

Investigating Beyond the Scales

Interactive governance analysis of small-scale fisheries in the San Andrés Archipelago, Colombia

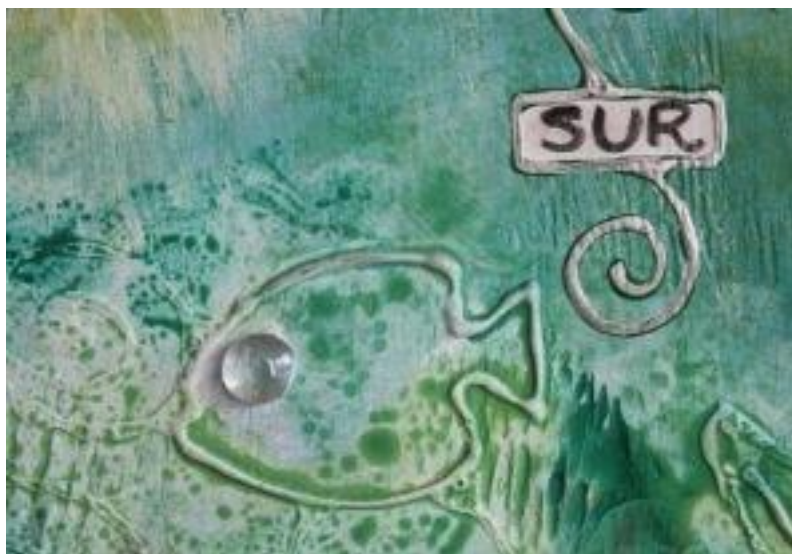
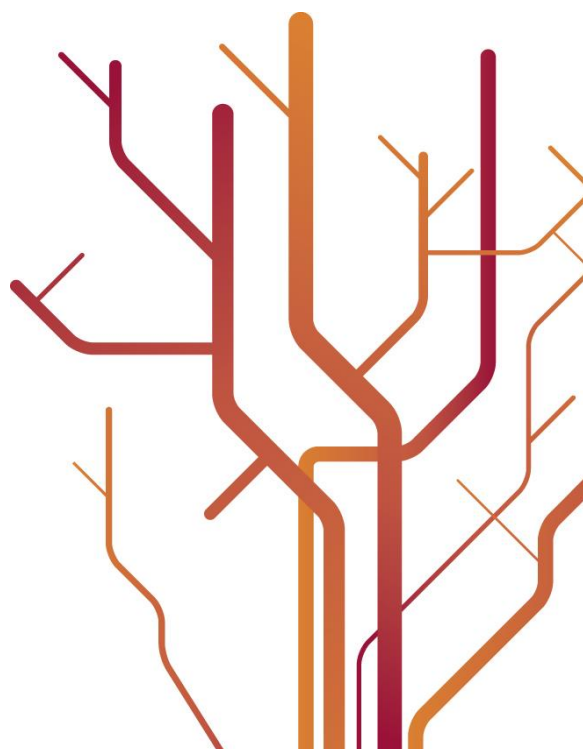


Photo credit: Olivier J. Randin

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"La principale découverte apportée par ce siècle de recherche et de science, c'est probablement la profondeur de notre ignorance de la nature. C'est là en soi une grande nouvelle."

"The major discovery in this century of research and science is probably the depth of our ignorance of nature. This is in fact great news".

Jacob, F., *La souris, la mouche et l'homme*, Ed. Odile Jacob, 2000: 236.

"The land might be paradise, but the sea is hell"

Capu, a fisher, Santa Catalina, May 2013

"We sold our land; the sea is all that is left to us..."

Antonio, a fisher, Santa Catalina, May 2013

"This was a sea she couldn't help but admire – calm, clear, with so many shades of blue, the surface rippling slightly with the lazy movement of the waves".

Hazel Robinson Abrahams, *No Give Up, Maan*, Biblioteca de Literatura Afrocolombiana, Ministerio de Cultura, 2010 : 296

Preface

People and oceans relate in strong, complex and multiple interactions. These rich interactions give rise to many questions with regard to our relation to the sea and the way we manage its natural resources. If management seemed to be the way, there are limits to what management can do in analytical terms. In the two past decades, voices have risen and called for a broader perspective.

A novel approach to governance has been proposed with the interactive governance theory. This paper bases itself on this theory and analyses and reflections developed in the books *Fish for Life* (Kooiman et al., 2005) and *Governability of Fisheries and Aquaculture: Theory and Applications* (Bavinck et al., 2013) as well as their related papers.

A holistic analysis is always difficult and it may quickly end up being a time consuming endeavour. This paper took the challenge and the opportunity to use the interactive governance framework as a guideline to analyse small-scale fisheries in a Colombian archipelago in the Caribbean Sea. During three weeks, the guideline has been used to point what to look for and what should be looked at. It served to frame the research and pinpoint main issues and contentious points between actors and stakeholders.

Let me acknowledge, in the following lines, all my gratitude to these persons that have contributed in a way or another to this journey, be it practical and/or intellectual.

I would like first and foremost to thank Professor Svein Jentoft. His youth of spirit, his wisdom, curiosity and passion for this world is an encouragement and a call to always go beyond. I thank him for teaching me, among many other things, a *technology of foolishness* (Jentoft, 2007a).

I would like to express also all my love to Aude Pidoux, my companion of life and adventure across the seven seas and the lands in-between. You are the Northern star in the sky. This paper is dedicated to you.

Thank you also to Stephanie Feinberg, a unique friend, who helped me sail away to Providencia. Your friendship means everything!

All my gratefulness to my sister and, of course, my parents to whom curiosity means the world and taught me to live by it; they brought Colombia to Switzerland and Colombia will always be a part of them!

Tusen takk to the Pidoux family! Open mind, open heart where creativity has no limits, I have no words to thank you enough. You have been a gate to so many worlds and, not the least, Norway! I am deeply grateful to Camille Pidoux for her great proofreading and suggestions to improve this master thesis (except preface, abstract, introduction, chapter 7 and conclusion). All remaining errors are of my sole responsibility.

Thank you to Eduardo Sarmiento and his fantastic family in Bogotá. I would have never made it to San Andrés without you. Hasta Pronto!

And last but certainly not least, all my thanks to all the people I met on San Andrés, Providencia and Santa Catalina; thank you to Sandra for introducing me to the history of the Raizals. I would like to thank all the inhabitants of Providencia and Santa Catalina for welcoming me so warmly; Capu, Antonio, Roque, Arelis and all of you who shared your time with me, thank you so much for the stories you told me, I learned so much! I would like to thank in particular June Marie Mow that opened the door to this incredible archipelago; words are not enough to express my gratefulness!

Abstract

Small-scale fisheries are complex, diverse and dynamic. Therefore, to understand these fisheries, governance is favoured to management as a more comprehensive analytical framework that aims to catch issues and challenged beyond the technical aspects of management. Following a *phronesis* approach, embedding theory into reality, I chose the case study of the small-scale fisheries of the San Andrés archipelago for analysis. To do so, the interactive governance theory and its conceptual framework have been used as a guideline and theoretical material to cast light on the many challenges in small-scale fisheries governance.

A judgement issued in November 2012 by the International Court of Justice (ICJ) in The Hague serves to cast light on the many challenges in the governance and governability of small-scale fisheries. Main challenges are related to issues power, interaction and scale. I argue in this paper that analysis of small-scale fisheries should include interactions at multiple levels and scales. The focus cannot be limited to the level in which fishers interact directly. To understand risks and potential opportunities for governability improvement, multi-level and multi-scale analysis should be fostered. As few information regarding this perspective exist, further research is needed to develop the scale and level features of the interactive governance theory.

Key-words: interactive governance theory, small-scale fisheries, Colombia, San Andrés, archipelago, scale and level issues.

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CBM	Community-Based Management
CORALINA	Corporación para el Desarrollo Sostenible del Archipiélago de San Andrés, Providencia y Santa Catalina
EEZ	Exclusive Economic Zone
HDI	Human Development Index
ICJ	International Court of Justice
ITQ	Individual Transferable Quota
FAO	Food and Agriculture Organization
MPA	Marine Protected Area

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1. Introduction

The world grows every day a little bit smaller. Technologies innovations allow increasing use and extraction of natural resources. But as the world shrinks, concerns about marine resources grow. Fisheries are put under strains where vessels go further to fish with effects such as "fishing down the food web" (Pauly and Palomares, 2005).

But conceptualisation of this interconnected world is too often limited to relations between States. And smaller scales are forgotten. If public speech is concerned about themes related to industrial fisheries, such as subsidies, bottom trawling or overcapacity, less information is issued on small-scale fisheries; despite calls made by the Food and Agriculture Organisation (FAO) to protect, improve and research management issues regarding small-scale fisheries (FAO, Code of Conduct for Responsible Fisheries (1995); c.f. in particular articles 6.2 + 6.18 + 7.2.2.c + 12.12). Thus small-scale fisheries, despite their scale and size, play an important role in providing millions of people with livelihood and food security. They also display a high degree and diversity. At this scale too fisheries management has been questioned and governance as an analytical tool is increasingly regarded as a way to depict and deconstruct problems to fisheries (Kooiman et al., 2005; Bavinck et al., 2013).

Small-scale fisheries' governance faces new challenges in this 21st century. One, among many, is the increasing contacts they must face with actors coming from beyond their boundaries. It can be illegal fishing for instance. But it can also be the consequences of international decision affecting directly the livelihood of small-scale fishers. In fact, local and global scale should both be considered in the analysis of small-scale fisheries (Johnson et al., 2005).

The case study presented in this paper is thus a journey in small-scale fisheries of the Colombian archipelago of San Andrés, Providencia and Santa Catalina. These small-scale fisheries are facing an important challenge: a reduction of their territory due to a decision of the International Court of Justice to transfer waters from Colombian ownership to Nicaragua's. This international event is considered as a catalyst of change and a revealing factor of governance and governability issues in the fisheries system of the archipelago.

"It's complicated...!" In the archipelago, these words come as a mantra, be that from institutions or from fishers. Diversity, complexity, dynamics and scale are thus look at to discern what favour and what hinders governance and governability.

1.1. Describing the problem

1.2. Challenges in small-scale fisheries management

Small-scale fishers enrich the world of fisheries by many different cultures, traditions and customs; the only limit to diversity of small-scale fisheries is the limit to human imagination on how to fish and how to live such a life with the sea. Diversity is also found in their motivations to fish: for some it represents an activity of last resort, for others it is a choice. To ask if small-scale fishers are poor because they fish or if they fish because they are poor shows all the complexity related to small-scale fishing (Béné, 2003). But small-scale fishery is more than poverty: it offers livelihoods, potentials economic growth, cultural assets, and so on; the human dimension, the representations and values of being small-scale fishers, have to be taken into account (Onyango, 2011). In other words, particularities and specificities of the small-scale fisheries has to be taken care of and their management cannot be reduced to a discussion on economic issues and wealth distribution (Béné et al., 2010).

This great mosaic, and all the diversity and complexity it entails, may explain why small-scale fisheries are examined at mostly local levels. But the analysis of small-scale fisheries should go beyond a local scale. They are influenced by global events. And they influence and impact global activities and ecosystems, maybe not separately (as single units), but considered as a group.





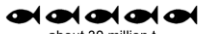












The last decade has seen an increasing literature on new approaches to natural resources management where inclusion of natural environment properties and of local knowledge and communities are fostered (c.f. for instance Berkes and Folke, 1998¹). Small-scale fisheries have seen an evolution from an anthropological theme of study to be studied to a subject to be included in management studies and schemes (Berkes et al., 2001). However, for small-scale fisheries to be considered as integral part of the fish chain policies is a long term process. Recent studies points to a gap between fisheries policies and their consequences on small-

¹ In particular, Berkes and Folke, 1998, p. 339 ss.

scale fishers; a gap that finds its roots in the historical, and hence technical, evolution of fisheries where small-scale fisheries have been slowly put aside on the institutional level (Chuenpagdee, 2011).

Small-scale fisheries face two important misconceptions. The first is the prevalence of modern, single-species management approach in fisheries science, with a focus on biological and ecological aspects. This approach omits the specificities and necessities of small-scale fisheries of developing countries (Kolding, Van Zwieten, 2011); in other words, the social and societal aspect of fisheries. The second is the notion that because the scale of the activity is reduced, the causes and effects of the activity will be circumscribed in the area where the fishing takes place, with the risk that small-scale fishers be considered as "part of the landscape" (Pauly, 2009).

Considered as single and individual units, these fisheries are indeed small. But considered as a whole, small-scale fisheries definitely represent a heterogeneous group "too big to ignore"². If comparison is to be made with large-scale fisheries, small-scale fisheries worldwide display aspects worth studying: if the annual catch for human consumption between industrial and small-scale fisheries is rather similar (about 30 million tonnes), small-scale fisheries accounts for more employment, less subsidies, less annual fuel consumption and less catch per tonne of fuel consumed.

FISHERY	LARGE SCALE 	SMALL SCALE 
BENEFITS		
Subsidies	<p>\$\$\$\$\$</p> <p>25-27 billion</p>	<p>\$</p> <p>5-7 billion</p>
Number of fishers employed	<p></p> <p>about 1/2 million</p>	<p></p> <p>over 12 million</p>
Annual catch for human consumption	<p></p> <p>about 30 million t</p>	<p></p> <p>same: about 30 million t</p>
Annual catch reduced to fishmeal and oils	<p> </p> <p>35 million t</p>	<p></p> <p>Almost none</p>
Annual fuel oil consumption	<p></p> <p>about 37 million t</p>	<p></p> <p>about 5 million t</p>
Catch per tonne of fuel consumed	<p> = </p> <p>1-2 t</p>	<p> = </p> <p>4-8 t</p>
Fish and other sealife discarded at sea	<p></p> <p>8-20 million tonnes</p>	<p></p> <p>Very little</p>

² C.f. <http://toobigtoignore.net/>

Figure 1: comparison between large-scale and small-scale fisheries benefits with seven (7) indicators: subsidies, number of fishers employed, annual catch for human consumption, annual catch reduced to fishmeal and oils, catch per tonne of fuel consumed, fish and other sealife discarded at sea (Jacquet, Pauly, 2008).

Thus it seems that small-scale fisheries face a scale issue. Studies of small-scale fisheries are limited to a local level and they are "not seen as actors on the national or international stage" (Chuenpagdee et al., 2006, p. 1). Their presence and role should be acknowledged and their study should be integrated not only as a management subject but also, and maybe more importantly, in a governance perspective.

1.3. Governance

Fisheries resource management have been addressed mostly with a management perspective. Many solutions (e.g.: individual transferable quota, ITQ; marine protected areas, MPA; customary based management, CBM; etc.) have been proposed to solve the many problems fisheries are facing today, but in the end, no quick fixes to solve fisheries challenges exist; and command-and-control approach may encourage the application of standard operating procedure lacking contextual sensitivity (Degnbol, P., et al., 2006). In fact, fisheries can be considered as complex adaptive systems, neither predictable nor controllable (Mahon et al., 2008). Thus, analysis of fisheries issues should be widened to encompass more than management and be included in a governance perspective (Bundy et al., 2008). To include them in a governance analysis follows at least three rationales: first to better understand role of small-scale fishers in governing systems, second to integrate them beyond local levels and give insights as to how they reach national and international levels, third to give clues and directions on how governability of these fisheries can be improved. To scrutinize fisheries governance is to acknowledge their complexity, diversity and dynamics.

Governance can be defined as:

"[...] 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." (Kooiman and Bavinck, 2005, p. 17)

Governance is thus more than institutions; governance encompasses the capacity of institutions to solve problems, create opportunities and interact with the system it has to govern (Kooiman and Bavinck, 2013).

If fisheries are diverse, complex, dynamic, they are also embedded in different governance levels (individual, local, regional, global). Hence scale accounts as an important parameter as international or regional drivers will often affect issues at the local level: "In fact, there is hardly anything global these days that does not also have a local manifestation" (Chuenpagdee and Jentoft, 2009, p. 117). Global events affect local structure and local structures are influenced by global images (O'Riordan and Church, 2001).

Small-scale fisheries represent such a scale challenge. Issues small-scale fisheries are confronted to would most often be solved at higher institutional levels. Making interactions work between governing institutions and small-scale fishers is an important governability challenge (Chuenpagdee and Jentoft, 2009)³.

In the archipelago of San Andrés, the office in charge of natural resource management (CORALINA) has chosen a Marine Protected Area to fulfil its ecosystem goals and objectives. Some aspects of this type of managing instrument should be examined.

1.3.1. Marine protected areas

For more than a decade, Marine Protected Area (MPA) has become a worldwide supported management tool, primarily considered as a biological and conservation-oriented instrument. MPA serves multiple purposes from "no-entry", "no-take", "limited access" to fisheries purposes. Therefore MPA's typology is wide and terminology sometimes blurry. This underlines that MPA has become an umbrella concept in a path toward ecosystem-based management. Researchers have started to develop new classification schemes to clarify the use (Al-Abdulrazzak and Trombulak, 2012) and MPAs are increasingly studied in a multidisciplinary approach (Claudet, 2011).

But MPAs are no quick fix, they depend as much on social considerations than on biological and ecological ones. Patrick Christie supports that "social considerations determin[es] long-term biological success" and an MPA can end up being a "biological success but a social

³ For more information on scale issues read Keohane and Ostrom (1995), *Local Commons and Global Interdependence*, Sage Publications, London, and in particular Young, O.R. (2001), *The Problem of Scale in Human/Environment Relationships* (op. cit. pp. 27-46).

failure" (Christie, 2004, p.155). Managers' intentions may head toward conservation. But protected areas affect life and customs of small-scale fishers. Therefore, improved attention should be brought on the human dimension of MPAs (Sowman et al., 2011). Literature on ecosystem management and MPA governance and governability enhances the necessity to take into consideration fishers as an integral part of the system (Jentoft et al., 2007; Jentoft et al., 2012; De La Cruz Modino and Pascual-Fernández, 2013).

1.4. Study aim

The aim of this study is to scrutinize governance and governability of small-scale fisheries in the Colombian Caribbean. The analysis uses the impacts of international events, a judgement of the International Court of Justice (ICJ). These impacts will serve to cast additional light to the challenges in the governance and governability of these small-scale fisheries.

The analysis is conceptualised within the interactive governance theory and its governability assessment framework. This analytical tool offers a mean to frame and dissect a problem in such a way that it deconstructs a situation into three systems: a system-to-be-governed, a governing system and a governing interaction. Each of these layers has its own specific properties. And each of these layers is connected to each other by common features: diversity, complexity, dynamics and scale.

Such a construction with four common features presents the advantage of relating systems between each other; hence improving the analysis of causalities, effects and interactions. It also helps avoiding ending up with an "exploded" situation where decomposed substructures have a common centre, the problem at hand, but no common tool to relate them together, but their centre of origin.

1.5. A *phronesis* approach: Small-scale fisheries in the San Andrés archipelago

A shift is taking place from considering fisheries as management to considering fisheries as governance. This new perspective broadens the scope of analysis and become more inclusive of non-institutional actors. This shift suggests three explanatory dimensions: first, social and political aspects have an increasing role in fisheries management. Fisheries management is not solely about technical fixes. Second, there is a growing need to look elsewhere for novel

tools to describe problems and propose solutions. Third, fisheries problems cannot be solved by one academic discipline or paradigm, nowadays managers and academics are looking for interdisciplinary inclusion (Jentoft, 2006, pp. 671-672).

With this in mind, Jentoft proposes a *phronesis* approach to fisheries issues, where *phronesis* can be understood as "practical wisdom; good sense; prudence" (idem, p. 673), where fisheries management is not only considered as instrumental but is also based on values and compassion (Jentoft, p. 679).

Following this perspective, this paper uses the interactive governance approach to analyse small-scale fisheries' governance and governability of a Colombian archipelago in the Caribbean Sea. It is the San Andrés, Providencia and Santa Catalina Archipelago (more commonly referred to as the San Andrés Archipelago). There small-scale fishers are mainly composed of a local insular ethnic minority, the Raizals. Since mid-20th century, Raizals have faced exclusion and lack of understanding from Colombian authorities, often in the hands of continental Colombians.

Under the impulse of international forum and international organisations, the regional environmental office favoured an ecosystem-based approach to natural resource management. The instrument chosen and designed to manage the natural resources is a multizone MPA. Its step-zero (i.e. its creation process), supporting a participative management approach, was already filled with tensions and meetings were acrimonious due to ethnic tensions. But inclusion of local stakeholders from the beginning fostered trust and resulted in positive outcomes (Howard, et al., 2003). The MPA was implemented in 2005. Almost a decade later, the MPA struggles to meet its objectives due to limited technical and financial resources and faces many challenges within a highly complex, diverse and dynamic social and ecological environment (Taylor et al., 2013).

The archipelago and its small-scale fishers are confronted with similar problems of many coastal nations: overpopulation, poverty, ethnic discrimination, illegal fishing, beach erosion, sea warming, alien fish species invasions, clear water issues, increasing tourism (Taylor et al., 2011).

And recently, small-scale fisheries of the archipelago have come under pressure of international events that affect directly their life and livelihood. The International Court of Justice in The Hague has issued a decision, November 19th 2012, transferring bordering

Colombian sea to Nicaragua (ICJ, 2012). The Colombian department of San Andrés, Providencia and Santa Catalina loses about 35% of its sea in favour of Nicaragua. This sea included important fishing spots for small scale fishers (as well as industrial). But it is not only a loss of livelihood potential but also a cultural blow, where the sea is part of what Raizals consider their profound essence. Raizals are the archipelagic ethnic minority. Once a majority, there are nowadays a minority in their own territory.

The government, as its first rapid answer, has granted subsidies to small scale fishers of the archipelago, triggering negative effects within the communities. All issues of the archipelago are dealt in a situation of legal pluralism, poor unity and little organisation of small scale fishers, and strong vertical/hierarchical governing system.

A special focus is brought on the islands of Providencia and Santa Catalina (later on referred to Providencia/Santa Catalina as distance between both islands is about 100 metres). Population of small-scale fishers is higher than in San Andrés and mainly composed of Raizals. Providencia/Santa Catalina are the ones closest to the new maritime border with Nicaragua, and used to fish at northern cays; if these cays are today still Colombian, they need the crossing of Nicaraguan waters to be reached. Providencia/Santa Catalina are thus at the forefront of the recent judgement by the ICJ.

1.6. Research design

According to Blaikie (2010, p. 14 + pp. 41ss.), a research design is the *what*, *why* and *how* of a research:

- *What*: the research studies the governance and governability of small-scale fisheries. The study is framed within a case study of a small-scale fishery in a multizone MPA in the Caribbean.
- *Why*: Small-scale fisheries in the San Andrés archipelago face challenges coming from multiple levels: local, regional and international. In a world where the local is in direct contact with the global, the archipelago's small-scale fishers are an interesting case of all the complexity in which small-scale fisheries governance and governability are confronted with nowadays. The San Andrés archipelago was chosen because of the many challenges it faces, challenges similar to many coastal countries. It represents a microcosm of environmental, social and fisheries issues. The Seaflower MPA is a worldwide recognised marine protected area. The challenges it has embraced to

govern with an ecosystem approach makes it an important contemporary subject of study, as MPAs and the ecosystem approach are both regarded as direction to be followed in environmental management perspective.

