of mutual interest, including stock assessments; and
- conservation and management measures for stocks and species of mutual interest.

Pacific Islands Forum Fisheries Agency (FFA)

The Pacific Islands Forum Fisheries Agency (FFA) was established to facilitate the conservation and management of the tuna resources within member states' exclusive economic zones. It is an advisory body providing expertise, technical assistance, and other support to help its members achieve sustainable fisheries and maximize their social and economic benefits in harmony with the broader environment. The WCPFC coordinates very closely with the FFA, whose members are also members of the WCPFC, to establish effective licensing, compliance systems and observer coverage.

In efforts to maximize the effectiveness of their scientific, compliance and other activities, the FFA Secretariat and the WCPFC Secretariat signed a Memorandum of Understanding to exchange information relating to their activities and programs of work on highly migratory fish stocks and associated and dependent species in the Pacific Islands region (WCPFC, 2009e). Also, the WCPFC and the FFA agreed to hold a meeting between the two Secretariats at least once a year at a venue and time that minimizes the cost of participation so that they can exchange information on activities of mutual interest and explore ways of minimizing duplication of their work. Several interviewees indicated that the close relationship between the WCPFC and FFA is vital for the WCPFC Commission. The quote below illustrates this point:

> "*SPC and FFA, we work very closely with. Last year, they provided to the Commission with areas of technical expertise. They have a very good understanding of Pacific Island nations' interests which is very important for this Commission. That's why we work very closely with them.*" (an official of the WCPFC)

7.4.2.2 The cooperation and coordination with NGOs

Rule 36 of the Commission's Rules of Procedure sets out the range of states, entities, and organizations that may participate as observers in the WCPFC Commission and its subsidiary bodies. These observers are identified as follows (WCPFC, 2004):

- states, entities and fishing entities that participated in the Multilateral High Level Conference on the Conservation and Management of the Highly Migratory Fish

Stocks, which are not members of the Commission;

- any entity referred to in article 305, paragraph 1, subparagraphs (c), (d) and (e) of the 1982 United Nations Convention on the Law of the Sea which is situated in the Convention Area, which is not a member of the Commission;
- any regional economic integration organization whose nationals and fishing vessels conduct or wish to conduct fishing for highly migratory fish stocks in the Convention Area;
- other states and fishing entities with an interest in the work of the Commission, invited by the Commission, which are not members of the Commission;
- the UN Food and Agriculture Organization and other relevant intergovernmental organizations and South Pacific regional organizations invited by the Commission; and
- non-governmental organizations concerned with matters relevant to the implementation of the Convention admitted by the Commission pursuant to paragraph 4 of this rule which have demonstrated their interest in matters under consideration by the Commission.

Non-governmental organizations that wish to participate as an observer are required to notify the executive director in writing of its desire to participate. This notification must be made at least 50 days before the meeting. Then the executive director will notify the member states of such request. Non-governmental organizations that have made such notification to the executive director will be invited to participate in the meeting as observers unless a majority of the member states objects to the request. To date, the WCPFC Commission has agreed 41 non-governmental organizations and 16 intergovernmental organizations participating in meetings of the Commission and its subsidiary bodies as observers (WCPFC, 2015a, 2015d).

The non-governmental organizations accredited with the WCPFC can be categorized as environmental non-governmental organizations or industry non-governmental organizations. Each environmental non-governmental organization focuses on their own specific interests. For instance, Greenpeace and World Wildlife Fund aim to protect the endangered shark species. On the other hand, the industry non-governmental organizations

campaign on different aspects. Some of them advocate interests of their members while others devote to sustainable use of fisheries resources. The following quotes can help enlighten us on this:

> "*As for industry NGOs, they do a lot of good research with fishing vessels, captains, and fishing company. They are very interested in sustainability. As a company, they can demonstrate their products are sustainable because the market is demanding that. So there are a lot of works come to scientific process…*" (an official of the WCPFC)

> "*There are a number of the industry organizations attending the meetings representing their interests, such as International Seafood Sustainability Foundation (ISSF) representing the fishing industry*" (a delegation of member states of the WCPFC)

It is clear that there are a lot of non-governmental organizations involved in the WCPFC Commission. A number of respondents expressed that the WCPFC welcome the non-governmental organizations' contribution, and therefore these organizations are very active in the WCPFC. Usually, they attend meetings of the Commission and the Scientific Committee with their written statements. They may make oral statements on matters within the scope of their activities upon the invitation by the Chair and subject to the approval of the Commission or the Scientific Committee. As one interviewee said:

> "*…The Commission works very well with them. They attend lots of meetings and involve in the discussions actively. In particular, they work very closely with bycatch issues. They come to our meetings with the papers they write. Within the Scientific Committee, they are able to contribute papers. Quite often, there are a lot of groups active.*" (an official of the WCPFC)

7.4.3 The SPRFMO

7.4.3.1 Cooperation and coordination with relevant intergovernmental organizations

In accordance with its Convention, the SPRFMO endeavors to cooperate and collaborate with other RFMOs, the UN Food and Agriculture Organization, other specialized agencies of the United Nations, and other relevant organizations on matters of mutual interest. The Commission seeks to make suitable arrangements for consultation, cooperation and collaboration with such other organizations. In particular, it seeks to cooperate with other relevant organizations with the aim of reducing and eventually eliminating illegal, unreported and unregulated fishing (Article 31 of the SPRFMO Convention). At present, the SPRFMO has signed a Memorandum of Understanding with Agreement on the Conservation of Albatross and Petrels (ACAP) and an Agreement with Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR).

ACAP is a multilateral agreement which seeks to achieve and maintain a favorable conservation status for albatrosses and petrels by coordinating international activity to mitigate known threats to their populations. In 2014, the SPRFMO signed the Memorandum of Understanding with ACAP to facilitate cooperation between their Secretariats so that they can support efforts to minimize the incidental by-catch of albatrosses and petrels (SPRFMO, 2014). Areas of cooperation include: (a) development of systems for collecting and analyzing data, and exchanging information; (b) exchange of information regarding management approaches; (c) implementation of education and awareness programs for fishers; (d) design, testing of albatross and petrel bycatch mitigation measures; (e) development of training programs on conservation techniques and measures; (f) exchange of expertise, techniques and knowledge; and (g) reciprocal participation with observer status at the relevant meetings of ACAP and SPRFMO.

In 2016, the SPRFMO signed an Agreement with CCAMLR to facilitate cooperation so that they can advance their respective objectives, especially in relation to stocks and species that are within their competence and mutual interest (SPRFMO, 2016b). Under this Agreement, areas of cooperation mainly include the following: (a) exchange meeting reports, information, documents and publications; (b) exchange data and scientific information on vessels authorized to fish, vessels suspected of illegal fishing, as well as

catch, bycatch and vessel information; (c) monitoring, control and surveillance policies and systems; and (d) collaborate on analysis and research efforts.

One interviewee specifically mentioned that although the SPRFMO is a relatively new RFMO, it is exploring the possibility of having more memoranda of understandings with other RFMOs with common areas of interest (e.g., the CCSBT, the WCPFC, the IATTC, and the North Pacific Fisheries Commission). From the interviewee's perspective, the SPRFMO is committed to cooperating and coordinating with other relevant intergovernmental organizations on matters of common interest.

7.4.3.2 Cooperation and coordination with NGOs

According to the Article 18.4 of the SPRFMO Convention, representatives of non-Contracting Parties, relevant intergovernmental organizations and non-governmental organizations with an interest in matters pertaining to the Commission are given the opportunity to participate in the meetings of the Commission and its subsidiary bodies, as observers or otherwise as appropriate.

Non-governmental organizations, including environmental organizations and fishing industry organizations, wishing to take part as an observer should notify the executive secretary at least 50 days before the meeting (SPRFMO, 2015d). The notification should have an explanation of its interest in the work of the Commission. Then the executive secretary will promptly notify the members of the request. In general, any non-governmental organization can participate as an observer unless a simple majority of the members objects to the request. Several interviewees claimed that the SPRFMO is very open and therefore it is effortless to become an observer in the organization, as illustrated by the quote below:

> "*It is very low bar for getting observer status. Once you get the observer status, you can see all the publications and be invited to the meetings. You can cooperate with members to work through the issues.*" (an official of the SPRFMO)

When participating in the meetings, non-governmental organizations can submit relevant

documents to the Secretariat for distribution to the member states as information documents. It is important to keep in mind that non-governmental organizations can take part in the deliberations of the Commission and its subsidiary bodies but they are not entitled to participate in the taking of decisions. The following was a typical comment made by the respondents:

> "*They don't have a vote in the decision-making process. Often when they are allowed to speak, they will put out a statement. Also, they submit their papers to the Commission. But they are observers, they cannot make binding proposals. They don't get to the decisions. They more often try their influences outside the Commission.*" (a delegation of member states of the SPRFMO)

The majority of interviewees believed that the involvement and support of non-governmental organizations are imperative for the success of conservation and management of the Convention Area. Currently, there are 13 non-governmental organizations, including environmental organizations and fishing industry organizations with an interest in the work of the Commission, having observer status in SPRFMO. These organizations include ANAPESCA A.G., Birdlife International, Center for Development and Sustainable Fisheries, Deep Sea Conservation Coalition, Environment and Conservation Organizations of New Zealand, Greenpeace International, Institute for Advanced Sustainability Studies, International Coalition of Fisheries Associations, Marine Stewardship Council, New Zealand High Seas Fisheries Group, Oceana, the PEW Charitable Trusts, and World Wildlife Fund.