- *How*: Conceptualisation and analysis will be devised using the interactive governance theory and the governability assessment framework. The study is performed on primary and secondary data on small-scale fisheries, governance and interactive governance theory.

The study includes a three weeks field trip in the archipelago, particularly on Providencia/Santa Catalina. Providencia/Santa Catalina was chosen for two main reasons: first, small-scale fisheries are very important for the livelihood, food and income security of these two islands. Second, due to time constraint, the small size of the island would improve first contacts with fishers.

The purpose of this study trip is threefold: first, to complement data by going beyond institutional publications and asking fishers their own position on the issues at stake, i.e. to gather information on fisheries and institutions by small-scale fishers. Second, to read the conclusions obtained by institutions to the light of fishers positions. Third, to complete the governability assessment matrix as some information could not be obtained or found through academic and institutional means.

Data collecting during field trip consisted of interviews and participatory observation.

A further discussion of methodology can be found in chapter two of this paper.

1.7. Research questions

This research studies the challenges pertaining to the governance and governability of small-scale fisheries of the archipelago of San Andrés. Several relations will be observed:

- 1) The impact of an external driver on the system-to-be-governed.
- 2) The impact of national action without consultation on the regional governing system and the system-to-be-governed.
- 3) The elements enhancing/hindering interactions between the system-to-be-governed and the governing systems.

1.8. Main hypotheses

The main hypothesis is that small-scale fisheries - a system-to-be-governed - should not be considered as a "sealed" scale. Their governance and governability are affected by multiple levels and multiple scales. The second hypothesis relates to the governing system: governability of small-scale fisheries depends on quality and diligent response of regional and national institutions. The third hypothesis relates to interactions between the system-to-be-governed and the governing system: governability of small-scale fisheries will be a function of small-scale fishers' capacity to express needs and wishes.

1.9. Limitations

This study is primarily a governance and governability analysis of small-scale fisheries. It integrates the consequences of a transboundary conflict on the local level. It analyses the situation from a bottom-up approach and the interactions and reactions of and with the managing institutions. It has a special focus on the island of Old Providence and, for time constraint, will let aside features proper to the island of San Andrés.

For the sake of size, readability and analysis, this study will not take into account the many stakeholders related to the sea and the MPA; for instance tourism, i.e. the main economic resource of the archipelago. This study will also limit itself to a descriptive approach of the main marine economic resources. Time and space do not allow for an in-depth analysis of the economics of natural resources.

In such an integrated ecosystem management approach, chosen by the governing institutions, the Seaflower MPA cannot go unmentioned as it is a constitutive part of the archipelago's management scheme. But in the present study, the MPA will be considered as a background where the analysis takes place.

This study looks at multiple levels of governance and governability. However, due to time limitations, the perspective presented will be one of the archipelago, with the voice of its fishers and institutions. Where the State stands and its analysis is constructed on national institutional papers, knowledge coming of institutions and fishers and general observation of its action or inaction.

This research also presents the ICJ judgement on the maritime and territorial dispute between Colombia and Nicaragua. The ICJ has defined new maritime borders between the two countries and granted banks and cays to Nicaragua. At the time of writing, Colombia refuses to recognise *de jure* the ICJ judgement, even if islanders *de facto* acknowledge the change

(without accepting it). Therefore, description of surface areas and adjoining countries should be considered as describing the state before ICJ judgement. A specific section will present the judgement of the ICJ for sake of precision and clarification.

1.10. Content

The second chapter of this paper is about methodology used during this study. Research strategy, data collection and data analysis as well as validity and reliability issues are presented. The third chapter sets the stage in which these small-scale fisheries take place. The natural and social environments are summarized. Some information on history and society are brought forth. In fact, present issues are also echoes of past problems that have not been solved yet. The fourth chapter displays the theory in which this study is grounded and the framework that is used to analyse the situation. The fifth chapter presents the results of the governability assessment and a brief presentation of the ICJ case considered as an external driver of change. The sixth chapter focuses on the evaluation and analysis of the governing system and the governing interactions. The seventh chapter discusses and concludes the study.

2. Methodology

This chapter, as derived from the 5 questions⁴ proposed by Blaikie (2010, p.42), presents the research strategy, data collection, data analysis, data display, validity and potential bias of the present paper.

2.1. Research strategy

This study is a qualitative one. It is based on an inductive strategy. This type of strategy describes characteristics and produces a description and presents explanations from the obtained data (Blaikie, 2010). Hypothesis and theories about small-scale fisheries exist but due to high diversity of this type of fisheries, a case study was seen as adding to the research on this subject.

According to Schramm, the rationale for a case study lies within the following definition:

"The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what results."(Schramm, 1971, p.6)

Consequently, case study can be seen as an "empirical enquiry that:

- Investigates a contemporary phenomenon in depth and within its real-life context, especially when
 - The boundaries between phenomenon and context are not clearly evident."
- (Yin, 2009. P. 18. Quote layout similar to the original text)

Context is of importance in the analysis of governance issues. In Yin's quote, one could underline the following terms as keywords: "contemporary phenomenon", "real-life context" and "boundaries".

Following Schramm and Yin's definitions, where contextualisation plays a significant role, a field study has been included in the research design (c.f. 3.2.2. Primary data/field study).

⁴ "What research strategy will be used, what ontological and epistemological assumptions will be adopted, where will the data come from, how will the data be collected and analysed, when will each stage of the research be carried out?" (Blaikie, 2010, p. 42).

As Blaikie (2010, p. 14) underlines, it would be too reductionist to consider social research as designed linearly. It is more appropriate to consider social research as an iterative process where research design is fine-tuned according to problems, new findings and real-life issues. For instance, the initial proposition of this study was about governance and governability of small-scale fisheries in the San Andrés archipelago within a MPA. But a phenomenon, such as a loss of marine territory, consequence of the ICJ judgment, has such impacts on small-scale fisheries in the archipelago that it called for some change of the initial topic. Indeed, such a phenomenon creates turmoil and reactions of small-scale fisheries and institutions, and emphasizes dynamics of small-scale fishers, adaptability and reactions of the managing institutions and interactions between groups. It casts light on the governance and governability of the small-scale fishery of the archipelago in such a way that it would not have been possible to witness without such a phenomenon.

2.2. Data collection

2.2.1. Primary data/Field study

Yin (2009, p. 101) support that case study should be "a) using multiple, not just single, sources of evidence; b) creating a case study database; and c) maintaining a chain of evidence".

The rationale for a field trip was to complement sources of and perspective to secondary information. In fact, secondary data on small-scale fisheries of the San Andrés archipelago came mainly from the same sources: CORALINA (institution in charge of environment and sustainable development of the archipelago), former CORALINA's employees and researchers affiliated with CORALINA. Thus, a field trip was devised primarily to meet and hear fishers: what are their life, their concerns, their hopes, and their relation with the national government and with the regional one. The second aim was to question other governing institutions and actors (other than CORALINA) in charge of fishers and fisheries. The aim was to compare information given by secondary literature and cross reference.

The field study was seen as an opportunity to cast a different light on the conclusions of secondary data literature on small-scale fisheries and the MPA of the archipelago. It was also the opportunity to obtain more information to complete an analytical grid proposed by the interactive governance theory: the governability assessment matrix.

Time and money were the main constraints of this field research. To optimise time while in the archipelago, researchers that lived there were contacted to comment on their work and get their personal impression (as commented in the previous section). By means of their help, persons of contact such as a former general director of CORALINA were contacted. She has created many opportunities to get in touch with local institutional sources.

The field study was a three weeks stay in the archipelago. Half a week was spend on San Andrés and two weeks and a half on Providencia/Santa Catalina. San Andrés hosts the headquarters of the governing institutions of the archipelago. Due to time and money constrains, small-scale fisheries of both islands could not be inquired. Thus a preference has been given to small-scale fisheries of Providencia/Santa Catalina: if San Andrés and Providencia/Santa Catalina share many similar issues and challenges, the islands of Providencia/Santa Catalina are much smaller in size and population. In addition, Providencia/Santa Catalina is composed of solely small-scale fisheries (industrial vessels have to land their catch on San Andrés), the main activity of the islands (whereas San Andrés rely more extensively on tourism). The size of these two islands (Providencia/Santa Catalina) allowed for a faster contact with inhabitants than San Andrés. In addition, the islands of Providencia/Santa Catalina lie closer to the new border with Nicaragua designed by The Hague International Court of Justice; as a consequence, small-scale fishers are much more impacted by the change of border in this section of the archipelago.

The research mainly took place at and around Santa Isabel (Providencia) and on Santa Catalina. Santa Isabel is the main town of the island, public institutions and the many fishers' structures are located there.

Two sources of evidence were used to obtain data: interviews and observation.

2.2.1.1. Interviews

As the main aim was to get closer to human concerns and behavioural motivations, interviews was chosen as the best fit to inquiry the situation in the archipelago. Interviews were in-depth (i.e. interviewee were asked open-ended questions and encouraged to give their opinion. No particular time limit was set) or semi-focus interviews (i.e. where certain questions were

designed to keep the interview in certain topic). Two strategies were used depending on if the interviewee was an institution or a fisher:

- Institutions: the following institution leaders were interviewed. In San Andrés: CORALINA (the environmental office in charge of the MPA) deputy director of Seas and Coasts for the archipelago, the Fisheries Coordinator of the Secretariat of Agriculture and Fisheries for the archipelago in presence of his director. In Providencia/Santa Catalina: CORALINA's office manager, the Seaflower Keeper Project manager (a joint project between the State of Colombia and the United Nations Drug and Crime), the McBean Lagoon Natural National Park director, the deputy manager of the Fish and Farm Cooperative.

Interviews were performed in a semi-structured way. It allowed leading the interviewee to answer certain questions but at the same time let him/her give insight on certain issues.

All institutional interviews were recorded and were later on transcribed. Interviews were performed in English or Spanish according to the preference of the interviewee. Institutional informants were asked names of fishers whom to contact on Providencia/Santa Catalina.

- Fishers: they were contacted following a snowball approach. Community leaders were also contacted. Interviews with fishers were not recorded but written down on paper. They were open-ended and semi-structured interviews.

At the beginning of the interview, the researcher informed that this study was to give fishers a voice, the opportunity to be heard in a complex situation.

As the political context is tensed, a looser type of interview was chosen to favour the exchange of information and communication and encouraged people to express their concerns, fears and potential hopes.

Interviews were performed in English or Spanish according to the preference of interviewees.

Data were also gathered under the form of informal talk at the dock, while they were selling fish.

2.2.1.2. Observation

"Just as with structured interviews, any form of qualitative interview keeps the researcher removed from the natural setting; individual behaviour and social interaction *will be reported rather than observed*" (Blaikie, p. 207, emphasis added).

To live in the islands of Providencia/Santa Catalina encouraged a closer contact with fishers. Daily talks about random subjects sometimes lead to new piece of information on the life in the archipelago and the issues regarding fisheries.

Two opportunities were to participate and observe social life and interactions between fishers and institutions.

The first was a meeting organised at the cooperative of Providencia/Santa Catalina. This meeting was a preliminary discussion between representatives of institutions and small-scale fishers about their interest in a mariculture project. The national authorities are very interested in the development of mariculture in the country. This meeting was the opportunity to involve the community in the design of such a project. During this meeting, fishers expressed their hopes, fear, irritations toward national authorities; and their mixed feelings toward mariculture.

During the whole meeting, written notes were taken by the researcher as well as general impressions recorded.

The second opportunity for participatory observation was a compulsory two days course for fishers. This course was organised by the national government. Presence to this meeting was required to receive a 6 months subsidies granted by the presidency to cope with the loss of maritime territory. The course was given by the Special Administrative Unit for Solidarity and Organisations⁵ depending (affiliated to the Labour ministry). It consisted of one and half day of theory and half a day of practice. The theory presented aspects, rights and duties of associations and cooperatives. The practice day was the organisation of an ordinary assembly meeting of an association/cooperative and the election of its board. Fishers were divided according to their affiliation to one of the two associations or to the cooperative.

To take part to this meeting was the opportunity to observe fishers' behaviour toward such imposed courses, their position toward the loss of territory, their feeling toward national authorities and subsidies. It also allowed engaging in informal conversations and listen to concerns, comments, hopes and grievance small-scale fishers could have.

⁵ Personal translation. Original title: Unidad Administrativa Especial de Organizaciones Solidarias, <http://www.dansocial.gov.co/>, accessed August 2013.

2.2.2. Secondary data

The research was based on a thorough secondary literature review. Fields of governance, interactive governance theory, small-scale fisheries, Marine Protected Areas and available literature on the San Andrés archipelago have been reviewed to acquire the necessary knowledge. Interactive governance theory and propositions allowed formulation of research questions.

Master theses and academic works of students and researchers that performed field studies in the San Andrés archipelago were examined. Two of these researchers were contacted by e-mail to get their professional and personal thoughts about governance and governability issues in the archipelago. An informal meeting was organised with one of them in Switzerland. These researchers suggested persons to get in touch with for a field study.

2.3. Data analysis

Data are analysed within the interactive governance framework. Analysis is performed following the Governability assessment framework proposed by Chuenpagdee and Jentoft (2013, c.f. Table 18.1. page 337). The framework is divided into 4 steps. Each step has targets where to look, features to look for and measures to look at. The second step delimitates and decomposes the problem at hand by using the governability assessment matrix (Chuenpagdee and Jentoft, 2009, p. 114). The governability assessment matrix is a table where columns give information about the natural system, the socio-economic system, the governing system and the governing interactions; rows displays information about diversity, complexity, dynamics and scale of the studied theme. More information on the interactive governance theory is to be found in chapter 5 (Theory).

2.4. Validity, reliability and bias

Issues of validity and bias will be addressed inspired by Yin's approach (2009, pp. 41-45): construct validity, internal validity, external validity, reliability.

To construct its validity, this research paper uses a tactic of multiple sources of evidence. It does not rest solely on secondary data but includes primary data, confirming information

displayed in secondary literature and gaining new data to complete information. Primary data were gathered from various institutions as well as fishers.

Also, this paper follows an analytical path of governance and governability according to a pre-established theory and framework (i.e. the interactive governance theory and the governability assessment framework).

Internal validity is supported by the use of an existing framework to analyse governance and governability. This framework, by its interactive nature, encourages cross analysis between its constitutive elements. To reduce threats to internal validity, it appeared important to get in touch with the first affected by any policies, the fishers, and have their voice heard.

As for reliability, the use of the governability assessment framework offers a systematic tool to repeat the study. The analysis can be followed from its inception to its final display, or, in the case of a repetition of the study, to change certain parameters by reframing questions or issues at the chosen levels.

Bias of different kinds may affect the analysis. First of all, the main language of the archipelago is creole. But people speak as a second language, very fluently, English and/or Spanish. Not to speak creole has undoubtedly hindered the acquisition of information. However, the possibility offered to interviewees to speak in either English or Spanish filled, to a certain extent, this gap; and when one word was missing in one language, it could be expressed in the other.

Second, residing on the island as a foreigner with knowledge of the archipelago (be it political, social, cultural, historical) acquired by various documents, but no prior living experience proved to be a challenge. To fill, as much as possible, this gap, questions on social and cultural issues were also asked.

Third, time was limited in the archipelago. Information could have been missed and insufficiently sought. To reduce this bias, the choice of the smaller island appeared as the best option. More, the opportunity to follow the compulsory course for fishers not only confirmed information obtained through interviews and informal talks, but also offered new data to the analysis.

3. Context: the San Andrés, Providencia and Santa Catalina Archipelago

This chapter will briefly review the main social and ecological features of the archipelago. Building on Berkes and Folke (1998), any socio-environmental issues or resource management problems should be understood within a broader view than a traditional utilitarian/exploitative perspective. Society and environment should not be considered dissociated from each other. To limit description of natural resource problems to mere management technicalities would be to leave in the shadows parameters that also affect natural resources: people and institutions. In other words, the social unit and the ecological unit should be considered as information for management- and governance - and both are interlinked.

The Republic of Colombia (capital city: Bogotá) is located in South America with a surface area of 1,141,748 square kilometres. It is the only South American country to have access to both Atlantic and Pacific Oceans. In 2010, its population is estimated at 46,295,000 persons. Its Human Development Index⁶ scores 0.719 (the world HDI is at 0.694) and ranks at the 91st position on 187 countries. According to the index, the country is considered below average for the Latin America and Caribbean region (UNDP, accessed July 2013).

Its main exports between 2008 and 2010 are petroleum oils, coal, coffee, gold, flowers, ferro-alloys, bananas and bovine meat (United Nations website, accessed July 2013).

⁶ The index uses health, education and living standard as dimensions to set country score. Score ranges from 0 to 1, where 0 is the lowest development score and 1 the highest development score (UNDP, accessed July 2013).

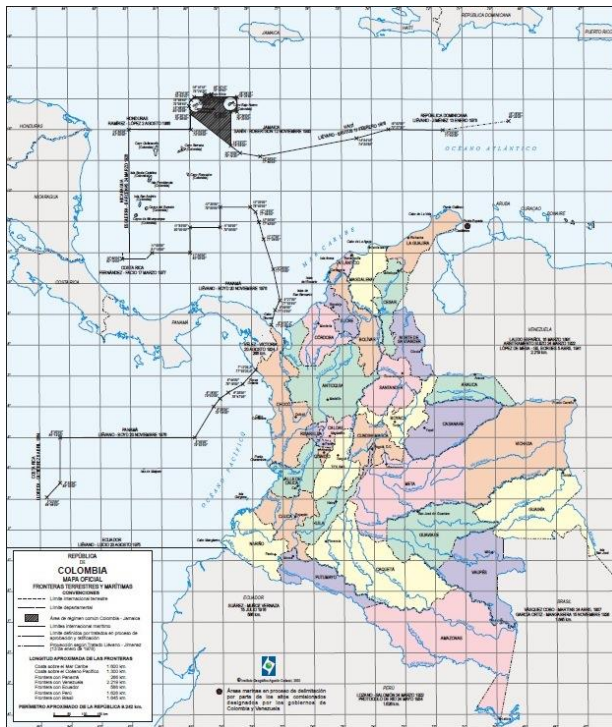


Figure 2: Official map of Colombia with land and maritime borders. With colored departments. Bold line in the sea delimitates maritime borders. This map is not amended according to ICJ Judgement, November 19th 2012, *Maritime and Territorial Dispute, Colombia vs Nicaragua*. (http://wsp.presidencia.gov.co/asiescolombia/documentos/colombia_mapa_oficial.pdf, accessed July 2013)

The Department of San Andrés, Providencia and Santa Catalina (capital city: San Andrés island) is the only Colombian department without continental land. Its surface area is 300,000 square kilometres⁷ (About 10% of the Caribbean Sea), but its total land area is of only 57 square kilometres. The department has borders with Costa Rica, Nicaragua, Honduras, Jamaica, Haiti and the Dominican Republic. It lies in the southwestern part of the Caribbean Sea, and is situated at about 720 km northwest of the Colombian coast and 110 km east of Nicaragua. The archipelago has about 180,000 square kilometres of Exclusive Economic Zone (Mow, 2006; INVEMAR, 2012).

⁷ Nota Bene: every surface values are given according to data prior to ICJ Judgement of November 19th 2012.

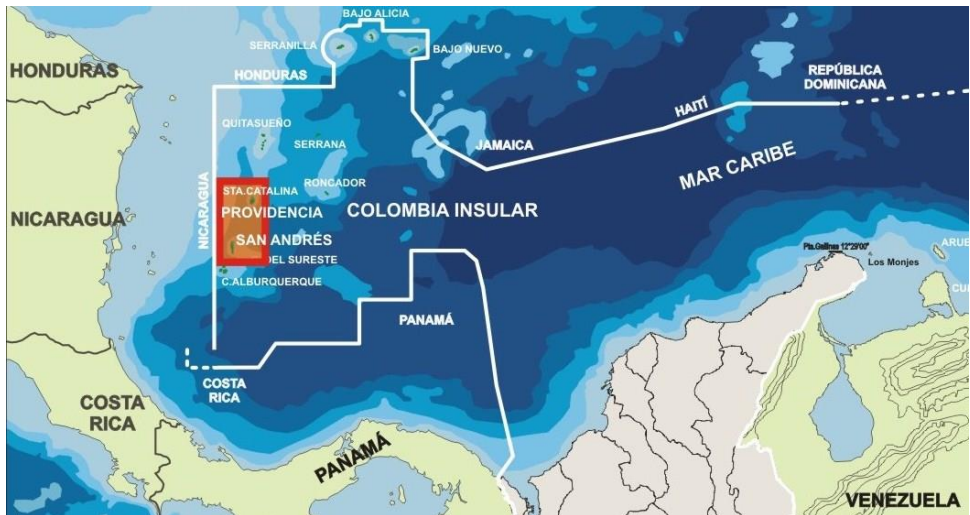


Figure 3: Map of the Caribbean Sea belonging to Colombia (with maritime border prior to November 19th 2012 ICJ judgment). The red square shows the zone where lie the three inhabited islands. (Detail. http://www.sogeocol.edu.co/dptos/archipelago_san_Andrés_02_ubicacion.jpg, accessed July 2013).

The archipelago (c.f. appendix I for a comprehensive map) is formed of three inhabited islands: San Andrés, Providencia and Santa Catalina. In addition, the department is composed of a multitude of uninhabited cays⁸ and banks⁹.

San Andrés has a surface area of 27 square kilometres and is surrounded by various cays: Cotton cay, Rocky cay, Rose cay, Haynes cay and Johnny cay.



Figure 4: left picture: San Andrés island. North is titled one quarter clock wise (photo credit: Image courtesy of the Image Science & Analysis Laboratory, NASA Johnson Space Center). Right picture: Johnny cay, lying north east of San Andrés island (photo credit: Olivier J. Randin).

Providencia is 17 square kilometres and has two main cays: Crab cay and Three Brothers. The island of Santa Catalina is about 1 (one) square kilometre. Santa Catalina is connected to Providencia by a 150 meter long bridge that crosses the Canal Aury.

⁸ Cays of the archipelago: Albuquerque (composed of North Cay and South Cay), Bayley, Basalt, Courtown Cays (composed of Sand Cay, East Cay, West Cay), Easy, Grunt, Palm, Serrana, Southwest Cay, Serranilla, Beacon Cay, East Cay, Middle Cay and West Breaker.

Cays were mostly mentioned in their English denomination. English names will thus be kept throughout this paper.

⁹ Banks are: Alicia, Quitasueño, Nuevo, Low Cay, Roncador and Rosalinda (the latter is part of the archipelago but not administered by it). As "Cay" is often used as synonym for "bank", this paper will not distinguish between both and will use the term "cay" in general.



Figure 5: left picture: photo taken from Santa Catalina of the bridge connecting the island to Providencia. On the left of the bridge, part of the town of Santa Isabel. Right picture: detail of the bridge (Photos credit: Olivier J. Randin).

The two islands, situated 80 kilometres northeast of San Andrés, form the municipality of Providencia and Santa Catalina (Government of the archipelago of San Andrés, Providencia and Santa Catalina, accessed July 2013).

The population projection for 2010 (based on DANE¹⁰ 2005 census) gives an estimate of 73,320 persons for the archipelago (DANE, 2005). But adding illegal immigration from continental Colombia, the population should be closer to 80,000. Providencia and Santa Catalina is the smallest municipality and has about 5,000 inhabitants.

The official languages are Spanish, English and Creole (English-based with Spanish, Caribbean and African languages influences; Mow, 2006).

Economy of the archipelago relies primarily on tourism and trade. Fisheries and agriculture are insufficient to feed the whole archipelago; hence most resources are imported from continental Colombia. Nevertheless, artisanal/small-scale fisheries and agriculture remain an important livelihood asset and belong to the culture and tradition of these islands (todacolombia.com, accessed July 2013).

¹⁰ Departamento Administrativo Nacional de Estadísticas-National Administrative Department for Statistics: <http://www.dane.gov.co/>, accessed 2013.



Figure 6: Maps of the islands of San Andrés (left), Providencia and Santa Catalina (right). Providencia and Santa Catalina lie northeast of San Andrés. Grey areas on each maps are localities. (Details. http://commons.wikimedia.org/wiki/File:Islas_de_San_Andr%C3%A9s_y_Providencia.svg)

3.1. The natural environment

Marine biodiversity of the archipelago is diverse and complex. An important problem to biological and ecological research and investigation is distances between islands and cays. CORALINA is the office in charge of natural resource administration and management and designed a multi-zone MPA, named the Seaflower MPA, to perform this task. First English settlers arrived in the archipelago on a vessel named the *Seaflower*. To commemorate their journey, the name "Seaflower" has been given to the MPA. Information in this subsection is based on a report, by CORALINA (2010), to have the Seaflower MPA included in the UNESCO's World Heritage List.

Atolls and islands are a consequence of the Nicaragua Rise and are composed of extensive and various type of reefs (bank-reefs, fore-reef terrace, drowned shelf edge barrier reefs, etc.). Water circulation runs east to west in a counter-clockwise eddy. The reef and atolls of the

archipelago may play an important role in the pattern and velocity of water circulation of the Caribbean Current and the Panama-Colombia gyre; velocity of water increases with the rising of the sea floor (CORALINA, 2010).

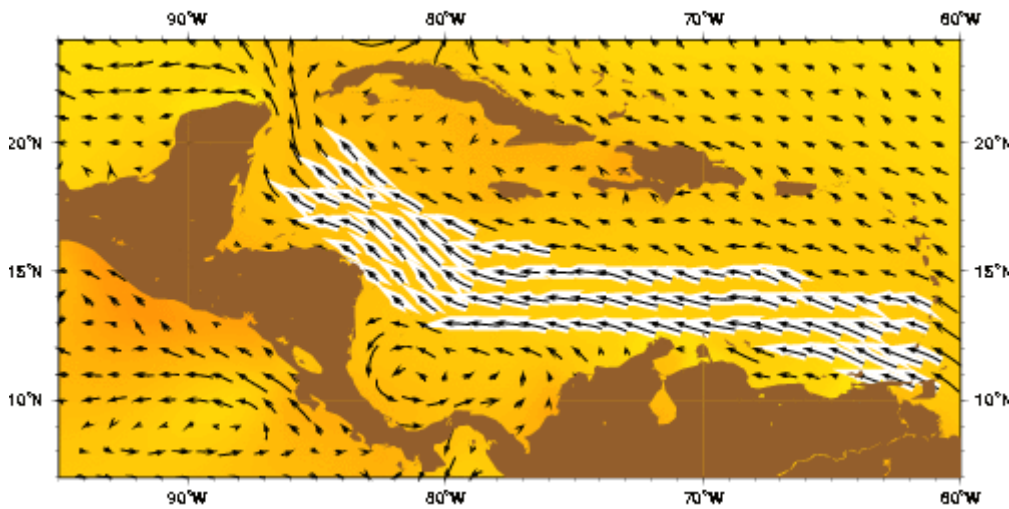


Figure 6: the Caribbean Current and main current patterns (<http://oceancurrents.rsmas.miami.edu/caribbean/caribbean.html>, accessed July 2013).

Islands and cays of the archipelago have a rich biodiversity of corals, seagrass beds and mangroves. The region of the Greater Caribbean accounts for about 500 to 600 species of fish; 407 species have been reported within the MPA: for instance, a sample of 163 species of coral reef fish has been reported for the islands of Providencia/Santa Catalina. And for all fish identified in the MPA, 53 species are on the red list of the IUCN (Appendix II).

On the 60 to 70 stony corals found in the Caribbean, 48 species are present in the Seaflower MPA. Providencia/Santa Catalina have about 44 species of octocorals, making it the richest spot in the Caribbean for this type of coral (CORALINA, 2010).

Invertebrates are poorly studied but for queen conch (*Strombus gigas*) and spiny lobster (*Panulirus argus*), some very important commercial assets for islanders and local economy. But, so far and among other species, 37 species of molluscs have been identified, as well as 37 species of crustaceans and 38 echinoderms.

Loggerhead turtles (*Caretta caretta*), an endangered species (Marine Turtle Specialist Group, 1996), and hawksbill turtles (*Eretmochelys imbricate*), critically endangered (Mortimer and Donnelly, 2008) are commonly found and usually nest in the northern and southern atolls.

Few information exists on cetaceans in the Seaflower MPA. The following species have been documented: the short-beaked common dolphin (*Delphinus delphis*), the common bottlenose dolphin (*Tursiops truncatus*), the Atlantic spotted dolphin (*Stenella frontalis*), the sperm whale (*Kogia sp.*), the shortfinned pilot whale (*Globicephala macrohynchus*).

Two socio-economic and culturally important species of crabs are the black land crab (*Gecarcinus ruricola*) and the shankey (*Gecarcinus lateralis*). The black land crab, also called "black crab", is very important in the culture of the archipelago and for subsistence purposes. Adults live inland and mature females migrate once a year to the sea to release their larvae. This occurs under the form of a mass migration. After spawning, females return inland and larvae drift for about three weeks. After development phase, a mass landing of small crabs returns to the shore.

3.2. The social environment

3.2.1. History and society

Modern history of Providencia and San Andrés began with Puritan settlers arriving aboard their vessel, the *Seaflower*. The colony of Providence (1630) was settled at the same time as the Massachusetts' colony in New England. The Providence colony imitated their Western Indies neighbours: they engaged in agriculture using slaves and privateers. Providence was considered by many at this time in England as a first step toward Central America. But the colony was plagued by disputes between settlers and resistance against the funding company (the Old Providence Company¹¹). Difficulties to create an ideal godly community, distance of the Providencia from Europe and economic difficulties¹² were some explanatory reasons for the failure of the colony. The island was surrounded by Spanish colonies, and hence required the assistance of privateers to defend it. The colony was invaded in 1641 by Spanish (Kupperman, 1993; 1988).¹³

¹¹ Also involved in financing and organisation of the Massachusetts Bay colony. They expected a possible failure of the Massachusetts Bay colony and financed another one the Caribbean.

¹² Main crop was tobacco which did not bring sufficient return on investment.

¹³ For more information on Providencia and slaves at this period, c.f. Games, 2008, 'The sanctuary of our Rebell Negroes': The Atlantic context of local resistance on providence island, 1630–41, *Slavery & Abolition: A Journal of Slave and Post-Slave Studies*, 19:3, 1-21.

After 1641, Providencia became a refuge port for pirates such as the famous Henry Morgan or Edward Mansveldt. Presence of English settlers and slaves was constant. In 1792, the Spanish crown officially accepted their presence in exchange of their fealty to the governor of the islands. It is estimated that, in 1810, the population of the archipelago (slaves included) was of 1640 inhabitants. (Arango, 1992).

June 23rd 1822, San Andrés becomes part of Colombia. Between the 19th century and the 20th century, relations between the archipelago and continental Colombia has gone from poor interest and acknowledgement of needs of the islands to a process of "colombianisation" of the population end at the turn of the 20th century. This policy was pursued with the goal of integrating local populations within cultural values and customs of the continent, and to create "a unity of language and religion"¹⁴ (Howard H.B., 1992).

This process of acculturation was reinforced with the introduction of a free port in San Andrés in 1953. San Andrés and the archipelago faced financial difficulties and the introduction a free port was presented as an ideal solution (Howard H.B., 1992).

If indeed it brought capital to the island, it also increased the destabilisation of a fragile land and society. The Raizals, the indigenous insular minority, was pushed aside by the influx of continental migrants. They could not compete with this new population as they lacked technical knowledge or did not speak Spanish. Another consequence was an increasing population putting additional pressure on the natural resources of the island¹⁵. The free port system showed its limits in the 60's and did not fulfil its economic promises. In addition, it did not take into account environmental issues and the Raizal community. But it paved the way to the creation and expression of a separatist group, which never succeeded in its endeavours (due to governmental repression, lack of organisation and internal dissensions), but it demonstrates a long-lasting divide between the archipelago and the continent (Howard H.B., 1992).

3.2.1.1. The Raizals

¹⁴ "unidad de lengua y religión".

¹⁵ Decree 2762 of December 13th 1991 states the need to control overpopulation in the archipelago.

Raizals¹⁶ are indigenous ethnic islanders of the archipelago. They are protestants and speak Creole. They represent 39.4 % of the archipelago's population (DANE, 2005). Raizal is the term used to differentiate these native islanders from people born on the island that do not belong to this group. They are the descendants of slaves, workers, and European settlers.

If the archipelago is considered as a unit, each island considers itself as different from the others; the island is used by Raizals as a "social isolation to maintain their culture" (Mow, 2006, p. 4). In addition, islanders of Providencia/Santa Catalina consider San Andrés as a lesson not to be repeated in their own islands. Because of its distance from San Andrés, Providencia/Santa Catalina could preserve part of their environmental integrity and was spared damages and challenges that face San Andrés (overpopulation, pollution, criminality, drug, prostitution, etc.).

In San Andrés, Raizals are a minority in their own island. The majority of the population is composed of continental Colombians born in the island or there to work. In Providencia/Santa Catalina, the majority of the population are Raizals and these two islands were not affected by the free port system. They could avoid immigration by continental Colombians and thus preserve some culture and natural resources (Mow, 2006). In San Andrés, Raizals, as a minority, struggle to unite and recover their identity to build a common future.

But for the three islands, Raizals are "living between two worlds" (Mow, 2006, p. 3): one world made of a community-based and equalitarian society prior the free port arrangement, and the other one made of rules and management inputs brought from continental Colombia. They struggle to find a balance between culture, traditions and modernity.

3.3. The Seaflower Biosphere Reserve and the Seaflower MPA

December 22nd 1993, Colombia issued governmental law 99¹⁷ of 1993 that establishes, in its article 37, CORALINA (Corporación para el Desarrollo Sostenible del Archipiélago de San Andrés, Providencia y Santa Catalina)¹⁸ as an administrative and financially autonomous

¹⁶ C.f. <http://pasaportecolombiano.wordpress.com/2007/12/29/documento-acerca-de-los-raizales-de-san-Andrés/#more-143>, accessed July 2013.

¹⁷ C.f. Ley 99 de 1993: http://www.minambiente.gov.co/documentos/normativa/ley/ley_0099_221293.pdf, accessed July 2013.

¹⁸ Corporation for the sustainable development of the archipelago of San Andrés, Providencia and Santa Catalina.

regional entity in charge of environmental matters for the San Andrés archipelago. Its article 37§2 declares the archipelago a biosphere reserve.

CORALINA, that entered into function in 1995, established 7 main objectives that lead its work: 1) to reduce environmental pollution, 2) to manage strategic ecosystems and renewable/non-renewable natural resources, 3) population density control and reduction, 4) to improve territorial use, 5) to develop human capital, 6) to reduce poverty, 7) sustainable development of seas and coasts (CORALINA website, Políticas, accessed July 2013).

From 1997 to 2000, CORALINA works to the recognition of its biosphere reserve, named "Seaflower". Its surface area is 300,000 square kilometres, encompassing the department almost in its entirety (Mow et al., 2003). In November 2000, the biosphere reserve was recognised by the UNESCO's Man and Biosphere programme¹⁹ (MAB). The purpose of CORALINA to work for the recognition of a biosphere reserve was to raise awareness within communities toward ecological challenges and work toward the creation of managing instruments (Mow et al., 2003).

Thus the creation of an MPA in the archipelago was considered as a second step in the management of natural resources and environment, envisioned within an ecosystem approach (Mow et al., 2003). However this process, that took place between 2000 and 2005, was paved with difficulties. Main concerns stem from small-scale fishers and to which extent restrictions would be imposed on their daily fishing activities. In addition, small-scale fishers, that enjoyed a free and open-access to the sea until then, resented the presence of a managing institution that would impose on them (Gorricho, Rivera, 2005).

The Seaflower MPA was established in 2005. Its total surface area is 65,000 km² and is divided in three sections: Northern (37,000 km²), Central (12,700 km²), Southern (14,800

¹⁹ "The goal of this program [MAB] is to achieve a sustainable balance between biodiversity conservation, economic development, and cultural survival. In order to achieve this goal, biosphere reserves are designed to reconcile the conservation of biodiversity, the quest for economic and social development, and the maintenance of associated cultural values by fulfilling three complementary functions:

- Conservation. Preserve genetic resources, species, ecosystems, and landscapes.
- Development. Foster sustainable economic and human development.
- Logistic support. Support demonstration projects, environmental education and training, research and monitoring related to local, national, and global issues of conservation and sustainable development."

(Howard, 2006, p.7)

km²). It is the 9th largest MPA in the world (Protect Planet Ocean website, accessed July 2013) and represents about 2.4% of the Caribbean Sea.²⁰

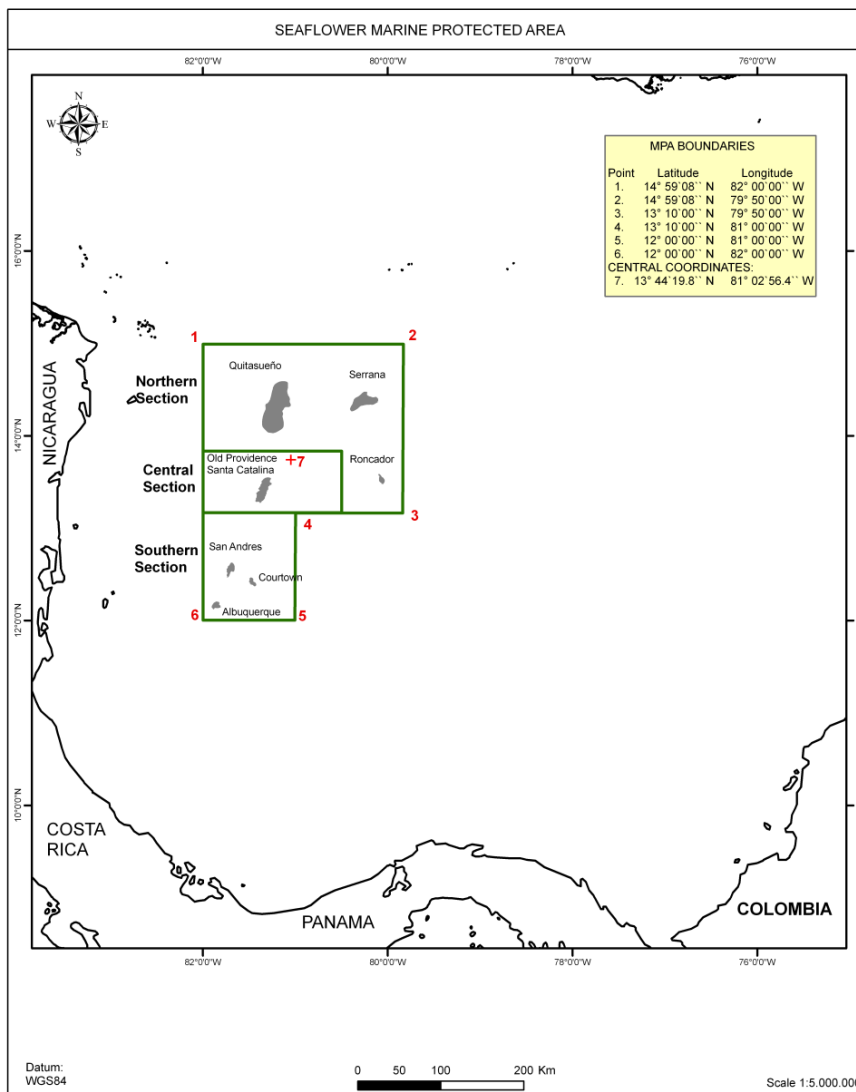


Figure 7: The Seaflower Marine Protected Area's delimitation and its three administrative sections: Northern, Central, Southern. (CORALINA, 2010, p. 18).

CORALINA and MPA' stakeholders developed 5 objectives framed in an integrated approach, all objectives are considered of equal importance: "1) Preservation, recovery and long-term maintenance of species, biodiversity, ecosystems, and other natural values including special habitats; 2) Promotion of sound management practices to ensure long-term sustainable use of coastal and marine resources; 3) Equitable redistribution of economic and social benefits to enhance local development; 4) Protection of the rights pertaining to

²⁰ Nota Bene: the Seaflower MPA did not replace the Seaflower Biosphere Reserve. Both exist at the same time. The Seaflower Biosphere Reserve (recognised by UNESCO's MAB programme) and the Seaflower MPA are both managed by CORALINA. The first entity can be considered as an international token of the singularity and specificity of the archipelago's ecosystem. The second is a management instrument.

historical use; 5) Education to promote stewardship and community involvement in planning and management." (CORALINA, 2010, p. 13). To comply with the devised ecosystem approach, CORALINA and stakeholders designed a 5 zones multiple-use MPA (CORALINA, 2010):

Table 1: The 5 zones of the Seaflower MPA, their definition, and surface area in km².

Zone designation	Zone definition	Surface area in km ²
No-Entry	Research and monitoring only	116
No-take	Non-extractive activities only	2,214
Artisanal fishing	Traditional methods and users only	2,015
Special use	Depending on the five objectives of the MPA, ex: ports, shipping lanes, cruise ship anchorage, etc.	68
General use	Protection integrity of other zones and objectives of the MPA (buffer zone)	60,587

No-entry and no-take are zones with conservation purpose. They are located close to the islands and atolls. The term "general use" is synonym to "buffer zone"; it is encompassed within the borders of the MPA and represents 93.2%. The rationale was to include a buffer zone (General use zone) that would enjoy a legal status and fulfil an ecosystem approach by protecting effectively conservation zones from the very creation of the MPA.

3.4. Maritime disputes between Colombia and Nicaragua

In March 1928, the Barceñas-Esguerra Treaty, signed between Nicaragua and Colombia, settles the territorial disagreement on to whom belongs the San Andrés archipelago. It grants to Colombia sovereignty over islands and cays west of the 82° meridian but for Roncador, Serrana and Quitasueño. For the latter, Colombia is in dispute with the United States of America who, later, will cede these cays to Colombia.

In December 2001, Nicaragua files a complaint to the International Court of Justice questioning the legal validity of the treaty and the title of the archipelago²¹ as well as the cays of Roncador, Serrana, Seranilla and Quitasueño, and asks for a settlement on the title of property of the islands and maritime delimitations (ICJ, Instituting Proceedings, 2001).²²

In November 2007, the Court answers the preliminary objections and in November 2012 issues its judgement. Nicaragua argued that it was entitled to an outer continental shelf and claimed a maritime border related to this maritime feature (see Appendix III). This claim would have left the islands of San Andrés, Providencia and Santa Catalina as enclaves in Nicaraguan sea. The Court does not support the claim of an outer continental shelf and favoured the continuity of Colombian territory instead of enclaves. Its judgement, final and without appeal, leaves islands and cays to Colombia and part of its sea, but transfers about 90,000 km² of sea to Nicaragua (ICJ, Judgement, 2012; c.f. Appendix IV of the present paper for a map with ICJ borders).

However, with the new borders, the cays of Quitasueño and Serrana become enclaves in Nicaraguan waters. This has dire consequences for small-scale fishers of Providencia and Santa Catalina as these two cays are major fishing spots for them and seamounts lie between both areas. With the new border, small-scale fishers are in direct competition with Nicaraguan industrial vessels and face intimidations of Nicaraguan official boats.

²¹ c.f. Appendix I for a general map of the region, islands and cays.

²² For more information on historical, geographical position of the case, c.f. Sociedad Geografica de Colombia, http://www.sogeocol.edu.co/documentos/SAN%20ANDRÉS_Y_PROVIDENCIA.pdf, accessed July 2013. See also the position of Professor Rengifo Lozano (Universidad Nacional de Colombia), summarizing the situation: <http://historico.unperiodico.unal.edu.co/Ediciones/103/02.html>, accessed July 2013. In addition, Mantilla, S. (Ed.), 2009, *Fronteras en el Caribe: la disputa colombo nicaraguense por San Andrés, Providencia y Santa Catalina*, *Cuadernos del Caribe*, Publicacion especial, 2009, San Andrés Isla Colombia, provides several articles on the 2007 Preliminary Objections (ICJ) and articles on border and social issues in the Caribbean and Colombia.

4. Theory

In this chapter, key ideas on governance concept, the interactive governance theory and governability will be presented. The first section presents what is the concept of governance. The second section defines and describes the interactive governance theory and the governability assessment framework.

Interactive governance theory and its framework are guidelines in the analysis of the archipelago' small-scale fisheries. The perspective this theory support integrates the world in a dynamic process. Its decomposition in systems allow for a holistic and comprehensive analysis of a problem.

4.1. Governance

The concept of governance has often been used as a catchword. However, its systematic use in various academic domains expresses a need of a term that goes beyond the mere act of governing and encompasses more than the State. In fisheries management, Jentoft (2006) notes a shift in describing problems from a "management" perspective to a "governance" perspective. A greater flexibility and a broader approach in the analysis of the ones that govern and the ones that are governed are certainly needed.

Kooiman (2003, p. 4) defines governance as: "the totality of theoretical conceptions on governing", and the World Bank (internet website) defines governance as: "the process by which authority is conferred on rulers, by which they make the rules, and by which those rules are enforced and modified". These two definitions underline that governance is more than governing and that governance is a process that leads to governing.