Some of these non-governmental organizations have close relationships with the SPRFMO, and regularly attend the organization's meetings, such as the Permanent Commission for the South Pacific, Deep Sea Conservation Coalition, and New Zealand High Seas Fisheries Group. They play very active roles in the SPRFMO's meetings, notably in the Scientific Committee meetings. Often they have opportunities to express their opinion during the seminars or lunch break.

7.5 Summary

This chapter has presented the research findings of three central factors influencing RFMOs' implementation, i.e., strong political will, the availability of proper resources, and the cooperation and coordination with relevant organizations, in particular with the other RFMOs. These findings will be discussed in the following chapter to help answer the third research sub-question. That is to define the central factors that affect RFMOs' policy implementation and how are they manifested.

Chapter 8: Discussion

8.1 Introduction

This chapter discusses the research findings presented in the previous two chapters with extant literature. Its primary aim is to address this study's research questions. The first section of this chapter will discuss the key design principles of governance arrangements. It is followed by a discussion of the main factors affecting RFMOs' policy implementation.

8.2 The key design principles of governance arrangements

8.2.1 Clearly defined boundaries

If a stable and robust cooperative fisheries management organization is to be established, the first issue, which must be well addressed, is that of the boundary rules. These rules stipulate which fishing vessels are allowed to fish in the Convention area, and how many fishing opportunities should be allocated within the limit to each of the member states. If those rules are well-defined, they can potentially exclude others' impacts, and develop greater trust and reciprocity (Ostrom, 2005, 2012). The findings show that the rules for fishing are clearly defined in the three case studies. The rules for getting access have well-defined total allowable catches or limitations of fishing efforts in their major management species (see Table 8.1).

Table 8. 1 The comparison of boundary rules in three case studies

	CCSBT	WCPFC	SPRFMO
Rules for fishing	Clearly defined	Clearly defined	Clearly defined
The limitation of fishing effort or total allowable catch	Southern bluefin tuna	Four tuna species Others not yet	Jack mackerel and bottom fishing Squid not yet
Allocation criteria	Regulate in the Convention but not exactly follow the guidance of UN Fish	Regulate in the Convention and follow the guidance of UN Fish Stocks	Regulate in the Convention and follow the guidance of UN Fish Stocks

	Stocks Agreement	Agreement	Agreement
Formal allocation procedure	Not yet but has created a percentage mechanism	Not yet	Not yet

Regarding the allocation criteria, despite the list of key factors in their Convention texts, in practice, these have turned out to be not as well defined as they appeared on paper in all cases. As discussed earlier, the criteria of the allocation of a total allowable catch should consider the biological conditions (status of the stocks), relevant scientific evidence, historical fishing activity, the state's capacity to comply with adopted measures, and socio-economic factors (the needs and the interests of coastal states, particularly the developing states). However, the evidence shows that the historical catches and political considerations invariably play a dominant role in the allocation. This echoes the findings of Lodge et al. (2007) and Willock (2006) who found that the allocation of participatory rights is always a political decision in RFMOs.

It is worth noting that although the CCSBT has not established the formal allocation procedure, it has created a pre-agreed formula (set of rules) relating to how increases or decreases in total allowable catches are distributed among member states based on updated monitoring data. This is a significant advance for the CCSBT dealing with allocation issues.

The common pool resources literature indicates that governance success of commons depends to an important degree on the extent to which the benefits to the resource users are appropriately aligned with (a) their contributions to the global commons; (b) fairness and equity considerations; and (c) other social norms and ethical values (Hoffman & Ireland, 2013). Given this, it is reasonable to assume that allocation criteria and procedures will only be established if an RFMO manages to provide fair and equitable opportunities to all member states.

8.2.2 Proportional equivalence

Accommodating new members is one of the most challenging issues of the legal principles governing the high seas fisheries. In general, the selected RFMOs are open to new members, but they differ in relation to the possible accession and attitude to embrace new members.

Previous research indicates that in choosing between the alternatives of reducing the allocation to existing members or increasing the total allowable catch to accommodate new members, a number of RFMOs have chosen the latter (Lodge, 2007; Rayfuse, 2007; Willock & Lack, 2006). The CCSBT used to be one of those RFMOs that chose the latter, before it adopted the management procedure to set the global total allowable catch. This science-based management procedure is planned to be the basis for the future setting of the global total allowable catch, meaning the CCSBT cannot increase its total allowable catch to accommodate new members. There is a definite sense among members that given the critical status of fish stocks, increasing the fishing allocations or total level of fishing effort is no longer an option to accommodate new members.

In the case of CCSBT, the finding shows that even though the existing members do not want to see their fishing rights limited with the admission of new members, the reality is such that the necessity of attaining sustainable use of fishery resources forces them to do so. That is, if the existing members believe the participation of a new member can significantly help the organization to achieve their long-term sustainable use of fish stocks, they are willing to transfer fishing opportunities. This suggests there has been a growing recognition among members that the concept of governance for sustainable development is essential for their management measures.

The findings reveal, regarding accommodation of new members, the three cases have maintained an arrangement for the granting of a cooperating non-member (or cooperating non-contracting party) status to encourage participation in the organization's activities. Nevertheless, due to the overexploited status of fish stocks, conflict of interests, and communication dynamics, some members do not have a positive attitude to embrace the new members. This reminds us of how the critical concept in governing high seas fisheries is that the obligation to cooperate is mutual. In denying or rejecting applications for cooperating non-member status or delaying their chance to become a member, the Commission was sending a message to them that it did not want to cooperate with them or appreciate their participation. This undermines the RFMO's effectiveness as it relieves new entrants themselves of their duty and reduces their willingness to comply with the conservation and management measures fully.

8.2.3 Collective-choice arrangements

The decisions of the CCSBT Commission are made by a unanimous vote in theory but is prone to be consensus-based in practice. As for the WCPFC and the SPRFMO, the general rule for the decision-making is that of consensus. If consensus cannot be reached, then a three-fourths majority vote is set out. The voting procedure in the selected three cases is summarized in Table 8.2.

Table 8. 2 Voting procedure in the selected three cases

RFMO	Procedure	Articles in the Convention
CCSBT	Unanimous vote	Article 7
WCPFC	Three-fourths majority vote, if consensus cannot be reached. Consensus if on the "consensus list".	Article 20 Article 10 (4)
SPRFMO	Three-fourths majority vote, if consensus cannot be reached.	Article 16

According to the UN Fish Stocks Agreement, an effective decision-making mechanism in the RFMO is to provide the best advice possible in the most timely, transparent and efficient manner. The evidence from the CCSBT case reveals that although consensus-based decision-making can ensure equity and inclusiveness, it can also prevent the adoption of meaningful conservation measures and regulations due to a conflict of interest or a lack of political will by one member. In the CCSBT, the unanimity mechanism has resulted in some significant decisions being delayed.

Lodge et al. (2007) argued that the unanimous vote is not best practice for RFMOs as it usually makes the organizations unable to take timely decisions. Nevertheless, they also reckoned that in a small organization with three to five members, consensus seems to be the only way the organization can take decisions. When the CCSBT was established, there were only three founding members, namely Australia, New Zealand, and Japan. Over the years additional states have joined. Currently, there are eight members in the CCSBT. Along with the expansion of membership, it is reasonable to argue that the unanimous vote

should be replaced by a new decision-making mechanism that meets the requirements of the UN Fish Stocks Agreement. The WCPFC and the SPRFMO's decision-making mechanism would be good examples for the CCSBT. The discussion below will explain why.

RFMOs have a long tradition of allowing their parties or members to object to their decisions. For instance, in many RFMOs, in the event that a state objects to a quota allocation, it can object to the quota and set a unilateral one for itself. This has been a primary element in the lack of success of many RFMOs because it undermines the adopted decision (McDorman, 2005; Schiffman, 2013). In order to avoid this difficulty experienced by many RFMOs, the WCPFC and the SPRFMO introduced a more comprehensive and strict decision-making procedure applicable to its implementation.

There are many similarities across the WCPFC and the SPRFMO in how they provide restrictions and safeguards in the decision-making process. In practice, both of their decision-making processes still aim to achieve consensus. Only when all efforts to reach a consensus have been exhausted can the Commission go for a majority vote. Unlike other RFMOs, both the WCPFC and the SPRFMO Conventions narrow the acceptable grounds for a member to vote against a decision or to use the objection procedure. There are only two legitimate grounds for the objector to articulate, that a decision is inconsistent with legally binding international fisheries law or it is discriminatory. The permissible grounds for attaining an objection are very restricted. In a way, this reduces the "opt-out" problem that contributes to failures to meet objectives of sustainable management and utilization of each RFMO.

In addition, based on empirical evidence from the WCPFC case and the researcher's observation made during the 13th WCPFC Commission meeting, having a voting procedure to a large extent helps members to reach consensus, as a vote will put a great deal of pressure on each member who is against the decision. This finding is in accord with the observation of Mansfield (2015) who argued that the possibility of voting can change the negotiating dynamics and increase the pressures to achieve consensus.