Therefore, to govern cannot be limited to a political "black box" where outputs are the consequences of a governing agency and where information can be integrated in a closed loop: input-black box-output-consequences. Such approach limits social and political relations to a mechanical one, the governing agency pulling strings of the society and natural resources under its command. This mechanistic approach is too limitative. Thus, to govern is much more than a command-and-control task and to understand all the ramifications it entails, one has to consider it as a much more complex and subtle operation.

Governing involves stakeholders - a system-to-be-governed - with different needs and demands, and with various goals and powers. From the perspective of governors - the governing system - institutions have various functioning modes. The governing system and the system-to-be-governed are not mute nor deaf to each other: voices, hopes and dissenting opinions are expressed. A whirlpool of interactions takes place between these two systems under the form of contacts, influences and feedbacks. And roots of interactions can be found deep in social, historical, political, cultural aspects of the studied society.

Governance is thus going beyond governmental institutions to encompass a whole social system that interacts with these institutions. Governance is multi-layered, multi-scaled and pluri-influenced. Governance is the conceptualisation of all these actors, influences and relations, and frames a whole social and political process.

The system-to-be-governed is composed of: the private sector, communities, NGOs, the media, the general public, and any group that has something at stake, should be included when analysing governance. Indeed, all these actors have their role in society. All of them, in their own ways, influence and steer the political institutions in certain directions. All of these actors should be considered implicit governing actors because they interact and as such influence the system (Chuenpagdee and Jentoft 2009). Governance is thus a game between diverse, complex and dynamic images, powers, alliances and consensus.

4.1.1. Governance as governing and governing as governance

With the previous section in mind, one can draw two ideal-type models.

The traditional view describes governing as governance as a top-bottom approach, single-minded and instrumental. It has the form of a pyramid with a chain of command that goes top to bottom. In this instance governance is governing because stakeholders are under the influence of the ones that govern. But such a view appears too rigid in contemporary societies. An example would be of a fishery, with highly independent stakeholders.

The alternative approach of governance, depicted as a rose, gives space to interactions between multiple stakeholders, where governing is governance. In this situation, matters of alliances, power and influences are taken into account. Stakeholders have an idea of what the

outcome of the political process should be, and the actual outcome will depend on consensus and agreements. It is a highly dynamic system. Equilibrium is never attained as stability of the system is always challenged by new issues.

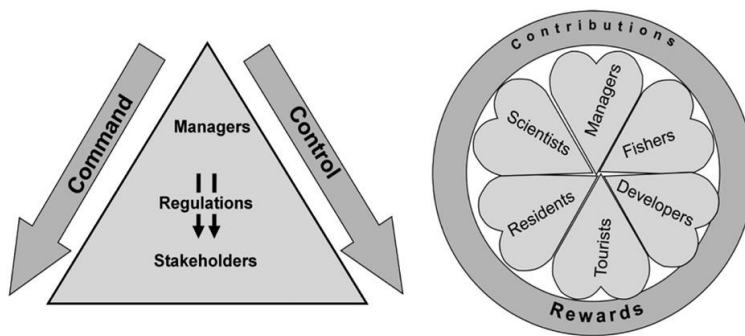


Figure 8: the traditional view of the governing system, a pyramid, and the alternative view depicted as a rose (Jentoft et al., 2010).

But whichever the view, governance cannot be limited and equated to government, it goes beyond it as it includes more than the formal institutions but also the relations and possible interactions with the one governed (Jentoft, 2007a). Whichever the perspective, governance has three common stances: firstly, to govern encompasses the public as well as the private sector, secondly interests between public and private sectors are often shared, and thirdly societal development forms the basis of governance (Bavinck et al., 2013).

4.2. Interactive governance theory

This theory considers that governing is performed by an aggregation of multiple efforts. These efforts take place in a world that is diverse, complex and dynamic. Stakeholders and institutions are as well diverse, complex and dynamic. They interact at various levels and scale in a perpetual state of change and communication.

Kooiman et al. (2005, p. 17) define interactive governance as:

"[...]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"²³.

To analyse a problem by fractioning it into smaller units may be too reductionist. The risk is to lack a larger vision that could explain causes and effects. To use a larger perspective may allow for a better representation of the issue as a whole (a holistic approach), but at the same time may lack subtlety and precision in the analysis (Kooiman, Bavinck, 2013). To reduce this risk of overgeneralization, the interactive governance approach defines three systems that exist together and in interaction. There is a governing system (formed by governing institutions) which is the *subject of governance*, a system-to-be-governed (encompassing civil and private sectors) which is the *object of governance*, and the governing interactions (interactions between the governing system and the system-to-be-governed) which is the *relation between the two prior systems*. Four features are found across these three systems: diversity, complexity, dynamics and scale; they are the vectors of the systems, and give its interactive and dynamic substance to the interactive governance perspective.

This model shall allow for a better understanding of what hinders or favours governability, what are the situations that create opportunities or challenge the sound functioning of the system as a whole. The model will be used as it was intended to be: a heuristic tool and not a teleological theory (Kooiman, 2008, p. 174).

Before turning to the definition of each system of the model and its constitutive parts, the governability concept is presented in the next section.

²³ Emphasis added.

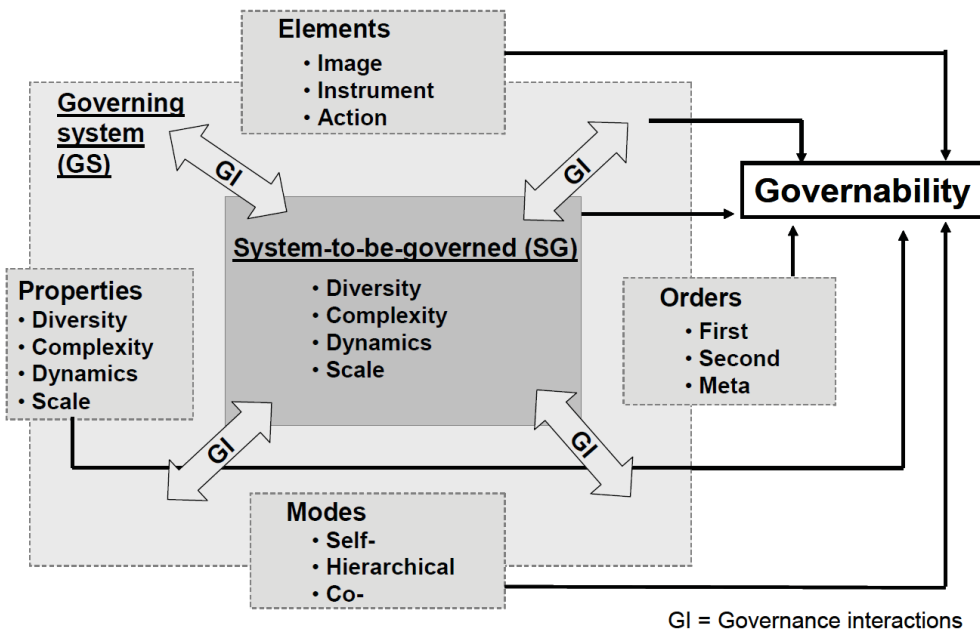


Figure 9: interactive governance model and its relation with governability (Chuenpagdee et al., 2008, p. 3).

4.2.1. The concept of governability

Dixon et al. (2003) stress the difficulty to govern in a world that has become more diverse, complex and dynamic. They also underline the debate that questions to which extent societies, nowadays, are governable. And within this question comes in others, such as: what favour governability? Or, what hinders it?

Within the interactive governance theory, Kooiman defines governability as:

"The overall capacity for governance of any societal entity or system."
(Kooiman, 2008, p.3)

Governability describes "the governance status of a societal sector or system"²⁴ (Kooiman et al., 2008, p. 1). It expresses the dynamic aspect of governance encompassing three nested components: governing system, system-to-be-governed and governing interactions. In other words, governability, with these three nested components, has a "composite property" (Kooiman et al., p. 3). This "composite property" questions the extent to which the overall system can be steered. Uncertainty is part of the dynamic governing process and changes can come from within or from outside the overall system. External drivers can affect governability

²⁴ Emphasis added.

in ways that governing institutions do not expect (natural disasters, regional political unrest beyond the studied scale, international events, etc.); governability is never reached once and for all, it is a fluctuating state that has to be constantly assessed in the light of the governing system, the system-to-be-governed and the governing interactions (Kooiman, 2003, p. 193). Assessment of governability could be considered as a snapshot of the state of dynamic and fluctuating governance (c.f. figure 9 hereunder).

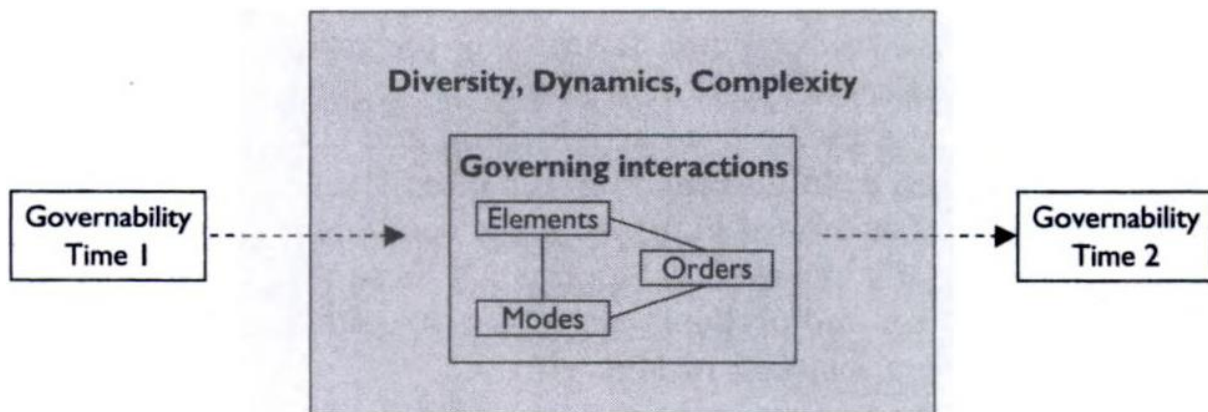


Figure 10: This scheme represents the interactive governance model (grey square) and governability assessments at two different times, time 1 and time 2 (Kooiman, 2003, p. 193).

Chuenpagdee and Jentoft, (2013, p. 347) underline that "at a general level, governability is a function of processes that occur within and between the system-to-be-governed, the governing system and governing interactions." Therefore, governability "is not solely an issue and responsibility of the governing system" (op.cit., p.347).

Chuenpagdee et al. (2008) proposes criteria to evaluate governability of fisheries. System-to-be-governed can be evaluated according to prevalence of the four features: diversity, complexity, dynamics and scale; governing system can be evaluated according to the goodness of fit (for the elements of governing), responsiveness (for the modes of governing) and performance (for the orders of governing); and governance interactions can be evaluated according to their presence and quality (c.f. also Kooiman, Chuenpagdee, 2005, p.347; Kooiman, Bavinck, 2013, p. 24).

Governability's pivotal function is to assess the quality of the interactive governance of an overall system (in this present case, fisheries). Governability is therefore related to, and a function of, a system-to-be-governed, a governing system and the governing interactions

(Jentoft, 2007a). These three systems are characterized by some level of diversity, complexity, dynamic and (spatial or temporal) scale and are presented in the next section.

4.2.2. System-to-be-governed, Governing system and Governing interactions

The system-to-be-governed: It is composed of a social system and a natural system. A socioeconomic system lives by and depends on a natural system. Environmental causes (climate and ocean changes, long term anthropogenic causes, etc.) will impact on the social system. Therefore diversity, complexity, dynamic and (spatial or temporal) scale of the natural system has to be taken in consideration to understand interactions and uncertainties it can cause (Chuenpagdee, Jentoft, 2009). Qualities of the natural system and socioeconomic systems affect the whole governability. Answering to its own needs, wants and rules, the system-to-be-governed should not be considered as a malleable system that will obey and respect orders automatically (Kooiman et al., 2008).

In interactive governance, stakeholders and their participation are taken into consideration. They are considered as active part of the system. A stakeholder is defined as any actor that has something at stake, regardless of what they do (Jentoft, 2007a). They are determined as active, passive or latent, depending on "the urgency of their concerns, the legitimacy of their interests or the power they hold" (Jentoft, 2007a, p. 362). Stakeholders have powers, they can either *voice*, express their concerns and participate, or *exit*, choose not to take part. In a case of *voice*, their power is related to the intensity of their participation and the form that this participation will take (Buanes et al., 2005). In case of *exit*, stakeholder does not disappear from the scene. It is still present and holds the possibility to act later on. Its acting power is latent and can still choose to abide by the rules or not.

Each stakeholder has its own agenda and problems that need to be solved. Therefore, problem identification is an important part of an interactive governance analysis, because: "problems are not an objective reality, they become such only in the minds of societal actors" (Kooiman et al., 2005, p. 19). In the end, it all comes down to (re-)solving issues and problems.

The interactive governance theory is innovative in the sense that it includes interactions of actors at different levels of society with overlapping actions²⁵ and interests. This emphasis on interaction puts a stress on actors, the structure of the composing systems and their interdependencies. Where such a system lacks commonly agreed normative basis, it will lack legitimacy, and this in turn will hinder its governability (Kooiman et al., 2008).

The governing system: it orchestrates the whole governance system and encompasses all mechanisms and process needed to lead and steer. Its governability is demonstrated by its capacity to combine stakeholders' needs and its ability to lead interactions (Kooiman et al., 2008). In interactive governance, State is not the sole actor: market and civil society play a role in the governing architecture. The State and its politics play a predominant role. But market can also organise a governing structure. For example, the ITQ management approach is market based. Civil society, NGOs, church organisations, academic institutions or social movements are also a part of the governing system. They express demands and needs of the system-to-be-governed. Of course, these clear cut distinctions are for analytical purposes and boundaries in daily life are much porous (Kooiman and Bavinck, 2013).

An important point to keep in mind, while assessing governability, is that attention should not only be brought on the actual functioning of a governing body, but also on the historical context of its establishment (Chuenpagdee, Jentoft, 2009). Chuenpagdee et al. (2013) underline the relevance to analyse the "step-zero". Issues in governance and governability may lie deeper than an a priori vision of an ill-suited governing structure. It may find its roots in the creation process where interactions between stakeholders and power relations may have influenced the decision process of a certain type of governing body²⁶.

The governing system is divided into three subsystems²⁷.

The *elements of governing*, they are the resources in the hands of governors. These elements composed of: images, instruments and action. *Images* are the "visions, knowledge, facts,

²⁵ And "actions implies intention, which relates to consciousness and identity" (Kooiman, 2003, p. 14). The question of consciousness of identity is of particular interest as it relates to the mental construction of what a situation is and the vision and imagination of what a system should be.

²⁶ For a description of the rationale for the creations of MPAs, the step-zero, c.f. Jentoft et al. (2012), What Stakeholders Think About Marine Protected Areas: Case Studies from Spain, *Hum Ecol*, 40:185-197.

²⁷ For more information on these components of governance, c.f.: Kooiman et al., 2008, pp. 6-8.

judgements, presuppositions, wishes, goals hypotheses, theories, convictions" (Kooiman, Bavinck, 2013, p. 18) that define the direction in which governing actors wish to go in the institution's creation process. *Instruments* are the tools used. They can take many forms such as fisheries regulations (for instance, fisheries, input or output regulations), subsidies, tax, etc. They are the means used to implement the vision of the governor. *Action* is the will and/or support (or their absence) that governors have to implement their vision (Kooiman, Bavinck, 2013).

The modes of governing deal with the structure, the form governance will take to interact with the system-to-be-governed. Modes are of three types: self-governance, hierarchical governance and co-governance.

Self-governing interactions: where a society holds the ability to govern itself. An example in fisheries management would be customary management or sea tenure.

The second mode is *Hierarchical governing interactions*: State governance usually takes this form depicted as a pyramid where the governing system sends steering orders to a system-to-be-governed through a bureaucracy.

Co-governing interactions: this mode conveys a cooperative or a collaborative approach. The most representative example of co-governance is co-management where stakeholders are directly involved in a "symbiotic" governing interaction (Kooiman and Bavinck, 2013).

*The orders of governing*²⁸ represent the mechanisms used to put governance in motion. Orders are divided into a first order, a second order and a Meta order. In the *1st order*, governing institutions deal with day to day issues. The main task is to create opportunities or to solve problems (Kooiman, Bavinck, 2013). But Rittel and Weber (1973) stress the difficulty to define what is the problem, i.e. the difference between "what-is" and "what-should-be", to locate the problem and finally to select the appropriate cure to solve it. The definition of a problem, and the solutions that come to solve it, may reside in the eyes of the beholder and "there are limits to how systematic, effective and rational a governing system can be in solving them" (Jentoft, Chuenpagdee, 2009, p. 553). The *2nd order* deals with the institutional setting, what type of institutions have been created to govern. These institutions will have to deal with *1st order* problems and are formed with a set of rules that control and manage

²⁸An image used by Kooiman et al. (2008) is one of concentric onion rings where the first order deals with the daily activities, the second order represents the institutions and the Meta order are the concepts and principles that overarch the governance institutions as for instance the precautionary approach.

human behaviour (Kooiman, Bavinck, 2013). The *meta-order* (3rd order) of governing institutions is the level at which values and principles are decided. These values and principles are important as they can be found in and within *Elements, Modes* and *Orders* of the governing system. They will guide and influence the architecture of the whole governing system. Meta-order is related to the field of applied ethics where applied ethics tends to build bridges between concepts and their application, for instance environmental ethics, business ethics, developmental ethics, etc. (Kooiman et al., 2005). These values and principles are often unvoiced and they represent a choice that will overarch actions of governing institutions (Kooiman and Bavinck, 2013).

The governing interactions: governability of the system-to-be-governed and the governing system will largely be expressed in the governing interactions. In fact, governing interactions is not only an expression of the relation between two systems. It has a dynamic role where interactions mutually influence each system. Therefore, "in interactive governance interactions and systems belong together" (Kooiman, 2008, p.174).

Governing interactions is the centre of power relationship between groups; it is in this system that the socio-political organisation will be expressed in a way that is specific to cultures and traditions²⁹ (Kooiman, 2008).

Interaction can be separated between interactions at the actor level, which put forth "the willingness or ability of actors to participate" (Kooiman and Bavinck, 2013, p. 20)³⁰, and interactions at the structural (or contextual) level where governing system and system-to-be-governed are reflected. The latter can take several forms, but Kooiman and Bavinck (2013) underline two forms in particular: the public sphere, which calls for further analysis in the realm of fisheries, and social capital.

Governability analysis of governing interactions will look at the kind of institutional mechanisms that are used to foster interaction between the governing system and the system-to-be-governed and how (means and quality) these two systems communicate (Chuenpagdee and Jentoft, 2009). Here, actors' participation (participatory, collaborative, policy or management interactions) and structural modes (self-governance, co-governance or hierarchical governance) have to be assessed (Kooiman et al., 2008) as possible factors influencing positively or negatively governability.

²⁹ For instance, Kooiman (2008 p. 184) poses the hypothesis that certain type of political organisation, such as co-management, may be more common in certain region more prone to this type of participative action.

³⁰ Participation presents its advantages and disadvantages as well. It can foster integration, learning, legitimacy, accountability, but can also be politically naïve, inefficient and unrealistic (Kooiman, Bavinck, 2013).

4.2.3. Core features: diversity, complexity, dynamic and scale

Interactive governance poses that social and ecological systems are inherently diverse, complex, dynamics and with multiple scales. These features represent governability challenges at whichever scale of analysis. They emphasize the uncertain and changing nature of the natural environment and society and the unexpected essence of life. A society is affected by unforeseen events and governing decisions have unexpected and delayed effects. Therefore, features of the inherent changing nature of societies and natural environments should be integrated the analysis of governance systems (Kooiman and Bavinck, 2013).

Geva-May (2002, in Kooiman, 2008, p. 188) calls for a "common manipulable denominators" in a comparative research agenda. Thus, to compare and analyse the three systems, common descriptors are needed. Diversity, complexity, dynamic and scale are used to describe their "overlaps, linkages, interactions and interdependencies" (Kooiman, 2008, p. 176). These four features qualify the systems and are the vectors, the forces that put them into motion.

Diversity: diversity relates to components of the observed system. It looks at the number of units (institutions, stakeholders, species, ecosystems, etc.) and their homogeneity/heterogeneity. The aim is to take a view sensitive to the context and inclusive of all its specificities. The hypothesis states that if the system presents a high diversity of components, the governability will be lowered (Jentoft, Chuenpagdee, 2009).

Complexity: complexity relates to relationships. Complexity depends on the general structure within a system and between a system and exterior actors or drivers (Kooiman, Bavinck, 2005). A system cannot be merely equated to a sum of units. It is the relationships between the units that form the system. Therefore, the hypothesis would be that the more complex a system, the lower would be its governability (Jentoft and Chuenpagdee, 2009). Complexity can be grasped as "handling interrelationships, interdependencies and interpenetrations" (Chuenpagdee and Jentoft, 2009, p. 112). Nevertheless, complexity poses two important restrictions. The first is the limits to our capacity to understand complexity, be that for the mere lack of knowledge of some issues, the second is related to the consequences of acts creating unforeseen path dependencies.

Dynamics: dynamic relates to the inherent changing nature of any system and the tensions that are created (Kooiman and Bavinck, 2005). A system is not frozen in time. It moves, acts, reacts either to predetermined, intentional acts but also most often to unpredicted events and is subject to uncertainty (Chuenpagdee and Jentoft, 2009). Therefore, governability would be assessed as "the capacity of systems to adapt and respond to internal and external pressure or demand" (Idem, p. 112). In this instance, a hypothesis on governability would be that the more dynamic the system, the lower its governability (Jentoft, Chuenpagdee, 2009). Kooiman and Bavinck (2005) stress that dynamics of modern societies, and globalisation, have increased.

Scale: scale relates to boundaries. Boundaries can be spatial, temporal³¹ or even institutional (Kooiman and Bavinck, 2005). The boundaries fix the limits of the system, its scale. The hypothesis states that a large scale induces a lower governability. If the scale is large, one can suppose that the diversity, complexity and dynamics of the system will increase (Jentoft and Chuenpagdee, 2009). When scale is large, mandates between institutions can overlap creating frictions and possible tensions lowering governability. This issue is known as "legal pluralism" (Jentoft and Chuenpagdee, 2009, p.559); hence the importance of a match between the governing system and the system-to-be-governed.

However, scale is a social and analytical construct and interactions with lower and upper levels are a norm. Scale should not be considered as hermetic boundary, but as an analytical framework. Indeed, scale-related issues increase the diversity, complexity and dynamics of fisheries (Mahon et al., 2005). Therefore, reflexion on scale is important for sound governance. Costanza et al. (1998) state the matching of scale as the second principle for a sustainable governance of the oceans.

The scale feature brings into the analysis the question of match and mismatch of governing institutions in relation to the system-to-be-governed; match/mismatch are thus important descriptors of the relation between these two systems (Mahon et al., 2005).

³¹ Examples of spatial scale could be for instance a Marine Protected Area, a reef, or a spatial area where a fish live. An example of temporal scale would be life cycle of a species, or seasonality of fishing patterns (Kooiman, Bavinck, 2013).

5. Governability assessment of small-scale fisheries in the San Andrés archipelago

As mentioned earlier, governability of the archipelago' small-scale fisheries will be assessed with an emphasis on the small-scale fisheries of the islands of Providencia/Santa Catalina. Even though the situation of small-scale fishers in the island of San Andrés is different, general lessons for the whole archipelago can nevertheless be learnt.

The assessment will follow 4 steps as proposed by Chuenpagdee and Jentoft (2013). The first step identifies the issue of governance and its related wicked problem(s). The second step examines systematically the systems properties with the governability assessment matrix (Chuenpagdee and Jentoft, 2009, p.114). The third step evaluates the governing system and its three subsystems (elements, modes, orders). The fourth step analyses the governing interactions between the system-to-be-governed and the governing system. The two first steps are part of this chapter as they delimitate the stakeholders and challenges and structure the governance analysis. The third and fourth steps, belonging to the analysis, are presented in the following chapter.

The last section of this chapter presents the judgement, November 19th 2012, of the International Court of Justice (*Nicaragua vs. Colombia*) and some of its key impacts on the governance of the archipelago. The judgement is analysed using the diversity, complexity, dynamics and scale features. This brief presentation will help cast some light on the governance and governability analysis in next chapters.

Assessment step	Targets (Where to look)	Features (What to look for)	Measures (What to look at)
Step 1	Fisheries governance problem	Degree of wickedness of the fisheries problem	Stakeholders' images of the problem Existence of stopping rules The embedded nature of problem Cost and reversibility of prescribed solutions
Step 2	Natural and social systems-to-be-governed Governing system Governing interactions	Prevalence of system properties (i.e., diversity, complexity, dynamics and scale)	Components Relationships Interactions Boundaries
Step 3	Governing system	Goodness of fits of elements (i.e. images, instruments and actions) Responsiveness of modes (i.e. self-, co-, and hierarchical) Performance of orders (i.e. first, second and meta)	Behaviour, decisions, mental models, institutional arrangements, implementation Awareness, learning, sensitivity, conflicts Consistency, effectiveness, transparency, justice
Step 4	Governing interactions	Presence and quality of interactions Enabling and restrictive role of power relations	Information sharing, co-learning, adaptiveness Inclusiveness, representativeness, participation

Figure 11: Governability assessment framework. Columns define the assessment steps, the targets (where to look), the features (what to look for), the measures (what to look at); rows are divided into 4 consecutive steps (Chuenpagdee, Jentoft, 2013, p. 337).

5.1. Identifying problem wickedness

To govern is to handle challenges and problems in time and space. But to define the problem, the issue that hinder the proper functioning of a system is not as easy as it seems (let alone finding the appropriate solution). Definition of a problem is related and relative to a point of view. Culture, social background, academic sensitivity, affiliation to certain kind of institutions (environmental, labour, fisheries and agriculture, etc.) will affect this definition. And to come up with a problem is to come up with potential solutions. However, the solution of one actor may not be the solution of another. And if this first actor finds an appropriate solution according to its rationality, the second actor may not find it suitable, and this solution may even worsen its situation. In this instance, problems can be defined as "wicked" as context and perspective of the individuals (or institutions) will influence the decisions if it is a problem or not and views can conflict (Jentoft and Chuenpagdee, 2013).

Problems are wicked in the way they are defined as problems because wicked problems have "no stopping rule", i.e. there is no solution once and for all and one may never know when the problem is definitely solved (Rittel, Webber, 1973, p. 162). Wicked problems can hide their own wicked problems, and solutions to wicked problems can have strong path dependencies and irreversibility (Jentoft and Chuenpagdee, 2013).

The overarching wicked problem is the governability of the San Andrés archipelago in a situation of crisis when international borders between Nicaragua and Colombia are changed: what appropriate solution should be brought? In this instance, if the problem is rather well and commonly defined by national government and fishers, the inadmissible loss of maritime territory, the answers to give to the problem are not shared between national government on the one side, and regional and fishers on the other side.

Therefore the degree (and location) of wickedness of the problem is high as the consequences of the ICJ judgment, at an international level, affects directly and principally small-scale fishers, at a local level. And answers to give to this problem differ between national, regional and local levels (wicked problem).

In line with the interactive governance perspective and Rittel and Webber's view that "wicked problems are problems within problems" (Chuenpagdee and Jentoft 2013, p. 339), two linked wicked problems are identified (: an international decision affects local actors and answers to the problem differ with a differential of power in favour of national authorities) that cast light on tensions created by the overarching wicked problem mentioned above. The first problem is related to the system-to-be-governed - pressure on natural resources - the second is related to the governing system - scale mismatch and interference between national and regional governing systems.

An important wicked problem of the system-to-be-governed in the archipelago of San Andrés is one of an increasing population³² that puts pressure on a fragile and already overexploited marine environment with much fishing strain. The archipelago is walking on a rope of a subtle and difficult game of balance between conservation and extraction. The recent loss of maritime territory renders this balance even more complex as less extractive area is available and more pressure on the remaining environment is to come.

³² Food is needed to meet the increasing demand of the tourism sector and small-scale fishers need fishing as a livelihood.

The regional governing system of the archipelago faces another type of wicked problem where it has to answer to the needs of fishers but at the same time cope with decisions of the national government that interfere with the societal structure of the archipelago. In fact, if there are wicked problems, there are indeed wicked solutions as well.

The national presidency's rapid answer to the issue has been to grant 6 months³³ subsidies to small-scale fishers of the archipelago³⁴. This decision triggered a whole set of issues and adds to the burden of regional institutions to cope with the situation.

For instance, this answer laid the task of defining who is a small-scale fisher and who is not. Lists were set by the Secretariat of Agriculture and Fisheries of the department on the basis of registers of small-scale fishers' licences. But quickly non-fisher free-riders tried to take advantages of subsidies and enter on the lists. The Secretariat set up administrative controls to limit frauds but faced two new challenges: some small-scale fishers fished for decades without licences (considering it was not a useful paper), and each time a controlling scheme was devised freeriders found a way to avoid it.³⁵

Fishers also did not understand why some received subsidies and why some did not receive them due to lack of information. Subsidies were an answer that created more problems than solutions. And this solution is wicked as it only serves the short term when fishers need a long term solution.

The direct implication of the national government, without previous consultation with regional bodies, adds a parameter to the already complex equation. And the governability capacities and the regional governance structure are thus put to the test. The governing system of the island must face a problem "that is", with solution that will have strong path dependencies and with a multitude of problems "to be".

5.2. The governability assessment matrix

This step assesses systematically the properties (diversity, complexity, dynamics and scale) of each system: system-to-be-governed, governing system and system interactions.

³³ January 2013 to end of June 2013.

³⁴ With conditions, for example, fishers that are employed temporarily in this period of 6 months will not be granted subsidies.

³⁵ A fisher said that a lawyer from Bogotá has been found on one of these lists. Another fisher on Providencia said that a person dead for three years was on one of these lists.

Table 2: Governability assessment matrix (Chuenpagdee and Jentoft, 2009, p. 114)

	Natural system-to-be-governed	Social system-to-be-governed	Governing system	Governing interactions
<u>Diversity</u>	High biodiversity. Multispecies fishery with about 65 species fished (INVEMAR, 2012). Important targets are: queen conch, spiny lobster, black crab, snappers and groupers.	Majority of small-scale fishers are Raizals, the insular indigenous ethnic minority. Creole speakers and protestant, their culture is totally different from continental Colombia. Providencia/Santa Catalina has 2 fishers associations: Pesproislas, Asopesboth; 1 crab catchers association: Asocrab; and one cooperative: Fish and Farm Cooperative. Most fishers share their time with another activity: agriculture, tourism, temporary	The small size of the archipelago and the multifaceted challenges led to an integrated work approach. Two institutions in particular stand out: CORALINA, for the management and sustainable use of natural resources, and the Secretariat of Agriculture and Fisheries for the management of fisheries. The Departmental Fishing Board is a joint institution formed of fisheries' stakeholders. Its tasks are administrative and advisory.	Various forms of interactions are devised. CORALINA created an advisory committee to foster management of the Seaflower MPA. For the Secretariat of Agriculture and Fisheries, integration of fishers and third institutions is less salient, more informal, but nonetheless deemed important.
<u>Complexity</u>	Complexity is high with many species interacting. Invasive species, such as lionfish (<i>Pterois volitans</i>), is increasing complexity with uncertainty of its effects. Complexity is acknowledged but insufficiently researched.	Tension factors are due to high population density, strained relations with the national, centralized authorities,	The two institutions mentioned above have position proper to their own mandate; however both share the vision of a need of an integrated, bottom-up management.	During the phase of creation of the MPA, relations were tensed. Though relations have improved, they seem to remain challenging. Nevertheless, participatory consultation are further developed and favoured.
<u>Dynamics</u>	Main external drivers of change and interactions are: climate change (effects on species distribution and sea rise) and anthropogenic pressure adding stress to the marine resources. There are signs of overfishing. Abundance is decreasing and fishers go further away from the reef to fish, among other signs.	Two types of dynamics are present on the island. The first is related to outsiders of the archipelago, where a unity is shown. The second is an internal dynamic with difficulty to work together.	CORALINA is an autonomous institution. It bases its management on a participative approach. Its can set rules and regulation (though misses the means to control them). The Secretariat of Agriculture and Fisheries is dependent on its hierarchy based on the continent.	CORALINA is a dynamic institution and put a lot of efforts in raising awareness in the population. However, it seems that dissemination of information is reduced by the trilingual structure of the archipelago.
<u>Scale</u>	Fishing takes place on reefs, shelves and pelagic waters. Fisheries activities take place in the Seaflower MPA. The loss of maritime waters has strongly affected fishing grounds.	By lack of work and opportunities, and due to high population density, some fishers seek work abroad. The ICJ judgement has even more reduced fishing boundaries for small-scale fishers.	For both institutions, the scale of their action matches the scale of the archipelago.	Regional institutions are well aware of all challenges present in the archipelago and try to design schemes to answer to them. However, national state seems less inclined to devolve power to the archipelago.

5.2.1. The system-to-be-governed

The tropical *natural system-to-be-governed* of the San Andrés archipelago displays a high level of diversity, complexity and dynamics.

Diversity: the San Andrés archipelago has a very rich marine biodiversity³⁶. It is a multispecies fishery with about 65 species fished (INVEMAR, 2012). The main species targeted by small-scale fishers are queen conch (*Strombus gigas*), spiny lobster (*Panulirus argus*), black crab (*Gecarcinus ruricola*), shankey crab (*Gecarcinus lateralis*), mutton snapper (*Lutjanus analis*) school master snapper (*Lutjanis apodus*) and Atlantic Goliath grouper (*Epinephelus itajara*). Other species fished are yellowtail snapper (*Ocyurus chrysurus*), yellowfin grouper (*Mycteroperca venenosa*), yellowmouth grouper (*Mycteroperca mystacinus*), black grouper (*Mycteroperca bonaci*), tiger grouper (*Mycteroperca tigris*), red hind (*Epinephelus guttatus*), rock hind (*Epinephelus adscensionis*) (Prada et al., 2004).

A small-scale fisher, in an interview on Santa Catalina, said that main pelagic and demersal fish fished were silk snapper³⁷ (*Lutjanus vivanus*), vermilion snapper (*Rhomboplites aurorubens*), queen snapper (*Etelis oculatus*), black snapper (*Apsilus dentatus*), yellowedge grouper (*Hyporthodus flavolimbatus*). Groupers are often all called under the common name of "yanpo". Other species of pelagic fish are kingfish³⁸, spanish mackerel³⁹ (*Scomberomorus maculatus*), wahoo (*Acanthocybium solandri*), common dolphinfish⁴⁰ (*Corypeana hippurus*), barracuda (*Sphyreana barracuda*), skipjack tuna⁴¹ (*Katsumonus pelamis*).

The same fisher told that on more shallow waters usual catch were black grouper (*Mycteroperca bonaci*), nassau grouper (*Epinephelus striatus*), red hind (*Epinephelus guttatus*), rock hind (*Epinephelus adscensionis*), queen triggerfish⁴² (*Balistales vetula*), white grunt⁴³ (*Haemulon plumierii*), bluestriped grunt (*Haemulon sciurus*), cottonwick grunt

³⁶ Mangroves, seagrass beds, barrier reef, lagoon, seamounts, beaches and deep sea waters. It features 2'000 km² of coral reefs, the Caribbean most extensive open-ocean coral reefs. There are about 407 species of recorded fish (CORALINA, 2010).

³⁷ Also called Soap snapper or Satin snapper in the archipelago.

³⁸ Which might be king mackerel (*Scomberomorus cavalla*).

³⁹ But "*Scomberomorus brasiliensis* in the Caribbean and Atlantic coast of South America have often been confused with [*Scomberomorus maculatus*]" in <http://fishbase.org/summary/126>, accessed July 2013.

⁴⁰ Called dorado in the archipelago.

⁴¹ Called bonito in the archipelago.

⁴² Call allwhite in the archipelago.

⁴³ grunts are called "ronco" on the island.

(*Haemulon melanurum*), squirrelfish⁴⁴ (*Holocentrus adscensionis*), different type of parrotfish (i.a. midnight parrotfish, *Scarus coelestinus*).

Complexity: The number of ecosystems and species entails complex ecological relationships. This complexity is put to a stress with invasive species. Lionfish (*Pterois volitans*) as an alien species has been acknowledged and may cause serious deleterious consequences on local species. An experiment in the Bahamas showed that the presence of lionfish reduced by 79% recruitment of native fish (Albins, Hixon, 2008). They spawn all year round, have a high reproduction rate, high fecundity and a rapid growth. They prey on many small and juvenile species. And their defence system, venomous fin spines, hinders being predated by larger fish (Albins, Hixon, 2011). This invasive species adds to the already complex ecological structure of this tropical fisheries ecosystem. Few studies have been made on issue of invasive species that could have impacts on subsistence-based fisheries resources (CORALINA, 2010).

Another factor increasing complexity is the water circulation. The specific bathymetry of the region accentuates currents coming from the Southeast of the Caribbean Sea. The archipelago is in the middle of a waterway coming from the Atlantic and crossing the Caribbean Sea. The water takes speed when meeting the elevation of the sea floor of the Caribbean plateau and Nicaraguan ridge. The speed gives the impulse to the Loop Current of the Gulf of Mexico. These currents, waves, among other oceanographic physical factors⁴⁵ seem to be an important factor affecting relationships between ecosystems (CORALINA, 2010a). As a consequence, fish adapt their behaviour to currents and winds. Fishers confirmed that with strong winds and strong currents, fishing was poor because water was "too clear and/or too rough"; and with no wind and no current, yield was not very good as water was "too dirty". Spring tides are another factor affecting negatively fishing.

But complexity of the natural system is poorly known because of a lack of research financing. And the remoteness of the archipelago makes it hard and expensive to reach for scientific teams.

⁴⁴ This fisher told me squirrelfish was not much eaten on Providencia and Santa Catalina but mainly sold for export or to restaurants.

⁴⁵ such as the Panama-Colombia gyre.

Dynamics: There are two main drivers for change and interaction. The first is climate change with a consequence on sea rise and ocean warming. It has a preponderant role on biological and physical changes occurring in the natural system. The second driver is anthropogenic, where increasing pressure puts to the test the limits of what the natural system can bear (CORALINA, 2010).

With regards to fisheries, monitoring of fish abundance and diversity has not been performed on a regular basis. The main source of information is landings of specific target species (CORALINA, 2010). Nevertheless, some general trends can be suggested and lead toward a state of overfishing. Prada et al. (2004) analysed the total (industrial and small-scale) landings in the archipelago. If definitive conclusions are difficult to present, total landings have been decreasing between 1996 and 2004. An increase of industrial landings in 2001 and 2002 took place because of an increase of fishing effort⁴⁶. Small-scale fishers started to go further away to catch fish, principally along the 82° meridian (the former Colombia-Nicaragua border) and seamounts. Another observation was a change from reef-fishing to pelagic fishing from small-scale fishers. In the same report (Prada et al., 2004), populations of groupers and snappers have shown reduction in several fishing areas.

Spiny lobster's (*Panulirus argus*) yield faced a boom in mid-90's; an important industrial fishery for the economy of the archipelago. Between 2000 and 2004, the number of trips was about 192, but it decreased to 118 trips between 2005 and 2007 (CORALINA, 2010. NB: no information was given if these figures represent only industrial trips or an aggregation of industrial and small-scale trips). The main reason was due to the implementation of a seasonal closure and reduction of fishing effort reduced by half in 2008 due to border issues with Nicaragua and the international financial crisis (INVEMAR, 2010; CORALINA, 2010).

Until beginning of the 80's fishing queen conch (*Strombus gigas*) was only fished by local fishers. Industrial vessels entered the fishery and landings went increased until 1993 with landing peaks up to 500 tons. After that, landings started decreasing and in 1996 landing of queen conch was of only 80 tons. In 1997, quotas were established but discrepancies between landings announced by industrial vessels and commercial exportations data decided national fisheries authorities to close the fishery in 2004. In 2006, small-scale fisheries refused the opening of the queen conch fishery and used judicial procedures to keep in closed until 2008

⁴⁶ Numbers of industrial boats in the archipelago increased threefold.

where an annual quota of 112 tons was established. Nowadays, queen conch is at a critical stage (less than 20 individual per hectare) in most of the archipelago. But the northern cays (Serrana and Roncador) showed healthy densities of individuals with 200 individuals per hectare (INVEMAR, 2010). A programme of repopulation is taking place transferring queen conch from Serrana and Roncador to Providencia in the national park of MacBean Lagoon. But it is very difficult to protect this species due to its strong cultural significance for local fishers.

Between 2004 and 2007, catches oscillated between 100 and 110 tons (INVEMAR, 2012). Most of catches were pelagic fish, of which 36.2% were large pelagic such as black fin tuna⁴⁷ (*Thunnus atlanticus*), skipjack tuna (*Katsuwonus pelamis*) and the atlantic blue marlin (*Makairan nigricans*). Coastal pelagic catches represents 12.6% with a catch composition mainly of wahoo⁴⁸ (*Acanthocybium solandri*) and common dolphinfish (*Coryphaena hippurus*). Of other pelagics, 16.3% are barracuda (*Sphyraena barracuda*) and rainbow runner (*Elagatis bipinnulata*). Demersal catch represent about 34.9% of the catch with mostly yellowtail snapper⁴⁹ (*Ocyurus chrysurus*), ocean triggerfish⁵⁰ (*Canthidermis sufflamen*) and dog snapper⁵¹ (*Lutjanus jocus*).

As for other fish, scientific data are insufficient to clearly assess the state of the stocks. Nevertheless, behaviour of small-scale fishers may give a clue to the actual ecological situation: small-scale fishers turn from reef-fish to pelagic fish, CPUE is decreasing and there is an increase in juvenile catch (INVEMAR, 2012) thus showing that fish are not only fished lower on the food web but also lower on the age scale.

If time series are scarce and incomplete, signs of overfishing and abundance depletion are reflected in fishers' comments.

Nicasio, a fisher, recalls his fishing childhood: "in that time, you could spot 6 or 7 hawksbill turtle per day. You could see their shining carapace above the water. Today, if you can see one per day, you are lucky".

⁴⁷ Called Black Bonito in the archipelago.

⁴⁸ Called also Sierra in the archipelago.

⁴⁹ Several fishers on Providencia/Santa Catalina told me that it was increasingly difficult to find this fish.

⁵⁰ Called Turbot in the archipelago.

⁵¹ Called Pargo in the archipelago.

Warren, another fisher, says: "When I was young, I was a speargun fisher. I could fish for 3 or 4 hours and my boat was full. Today, speargun fishers need up to one day of fishing, for sometimes getting 50 pounds of fish".

Fishers say that the best time to fish are between September and December. Warren fishes with traps. During this time period, he sets about 10 traps and gets between 400 to 500 pounds of fish. The rest of the year, he only displays 4 or 5 traps. One of the main problems with traps is nurse sharks that force their way into the trap to get to the fish. One day Warren was at the wharf complaining that sharks had destroyed two of his 4 traps; fishing was not good this day.

Roque, a fisher on Providencia, also tells me about his youth. He used to go fishing by Three Brothers Cay, next to Providencia. There, queen conchs were so abundant, he could fill his boat "that it almost sunk"; today, if he sees one, he considers himself lucky. Population of black crabs has also changed. Roque recalls that before, he could see huge black crabs, even during the day, in the Aury channel between Providencia and Santa Catalina. Today, he sees black crabs only in the evening or at night, by the mangrove and not anymore in the channel, and their size is much smaller.

There are closed seasons to protect the most important species: lobster, black crab and queen conch. But the reproduction period of these three species overlap during spring with a consequence of having closed seasons for the three species at the same time. Fishers live out of these species that represent a source of food, income and are culturally important. Thus alternatives work opportunities is important to get food.

Scale: Small-scale fishing mainly takes place within the Seaflower MPA. It is an open ocean MPA, with only 0.01% of land surface. Its 65'000 km² are divided in three administrative sections. Southern section: coastal and marine areas of San Andrés. Central section: coastal and marine areas of Old Providence and Santa Catalina. Northern section: the uninhabited atolls of Roncador, Serrana and Quitasueño (CORALINA, 2010). Small-scale fishers engage activities in all possible shelves and go further away the reef to pelagic regions to fish (Prada et al., 2004).

As mentioned above, the loss of maritime territory has strongly affected the fishing grounds of small-scale fishers (let alone industrial ones⁵²).

The social system-to-be-governed in the archipelago is an entangled mix of issues and tensed relations. Diversity, complexity and dynamics are high.

Diversity: The majority of small-scale fishers are composed of Raizals. They are among the most vulnerable stakeholders⁵³. Until the middle of the 20th century, they enjoyed a high degree of independence and control over the resources and economy of the archipelago. But since then they have been marginalized.

Raizals speak creole (close to Jamaican creole) and are of protestant belief. Their identity and cultural background finds its roots in Anglo-Saxon influences. The identity of the archipelago is thus much different from continental Colombia: Spanish-speakers, catholic and with colonial Hispanic influences. The connection of Raizal small-scale fishers with the sea is very strong. A Raizal woman in Providencia expresses: "the sea is part of our essence, it is who we are". During an informal talk, fishers pointed out that in creole the sea is a feminine word (when in Spanish it is a masculine word, "El mar"): "la mar", because, they explained, the sea gives birth to life and feed fishers. Sandra, a Raizal woman in San Andrés, said she travelled and worked in various countries in Central America and the Caribbean, but she never felt so free as on San Andrés with the sea all around here. In Santa Catalina, Antonio, a respected fisher, told me: "I am a fisherman because it makes me free!". People are fishers because they have to (need to feed, no alternatives) but also because it is part of their cultural identity.