McDorman (2005) argued “there is no one model process for decision-making that can be held out as the most appropriate for RFMOs” due to the differences among RFMOs (p.441). Nevertheless, the WCPFC and the SPRFMO’s decision-making mechanism could provide an example for other RFMOs that are seeking to enhance their decision-making process.

An effective decision-making mechanism is imperative for RFMOs as it provides a transparent process for the stakeholders to engage. In general, the effectiveness of consultation with stakeholders comes down to each member state. That is to say, each member must ensure consultation with its fishery industry and stakeholders directly. On the other hand, the fishery industry representatives maintain their interests by working and pushing their delegations. At the national level, however, the stakeholder’s engagement varies in the member states of the selected RFMOs.

At the regional level, according to the UN Fish Stocks Agreement, each RFMO should provide for transparency in the decision-making process and afford the opportunity for the representatives from the intergovernmental organizations and non-governmental organizations to take part in their meetings as observers. These observers should have timely access to the records and reports of the RFMO, subject to the procedure rules on access to them (Article 12.2 of the UN Fish Stocks Agreement).

In the three case studies, all of them have met the requirements in offering the chances to allow the representatives from the intergovernmental organizations and non-governmental organizations to participate in their meetings. Regulations governing attendance and participation in each RFMO is set out in their rules of procedure. In the cases of WCPFC and SPRFMO, the findings reveal that both of their decision-making processes are transparent, and the stakeholders are able to participate in their meeting fully.

In the case of CCSBT, the delegations tended to deliberate the allocation issue behind closed doors, and the decisions were made with little or no explanation. Due to the closed meetings for the heads of delegation, the observers and cooperating non-members cannot engage in the organization’s meeting entirely. Also, some reports and documents are not immediately available for the observers. This lack of transparency makes it is hard to hold the delegations accountable for their decisions. More importantly, the delegations are not able to build credibility with the general public.

Abrams et al. (2003), Mahon et al. (2013), and Stratford et al. (2010) claimed that transparency is one of the essential principles for natural resource governance. Institutions and decision-making processes should be accessible to stakeholders by information sharing. Furthermore, Lodge et al. (2007) suggest that the best practice for RFMOs is that the RFMO should ensure its final decisions and the adoption of management recommendations are made in Plenary at the Commission meeting. Given this, the CCSBT should improve its transparency to enhance the organization's effectiveness.

8.2.4 Monitoring, control and surveillance

The commons literature suggests that robust commons governance is easier to achieve when users support active monitoring and rule enforcement (Dietz et al., 2003). Therefore, effective monitoring, control and surveillance measures are crucial for sustainable high seas fisheries governance of RFMOs. The relevant international legal instruments, such as the UN Law of the Sea Convention, the UN Fish Stocks Agreement, the Compliance Agreement and the Code of Conduct, have provided comprehensive provisions in this regard. The best practices from the Chatham House and the Kobe Process further recommended essential elements for RFMOs' monitoring, control and surveillance measures. The research findings reveal that the selected RFMOs have established a variety of measures that implement these provisions to enhance each organization's effectiveness. Table 8.3 shows the comparison of monitoring, control and surveillance measures among the RFMOs in question.

Table 8. 3 The comparison of monitoring, control and surveillance measures in three case studies

	CCSBT	WCPFC	SPRFMO
Vessel register	Yes	Yes	Yes
Vessel monitoring system (VMS)	Yes	Yes	Yes
Centralized vessel monitoring system	No centralized VMS	Centralized VMS provides simultaneous transmission of reports to the Secretariat and the flag state	Centralized VMS provides simultaneous transmission of reports to the Secretariat and the flag state

Transshipment program	Yes	Yes	Yes
Regional observer program	Yes, the target scientific observer coverage of 10% for each fishery	Yes, 100% for purse seine vessels and 5% for long-line vessels	Has established but not yet entered into force
Catch documentation scheme	Yes	Not yet	Not yet
High seas boarding and inspection scheme	Not yet	Yes	Not yet but has followed the UN Fish Stocks Agreement regulations

The common monitoring, control and surveillance measures that selected RFMOs use are the vessel register, vessel monitoring system, and transshipment program. These measures are also common practices among other RFMOs to ensure compliance by their members. In contrast, the more advanced measures, such as the observer program, catch documentation schemes and high seas boarding and inspection scheme have been established only in some of them.

The observer program enables the RFMO not only to collect scientific data but also to monitor the implementation of adopted conservation and management measures. The observer coverage requirements vary among the three cases. In the WCPFC, 100 percent coverage is required for large-scale purse seine vessels and five percent for long-line vessels. In the CCSBT, the observer program focuses on the collection of science-related information, and therefore it requires a target scientific observer coverage of 10% for each fishery. For the SPRFMO, the aim of observer coverage will be 100 percent in trawl fisheries and ten percent in all other fisheries.

The catch documentation scheme is a market-related measure of monitoring, control and surveillance. It tracks and traces fish from the point of capture through unloading and throughout the supply chain in order to combat illegal, unreported and unregulated fishing (FAO, 2015). Arguably, it is the most effective mechanism capable of directly eliminating

illegal fishing activities by limiting access of illegal fish and fishery products to markets (Agnew, 2000; Clarke, 2010). The CCSBT has implemented this scheme since 2010 as a powerful tool for monitoring compliance. The WCPFC has discussed this scheme but has not developed any scheme yet (WCPFC, 2010b, 2013a). In fact, even though the catch documentation scheme has been proven an effective tool to combat illegal fishing and improve catch statistics, only three RFMOs have established this scheme to date (Clarke, 2010; FAO, 2015; Mooney-Seus & Rosenberg, 2007). They are the CCSBT, the ICCAT and the CCAMLR.

The high seas boarding and inspection scheme empowers the members of an RFMO to conduct boarding and inspection of fishing vessels engaged in its management area. In doing so, the RFMO can combat illegal fishing activities effectively, as well as promote compliance from the authorized fishing vessels of members and non-members (Proulx, 2003). The WCPFC and the SPRFMO were established after the UN Fish Stocks Agreement entered into force and had followed its regulations regarding the high seas boarding and inspection. On the other hand, although the members that can become a party to the UN Fish Stocks Agreement have become parties to this agreement, the CCSBT has not yet developed its own boarding and inspection scheme.

It is worth noting that the WCPFC and the SPRFMO have established a centralized vessel monitoring system which provides transmission of reports to the Secretariat and the flag state simultaneously. The CCSBT has not yet developed its own vessel monitoring system. Instead, it requires compliance with the monitoring system of the WCPFC, the CCAMLR, the ICCAT, and the IOTC.

The best practices from the Chatham House suggest that a comprehensive monitoring system should develop a centralized vessel monitoring system so that the RFMO and the flag state can receive the data directly from the vessels involved in fishing operations on the high seas in real time (Lodge et al., 2007). This recommendation is essential for high seas governance of RFMOs because few long-surviving resource regimes rely primarily on levels of trust and reciprocity among resource users to keep rule-breaking levels down (Ostrom, 2005). Hence, developing a centralized monitoring system is vital for RFMOs as it makes those fishing vessels that do not comply with rules visible to the community, which facilitates the effectiveness of monitoring, control and surveillance mechanisms.

Ostrom (1990) and M. Cox et al. (2010) emphasize the importance of monitoring in managing common pool resources, such as fisheries. The research findings on monitoring, control and surveillance mechanisms are in agreement with their emphasis. In addition, the research findings reveal that holding monitoring accountable to resource users in regional and global commons is much more difficult than in national level commons. Some monitoring schemes are either technically challenging to implement or require expensive equipment and many trained staffs, such as a centralized vessel monitoring system and high seas boarding and inspection scheme. However, Stern (2011) argued that establishing independent monitoring of the resource is a fundamental design principle for global resource commons, which is also a key principle for RFMOs to sustainably manage fishery resources. Each RFMO has to develop independent and accountable monitoring, control and surveillance mechanisms although there are some technical or political issues for them to overcome.

8.2.5 Manifestation of accountability

Sustainable high seas fisheries governance cannot successfully be attained without the full cooperation and compliance of all members of RFMOs. Nevertheless, the evidence has shown that violations from members and illegal fishing activities of non-members inevitably occur against governing the high seas fisheries commons. In the RFMO context, there are two levels of sanctions against non-compliant fishing vessels. One is against the member that fails to control its vessels, and another is against the vessels themselves (Rayfuse, 2016, p. 195). In the selected RFMOs, different regulations and measures have been created to sanction non-compliance and enhance the organization's effectiveness (see Table 8.4).

Table 8. 4 The comparison of sanction mechanisms in three case studies

	CCSBT	WCPFC	SPRFMO
The provision of the Convention	No provision for penalizing infringements	Article 25 requires that members must ensure that the non-compliant vessel ceases fishing activities until appropriate sanctions have been followed	Articles 3 and 25 require that members must ensure compliance by implementing sanctions to deprive offenders of the benefits accruing from

			their illegal activities
Resolution or conservation and management measure	The Resolution has been established but there is no IUU vessel list Corrective Action Policy	The IUU vessel list Compliance Monitoring Scheme	The IUU vessel list Compliance Monitoring Scheme
Other measure	The quota pay back sanction was applied in practice before the Corrective Action Policy was adopted	Trade-related restriction by the EU	

As can be seen in Table 6.14, the CCSBT Convention, which was established prior the UN Fish Stocks Agreement, has no provision for penalizing infringements by members and cooperating non-members. On the other hand, the WCPFC and the SPRFMO have complied with the requirements of the UN Fish Stocks Agreement, specifying the members' responsibilities to sanction non-compliant vessels in their conventions. However, the CCSBT is notable in that it has provided the quota pay back sanction in practice since 2006.