CORALINA (2010) reported 700 registered small-scale fishers, with 188 in Providencia/Santa Catalina. In 2013, Mr Bent, fisheries coordinator at the Secretariat of Agriculture and Fisheries, reports there are about 1,000 fishers registered between both islands but this number is increasing lately to about 1,200. A condition to receive subsidies was to be registered as fisher; which does not go without trouble as to ascertain who is a

⁵² The sector of La Esquina, also known as Luna Verde, situated at 82°W-15°N, was the most important Colombian industrial fishing ground for lobsters. 90% of the catch was done by industrial fishers and 10% by small-scale fishers. This sector lies now in Nicaraguan waters as a consequence of the ICJ judgment.

⁵³ NB: but the only ones. there is also a population originally from continental Colombia (either from immigration or born in the islands) that are vulnerable and live of subsistence and small-scale fishing.

fisher and who is not. According to the official list, there are now about 500 small-scale fishers on the islands of Providencia/Santa Catalina.

On Providencia/Santa Catalina, there are one cooperative, Fish and Farm Cooperative, and two associations, Pesproislas and Asopescboth. A brand new association has been created in 2013 to support black crab fishers' interests, Asocrab. Prior to the obligation to register in an association or the Fish and Farm Cooperative had 69 active members, Pesproislas had 60 members and Asopescboth had 50 members. 50 fishers were considered as independent (Acuerdo Municipal No. 007 de 2012, Providencia y Santa Catalina Islas).

Fishers usually share their time between fishing and another activity such as agriculture, seasonal work with the local public administration or tourism. Fishers that are considered full-time are few. On Providencia, Harvey Robinson - working for the Seaflower Keepers Project⁵⁴ - estimates the number of full time fishers at about 90 persons. But he stresses that one cannot live solely of fishing. For instance, during closed seasons, fishers have to find an alternative anyway.

There are no industrial fisheries on Providencia/Santa Catalina; fishers of these two islands are only of small-scale. Fishers use mainly 3 techniques: speargun fishing at lung capacity (scuba fishing is forbidden in the archipelago), trap fishing, hooks and line fishing. But fishers in Providencia/Santa Catalina fish mainly with speargun and hook and line techniques. Often young fishers start fishing with spearguns. Some will earn and save enough to switch to hook and line techniques that demand more capital.

Mr Bent, at the Secretariat of Agriculture and Fisheries, explains that small-scale fishers use boats of less than 12 meters long with an outboard engine. Boats of a capacity of less than 3 tons are considered small-scale. There are a maximum of 5 fishers per boat, but usually there are 2 or 3 fishers per boat. Small-scale fishers need a licence, though they do not need to go through a formal process similar to industrial fisheries⁵⁵. Small-scale fishers are only required

⁵⁴ A joint programme between Colombia and the United Nations Office on Drugs and Crime. The aim is to consolidate associations and cooperatives of the island and improve life of inhabitants of the islands with the purpose to keep them out of drug-trafficking. More information on the website of the Republic Presidency: <http://www.urnadecristal.gov.co/gestion-gobierno/este-es-programa-sea-flower-keepers-san-andr-s-islas> (accessed July 2013) and the website of the Administrative Unit for the Consolidation of the Territory: <http://www.consolidacion.gov.co/?q=content/m%C3%A1s-apoyo-para-el-programa-seaflower-keepers-en-san-andr%C3%A9s> (accessed July 2013).

⁵⁵ Whose request is submitted to the Departmental Fishing Board (Junta Departamental de Pesca).

to come to the Secretariat of Agriculture and Fisheries office, bring an ID, their OCCRE card⁵⁶ and a written statement that they are small-scale fishers.

Complexity: Factors increasing complexity are a high population⁵⁷ density⁵⁸, and illegal fishing activities and tensed relations between small-scale fishers and industrial fishers. Illegal, unregulated and unreported fishing has been reported as the main issue by CORALINA (2010).

Complexity is accentuated with two groups of islands: San Andrés where lies the province's government, strongly urbanized and mass tourism-oriented. And Providencia/Santa Catalina, more related to fisheries as livelihood and developing eco-tourism.

The recent subsidies accentuate the complexity of relationships between fishers: tensions arise because of misunderstanding and jealousy over who receive money and who doesn't.

Complexity can also be considered with regard to the torn relationship small-scale fishers have with natural resources. On the one hand, there is a will - a conscience - that natural resources need to be protected. Nicasio, an elder fisher, says: "if you take more than what you need, there will be no more future". And at the same time, fishers need to eat and fishing is also an occupation of last resort on the islands. Nicola, a fisher says: "sometimes we have to fish illegally...it hurts and we know it is bad but we need to eat!" He adds later:

"Once I did not take a lobster in closed season. I knew it was better even if I needed this lobster. But another fisher took it. I thought: why?! It is not fair! I make an effort and someone else takes advantage! But still, I will not fish illegally".

Dynamics: Two types of dynamics can be observed in the archipelago.

The first relates to interactions with outsiders of the archipelago. From this perspective, one can see that islanders share a strong sense of ownership of land and sea. Interaction is fostered by the integrated and participatory management approach of CORALINA.

⁵⁶ Oficina de Control Circulación y Residencia; the office in charge of controlling residency and movements of inhabitants of the archipelago.

⁵⁷ The density of the islands is one of the highest in the world with 2'431 persons/km². San Andrés (circ. 67'000 people for 26 km²) and Old Providence/Santa Catalina (circ. 4'000 people for 17 km²).

⁵⁸ vector of i.a. pollution, poverty, overexploitation of natural resources.

For instance, in October 2011, an oil exploration project was suspended after a long struggle between islanders and national authorities, the latter supported by the private sector. CORALINA launched a legal action against this project arguing that, according to international laws and the national constitution, indigenous people, the Raizals, had not been consulted. This legal action was supplemented by local protests against oil exploration. Finally, the Colombian president, Juan Manuel Santos, announced that no oil exploration would take place in the archipelago⁵⁹.

The second type of dynamics is related with interactions within the islands and between groups. Small-scale fishers are a homogenous group – as they are, to their majority, Raizals – and heterogeneous in their relations and dynamics.

They share similar needs and expectations: fishing grounds, livelihood alternatives, recognition of their culture and identity by Bogotá, the capital city. But they struggle to organise and act together. Nicola, a lobster fisher, during an informal talk (other fishers were around to listen and agreed), says:

"In this island (Providencia/Santa Catalina), we do not know how to organise. We are all one against the other. We are selfish! It is a small island, we should be capable of working together - but no. I don't know why we are so individualistic".

After these words, a long moment of silence followed, people were in their thought nodding in agreement. Then, he goes ahead about the situation in San Andrés: "It's the same problem but even worse! There are the continental Colombians against islanders, but even so fishers are not capable to unite!" Antonio, a respected man, made a similar comment some days before: "We are quite individualistic here. I don't know why. Maybe because we are on an island and we are competing?"

Scale: Fishers live and interact within the boundaries of the archipelago. As there is not enough work on the islands, some fishers, men and women, leave for a while to work on cruise ships or immigrate to North America and send remittances to their family in the islands. For fishers that stay, the work space and living scale is the scale of the archipelago.

⁵⁹ Report in newspaper: <http://colombiareports.com/colombia-will-not-allow-oil-and-gas-exploration-in-san-Andrés/> (accessed July 2013), and additional information that explains this decision: <http://www.oxfamblogs.org/fp2p/?p=9807> (accessed July 2013).

Fishing scale and boundaries⁶⁰ of fishing grounds have been redesigned with the creation of the Seaflower MPA. But Warren, a trap fisher, notices: "by reducing fishing grounds, fishers gather now in the same spots and the MPA forces us to go further in the sea". In addition, fishing boundaries have recently been strongly reduced by the ICJ judgement. This is another hardship on fishers that are highly dependent on marine resources for livelihood and survival. For the same amount of fishers, sea has reduced adding pressure to their organisation and lifestyle. In other words, the environmental scale has been reduced when social scale is unchanged.

The governing system is formed of multiple institutions that seek to manage resources in an integrated and eco-system based approach. There again, their diversity, complexity and dynamics is high.

Diversity: The small size of the islands and the multifaceted challenges has led CORALINA to embrace an integrated work approach. As a consequence, management and governance of any issue related to the ocean is bound to have a diversity of actors and stakeholders.

With regard to fisheries, CORALINA and the Secretariat of Agriculture and Fisheries are the main interlocutors.

CORALINA (Corporación para el Desarrollo Sostenible del Archipiélago de San Andrés, Providencia y Santa Catalina) is a decentralized regional autonomous governmental agency. It administers and manages natural resources and leads the regional planning process for land and marine use. To fulfil its tasks, CORALINA, communities and stakeholders have set up Marine Protected Area scheme. In 2005, the Seaflower MPA was implemented. The governing mode of the Seaflower MPA is a participatory one using an ecosystem based management approach. It fosters a bottom-up management integrating as much as possible small-scale fishers in decision-making processes. CORALINA has a unique administrative setting in Colombia as it can "enact and enforce environmental regulations on land and sea" but with a major drawback as "it is not armed" (CORALINA, 2010, p. 122). Control and

⁶⁰ The MPA has 5 zones that delimitate its use: i) no entry (research and monitoring), ii) no-take (non-extractive activities), iii) artisanal fishing (traditional users and methods only), iv) special use (i.a. ports, shipping lanes, and anchorage), v) general use (securing other types of activities, e.g. water sports) (CORALINA, 2010).

enforcement are duties of the DIMAR (General Maritime Management⁶¹ - the Colombian maritime authority) and the coast guards (under the responsibility of the Colombian Navy). However, proprietary missions of the Navy are protecting Colombian borders and fight against drug-trafficking. Monitoring, control and surveillance is therefore deficient. According to Mr Bent, Fisheries Coordinator at the Secretariat of Agriculture and Fisheries, the Navy uses 1 to 4 boats; it fluctuates depending on their missions. The air force sometimes put at the disposal of the Secretariat a plane. As a reminder, the MPA is 65,000 km² and the department about 350,000 km².

If environmental issues are CORALINA's responsibility, fisheries on the other hand are the competence of the Secretariat of Agriculture and Fisheries, a branch of the Ministry of Agriculture and Rural Development.

In accordance with a move toward decentralisation set up by the 1991 Colombian Constitution, Law 47 of 1993 (Senate Secretariat, Ley 47 de 1993, accessed 2013) grants to the archipelago a larger degree of autonomy for its governance (law 47, art.1) and for the management of its natural resources (Law 47, art. 5+23; and article 24 and 25 in particular for the creation of the Departmental Fishing Board). The Ministry of environment acknowledge this in Law 99 of 1993 (Ministry of Environment, Ley 99 de 1993, accessed July 2013). This whole process lead to the implementation, in 2000, of the Departmental Fishing Board (Junta Departamental de Pesca) in charge of fisheries matters in the archipelago. Its role is to issue permits, manage small-scale fisheries areas and submit fisheries related suggestion to the national authorities. The Departmental Fishing Board is composed of representatives of the departmental government, of the AUNAP (National Authority for Mariculture and Fisheries⁶²), of CORALINA, of DIMAR, of the national university, of a small-scale fishers' representative, and of one industrial fishers' representative (INVEMAR, 2010).

Another actor in the management of natural resources is the National Natural Park of McBean Lagoon in Providencia. It is the only national natural park in the department. The McBean Lagoon Park is part of the Special Administrative Unit of the National Natural Parks System (Unidad Administrativa Especial del Sistema de Parques Nacionales Naturales), an

⁶¹ Personal translation. Original: Dirección General Marítima. For more information: <http://www.dimar.mil.co/>, accessed August 2013.

⁶² Personal translation. Original text: Autoridad Nacional de Acuicultura y Pesca. More information: <http://www.aunap.gov.co/>, accessed August 2013.

independent and autonomous structure under the ministry of Environment and Sustainable Development (National Natural Parks of Colombia, accessed July 2013).

Complexity: Visions and directions between environmental and fisheries governing institutions are rather aligned. Their institutional sensitivity draws them to certain positions that is sometimes difficult to combine. However, the vision to a need of a sound and integrated, interactive and bottom-up oriented management is shared.

Complexity appears in the relations between the governing institutions at the regional level and the national level. National authorities, with a hierarchical chain of command, lack sensitivity to the specific challenges of the archipelago. But the recent appointment of former CORALINA's general director, Elisabeth Taylor⁶³, as director of Marine, Coastal and Aquatic Resources Affairs (Directora de Asuntos Marinos, Costeros y Recursos Acuáticos) is a hope for the insular institutions for more understanding. Complexity may be reduced with this recent nomination.

Dynamics: CORALINA is a stable and dynamic organisation with an orientation toward learning and improving its managing capacities. It tries to develop capacity building programme for communities. Assessment of natural resources is performed with the help of fishers (fishers knowledge or fishers' inclusion in natural resources assessment processes). CORALINA has power to set its own rules and regulations, in accordance with the national Constitution and with the limits framed by the law, which allows it to be more in tune with specificities of the natural and social environment.

The Secretariat of Agriculture and Fisheries appears much more dependent on the ministry of Agriculture and Rural Development, the latter deciding on quotas and closure seasons, for instance. It is thus a much more pyramidal relation related to a national authority.

An important issue in dynamics are the many changes in State policies with regard to fisheries. In 20 years, national fisheries authorities changed 4 times (Rueda et al., 2011, p. 120-121): "The last changes in the fishing authority (from INPA and INCODER to ICA) emphasize one of the biggest problems in the Colombian fishing industry: the changing institutional framework". And in 2012, AUNAP (Autoridad Nacional de Acuicultura y Pesca⁶⁴), under the ministry of Agriculture and Rural Development, has become the

⁶³ <http://www.minambiente.gov.co/contenido/contenido.aspx?conID=1078&catID=463>, accessed July 2013.

⁶⁴ National Authority for Mariculture and Fisheries. Website: www.aunap.gov.co, accessed July 2013.

institution in charge of mariculture and fisheries. This lack of constancy impacts fisheries in long term policies, data collection and liability of this governing system.

Scale: The geographical range of CORALINA's activities lies mainly within the Marine Protected Area. Its vision of natural resource management is not limited to mere natural conservation. To fulfil its tasks, it has enlarged its boundaries to include people and communities as actors benefiting and affecting natural resources.

Boundaries for the Secretariat of Agriculture and Fisheries is limited to the department but its governing boundaries goes beyond it as it is highly dependent on decision of its hierarchy on the continent.

The governing interactions are multiple, where institutions try to foster community participation as well as inter-institution communication. However, communication with fishers' communities is a trial-and-error process for institutions. They consider it a difficult but necessary effort.

Diversity: Interactions take several forms and are strongly relied upon by both CORALINA and the Secretariat of Agriculture and Fisheries for development and implementation of their policies.

CORALINA has set up an integrative system to foster interactions taking the form of three advisory committees. The first one is the International Advisory Board (IAB) composed of external advisors to comment and suggest on various theme from environmental queries to governance, the second one is the Stakeholders Advisory Committee (SAC) that gather representatives of stakeholders (small-scale fishers, professional divers, marinas, etc.) of the Southern and Central sections of the Seaflower MPA; the third one is the Inter-Institutional Committee (IIC) where sits representatives of the governing institutions (for instance, Secretariat of Agriculture, AUNAP, McBean Lagoon, etc.).

International Advisory Board (IAB)	Stakeholder Advisory Committee (SAC)	Inter-Institutional Committee (IIC)
<p><i>Membership by individual</i></p> <p><i>External advisory capacity only</i></p>	<p><i>Representatives as indicated</i></p> <p>Southern Section (9) Artisanal fishers - 3 Professional divers - 2 Other water sports - 2 Traditional users - 1 Marinas - 1</p> <p>Central Section (7) Artisanal fishers - 2 Professional divers - 2 Other water sports - 1 Traditional users - 1 Tourism - 1</p>	<p><i>1 representative each unless otherwise noted</i></p> <p>DIMAR Port Captain (2: SAI and OPSC) Coast Guard Secretary of Agriculture and Fisheries (SAI) Municipal Fisheries (OPSC) ICA McBean Lagoon National Park National Police CORALINA</p>

Figure 12: Advisory committees of the Seaflower MPA: the International Board (IAB), the Stakeholders Advisory Committee (SAC), the Inter-Institutional Committee (IIC) (CORALINA, 2010, p. 123).

In addition to the Stakeholder Advisory Committee, ad hoc workshops, meetings, informal interviews and seminars are organized. Fishers are strongly encouraged to participate not only in the decision process but also in the formulation of solution⁶⁵.

For the Secretariat of Agriculture and Fisheries and for the McBean Lagoon Park representation of the system-to-be-governed is less salient than for CORALINA. But be that as it may, inclusion of fishers for both institutions is considered extremely important for several purposes: acquisition of knowledge, participation in research projects (tagging/stock assessments/etc.) and educational purposes.

The Departmental Fishing Board wishes to increase interactions within the archipelago by obtaining more power from the central authorities.

Complexity: Interactions between the governing system, its multiple institutions, and the system-to-be-governed have been built on a trial-and-error scheme.

As presented before, creation of the MPA, with the integration of communities in the design process, became a platform to express grievances and frustrations from the small-scale

⁶⁵ C.f. for instance, Baine et al., 2007, *The development of management options for the black land crab (Gecarcinus ruricola) catcher in the San Andrés Archipelago, Colombia*, Ocean & Coastal Management, 50, 2007, 564-589.

fishers. If relations have improved they are still tensed and interactions remain complex: for small-scale fishers, CORALINA is the institution that forbids. However, CORALINA sets regulations but does not have the means to control and enforce them properly. As a consequence, the state of the resources is not improving (INVEMAR, 2012).

Interactions have evolved in a positive way in the McBean Lagoon Natural Park on Providencia. At first, decisions were set without prior consultation of small-scale fishers resulting in a very low acceptance and tensed relations between the Park and fishers. However, a new and more participative approach has now been implemented, where solutions are discussed and negotiated between the different actors, to the benefit of interactions.

Interactions of the three institutions (Secretariat of Agriculture and Fisheries, CORALINA, McBean Lagoon National Park) and fishers are present and consistent with their missions. But dynamics issues are to be raised.

Dynamics: CORALINA adapts well and tries new approaches to management; it is a rather dynamic system. One important feature of the MPA is raising awareness in the population of the archipelago and within communities. Outreach and education program is an important feature of this governing institution. In the case of the black crab catchery, the fishers were interested in creating a cooperative or a working group for the management of the black crab. CORALINA listened to the demand and organized meetings to carry out the proposal (Baine et al., 2007a). Another example is the "green market initiative". The goal of this initiative is to foster economic and trade opportunities of local products at a local level and national level. However, the dissemination of information is reduced due to the trilingual (English, Spanish, Creole) structure of the archipelago. English is recognized as an official language, but most official documents, education, scientific research and the media are in Spanish (Baine et al., 2007b) and the knowledge of Spanish appears not to be sufficient to understand these documents.

Scale: The three advisory committees designed in CORALINA's management scheme should allow for a good interaction between and across levels of institutions.

On the other hand, the national government appears to be less inclined in devolving more power to the region, and in particular to the Departmental Fishing Board. This limits the range

of action of CORALINA as well as the Secretariat of Agriculture and Fisheries. The question of the efficiency of coordination between institutions remains open.

At the Caribbean region level, CORALINA also has a high level of collaboration for instance with the Caribbean Large Marine Ecosystem Project⁶⁶. At the international level, CORALINA shows a high level of collaboration, for example, with the UNESCO.

As for the Departmental Fishing Board, its boundaries are embedded within the limits of the archipelago and would represent a chance of common management of fisheries resources but it lacks executive power.

What appears to be a troublesome topic for interactions is illegal, unreported and unregulated fishing. In this instance, small-scale fishers are held between survival and the necessity to protect the environment.

5.3. External driver: ICJ, *Nicaragua vs. Colombia*: diversity, complexity, dynamics and scale of a territorial dispute

The aim of this subsection is to look at the consequences of the ICJ judgement on small-scale fishers of the archipelago and the steps the national government has taken so far to answer to this crisis. Features of diversity, complexity, dynamics will not be presented as a matrix but integrated in a short discussion about the case.

The point is not so much to analyse the judgement, but to consider it as an external driver of change. This external driver affects the archipelago's governance and governability by pushing the systems to the limits of adaptability. Therefore, the turmoil and dynamics it started will serve in the evaluation of the governing system and the analysis of the governing interactions.

Components of diversity are limited to two actors in demand, the State of Nicaragua and the State of Colombia, and an actor that judges, the ICJ. The conflict between the two States is a struggle for marine resources: fisheries, oil and maritime space. The tool used in this struggle for territory is historical treaties. Complexity lies in the consequences the judgement has for

⁶⁶ The Caribbean LME Project and one of its pilot project with the Seaflower MPA: <http://clmeproject.org/index.html> , accessed July 2013.

the Colombian archipelago. Scales do not have the same meaning be it observed from an international level or a local level. What appears to be a logical, rational and just equitable repartition of sea between two States proves to be illogical, irrational and profoundly unfair in the eyes of small-scale fishers of the archipelago. Both views are valid if observed independently. But if the two scales, international and regional, are considered together, there is a discrepancy between the perception of what is a maritime boundary for international actors and for local users (Mantilla, 2009). Complexity thus lies in the perception of scale where conceptualisation of space and boundaries at higher scales are imposed on lower scales.

This complexity affects the dynamics of the relation between Colombian national authorities and regional authorities. In this present situation, the State instead of acting as a mitigating actor receiving and absorbing the shock - a buffer between the initial transmitter, international decisions, and the regional/local final absorber - has been acting as an accelerator putting additional stress on governing institutions of the archipelago. The archipelago has faced a double wave effect: the first wave comes from the exterior of the country, the ICJ judgement. The second wave comes from the inside of the country: the State' short term remedy for the archipelago under the form of subsidies.

Mr Castro Gonzáles, CORALINA's deputy director for Seas and Coasts, points out (2008) that seldom in the present case have the interests, hopes and various relations of the ones (fishers, sailors, traders) enjoying the marine system been taken into account. The scale at which the dispute took place did not take into account the scale at which the strongest effect would be felt.

5.4. Summary

The overarching wicked problem in the San Andrés archipelago is the loss of maritime territory. If all Colombian stakeholders agree to say that the decision of the international Court is terrible blow, what solutions to bring to the problem differ depending on stakeholders. For the State, no clear solution stands out. Its only answer so far has been subsidies, the latter creating disruptive effects in the archipelago. Regional institutions stress the need to work in an integrated way between institutions of the archipelago and encourage a better devolution of power to the Departmental Fishing Board which, for the moment, has

only administrative functions. As for fishers, they would like to have their sea back and seem in a state of shock without knowing what will come next.

The wickedness of this problem lays in-between two worlds: the international level and the local level. An international instance, the ICJ, took a decision without taking into account life and livelihood of local fishers; local fishers on the other hand, face this landslide without the ability to answer. The State, instead of working as a nexus between these two levels, accentuated the crisis by taking a unilateral decision.

The San Andrés archipelago has a highly diverse, complex and dynamic natural system-to-be-governed. The state of the knowledge regarding this system is low and regional institutions do not have the financial means to carry out all the necessary scientific research. Governability of this system is thus low.

The social system-to-be-governed also shows a low governability. Diversity is low, the majority of small-scale fishers are of the same indigenous ethnic origin. However, complexity is high as problems are different between San Andrés and Providencia/Santa Catalina. Moreover, dynamics are complicated as fishers struggle to work together. They seem rather to be in a passive reactive mode than in an active creative state of mind.

The governing system is diverse. This diversity allow for a joint management of resources. To know if the joint management, through the Departmental Fishing Board, is efficient is still a question to be. Notwithstanding, the Board's lack of executive power may be a reason of low governability.

Governing interactions display a high level of awareness of all the issues and complexity of the archipelago. The will of regional institutions to interact with fishers is present and is fostered by the former. However, interactions between national authorities and regional institutions seem more troublesome.

6. Governing system and governing interactions analysis

Governability relies on the structure and interacting capacities of the governing system. In addition, governing interactions are also parameters that influence dynamics of governability and must be scrutinized. These are the themes of this chapter. Interviews of fishers and institutions will be added to this analysis.

6.1. Evaluating the governing system

The general aim of this evaluation is about how governing goals are developed and how these goals are achieved (Chuenpagdee and Jentoft, 2013).

To evaluate competencies and general performance of the governing system, one will look for goodness of fit of governing elements (images, instruments, actions), responsiveness of modes (self-, co-, and hierarchical) and performance of orders (first, second and meta-order).

6.1.1. *Elements'* goodness of fit (Images, instruments, actions)

Goodness of fit looks at synchronisation and match between governing instruments – the tools used to govern. If in the end, mental models (i.e. images) of a problem, institutional arrangements (i.e. instruments) created to solve it and implementation (i.e. actions) taken to resolve it are aligning, then there is a high institutional fit between the governing system and the system-to-be-governed (Chuenpagdee and Jentoft, 2013). In other words, goodness of fit describes the accuracy that relates mental representation of a problem and actual implementation to solve it; the accuracy between an issue, an instrument to solve it and the actual result of the said instrument.

One could imagine the governing system as a person that wants to take a picture. The person may have an idea of what he or she wants to picture: image. But it has to have the proper lens: instrument. And it should know how to use a camera: action. In the end, it is the performance of having a nice and representative photo of a situation that will be evaluated.

Perceptions of fisheries by the environmental institution, CORALINA, and the fisheries institution, the Secretariat of Agriculture and Fisheries, are two sides of the same coin. The former puts a stress on the environmental side of the resource when the latter views it on its

extractive side. But despite their institutional sensitivity and own mental models, CORALINA knows it has to work with fishers to fulfil its mandates, and the Secretariat knows it has to protect the resources for future extraction.

The Secretariat of Agriculture and Fisheries highlights several issues with regards to fisheries management in the archipelago (industrial and small-scale confounded). The first is related to a loss of economic rent due to a diminution of marine resources and an increase in operational costs⁶⁷. The second is an increasing competition and confrontation between industrial and small-scale fishers for resources. The third is illegal, unregulated and unreported fishing from foreign and national vessels that are jeopardizing sound management of marine resources. Among these issues, small-scale fishers are confronted with additional problems. First, small-scale fishers have difficulties organising and working together in a common direction. Second, fishing and safety equipment is not adapted to the needs and risks at sea. Third, post-catch handling is poor. Fourth, there is a low acceptance of administrative formalities (e.g.: few fishers pay into pension funds). Fifth, alcohol and drug (consumption and drug trafficking) are an increasing problem among some fishers. Sixth, there are weaknesses in the open sea rescue and emergency services (Plan de Desarrollo, San Andrés, Providencia y Santa Catalina, 2012).

With this list, in particular the fourth point, a low governmentality of the fishery can be deduced. Governmentality is to be understood as "the willingness to be governed" (Johnsen, J.P., 2013).

As these issues cover several institutions of the archipelago, the main institutional arrangement for the Secretariat is the Departmental Fishing Board. According to Law 47 of 1993 and Law 915 of 2004, the Departmental Fishing Board enjoys a special administrative regime granting a certain degree of autonomy. However, this degree of autonomy is limited to administration, research and recommendation. These powers are considered insufficient to implement the objectives the Secretariat of Agriculture and Fisheries has. Mr Bent, Fisheries Coordinator at the Secretariat of Agriculture says: "We do the studies, we recommend the quotas, but it is Bogotá that assigns them. Usually, they listen to us. But it is not enough to be really efficient."

⁶⁷ Because of the decrease in marine resources, boats have to go further away spending more, among other costs, in gasoline. In addition, the rise of gasoline price increases these operational costs.

CORALINA defined seven challenges that are its founding images for action: 1) reduction of environmental pollution, 2) administration and planning of strategic ecosystems and renewable/non-renewable natural resources, 3) control and reduction of population density, 4) improve territorial use, 5) human capital development, 6) poverty reduction, 7) sustainability of seas and coasts (CORALINA website, Políticas, accessed August 2013). The implementing tool CORALINA has proposed is a multizone Marine Protected Area. But several causes have hindered action and implementation. According to Eric Castro Gonzáles, CORALINA deputy director for Seas and Coasts, there are two main challenges in the management of the Seaflower MPA. The first is the necessity to work with other institutions. The second challenge is:

"The most sensitive point, it is about surveillance which raises three issues. A logistic one, the MPA is very large which entails high costs. We do not have an environmental police. It falls on the Colombian Navy to carry out controls. But the Navy has other priorities such as the fight against drug trafficking. The second concern is related to international politics. The northern coasts are adjacent to several countries. When a boat is arrested by the Navy, it is in great extent in the hand of the ministry of Foreign Relations to decide if the boat shall be brought back and sanctioned".

The third issue underlined by Mr Castro Gonzáles is a legal one. If a boat is apprehended for carrying out illegal activities with penal consequences, the public prosecutor, in San Andrés, only disposes of 36 hours for emitting his judgement. Often, offences happen at distances much further away than 36 hours of San Andrés. In addition, the legal status of the MPA is still in construction and has not a clear legal delimitation. Mr Castro Gonzáles adds: "a lot of zones, for instance "no entry" that we have in our MPA, does not exist in fisheries legislation. Therefore, there always lingers a doubt to who has to sanction certain type of infraction."

Implementation of actions is thus reduced. The reasons are high costs entailed by a large MPA, legal pluralism where several institutional actors have to be taken into consideration and legal considerations related to the size of the MPA.

Images and instruments are rather fit, but action is not aligned due to the aforementioned reasons.

6.1.1.1. Effects and consequences of the ICJ judgement

Mr Bent explains that landings are decreasing and that small-scale fishers are scared to go fishing to Serrana and Quitasueño: "People used to do two trips, now they do one or none because they are afraid." These two cays are Colombian territories with 12 nautical miles of sea around them (c.f. appendix IV) but fishers have to cross Nicaraguan waters. Nicaragua authorises fishers to cross the sea to reach to cays but tension between the two countries runs and acts of intimidations are frequent⁶⁸. The Seaflower MPA (governing instrument) is affected as Mr Castro Gonzáles, CORALINA's deputy director for Seas and Coasts, explains: "With the implementation of the judgement, the MPA will be reduced by 50% of its actual size". This will increase conflicts between industrial and small-scale fishers. Industrial fishers used to fish in areas lost to Nicaragua. They will certainly go then to the cay of Roncador and "there will be a lot of conflicts with small-scale fishers of Providencia", says Mr Castro Gonzáles. The challenge is thus more fishers in less space.

Another issue is the fragmentation of the instrument: with the judgement, Serrana and Quitasueño are enclaves in Nicaraguan waters. To take actions in a fragmented institutional arrangement reduces thus the implementation of policies. This fragmentation questions also the meta-order of governance as well as the second order of governance.

6.1.2. Modes' responsiveness (self-, co-, hierarchical)

Evaluation of governance modes analyses how responsive is the governing mode to the situation and needs of the system-to-be-governed. Responsiveness deals with how efficiently the chosen modes of governance favour the passage from goal to action.

The 1991 Colombian Constitution calls for decentralisation of power. The archipelago, with its special regime (Law 47 of 1993), has thus gained some degree of liberty and allowed the creation of CORALINA. This is in line with the idea that the more wicked a problem can be the more suited the ones closest to the problem are to see solutions to it (Chuenpagdee and Jentoft, 2013). CORALINA's proximity with fishers and their environment increases its awareness to issues and challenges of the archipelago.

⁶⁸ This article published March 2nd 2013 in the Colombian newspaper El Tiempo shows the tensions and doubts fishers about their fishing rights: <http://www.eltiempo.com/archivo/documento/CMS-12630213>, accessed August 2013.

CORALINA favours a participative and integrated management. Its governance acknowledges the necessity to work with the people (vertically) and with other institutions (horizontally). It has a comprehensive administrative, executive and legal setting that allows it to take necessary decisions. Its structure and responsibilities cover very well the boundaries and needs of the archipelago. If tools and proximity are suited to work with communities, this does not solve it all. Decentralized structures present better governability features to work with wicked problems and a diverse system-to-be-governed. But working with communities has its challenges. On Providencia, Mrs Peñalosa, head of CORALINA on Providencia says: "To work with communities is sometimes tiresome because you always have to come back and insist. They say yes, turn their shoulders and do the opposite...". And the size of the community on an island has an impact on governability even if governance is participative. For instance, Providencia/Santa Catalina has about 5,000 inhabitants and Mrs Peñalosa explains:

"Here it is a *very*⁶⁹ small community. Everyone is in contact with everyone: in the street, in the supermarket, at church. If it is sometimes an advantage, it is also a drawback; and this makes our work a bit more complicated."

The size of the island may ease contact with fishers. But in case of conflict, tensions can easily spread to all aspects of life in the community. There is an important overlap between public functions and private life. A fisher recalls: "Once, I went to the police and denounced someone that was fishing illegally. The police told me to show them the illegal fisher. But I cannot do that, otherwise all fishers will become my enemy."

For the Secretariat of Agriculture and Fisheries, the situation appears different as it depends to a greater extent on national authorities and is much more vertically integrated. Its responsibilities are directed toward administration and research/assessment purposes.

The archipelago's governance is integrated within a hierarchical mode of governance at the national level. The Departmental Fishing Board is a joint institution in charge of fisheries administration. Its role is limited to issuing permits (according to rules set by national authorities), define small-scale fisheries areas and some related administrative tasks. Both CORALINA and the Secretariat of Agriculture and Fisheries would like to see this joint institution gain more executive power.

⁶⁹ Emphasize by Mrs Peñalosa.

Mr Castro Gonzáles, deputy director for Seas and Coasts, explains the history of the Departmental Fishing Board. It was created within the Law 47 of 1993. With it, some powers of the National Institute of Fisheries (INPA-Instituto Nacional de Pesca⁷⁰) – in charge fisheries statistics and regulation setting – were to be transferred to the Departmental Fishing Board. But this national authority was not keen on this transfer of power. There followed 6 years of legal proceedings ending at the Colombian constitutional court (the highest legal instance in Colombia). The court's judgement acknowledged powers devolved to the Departmental Fishing Board. Despite that, authorities were not transferred. Civil protests took place in the archipelago and the airport of San Andrés was blocked for 4 days by protesters. The case of the Departmental Fishing Board was not the reason for these protests. But in the negotiations to solve these protests, The Board was brought as a point to be resolved. In 2000, the Board was finally set up. Mr Castro Gonzáles adds: "Basically, relations between local government and national government with regards to fisheries were totally broken". Relations between regional institutional and national agencies have may have improved according to informant but they are still contentious. The State, according to them, is starting to understand the peculiarity of the archipelago compared to the rest of the country.

Thus it has been thus a difficult task to obtain the implementation of what had been a nationally and legally drawn institution. Therefore, to ask for a change of status of the Departmental Fishing Board - with increased power - is an endeavour that is not without risks. Mr Castro Gonzáles underlines: "This implies to bring our demand to the national congress of the Republic. And maybe run the risk of losing what we have."

Mr Bent, Fisheries Coordinator for the archipelago, confirms the necessity of a Departmental Fishing Board with more integrated power: "We want to give more power to the Board. Evaluation competencies are not sufficient for effective management. The Board should be the highest authority in term of fisheries. The problem is that the Colombian government wants to have the power. Maybe a solution could be to open more the Departmental Fishing Board and accept the participation of the ministry of Agriculture or a representative of the presidency. We wouldn't have any problem with that, but they don't want to let go the power". There is more to fisheries governance than management structure and institutional arrangements (Jentoft, 2007b). Tensions rise over power and governability and governance analyses should be aware of power developments. As Fox et al. (2005) summarize:

⁷⁰ This institution does not exist anymore and has been replaced by the AUNAP – Autoridad Nacional de Acuicultura y Pesca.

"Decentralization is essentially a process involving competition among competing vested interests." In the present case, tension arises between a regional system that leans on decentralization, supported by the Colombian Constitution, and national institutions keen on keeping power in their hands.

Sensitivity and awareness of national authority towards the archipelago are further reviewed in the next subsection.

6.1.2.1. Effects and consequences of the ICJ judgement

As an answer to the ICJ judgement, the presidency of Colombia has granted a 6 months (from January 2013 to June 2013) subsidies to all small-scale fishers of San Andrés and Providencia/Santa Catalina for the lost benefits of not going fishing.

There were some prerequisites among which one was to belong to an association or a cooperative. Independent fishers had 2 months to join an association or cooperative which had the obligation to accept them. Another was not to be submitted to any judicial proceedings. And then, fishers under temporary contracts could not benefit from subsidies.

To receive the last quarter of subsidies, fishers were to follow a two days course on association and cooperatives.

During this course a fisher says: "After the subsidies, fishers will not come to the association or cooperative anyway". And fishers agree about the disquieting effects of these subsidies. Oliver, a fisher on Providencia says:

"These subsidies, it is really a mess! I don't understand why the government acted like this. They could have helped in other ways, with material or improve infrastructures, for example. And you know, many fishers don't receive the subsidies and it's unfair, everyone here on Providencia depends on fishing."

Nelson, a fisher on Providencia that drives a bus during the three months closure for lobster, queen conch and black crab confirms:

"I have a 6 months contract with the main town of Santa Isabel: I drive a bus. Well, I don't receive anything. In 6 months, I don't know what I will do. I know this fisher that works for the town during the day and fishes at night. He wanted to denounce his contract to get the subsidies, but I dissuaded him to do so. To me, all these conditions

Bogotá has set, they are just barriers created to limit the number of fishers to get subsidies."

Roque, a respected fisher on Providencia adds: "Before the subsidies, there were maybe 100 or 200 fishers on Providencia. Now there are 500 fishers! Many are not fishers; they are just here for the money."

Institutions do not have a better opinion about these subsidies. Mr Bent, Fisheries Coordinator at the Secretariat of Agriculture and Fisheries, comments that the problem is not about the amount of money that is distributed, it is about what it does to fishers: "Instead of finding solutions or looking for other fishing areas, fishers are seeking money and they don't work". He continues: "There are people that are not fishers, but they want to be recognised as fishers to receive money." Mr Bent adds that there are other ways to help, not so short-sighted and disconnected of reality of the island. He points out that there is a departmental plan (Plan de Desarrollo, 2012-2015) that defines problems, challenges and directions for fishers and fisheries, and that it is this kind of plan that should be subsidised if any is to be given.

The unilateral decision taken by the national authority had a strong negative impact on communities. CORALINA and the Secretariat of Agriculture and Fisheries were faced with a *fait accompli* and had to deal with it, increasing instability in the fisheries governance of the archipelago. This lack of communication from the national presidency with regional institutions raises questions to its sensitivity to local problems. And acting as it did, with a short term vision using subsidies, the national government presented a solution that once unfolded was replete with wicked problems raising new conflicts. There is thus a poor fit in governance elements between the national authorities and regional instruments to perform local actions.

6.1.3. Orders' performance (1st, 2nd, meta)

Orders of governance are assessed looking at how well each order performs relatively to the other (Chuenpagdee and Jentoft, 2013). Consistency, effectiveness, transparency, justice are parameters that can be used to look at performance of orders. Meta-order sets the values, it is the cornerstone upon which institutions will be built (2nd order) and according to which problems will be solved (1st order). The meta-order stands apart from other governance components. In the interactive governance theory, meta-governance is not only related to the

State. It includes public and private actors in the expression of overarching values. These values will pose *ex ante* the direction toward solution will be built and *ex post* as evaluation criteria (Kooiman and Jentoft, 2009).

The Secretariat of Agriculture and Fisheries' values and principles are presented in the governmental plan of the department for 2012-2015 (Plan de Desarrollo, San Andrés, Providencia y Santa Catalina, 2012, p.215). The meta-principles steering fisheries management are food security, employment and income security. To attain these goals, basic conditions should be created to foster a sustainable use of marine resources. To go toward these goals implies institutions that improve regional cooperation for shared resources (national and international), support and develop small-scale fisheries and the position of Raizals in small-scale fisheries. Translated into daily activities, fisheries institutions have to foster programmes that improve fisheries administration and institutions, support Raizal small-scale fishers and fight against illegal, unregulated and unreported fishing activities. The Departmental Plan presents the Departmental Fishing Board as the instance the most suited to answer to the 1st and 2nd orders of governance.

The first and second orders are consistent with each other. Visions are integrated in institutions that work at implementing these images. Moral responsibility to assure food security for small-scale fishers and justice for Raizal fishers is necessary but challenging as the ability of the institutions, and principally the Departmental Fishing Board, is limited to administrative and advisory tasks and lacks executive powers to implement its visions. But the Departmental Plan calls for further development and strengthening of existing institutions, mainly the Departmental Fishing Board (Plan de Desarrollo, San Andrés, Providencia y Santa Catalina, 2012). Thus there seems to be insufficient effectiveness in the 1st order of governance (i.e. problem solving and opportunity creation). Problems certainly do not come from a lack of will or interest or even belief in the values held in the meta-order. Problems could stem from responsiveness difficulties of governing institutions. Responsiveness can be considered as "having the quality to respond to wishes" (Kooiman and Jentoft, 2009, p. 827). Issues to respond to wishes may be found in the hierarchical structure of governance. This structure limits the powers the Secretariat of Agriculture and Fisheries and the Departmental Fishing Board have to respond to wishes. In addition, *elements* of governance cannot perform due to limited financial capacities.

CORALINA's values and principles aim at a sustainable use of natural resources in a multicultural society. The meta-principle is rooted on an ecosystem-based approach and conservation of natural resources as well as social and cultural ones (CORALINA Plan de Acción Trienal, 2013, p. 37). The institution, CORALINA, and its main instrument, the MPA, aim at a sound use and fair repartition of benefits of natural resources and environmental goods between tourism, fisheries and agriculture activities (CORALINA website, Visión, accessed 2013).

The creation of a multi-zone MPA is consistent with the ecosystem principle that this environmental institution fosters. But effectiveness of managing daily problems is hindered by the size of the MPA. In addition, financial limits do not allow CORALINA to perform all monitoring, control and surveillance tasks it deems necessary. Despite all these problems, the institution keeps on fostering alternative work opportunities, such as mariculture. But Mr Castro Gonzáles stresses: "Yes, [CORALINA wants] want to develop mariculture, but [CORALINA] do not think that mariculture will replace fishing, as some think it will be the case. What [CORALINA] want is small-scale mariculture". But this idea creates challenges and difficulties of implementation that questions meta values of the Corporation "if it is poorly done and implemented, mariculture can generate more negative impacts than fishing" (dixit Mr Castro Gonzáles), and questions also 1st order governance," to create a mariculture is to give to a person, part of the public space" (dixit Mr Castro Gonzáles).

Moral responsibility is acknowledged by CORALINA by its will to include fishers in designing alternatives with the consciousness that "it is a big challenge but I think we are on the right tracks and this is our vision" says Mr Castro Gonzáles.

6.1.3.1. Effects and consequences of the ICJ judgement

As mentioned earlier, 1st order of governance deals with problem solving and opportunity creation. The ICJ judgement has been to the detriment of the archipelago. As mentioned above, subsidies have negatively impacted the archipelago. But other problems exist when it comes to resources and fishers.

Increased illegal fishing – due to border change – challenges the meta-order of the Secretariat of Agriculture and Fisheries (food security) and CORALINA (sustainable use of natural resources). This challenge has repercussions on the 1st order of governance. Mr Castro Gonzáles explains that: "With borders closer to the islands, it will be much easier for foreign

illegal fishers to enter in our sea and fish." And the problem of illegal fishing is much more acute around the enclaved cays of Serrana and Quitasueño.

Differences in fisheries regulations between Nicaragua and Colombia is another kind of problem set at the 2nd order of governance. In lobster fishing⁷¹, for instance, Nicaragua allows SCUBA diving when Colombia only allows traps and diving at lung capacity. Harvey Robinson, in charge of the Seaflower Keepers project on Providencia/Santa Catalina, says: "For every Colombian boat there are three boats from Nicaragua and they fish with SCUBA tanks when Colombian fishers use traps. Needless to say there are not enough resources for so many boats." Capu, a fisher on Santa Catalina, declares about this issue: "With one boat in one trip, they can catch as much as we do in one year!"

The secretariat of Agriculture and Fisheries, in its 1st order of governance, tries to create opportunities. Mr Bent, fisheries coordinator at the Secretariat, explains how, with the help of small-scale fishers, they try to find new fisheries, for example for wahoo, tuna or dolphinfish.

The ICJ judgement implies hard choices for CORALINA, where "every choice situation is governed by some value" (Chang 1997, p.7, in Kooiman and Jentoft, p. 827). The present fragmented situation of the Seaflower MPA is a wicked problem. Mr Castro Gonzáles says he faces a situation where he could either keep Serrana and Quitasueño as a marine protected area or just keep San Andrés, Providencia/Santa Catalina and the southern cays within the MPA. He adds: "These are in-depth questions that are important to ask." But the answer lies in great part in the decision at the national level.

At the level of the community, feelings are mixed. According to Mr Castro Gonzáles, some people say that, because of the ICJ judgement, the vision toward the sea should change, that it is not possible anymore to have an environmentalist perspective. Others are just uncertain on what to do. But Mr Castro Gonzáles stresses that "with this judgement, it is a whole working process that has been lost". A reflexion that shares Mr Mr Bent: "We make studies, we protect for the sons and grandsons and suddenly they are told 'these waters are not ours anymore. These resources that you protected, it is Nicaragua that can harvest them'."