According to Ostrom (2005), a durable and robust governance arrangement of common pool resources has a sanctioning system in which users who break the rules are likely to receive graduated sanctions, depending on the seriousness and context of the offense. A graduated sanctioning system deters participants from excessive violations of rules and helps maintain community cohesion while punishing severe cases (M. Cox et al., 2010). The empirical evidence shows that the CCSBT's experiences support and highlight the importance of sanction mechanisms. That is, when the punishments are used, a member that purposely or by error breaks a rule is notified that other members notice the infraction (Ostrom, 2012). This could stop the member from continuing its non-compliance behavior. As in Japan's over-catches case, Japan never exceeds its national allocations after receiving the quota pay back penalty.

It is interesting to note that although the sanction mechanism has been approved as an efficient policy instrument, it may not be the main and most effective policy instrument choice to increase members' compliance in the RFMO context. The research findings from the selected three RFMOs reveal that the best compliance strategy should provide a combination of deterrents and incentives. Put differently, the "carrot and stick" approach

holds the promise of securing compliance and deterring violations.

According to Chayes (1995), non-compliance and incomplete compliance may occur not because of a rational choice not to comply but because of the following three circumstances: (a) ambiguity and indeterminacy of treaty language; (b) limitations on the capacity of members to conduct their tasks; and (c) the provisional dimension of the social, economic, and political changes contemplated by regulatory treaties (p.10). Under these circumstances, the "managerial model", which relies on a cooperative and problem-solving approach, will be a better alternative than the "enforcement model" of compliance. At present the selected three RFMOs not only follow the "enforcement model" but also recognize the significance of the "managerial model". As we can see in their Corrective Action Policy and Compliance Monitoring Scheme, the compliance system focuses on appropriate penalties and actions as well as capacity-building. Through technical assistance or capacity-building, the RFMO could identify the critical factors that hinder member states from full compliance. Further, based on this feedback, the RFMO could refine or amend its management measures for better effective implementation.

8.2.6 The principle of compatibility

There is a broad consensus in the international community that the conservation and management of straddling and highly migratory fish stocks requires the cooperation between coastal states and states fishing on the high seas. The research findings show that the RFMOs established after the adoption of the UN Fish Stocks Agreement usually establish a requirement of compatibility. The WCPFC and the SPRFMO have incorporated the notion of compatibility into their conventions and some management measures (see Table 8.5).

Table 8. 5 The comparison of compatibility in three case studies

	CCSBT	WCPFC	SPRFMO
The compatibility requirements are in its Convention	No	Yes (Article 8)	Yes (Article 4)
Has adopted the compatible conservation and management measures	No	Yes (CMM2008-01; CMM-2014-01)	Yes (CMM 01-2017)

Neither the CCSBT Convention nor the management measures adopted by the Commission require the principle of compatibility. This is because of the characteristic of CCSBT's memberships. In the CCSBT, there are only two developing coastal state members, and therefore the organization is prone to have different requirements for developing members in lieu of establishing compatible measures for now.

While the UN Fish Stocks Agreement stipulates the necessary legal framework for RFMOs to apply the principle of compatibility, the establishment and requirements of compatible measures depend on RFMO members' willingness. In 2006, the UN Fish Stocks Agreement Review Conference criticized that the principle of compatibility had not been fully applied in some fish stocks because of a lack of cooperation between coastal states and distant water fishing nations (UNGA, 2006a). The following Review Conferences in 2010 and 2016 kept asking members and RFMOs to strengthen efforts to improve cooperation between coastal states and high seas fishing states so as to ensure the efficiency of compatible measures (UNGA, 2010a, 2016). They argued that discrepancies between areas within and beyond national jurisdictions could undermine efforts to rebuild certain straddling and highly migratory fish stocks.

Örebech et al. (1998) argue that the members of an RFMO could have two approaches to achieve compatible measures: the bottom-up and the top-down (p.128). The bottom-up approach is where an RFMO accepts the autonomy of the coastal state to establish quotas and management measures for its exclusive economic zone, which the RFMO is obliged to consider in the establishment of high seas allocations and management measures. Conversely, the top-down approach accepts that the RFMO has the responsibility to set quotas and management measures throughout the entire fish stock.

Under the top-down approach, the RFMO could emphasize ecological integrity, holistic management and supranational authority rather than national sovereignty (Örebech et al., 1998). Nevertheless, it is challenging to use this approach in practice as the coastal states have to relinquish their sovereign rights to the RFMO. The WCPFC is a case in point. The WCPFC Convention states the functions of the Commission are without prejudice to the sovereign rights of coastal states to explore, conserve and manage highly migratory fish stocks within their exclusive economic zones. Hence, the sovereign rights for the exclusive economic zone remain at the coastal states, namely the Pacific Island countries, in the

WCPFC. The Commission has no authority to allocate fishing rights within coastal states' exclusive economic zones (Hanich, 2009).

It should be noted that the SPRFMO Convention provides an opportunity for members to follow the top-down approach in order to create comprehensive management measures. Although currently there is only one coastal state (Chile) willing to consent to a shared total allowable catch with the Commission, it reveals a positive trend to achieve compatibility in the SPRFMO, which could set an excellent example for other RFMOs.

8.2.7 Conflict resolution mechanisms

Differences and conflicts over an exhaustible resource are inevitable in governing common pool resources, and therefore the presence of established mechanisms for dispute resolution to maintain collective action is needed (M. Cox et al., 2010). In the three selected RFMOs, the dispute settlement procedures have been included in their conventions. Nonetheless, only the dispute settlement procedures in the WCPFC and the SPRFMO are compulsory or include binding resolutions of disputes (see Table 8.6).

Table 8. 6 The comparison of dispute settlement procedures in three case studies

	CCSBT	WCPFC	SPRFMO
Article of the dispute settlement procedures in the Convention	Article 16	Article 31	Article 34
The nature of the dispute settlement procedures	Not binding resolution of disputes (Article 16.2)	Compulsory (following the provisions of the UN Fish Stocks Agreement)	Compulsory (following the provisions of the UN Fish Stocks Agreement)

In the CCSBT, the consent in each case of all members to the dispute is required when referring the dispute to the International Court of Justice or to arbitration for settlement. It can be argued, however, that the compulsory dispute settlement procedures of the UN Fish Stocks Agreement remain applicable in disputes between members of the CCSBT that are parties to the UN Fish Stocks Agreement (Henriksen, 2016, p. 556).

The international fisheries law requires states to cooperate so as to prevent disputes and to solve their conflicts in a peaceful manner. This has been reflected in the selected three RFMOs. The empirical evidence shows that members of the RFMO always try to use their best efforts to resolve their conflicts. Diplomatic negotiations, discussions and communications through the Chair's assistant at the Commission meeting and the active involvement of the Secretariat are the conventional means used in practice. The dispute settlement procedures are rarely used. That being said, the southern bluefin tuna case has demonstrated that the effective dispute settlement regime is significant for RFMOs.

8.2.8 Policy learning and adaption

The need for RFMOs to amend their mandates and to strengthen conservation and management measures that comply with the international legal instruments in order to improve their effectiveness has led numerous RFMOs to undertake performance reviews. Those RFMOs include the three selected RFMOs in this study. The CCSBT has conducted its performance review twice. The WCPFC has finished its performance review once and has reviewed the effectiveness of its Compliance Monitoring Scheme. The SPRFMO Convention requires the Commission to review its management measures and the provisions of the Convention in order to provide appropriate refinements of conservation and management measures.

Policy learning means that the states and the organizations can learn from their experiences and they can modify their current actions based on their interpretation of how previous measures have failed in the past (Huntjens et al., 2011). The research findings reveal that policy learning and adaption through the performance review is crucial in the context of high seas fisheries governance. The CCSBT is an excellent example in this regard. After implementing the recommendations and reforming its institutional arrangements and management measures, the CCSBT has made significant progress in improving its effectiveness.

8.3 The central factors of policy implementation

The most significant factor affecting implementation outputs in this study is having strong political will and commitment. This finding is in accord with the research results of Najam (1995) and Giacchino and Kakabadse (2003) that commitment is crucial to implementation success. The research findings indicate that when a state decides to participate in and cooperate with an RFMO, it has demonstrated its willingness to comply with management measures adopted by the RFMO and to contribute towards sustainable global fishery resources. The international law literature suggests that there are three main reasons that motivate states to do so: (a) states act through self-interest to enhance the effectiveness of institutions and regimes; (b) states act by internal necessity to adjust existing structures and systems to new paradigms; and (c) states pay attention to social movements, especially the conservation and environmental activities (Gorina-Ysern, 2004, p. 697).

Successful policy implementation requires that the members' behavior be modified (DeLeon & DeLeon, 2002). Thus, it is critical to know what factors discourage members from the necessary commitment to change their behavior so as to achieve the organization's goal. By looking through the three case studies, it is evident that the government's engagement and capacity, distribution of preferences, and commitment to preferences are key factors influencing member states' political will (see Figure 8.1).

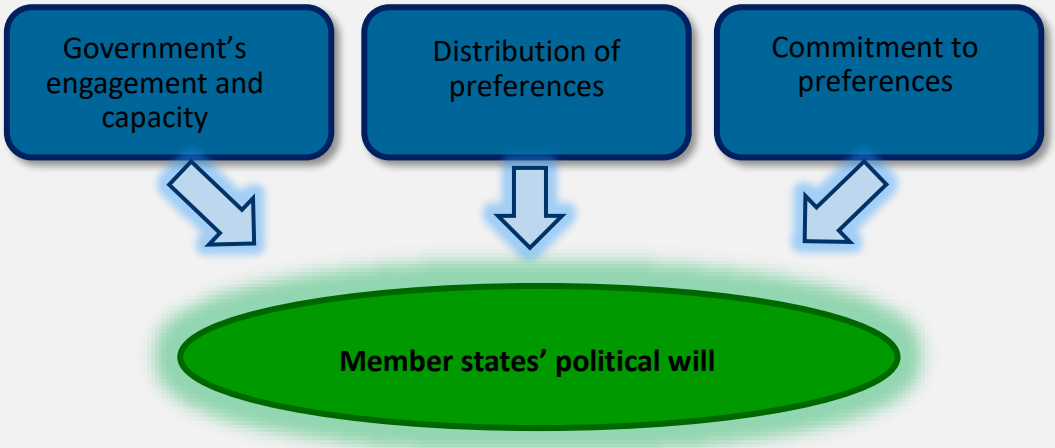

Figure 8. 1 The Key factors affecting member states' political will

Before proceeding with a discussion on the key elements affecting political will and the recommendations to enhance it, a definition about the meaning of political will is necessary. According to Post, Raile, and Raile (2010) political will is "the extent of committed support among key decision makers for a particular policy solution to a particular problem" (p.659). Brinkerhoff and Kulibaba (1999) define political will as "the commitment of actors to undertake actions to achieve a set of objectives" (p.3). This commitment is manifested by political leaders and government agency officials. Rose and Greeley (2006) conceive political will as "the sustained commitment of politicians and administrators to invest political resources to achieve specific objectives" (p.5).

Based on the empirical evidence that inductively comes up with the interviews, this study creates a definition of political will as follows: "*Political will is the extent of willingness/disposition and capabilities of the member states to undertake management measures and actions to achieve the organization's objectives.*" Furthermore, according to the above definition this study forms a typology of four modes of political will, which can help to understand the situations that the RFMOs can possibly face (see Table 8.7).

Table 8. 7 A topology of four modes of political will in RFMOs

		Willingness/disposition	
		Low	High
Capabilities	Low	**Mode A** Do not want to and cannot do it	**Mode B** Do want to but cannot do it
	High	**Mode C** Do not want to but can do it	**Mode D** Do want to and can do it (Outcomes are expected to be optimal)

Political will is crucial, and the Mode D of political will can be seen as an optimal form for RFMOs. In the Mode D scenario, a member state of the RFMO has high willingness and high capabilities simultaneously, which means the member state not only wants to comply with conservation and management measures but also has sufficient capacity to do so. In reality, nevertheless, there is no guarantee that each member has the same or similar

capabilities to implement all kinds of management measures (Nelson, 1984). This is particularly the case of developing member states, which is the typical case of the Mode B of political will (high willingness with low capabilities) in RFMOs. They may want to display their high degree of commitment to undertake actions to achieve necessary objectives; nonetheless, their insufficient capacity would detract from political will.

This situation would result in two undesirable scenarios. One is that critical and necessary management measures cannot be adopted by the Commission (at the organizational level) because the members do not believe in their abilities to implement those measures. Another scenario is that the members agree to adopt the measures but cannot adequately enforce those measures at the domestic level. Sometimes it may even cause non-compliance problems. Under such circumstances, investment in capacity-building becomes essential. In the selected three RFMOs, some capacity-building programs have been established to assist members in fulfilling their obligations. In a sense, these programs not only improve members' capabilities but also strengthen their commitment to the organization, which can transfer the Mode B situation into the optimal Mode D.

Van Meter and Van Horn (1975) argue that policy implementation will be most successful when the level of goal consensus is high. Nonetheless, one of the most prominent challenges in the context of high seas fisheries governance is that different actors pursue different objectives and priorities (Olsen, 2008). This situation leads to diverging interests between members and different preferences of governance arrangements, which could result in the Mode C of political will (high capabilities with low willingness) in RFMOs. It is evident that member states have extensive political pressures from influential groups, such as the fishery industries and environmental non-governmental organizations. These political pressures play the most important role in shaping members' commitment to environmental policy (Hays, Esler, & Hays, 1996). In many instances, a common understanding of a particular problem on the formal agenda is absent between members, which fails to create an aggregate political will (Post et al., 2010). The larger the memberships, the greater the conflicts of interest, which is a common predicament in the WCPFC. There is an obvious need for the members of RFMOs to build trust and manage conflict so that they can maintain the commitment to attain the long-term goals.

The empirical evidence also reveals that the availability of appropriate resources for the RFMO activities and the cooperation and coordination with other relevant organizations are significant in the organization's implementation success. The research findings show that, in general, the financial budget and other resources are made available to the Secretariats in the three case studies so that they can achieve the objectives set by the Commission. Nevertheless, along with the growth of memberships, the rising demand of scientific work, and the expanding workload at the Secretariat, it is apparently necessary to increase the members' contributions to support the financial budget and extra human resources. Any formal or informal regulations that do not allow an increase in funding are unrealistic and will constrain the functioning and effectiveness of the Secretariat. For instance, the principle of a fixed increased percentage of the contributions in the CCSBT has caused some problems, particularly in terms of hindering scientific work. In these circumstances, the CCSBT Commission should seek to expand its financial base by changing the increased percentage of the contributions.

According to Peterson (1997), an intergovernmental organization's Secretariat more often plays a role as network manager that encourages contacts and communications, disseminates members' ideas, and promotes discussions that result in refinements of environmental understanding. This suggests the role of Secretariat is on the administrative side, which also reflects the role of an RFMO's Secretariat in theory. The research findings reveal that the three Secretariats so far have done very well to fulfill the tasks delegated to them by the Commission, in particular regarding information collection and sharing, communication, and the organization of meetings and research workshops. Moreover, they play a more active role in practice by cooperating with other organizations and participating in relevant meetings. The function of the Secretariat nowadays is in the administrative dimension as well as to serve as a promoter of coalitions. This implies that the Secretariat could become an important actor to facilitate the strategic linkages in governing high seas fisheries (Jinnah, 2011).

Over the past decades, the international community has progressively recognized the significance of the participation of non-state actors in global fisheries governance. The UN Fish Stocks Agreement requires that representatives from other intergovernmental organizations and non-governmental organizations concerned with straddling and highly migratory fish stocks should have the opportunity to take part in meetings of RFMOs as

observers. The rule of procedure in the three selected RFMOs has provided a right for those non-state actors to attend the Commission and subsidiary bodies' meetings and deliver their statements as observers.

The research findings show that the non-governmental organizations have participated actively in the WCPFC, compared to the other two RFMOs. This is because the Convention area and management species in the WCPFC have involved many environmental and ecosystem issues that interest those non-governmental organizations. In addition, those organizations are allowed to participate in all meetings (including the negotiation sessions) and express their perspectives in the WCPFC.

It is acknowledged that a large number of the non-governmental organizations can access funds and technical expertise and thereby have contributed to legitimizing the international instruments (Manoa, 2009; Parmentier, 2012). For instance, many scientists belong or work with the World Wide Fund For Nature (WWF) and Greenpeace International to actively promote the development and improvement of marine governance policies by influencing legislation at national, regional and global levels.

When taking part in the RFMO's meeting, the non-governmental organizations can help to raise awareness about significant issues and encourage the necessary efforts to improve. Through participating in the meetings and negotiations directly, they can identify which members are responsible for blocking important decisions. As a result, they can exert their influence on those members to help the RFMO reach an agreement. The pressure from the non-governmental organizations is rather weighty, and therefore it can enhance the transparency and accountability in the RFMOs.

Since the UN Fish Stocks Agreement Review Conference in 2006, strengthening and enhancing cooperation among RFMOs has been emphasized over a decade (UNGA, 2006a, 2010a, 2016). The significance in this regard has been reflected in the three case studies, which have made remarkable progress in cooperating and coordinating with other RFMOs. In theory, those RFMOs must collaborate with other intergovernmental organizations, particularly with other RFMOs, as their Convention obligates them to do so. In practice, considering the cooperation would be mutually beneficial, they actively explore the chance to work with each other by signing the Memorandum of Understanding.

In addition to cooperating with other RFMOs, the CCSBT and the WCPFC also work closely with other tuna RFMOs through the Kobe process that has proven to be successful in coordinating the work of the tuna RFMOs (UNGA, 2010a). Under this form of collaboration, these two RFMOs are able to harmonize their data collection and sharing systems with other tuna RFMOs to ensure effective implementation of their management measures.

Chapter 9: Conclusion

9.1 Introduction

This study focuses on how governance arrangements and policy implementation influence organizational effectiveness in the context of high seas fisheries. The interest lies in exploring the key design principles of governance arrangements and the central factors affecting each organization's policy implementation. A case study strategy involving narrative inquiry, documentary analyses, and a thematic analysis approach to data analysis was utilized to examine the research questions. In this final chapter, the answers that were provided to my research questions first posted in Chapter One are summarized. This is followed by the contribution to theory, empirical body of knowledge and policy. Finally, it points out the limitations of the study and the suggestions for future research.

9.2 Research questions

The overarching research question in this study is: How do governance arrangements and policy implementation affect organization effectiveness? In order to answer this question, three sub-questions have been investigated in this research. The following sections summarize the answers to each sub-question.

Question 1: What are the differences in the designs of the governance arrangements of RFMOs with significantly diverging effectiveness?

First of all, in order to discover the differences of RFMOs' governance arrangements that lead to diverging effectiveness, one of the case selection criteria is based on a review of the Cullis-Suzuki and Pauly (2010) quantitative research. In their research results, the CCSBT earned the lowest score among all RFMOs, while the WCPFC obtained the highest score in theoretical effectiveness. As for the SPRFMO, it is the newest RFMO and deemed a good example of creating a comprehensive Convention.

The research findings and discussions in Chapters Six and Eight show that the governance arrangements in the WCPFC and the SPRFMO are established in a manner wholly faithful to the requirements of the international legal instruments for high seas fisheries, particularly

consistent with the UN Fish Stocks Agreement. On the other hand, the CCSBT Convention was established prior to the UN Fish Stocks Agreement. The designs of the governance arrangements of the CCSBT to some extent were absent from the modern principles and guidelines when Cullis-Suzuki and Pauly (2010) conducted their research. In particular, the CCSBT fell short of the design principles of clearly defined boundaries, well established collective-choice arrangements and accountable monitoring, control and surveillance at the time.

After adopting the management procedures in 2010 as a precautionary approach and the strategic plan in 2011 to implement the performance review reports' recommendations, the CCSBT has not only made progressive improvement in its effectiveness but also made itself into a modern RFMO. It will be seen from this that well-designed governance arrangements incorporating up-to-date principles and guidelines are imperative for RFMOs' effectiveness.

Question 2: What are the critical factors that constitute well-designed governance arrangements of RFMOs and how do they influence RFMOs' effectiveness?

The empirical evidence collected from the selected three RFMOs identifies eight key design principles that are influential and essential to organizational effectiveness. These principles include:

- Clearly defined boundaries: The boundary rules stipulate which fishing vessels are allowed to fish, and how many fishing opportunities should be allocated within the limit to each of the member states. If those rules are well-defined, they can potentially exclude others' impacts, and develop greater trust and reciprocity among members, which leads to a high degree of implementation outputs.

- A well-matched proportional equivalence: The critical concept of high seas fisheries governance is that the obligation to collaborate is mutual. Rejecting or delaying a state's chance to become a member will undermine the RFMO's effectiveness because it relieves new entrants of their duty and reduces their willingness to fully comply with the management measures adopted. Hence, having a positive attitude towards the admission of new members and identifying the rules regarding accommodating new members and their allocations (fishing opportunities) are both crucial for sustainable high seas fisheries governance of RFMOs.

- Well established collective-choice arrangements: An effective decision-making mechanism that provides a transparent process for the affected stakeholders to engage and gives advice in a timely and efficient manner will lead to positive impacts on implementation outputs. An effective decision-making mechanism could be adopting a three-fourths majority vote if consensus cannot be reached, with rigorous legitimate grounds for the objection procedure.

- Accountable monitoring, control and surveillance mechanisms: Conservation and management as well as prevention of illegal fishing activities cannot be attained without adequate monitoring, control and surveillance. To ensure long-term sustainable utilization of fish stocks, monitoring, control and surveillance measures adopted by RFMOs must be implemented entirely by their members. These measures include not only conventional means, such as the vessel register, vessel monitoring system, and transshipment, but also the more advanced measures, such as the observer program, catch documentation schemes, high seas boarding and inspection scheme, and a centralized vessel monitoring system. Those accountability measures make fishing vessels that do not comply with rules visible to the community. Consequently, it could enhance members' compliance and enforcement, which leads to a high degree of effectiveness.

- Manifestation of accountability: The "carrot and stick" approach holds the promise of securing compliance and deterring violations in the context of high seas governance. Thus, the best compliance system should center on appropriate penalties and actions as well as capacity-building to ensure the organization's effectiveness.

- The application of the principle of compatibility in position: The RFMO should ensure compatibility of management measures for the high seas and areas under national jurisdiction concerning straddling and highly migratory fish stocks, as discrepancies between regions within and beyond national jurisdictions could undermine efforts to sustain or rebuild fish stocks. The coastal states must ensure that measures taken for their national jurisdiction do not undermine the effectiveness of measures adopted by the Commission, and *vice versa*.

- Effective conflict resolution mechanisms: Diplomatic negotiations, discussions and communications through the Chair's assistant and the active involvement of the Secretariat are the conventional means used to solve conflicts in practice among RFMOs. Given the increasing number of members and the depletion of fishery resources, an effective dispute settlement regime is fundamental for RFMOs to maintain collective action.

- Policy learning and adaption: Policy learning and adaption through regular performance review is crucial for high seas governance. RFMOs can reform and refine institutional arrangements and management measures by implementing each review's recommendations to improve effectiveness.

In line with Ostrom (1990), Anderies et al. (2004), and Poteete et al. (2010), arguing that the prospects for sustainable fisheries governance tend to increase when more of the design principles are in position, this study based on case study comparisons concludes that the relationships between the designs of governance arrangements and RFMO's effectiveness are as follows:

"*The effectiveness of the organization is likely to be enhanced when the RFMO's governance arrangements have incorporated the design principles that characterize robust and up-to-date principles and guidelines for achieving sustainable utilization of high seas fisheries resources.*"

Question 3: What are the central factors that affect RFMOs' policy implementation and how are they manifested?

The most significant factor is to have strong political will and commitment. According to the empirical evidence inductively produced by the interviews, this research defines that "*political will is the extent of willingness/disposition and capabilities of the member states to undertake management measures and actions to achieve the organization's objectives.*" Three essential elements influence members' political will: the government's engagement and capacity, distribution of preferences, and commitment to preferences. A typology of four modes of political will (Table 8.7) was formed in this study to help understand the situations that the RFMOs can possibly face. It is suggested that capacity-building, trust-

building and conflict management can help to uplift member states' political will to the objectives of the organization.

The other two factors are the availability of appropriate resources for the RFMO activities and the cooperation and coordination with other relevant organizations. Robust financial budgets and human resources help the Secretariat function well to conduct its work. The role of the Secretariat could be advanced to serve as a promoter of coalitions to enhance the RFMO's policy implementation. In addition, the involvement of non-governmental organizations improves transparency and accountability in the RFMOs, while the cooperation with other intergovernmental organizations, particularly with other RFMOs, can harmonize and ensure effective implementation.

9.3 Contributions

9.3.1 Contribution to theory

The common pool resources theory affords a promising approach to natural resources governance. Ostrom studied hundreds of case studies and proposed eight design principles to help delineate robust institutions for governing common pool resources. This research contributes to common pool resources theory through the modified Ostrom's design principles to obtain further understanding of applying design principles for RFMOs' governance arrangements in governing high seas fisheries.

The commons scholars indicated that different scales of commons face different governance challenges and therefore the most important design principles might change according to the critical problems (Stern, Dietz, Dolsak, Ostrom, & Stonich, 2002). Compared to the original design principles of Ostrom (1990), there is one principle that has not been used in this study: minimal recognition of rights to organize (see Table 9.1). This principle requires higher-level authorities to allow resource users to devise their own rules, which is difficult to apply in regional and global commons. Also, three design principles need modification to fit in the large scale of commons: proportional equivalence, collective-choice arrangements, and graduated sanctions. The proportional equivalence principle should take into account the new members issues to be an essential principle in regional and global commons. The collective-choice arrangements are as critical for global

commons as for local, but it must incorporate the concept of an effective decision-making mechanism to implement. The graduated sanctions are also as important as global commons as local; however, these need to be made more comprehensive by considering the manifestation of incentives.

Table 9. 1 The comparison of design principles between Ostrom and this study

Ostrom's design principles	Applicable	Design principles for regional and global setting
Clearly defined boundaries	Yes	Clearly defined boundaries
Proportional equivalence	Need modification	Proportional equivalence
Collective choice arrangements	Need modification	Collective choice arrangements
Monitoring	Yes	Monitoring, control and surveillance mechanisms
Graduated sanctions	Need modification	Manifestation of accountability
Conflict resolution mechanisms	Yes	Conflict resolution mechanisms
Rights to organize	Not applicable	
Nested enterprises	Yes	Compatibility
		Policy learning and adaption (New)

Furthermore, this study defines an additional design principle for regional and global commons: policy learning and adaption. In order to address complexities and uncertainties, the ability of institutions to learn and change is essential. As emphasized by Ostrom, these design principles presented in this study do not foster a narrow blueprint style. Instead, they identify core principles that can be used in the design of effective governance arrangements on a large scale, i.e., in the regional or global context.

In addition to the contribution above, this research contributes to implementation theory through confirmation that a top-down perspective dominates governance arrangements and preferences. The RFMOs focus on rules and management measures to maximize the prospect of achieving their policies and objectives. Strong political will, robust financial

and human resources and coalitions are the preconditions for successful implementation. Based on the empirical evidence, this study forms a definition and a typology of four modes of political will in RFMOs to help better address the lack of political will issues.

9.3.2 Contribution to empirical body of knowledge

The previous research has focused on the assessment of effectiveness and transparency issues of RFMOs and has paid little attention to the systematic exploitation of the designs of governance arrangements and policy implementation of RFMOs. This research addresses the gap in literature by offering an in-depth comparative study of three selected RFMOs. Utilizing the modified Ostrom's design principles, the research findings not only identify the key features constituting RFMOs' governance arrangements but also contribute to the knowledge of how RFMOs' effectiveness can be enhanced. Moreover, although there has been grey literature that indicates the important factors influencing RFMOs' policy implementation, there is no research that has deeply investigated and discussed these center factors. This study identifies these main factors affecting RFMOs' policy implementation as well as discusses the way they manifested. As such, it contributes to the empirical body of knowledge on governance arrangements and policy implementation of the high seas governance.

9.3.3 Contribution to policy

This study provides three detailed case studies describing the strengths and weaknesses concerning their governance arrangements. The policymakers of RFMOs can use these three cases to learn how to better achieve their overarching objectives. To this end, the policymakers can translate these design principles into a series of questions when thinking about enhancing their governance arrangements. The most critical issues that should be asked would be: (a) How to provide fair and equitable fishing opportunities for members to better define the boundaries of management species? (b) How to identify the rules to accommodate new members and consider their allocations? (c) Do we have an effective and transparent decision-making mechanism to make significant decisions? (d) How can we improve the monitoring, control and surveillance mechanisms? (e) Do we have a regular performance review to facilitate policy learning and adaption? Taking all of these questions into account can help RFMOs work on their management fish stocks sustainability.

In addition, this research indicates three central factors influencing RFMOs' implementation. Not surprisingly, the strong political will is the most crucial factor. Since the political will is the most essential factor for RFMOs' policy implementation, the policymakers should learn how to advance capacity-building, trust-building and conflict management between members so as to govern fisheries resources in a sustainable way.

9.4 Limitations and recommendations for future research

Limitations specific to this study are in case selection and data collection phases. Although the rationale of case sampling was theory-driven to make analytic generalizations possible, the feasibility in relation to time, budget, and access to some extent constrained the case selection. Only three RFMOs were selected and examined in this research.

Another limitation is the data collection process. The researcher's time frame for fieldwork happened to overlap the annual Commission meeting and sub-committee meeting schedules of the three selected RFMOs. This situation resulted in some interviewees being willing to participate in the research but were not available during the fieldwork timeframe. Even though the researcher was able to conduct interviews with people from different types of groups (i.e., the official of representative RFMOs, the delegations of member states, fisheries experts and the advisor of non-governmental organizations), the number of participants was smaller than expected. Furthermore, the delegations of members who participated in the study were all from the developed member states or distant water fishing nations. No interviewee was available from the developing member states or Pacific Island states. The research findings might have been strengthened with a larger number of participants from different backgrounds.

Given the above limitations, this study suggests that further research could be conducted investigating other RFMOs with more interviewees from divergent backgrounds. Also, further work would be useful to apply the design principles presented in this study in other RFMOs or in other regional and global commons to test and refine its application.

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Appendices

Appendix A Glossary

Term	Definition
Allocation	"Distribution of the opportunity to fish among user groups or individuals. The share a user group gets is sometimes based on historic harvest amounts" (Blackhart, Stanton, & Shimada, 2006, p. 2).
Common Pool Resources	"A natural or man-made resources system that is sufficiently large as to make it costly (but not impossible) to exclude potential beneficiaries from obtaining benefits from its use" (Ostrom, 1990, p. 30).
Exclusive Economic Zone (EEZ)	"A zone under national jurisdiction (up to 200-nautical miles wide) declared in line with the provisions of 1982 United Nations Convention of the Law of the Sea, within which the coastal State has the right to explore and exploit, and the responsibility to conserve and manage, the living and non-living resources" (FAO, 2003, p. 105).
Fish Stock	"The living resources in the community or population from which catches are taken in a fishery" (FAO, 2003, p. 105). Usually, it implies the particular population is, to some extent, isolated from other stocks of the same species and consequently self-sustaining.
Fishing Capacity	"The ability to take the maximum amount of fish over a period of time (year, season) by a fishing fleet that is fully utilized, given the biomass and age structure of the fish stock and the present state of the technology" (FAO, 2003, p. 105).
High Seas Resources	Resources distributed exclusively in the high seas, namely "in waters beyond the areas of national jurisdiction (which can be 200 miles or less) excluding species fixed on the continental shelf which remain under the sovereign rights of the coastal States" (Garcia, Rice, & Charles, 2014, p. xxxiii).
Overfishing	"A generic term used to refer to the state of a stock subject to a level of fishing effort or fishing mortality such that a reduction of effort would, in the medium term, lead to an increase in the total catch. Often referred to as overexploitation and equated to biological overfishing, it results from a combination of growth overfishing and recruitment overfishing and occurs often together with ecosystem overfishing and economic overfishing"

	(Cochrane & Garcia, 2009, p. 490).
Precautionary Approach	"The precautionary approach involves the application of prudent foresight, taking account of the uncertainties in fisheries systems and the need to take action with incomplete knowledge. It requires, inter alia: (i) consideration of the needs of future generations and avoidance of changes that are not potentially reversible; (ii) prior identification of undesirable outcomes and of measures that will avoid them or correct them promptly; (iii) that any necessary corrective measures are initiated without delay, and that they should achieve their purpose promptly, on a timescale not exceeding two or three decades; (iv) that where the likely impact of resource use is uncertain, priority should be given to conserving the productive capacity of the resource; (v) that harvesting and processing capacity should be commensurate with estimated sustainable levels of resource, and that increases in capacity should be further contained when resource productivity is highly uncertain; (vi) all fishing activities must have prior management authorization and be subject to periodic review; (viii) an established legal and institutional framework for fishery management, within which management plans that implement the above points are instituted for each fishery, and (ix) appropriate placement of the burden of proof by adhering to the requirements above" (FAO, 1996, p. 75).
Reference Point	"A reference point indicates a particular state (value) of a fishery indicator corresponding to a situation considered as desirable (Target reference point, TRP), dangerous (threshold reference point, ThRP) or undesirable (limit reference point, LRP). Both ThRPs and LRPs require immediate action, and differ in the degree of urgency" (Cochrane & Garcia, 2009, p. 493).
Regional Fisheries Management Organization (RFMO)	"An intergovernmental fisheries organization or arrangement, as appropriate that has the competence to establish fishery conservation and management measures" (FAO, 2001, p. 3).

Appendix B Participant information sheet

Project Title: Enhancing Effective Governance and Policy Implementation in Regional Fisheries Management Organizations

INFORMATION SHEET FOR PARTICIPANTS

Thank you for your interest in this project. Please read this information before deciding whether or not to take part. If you decide to participate, thank you. If you decide not to take part, thank you for considering my request.

Who am I?

My name is Jia Huey Hsu and I am a Doctoral student in PhD program in Public Policy at Victoria University of Wellington. This research project is work towards my PhD thesis.

What is the aim of the project?

This project aims to explore the concepts of the designs of governance arrangements, implementation outputs of Regional Fisheries Management Organizations (RFMOs), and the linkages between them in the context of high seas fisheries governance. The central factors affecting RFMOs' implementation outputs are also of interest in this study. The research findings will provide a foundation for plausible recommendations for RFMOs' governance arrangements. The conclusion will identify the organizational linkage between governance and successful implementation. This will lead to an understanding of the factors that contribute to optimal and sustainable utilization of high seas fisheries resources.

This research has been approved by the Victoria University of Wellington Human Ethics Committee.

How can you help?

If you agree to take part I will interview you in a public place, such as a café. I will ask you questions about governance arrangements and implementation of RFMOs. The interview will take 1 hour. I will record the interview and write it up later. You can stop the interview at any time, without giving a reason. You can withdraw from the study up to four weeks

after the interview. If you withdraw, the information you provided will be destroyed or returned to you.

What will happen to the information you give?

This research is confidential. I will not name you in any reports, and I will not include any information that would identify you. Only my supervisors and I will read the notes or transcript of the interview. The interview transcripts, summaries and any recordings will be kept securely and destroyed three years after the research ends.

What will the project produce?

The information from my research will be used in my PhD dissertation. You will not be identified in my report. I may also use the results of my research for conference presentations, and academic reports. I will take care not to identify you in any presentation or report.

If you accept this invitation, what are your rights as a research participant?

You do not have to accept this invitation if you don't want to. If you do decide to participate, you have the right to:

- choose not to answer any question;
- ask for the recorder to be turned off at any time during the interview;
- withdraw from the study up until four weeks after your interview;
- ask any questions about the study at any time;
- receive a copy of your interview recording (if it is recorded);
- read over and comment on a written summary of your interview;
- agree on another name for me to use rather than your real name;
- be able to read any reports of this research by emailing the researcher to request a copy.

If you have any questions or problems, who can you contact?

If you have any questions, either now or in the future, please feel free to contact either:

Student:
Name: Jia Huey Hsu
Email: jessica.hsu@vuw.ac.nz

Supervisor:
Name: Associate Professor Karl Lofgren
Role: Primary supervisor
School: School of Government
Phone: +64-4-463 6349
Email: karl.lofgren@vuw.ac.nz

Human Ethics Committee information

If you have any concerns about the ethical conduct of the research you may contact the Victoria University HEC Convener: Associate Professor Susan Corbett. Email susan.corbett@vuw.ac.nz or telephone +64-4-463 5480.

研究計畫名稱：強化區域性漁業管理組織之有效治理與政策執行

參與者資料表

非常感謝您對本研究計畫感興趣。請您在決定是否參與本研究計畫之前，詳細閱讀此資料表。若您願意接受錄音訪談，感謝您的參與。若您沒有意願參與本研究計畫，感謝您撥冗瞭解本研究，打擾之處，尚祈見諒。

我是誰？

您好！我是目前就讀威靈頓維多利亞大學政府學院公共政策博士班的許佳惠。本研究計畫為我的博士論文研究。

本研究計畫目的為何？

本研究計畫旨在探討區域性漁業管理組織的治理安排制定與政策執行產出，以及此兩者在公海漁業治理上之關聯性。另影響區域性漁業管理組織之政策執行產出之核心要素亦為本研究計畫重點項目。本研究發現希冀能提供區域性漁業管理組織在其治理安排制定上之可行建言；亦即本研究成果將確認治理與成功的政策執行之間的關係，並進一步瞭解能促進公海漁業資源永續利用的關鍵因素。

本研究計畫已通過威靈頓維多利亞大學人類倫理委員會的審查認可。

您能如何協助本研究計畫？

若您同意參與本研究計畫，我們可以在公共場所進行訪談，例如咖啡館。我將詢問您有關區域性漁業管理組織的治理安排制定與政策執行產出問題。訪談時間約需一

小時。訪談過程將徵詢您的同意後予以錄音，以利後續資料分析與論文撰寫。您可以隨時終止訪談的進行，並於訪談後四星期內退出本研究計畫。若您欲退出本研究計畫，我將銷毀或返還您所提供的資訊。

關於您所提供的資訊？

本研究計畫將善盡保密責任。您的姓名將不會在任何報告中被提及，同時我也不會使用任何足以辨識您個人背景資料之資訊內容。僅有我的指導老師以及我本人有權限閱讀訪談的田野筆記或錄音的文字記錄。是項訪談的錄音文字紀錄、總結與任何形式的紀錄都將予以妥善保管，並於此研究計畫結束後三年銷毀之。

本研究計畫成果為何？

本研究計畫所彙整之資訊，將呈現於我的博士論文研究。您的姓名將不會出現在我的博士論文。我亦有可能利用此研究成果，參與相關學術研討會及論文發表，惟您的姓名將不會在任何研討會或報告中被提及。

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- 同意我使用化名而非您的真實姓名。
- 透過電子郵件向我索取本研究計畫的任何產出報告。

若您有任何疑問或問題，您應與誰聯繫？

若您有任何問題，不論是現在或未來，您可聯繫我本人或我的指導老師：

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人類倫理委員會的聯絡資訊

若您對於本研究計畫的道德行為有任何疑問，請您聯繫威靈頓維多利亞大學人類倫理委員會的召集人：Susan Corbett 副教授。電子郵件：susan.corbett@vuw.ac.nz 或電話 +64-4-463 5480.

Appendix C Consent form

Project Title: Enhancing Effective Governance and Policy Implementation in Regional Fisheries Management Organizations

CONSENT TO INTERVIEW

This consent form will be held for 5 years.

Researcher: Jia Huey Hsu, School of Government, Victoria University of Wellington

- I have read the Information Sheet and the project has been explained to me. My questions have been answered to my satisfaction. I understand that I can ask further questions at any time.
- I agree to take part in a (video/audio) recorded interview.

I understand that:

- I may withdraw from this study up to four weeks after the interview, and any information that I have provided will be returned to me or destroyed.
- The information I have provided will be destroyed three years after the research is finished.
- Any information I provide will be kept confidential to the researcher and the supervisor. I understand that the results will be used for a PhD report and a summary of the results may be used in academic reports and/or presented at conferences.
- My name will not be used in reports, nor will any information that would identify me.
- I would like to receive a copy of the final report and have added my email address below. Yes ☐ No ☐

Name of participant: _____

Signature of participant: _____

Date: _____

Contact details: _____

研究計畫名稱：強化區域性漁業管理組織之有效治理與政策執行

訪談同意書

此訪談同意書將保留五年

研究員：許佳惠，政府學院，威靈頓維多利亞大學

- 本人已詳閱參與者資料表，並經研究員詳細說明此研究計畫目的。我的疑問已獲致滿意解答；同時，我瞭解我可以隨時進行更深入的提問。
- 本人同意參與此研究計畫之（錄音）訪談。

本人充分瞭解以下有關我參與此研究計畫的各項權利：

- 我可於訪談後四星期內退出此研究計畫，而我所提供的任何資訊將返還於我或銷毀之。
- 我所提供的資訊將於此研究計畫結束後三年銷毀之。
- 研究員及其指導老師對於我所提供的資訊具有保密責任。我瞭解此研究成果將呈現於研究員的博士論文；同時，此研究成果的總結亦有可能發表於學術或研討會論文。
- 我的姓名將不會在報告中被提及，同時研究員也不會使用任何足以辨識我個人背景資料之資訊內容。

- 我欲索取一份期末報告至下述我的電子郵件信箱。　　Yes ☐　No ☐

受訪者姓名：_____

受訪者簽名：_____

受訪日期：_____

聯絡電話及電子郵件：_____

Appendix D Interview questions

Interview Questions

Interviewee:

Title:

Date and place:

Category 1: Governance arrangements

1.1 Do you think the rules of access are well defined for the resource users? If so, how? If not, why not?

1.2 Could you please discuss the rules in terms of accommodating new members and allocation?

1.3 Who is involved in the decision-making process? Do you think that most of the stakeholders affected by harvesting and protection rules are also involved in the process? If so, how? If not, why not?

1.4 What, if any, mechanisms and measures does your organization use in monitoring, control and surveillance of high seas fisheries conservation and management?

1.5 Could you please describe in as much detail as possible, the deterrent penalties and sanctions for both members and non-members?

1.6 Do you think the effective conflict-resolution mechanisms have been established? If so, what are the major benefits of effective conflict-resolution mechanisms?

1.7 Do you think the institutional arrangements, such as appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are nested in a multi-level context? If so, how? If not, why not?

1.8 Please describe how the institutions were adapted and changed? What kind of information was incorporated into the institution updating process?

1.9 Do you think policy and institutional adjustments can adopt new knowledge and experiences?

1.10 What do you see as the salient features that constitute well-designed governance arrangements?

Category 2: Policy implementation

2.1 What kind of resources (financial and other) does your organization have? Do you think the availability of proper (financial) resources is essential to your organization's implementation success?

2.2 Do you think commitment (political will) is a key factor affecting implementation outputs, and if so, why?

2.3 What kind of interest groups, such as non-governmental organizations, does your organization cooperate and coordinate with? How are they involved with your organization?

2.4 Could you please describe in as much detail as possible, the decision-making mechanisms?

2.5 What major obstacles can you see to more effectively implement conservation and management measures in your organization?

2.6 What do you think are the key factors affecting policy implementation?

Thank you for participating in this study.

訪談問題

受訪者：

職稱：

受訪時間與地點：

第一類訪談問題：治理安排

1.1 您認為貴組織對於資源使用者，是否有明確的進入規範？若有，請問規範內容為何？若無，請問為何未考量是項規範？

1.2 請您說明有關新進會員與總可捕撈量與總可容許漁獲努力量分配之相關規範。

1.3 請問誰有權能參與組織的決策程序？您認為大多數的利害關係人都有權參與決策程序嗎？若是，請問是如何參與？若否，請問為什麼？

1.4 請問貴組織對於公海養護與管理上的監測、管控與偵察機制與措施為何？

1.5 請詳述貴組織對於違法漁船（會員與非會員）的懲罰與制裁規範。

1.6 請問您認為貴組織是否已有健全之衝突解決機制？若有，請問您認為建立是項機制之最大益處為何？

1.7 請問您認為貴組織的制度安排，例如占用、規定、監督、強制執行、衝突解決及治理活動等，是否已納入多層次的制度設計？若有，請問規範內容為何？若無，請問為何未考量是項制度設計？

1.8 請描述貴組織的制度是如何調整與改變？通常何種資訊在此過程中會被納入，以協助制度的改變？

1.9 請問您認為貴組織的政策與制度調整是否有能力納入新的知識，並汲取經驗？

1.10 請問您認為什麼是構成良善治理安排的重要因素？

第二類訪談問題：政策執行

2.1 請問貴組織具有何種資源（財務資源或其他）？請問您認為適切的資源是影響貴組織在執行方面成功與否的重要因素嗎？

2.2 您認為承諾（政治意願）是影響執行產出的關鍵因素嗎？若是？為什麼呢？

2.3 請問貴組織已與何種利益團體（例如非政府組織）進行合作？合作方式為何？

2.4 請詳述貴組織的決策程序機制。

2.5 請問影響貴組織更有效執行養護與管理措施的主要障礙是什麼？

2.6 您認為影響政策執行的關鍵要素為何？

非常感謝您撥冗參與本研究計畫。