⁷¹ NB: lobster fishing is performed at 80% by industrial vessels and 20% by small-scale fishers.

With this judgement, CORALINA faces a challenge with regard to its values (meta-order). Solution and opportunities creation are slowed down by Bogotá, a problem related to the hierarchical mode of governance. CORALINA's value is an ecosystem vision of the archipelago. This value is reflected in its will to include community in decision processes. Today, Mr Castro Gonzáles expresses the difficulty to sit with communities because "we are the governing institution and the communities ask for an answer that we do not have." The central government does not know yet which concrete answer to give to the ICJ judgement. Mr Castro Gonzáles continues: "When I ask Bogotá, they say 'wait for directives from the republic presidency'." Therefore, problems at the 1st order of governance are not efficiently solved because of slow hierarchical responsiveness. This in turn pushes stakeholders to question the moral responsibility of the meta-order and the efficiency of the institutions, the 2nd order when they look at the few answers and opportunities they get from the 1st order of governance (problem solving and opportunity creation).

Two other important issues create great uncertainty on the governance of the archipelago. These are considered "problems-to-be", latent issues by stakeholders of the archipelago. The first is the transoceanic canal that Nicaragua wants to dig. Though slim appears the chance that the project find sufficient funds (The New York Times, June 13th 2013), it is a fear that is present among islanders and a possible threat according Mr Castro Gonzáles. The other latent issue is oil exploration and exploitation. As mentioned above, Colombia has forbidden oil exploration. Now that these waters are Nicaragua's, there is a fear that oil exploration might start again. It is a risk that both Mr Bent and Mr Castro Gonzáles acknowledge as probable.

6.2. Governing interactions analysis

As mentioned previously, governance is about a system with needs and wants (a system-to-be-governed) and a system designed to answer to these needs and wants (a governing system). But an analysis of governance cannot stop at a description of a system-to-be-governed that emits and a governing system that receives messages; they are not separate units without relations. The analysis must take into account communication and relations between both systems. The type, form and quality of interconnectedness will express the degree of governability and assess strength and weaknesses in the overall governance scheme.

The first subsection deals with presence and quality of interactions when the second subsection looks for power relations in interactions.

6.2.1. Presence and quality of interactions

Various forms of media are mobilised by managing institutions when it comes to transmit or to share information with fishers. CORALINA displays lots of information on its website, but if fishers use it as a source of information is still to be assessed. Otherwise, newspapers, TV and radio are important vectors of information. Important information is also expressed at church and official papers are displayed on information boards. But as an employee of the Secretariat of Agriculture and Fisheries' office of Providencia said: "The problem with information displayed on public boards or on the window of our office is that fishers just look if there is their name on it, if it is not the case, they do not read it."

Interactions can also take the form of working group between institutions and fishers. For instance a working group took place on Providencia to talk about a project of mariculture on which the national government is very keen. This meeting was a preliminary discussion about the project and what fishers think about mariculture. The institutions present were the Providencia Foundation, the SENA⁷² (Servicio Nacional de Aprendizaje-National Learning Service), CORALINA, the Secretariat of Agriculture and Fisheries, a representative of the Fish and Farm Cooperative, a guest from the University of Florida specialised in mariculture, a representative of the city hall of Providencia. About 20 fishers took part to the meeting. Nicola, a speargun fisher, stresses to the institutions: "Do you see how many fishers we are today? We are not a lot⁷³. Well, consider we were the easy ones to convince to come." This statement underlines the difficulty for institutions to interact with communities and create spaces of communication with fishers.

But institutions also had to learn to create a space for interaction. For instance, Marcela Cano, director of the McBean Lagoon Natural National Park, recalls that at the beginning meetings with fishers were organised. But with regard to little attendance, the strategy was changed and adapted to fishers' lifestyle: meetings and discussions are carried out at wharfs where landings take place. This was also the opportunity to exchange information with fishers and Mrs Cano says: "We discovered that many of our biological data coincided with fisher's knowledge." These interactions have opened the way to co-learning and improve understanding of each

⁷² A autonomous unit under the Labour Ministry of Colombia.

⁷³ The Secretariat of Agriculture and Fisheries has, in Providencia, 31 registered small-scale fishers.

other perspectives. This exchange is not only important for scientific or communication but also for education purposes: "We also involve fishers in monitoring and evaluation so that they can see by themselves the state of the resources and transmit the information to their relatives, friends and co-workers." A fisher says during an informal talk, on Providencia: "If you don't see it, you don't believe it". This seems to sum up the way fishers perceive issues and problems on the island. Mrs Peñalosa, director of CORALINA's office on Providencia/Santa Catalina, confirms: "These are oral communities; there is no culture of reading. Here people believe what they see and hear. Not what they read". She stresses the need to adapt programmes to the local level and that what works in Bogotá thus may not work here. When asked if Bogotá understands the situation on the archipelago, she answers: "I think they start to understand. They are much more present than before thus I think they start understanding that the archipelago is different."

Mrs Cano also points to a need of improving communication's clarity; she tells about the example of queen conch closures: "This fishery has opened and closed a couple of time. Last year, it opened only for the cay of Serrano. But there has been insufficient information about it and fishers thought it opened everywhere." According to her "there is not enough communication about regulations".

Later on, while talking informally with a fisher, he was convinced that the national park was managed by CORALINA, when in fact the park has its own autonomous management structure. Another example about communication issues was for the compulsory course on associations and cooperatives⁷⁴: About 15 fishers left for the northern cays jeopardizing their right to subsidies⁷⁵. Apparently, they did not know that the course was taking place the week they left.

But interactions within the system-to-be-governed should also be considered as it affects quality of interactions between the system-to-be-governed and the governing system.

During the mariculture meeting, a fisher expressed to the audience: "The biggest problem is to get together and work together". This issue was also commented during the compulsory courses on association and cooperatives. A blatant example was reported by one of the

⁷⁴ Compulsory for small-scale fishers in order to receive the last quarter of their subsidies.

⁷⁵ Fishers leave for 10 to 15 days when fishing in the northern cays. It all depends on the quality and fishing, water and food for the trip, and ice.

speaker who organised an exercise on cooperation: one person was blindfolded, he represented the leader of a fictive association. His task was to gather objects on the floor and put it in a box. The rest of the group had to tell him where to go to pick up the objects and help him put them in the box: they represented the assembly of a fictive association. The speaker reported that everybody was speaking at the same time, yelling, there was no organisation and participants were misleading the blindfolded leader to walk into walls and tried to make him trip. In the end, as he could not perform his task with the help of his assembly, the leader eyed another group doing the same exercise and stole their box. The assembly of the first group started to yell he was a cheater. During the debriefing of this exercise, the group said that all managers were thieves and that the leader during the exercise proved it. The speaker suggested then that the manager may be a thief but the assembly does everything to make him fall.

Such attitude was confirmed by an employee of the Secretariat of Agriculture and Fisheries of Providencia: "Everybody talks, no one listens." And the leader of one association in Providencia/Santa Catalina shares this point of view: "To be in an association here is hard. And I am fed up of it, to be the leader, to be part of it, of everything. No one takes responsibility but everyone criticizes. The members throw stones and then hide behind the wall". He carries on: "Actually, there is no unity. People here just unite when they need something".

There is thus a mentality of working together that lacks on the islands of Providencia/Santa Catalina (a problem similar in San Andrés). The system-to-be-governed appears thus more passive and reactive to situations and external shocks than proactive to express their needs.

In this instance, there is a low governmentality (Johnsen, 2013) and institutions have difficulties in creating co-working spaces.

Communication and interactions are also difficult between institutions and fishers. Mr Castro Gonzáles says: "Today, many people see us as an entity that only regulates and sanctions." Talking about CORALINA, Antonio, a fisher, says: "CORALINA makes me very angry: they forbid but they propose no alternatives." Mr Castro Gonzáles recognises that it is difficult to have a regional entity that regulates and a national entity that gives subsidies and helps of different kinds. He underlines the necessity to work closer with other institutions as well as the community.

Mr Cano stresses also the necessity to work together and foster interactions between institutions and not only with fishers: "With such a small park (about 10 km²) if there is not a fisheries management plan, our own rules and our work with fishers have no sense." Thus interaction must deal with the system-to-be-governed but also with other governing institutions to foster the overall governability.

Moreover as Mow (2006, p.3) stresses: "The Colombian government has increasingly recognized that the management of the tiny remote oceanic islands is complex and that limitations are imposed by isolation, small land area, and distinct culture and social systems. However, the still need to understand that planning and management need to be based on linkages between biological systems – terrestrial, coastal and marine – and societal systems."

When Mr Castro Gonzáles, CORALINA's deputy director for Seas and Coasts, is asked what are the lessons learned with the management of the Seaflower MPA, he answers: "The ideal MPA does not exist but if there is a lesson to be learned: we should have put more emphasis on socio-economic themes in the implementation design of an MPA, when more stress was put on biological and ecosystem aspects". To the same question, Mrs Cano, director of the McBean Lagoon National Natural Park answers: "we should have made a diagnostic of fisheries issues before taking the decision to close speargun fishing. If we don't work with the community, we will have more conflicts".

6.2.2. Enabling and restrictive role of power relations

Power relations affect governability, where some may defend their own interest to the detriment of other. As presented above, power relations within the system-to-be-governed are strong and have a restrictive role. In this instance, power relation is located at the individual level. Fishers struggle to voice their own, personal needs but do not seem to know how to voice in common. Because individuals do not share a common vision and miss a constructive mentality on how to cooperate, it affects their ability to express their wants and needs. Instruments exist, associations and cooperatives, but their mere existence does not imply their effectiveness. The latter derives from fishers' participation and capacity to organise.

Power issues are also present at the institutional level. Mrs Cano, director of the McBean Lagoon National Natural Park, recalls that she decided unilaterally to forbid, in 2008,

speargun fishing in the McBean Lagoon Park. Conflicts generated were very strong: "All fishers were against us; they hated us and did bad things to us". But she considered the situation urgent and in need of a quick answer – protect a resource. But the consequences were a power struggle that was beneficial to none. The tactic therefore changed to a more inclusive and participative approach.

But fishers' competencies to organise and to express their power are double-sided. When organisation is needed within to create a common vision, capacities are scarce with a result of a minimal power and scattered energy between individuals. But when it comes to organise for an external cause, fishers seem to know how to mobilize their strength. Mr Castro Gonzáles:

"Fishers are not so much organised at the productive level but they are organised and unite when it comes to fight and appeal. They are politically aware. They know how to negotiate and how to talk to the president. They know how to ask from the government without giving much in exchange when it comes to environmental commitments."

Power relations affecting small-scale fishers do not limit to regional and institutional relations. It also has to do with the national government launching and implementing projects with few consultations of inhabitants. National authorities support the development of mariculture. Providencia/Santa Catalina was to have pilot project. A national team came and selected Warwick Point, north of Santa Catalina, as an ideal spot for its clear water. Antonio, a respected fisher on Santa Catalina, recalls:

"They came to set cages because the water was clear and considered it safe, they thought it was a good spot. We told them there were high waves and currents there. But they did not listen. One night, waves got high and crushed all the cages". As Warren, a trap fisher on Santa Catalina said: "Bogotá is no good. It does not help, and when it does, it does not think".

During the mariculture meeting, several comments came out about national authorities' behaviour. Nicola, a fisher, says: "The government is only promises, promises, promises! I don't believe in institutions, I just believe in myself!".

National authorities have an important power on what should be done and how but with few inclusion of local fishers. This entails two consequences of inadequate participation and

inclusion of fishers. The first is failure of their project in the region, the second is a diminishing trust of fishers toward institutions⁷⁶.

6.3. Summary

Goodness of fit between *elements* of governance is rather good. Regional institutions have developed instruments that are in line with the image the former have of the issues to solve and the opportunities to create. However, actions are difficult to implement. Challenges come from limited resources for an extensive maritime area to low governmentality of small-scale fishers. The latter struggles to work together. They are conscious of this issue but haven't developed yet a mentality of co-working.

Colombia has a constitution that aims at a decentralization of power. However, what is written does not match with facts. The national system is still very hierarchical. The government of the archipelago had to fight up to the higher judicial instances to receive what it was granted, the Departmental Fishing Board, when national authorities were not willing to share the power.

The meta-order values for CORALINA and the Secretariat of Agriculture and Fisheries are strongly roots. It feeds their vision of what institutions should be like to solve problems and create opportunities. However, 1st order of governance lacks effectiveness. Limited responsiveness of institutions to needs and wants may find its cause in a hierarchical structure as well as a system-to-be-governed that has difficulties to express clearly needs and wants.

To analyse interactions is not only to notice presence or absence of interactions. It relates also to interaction's quality and power relations that can exist. Interactions with fishers take place but quality is sometimes low due to inappropriate means of communication. Moreover, quality of interactions is lowered due to the scattered voice of the system-to-be-governed, its difficulty to work together and mistrust of institutions.

⁷⁶ During the same meeting, a fisher expressed his discontent toward CORALINA that was doing too much diagnosis and studies.

With regard to power relations, the main problem stems from the difficulty of national authorities to listen properly to needs, wants and most of all specific way of fishers' way of life in the archipelago.

7. Discussion and conclusion

Kooiman (2013) suggests analysing actions and interactions at a micro level considering macro phenomena as a frame of reference. The ICJ judgement was the opportunity to look at power relations, interactions and macro scale issues in the governance of micro small-scale fisheries.

In the archipelago the system-to-be-governed, small-scale fishers, is dependent on a very sensitive and complex natural system. Marine resources form the core of fishers' livelihood, let alone identity. For the time being there are no real alternatives to fishing. Some agriculture projects are developed but they face two problems: the small size of the islands reduces available land for large agriculture projects, and limited fresh water reserves do not allow for extensive projects. Fresh water resources is already a problem in daily consumption (in the archipelago, people drink industrial bottled water). Mariculture projects are encouraged by national entities. But CORALINA recognizes the limitations of such projects: large mariculture plants are not encouraged due to fragility of the ecosystem and available space.

In the archipelago, dynamics of the natural and social systems are complex due to their respective diversities and their mutual interactions in such a small area. Available sea is important but fishing sites and opportunities are not limitless and fishers go for the same fishing spots. Overpopulation is thus an important driver of problem recognised as much by the population than by authorities.

7.1. Influences of power

Four levels of analysis can be delimited: local, regional, national, international. These levels are in interaction with one another. But the power differential each has over the other is very different in intensity and consequences.

Small-scale fishers have seen their boundaries reduced by the ICJ judgement. They have been affected directly by an international decision and they have the feeling they have been put in front of a fait accompli where they had no opportunity to voice their concerns. This judgement shows how international decisions can have a powerful impact on small-scale fisheries at a local level.

These fisheries are small by their scale and they are at a low conceptual level of analysis, but their governance analysis should be integrated in a broader perspective considering the powerful effect decisions at higher levels can have. Governability of San Andrés' small-scale fisheries cannot be understood without looking at power relations with the State.

In fact, small-scale fisheries governance is a function of consequences at the local, regional, national and international levels. However, international decisions do not merely "trickle down" to the local level; such a view would be too restrictive. Analysis should include cross-level influences (Cash et al., 2006) where an international level enters in an interactive process with and between national, regional and local levels.

The State is also a powerful actor that can be the cause of destabilisation. The way the national presidency dealt with the post ICJ judgement had a disruptive effect on the governance of the archipelago. The regional governing system (composed in this paper by CORALINA and The Secretariat of Agriculture and Fisheries) has been put aside by the direct action of national authorities. The State unilaterally decided to grant subsidies leaving the task to distribute them to regional institutions. It reveals a hierarchical system that did not concert with regional institutions on how to best cope with the ICJ judgement.

The governing system of the archipelago is made of several institutions two of which stand out for the management of fisheries: CORALINA and the Secretariat of Agriculture and Fisheries. The governing system can be regarded as a two-tiered structure. At the regional level, the diversity of issues, their complexity and their interrelated dynamics within such a small territory force institutions to work together. The two institutions share the same mental model, the vision of a fragile archipelago that needs to be protected. Each tries to foster solutions that are tailored to the boundaries of the department but implementation is hampered due to financial limits and a hierarchical structure where the State does not seem keen on devolving more power, even though the Colombian constitution calls for a decentralized State. The Departmental Fishing Board, gathering together regional institutions connected to fisheries and fishers' representatives, is an example of tensions and conflicts for the devolution of power to a lower level. Regional institutions would like to see the Board gaining more than simple administrative powers. As to the reasons why national authorities seem reluctant, more information from their point of view should be collected.

Effectiveness of the governing system is affected by various levels. The concept of devolution of power supported by national authorities encourages the creation of institutions at lower levels. These regional institutions are then built on images and values that will lead their daily activities. But as consistent as they wish to be, their values and the actual power at their disposal to solve problems and create opportunities is reduced by an incomplete devolution of executive authority. If the governing system's architecture matches the scale and its awareness of the situation in the archipelago makes it fit to answer to fishers, its lack of power hinders its capacity to attune to the needs and wants of the system-to-be-governed (Scholtens and Bavinck, 2013).

Fisheries institutions in the archipelago are submitted to power influences of higher levels. It also seeks additional power to solve its societal issues. They ask for additional power in accordance with the Colombian constitution and considering themselves as the best suited to solve problems and create opportunities. Power influences interactions, either by fostering or hindering their presence and quality.

7.2. Communication – interactions

Consequences of the ICJ judgement are multiple: reduction of the Seaflower MPA, forecasted increase in illegal fishing and increase in conflicts between small-scale and large-scale fisheries, etc. The State, instead of developing interactions and communication with the archipelagic governing system took a unilateral decision on subsidies, and left its implementation to regional institutions. Due to this decision, governability of small-scale fisheries has been strongly reduced; where governmentality was already low. Effectiveness of regional institutions is questioned by fishers and negative feelings toward national authorities have increased.

Institutions in charge of natural resources, such as CORALINA and the McBean Lagoon National Natural Park, have underlined the necessity to involve communities in multiple interactions. These direct interactions are viewed as a way to learn from fishers' knowledge. They are also viewed as a way to transmit knowledge by the direct involvement of communities. As mentioned above, these communities are based on oral traditions. Other ways than written report have thus to be found to transmit information. Therefore, governing institutions tries to improve their receiving and emitting capacities.

Turning now to the system-to-be-governed, presence and quality of interactions are lowered by the individualistic behaviour of small-scale fishers. As mentioned above by Mr Castro Gonzáles, small-scale fishers know how to unite when it comes to ask for punctual help. But they have difficulty to organise when it comes to formulate their needs and wants for short term or long term projects. It seems that information emitted by the system-to-be-governed lacks momentum due to scattered voices.

Small-scale fishers of the archipelago present a low level of governmentality. To improve governability, the system-to-be-governed should be a co-producer of rules and regulations (Johnsen, 2013). However, even with a participative approach interactions are difficult in the archipelago. Interactions can be considered as a flux between a governing system and a system-to-be-governed; interactions thus foster, or reduce, governability. But presence and quality of interactions are also a function of emitting capacities of an actor and receiving capacities of another actor. These emitting and received capacities will also affect interactions, hence governability. Flux and qualities of interactions is thus a theme for further research in the archipelago.

The intervention of State' subsidies in the archipelago broke a working process with small-scale fishers. In a sense, the ICJ judgement acted as a revealing factor of the difficulties and fragility of interactions between the governing system and the system-to-be-governed.

The governing system of the archipelago is thus in-between the State that fosters an image of decentralization – and at the same time hinders – and a system-to-be-governed that is reluctant to abide by the rule. The State does not share information and tries to control the situation in a top-bottom approach. As for the system-to-be-governed, it struggles to organise where the cause of the problem lies in its own self limitative interactions and power relations. In fact, interactive governance considers the governing system and the system-to-be-governed as never totally under control. Their respective development is thus non-linear where incomplete information is part of the process (Chuenpagdee and Jentoft, 2013).

Therefore, the governance approach should be flexible and adaptable, instead of emphasizing control and stability (Chuenpagdee and Jentoft, 2013, p.346). In this instance, an institutional match and proper communication between levels are mostly important. This raises questions about scale issues.

7.3. Levels and scales

Scholtens and Bavinck (2013) stress the importance of institutional match. The architecture of governing institutions matches the scale of the archipelago. The Departmental Fishing Board, as a joint institution, seeks to foster exchange of information and coherence in governance and management, adding to governability.

However, a sole level of analysis is insufficient to depict all the complexity and diversity in governability challenges. The ICJ judgement and its consequences stress the necessity of a broader perspective. Needless to say that disruptive effect such as the ICJ judgement is seldom but it underlines the integrated nature of small-scale fisheries in a globalised world.

The judgement also underlines the difficulty to have a governance system that is flexible and adaptable and where communication flows throughout the system; from the international level to the local. Governing institutions should be able to interact in such way that each adds to the knowledge of the other to solve problems or create opportunities. In this instance, the constructive sharing of information plays an important role, be that at the regional level or between regional and national levels. Governability would be improved if the governing system favoured a rose system rather than a pyramid system (c.f. figure 7 this paper; Jentoft et al., 2010). In the former system, information is shared, constructed and commented, whereas in the latter information is transmitted and considered informative, to be implemented.

Governability could be improved if governance was considered as a "political brokerage" (Chuenpagdee and Jentoft, 2013, p.346).

With the ICJ judgement, Colombia confirmed its top-down governance approach to deal with small-scale fisheries in the archipelago; with regrettable consequences for small-scale fishers and regional institutions. The State, instead of acting as an interface between the international level and the local level, hindered the creation of a space for problem-solving and opportunity creation. Its actions were twice detrimental: prior to the ICJ final judgement, the State did not involve local population in the formulation of the legal defence argumentation (Avella, 2009) and after the judgement it did not consult the population for solutions. Instead of considering governance as a "political brokerage" discussing issues and negotiating solutions, the State became part of the problem by increasing challenges in the governance of small-scale fisheries in the archipelago.

Berkes points out that "focusing only at one level, whether local, national or international, is inadequate design for governance policy" (Berkes, 2010, p.494). In fact, looking at the big picture, governing efforts "resemble a large, tangled and constantly changing spider's web" (Kooiman and Bavinck, 2005, p.14, in Bavinck and Salagrama, 2008, p.3).

In the case of the San Andrés archipelago, the issue permeates from the international level to the local. Thus in the analysis of governance of these small-scale fisheries, to delimitate a scale of analysis is important for analytical purposes, but the situation at hand also presents the necessity to look at different levels, looking "up-the-system". In other words, to understand the challenges facing small-scale fisheries, a two-tiered analysis should take place. At first, analysis should zoom in and look at the situation at the local level. Then, it should zoom out to analyse the situation with additional governing levels. Governability is therefore influenced by interactions between institutions at different levels and by interactions between institutions at various levels and the system-to-be-governed itself, namely small-scale fisheries.

In this case study, neither the ICJ, nor the State and fishers have looked at the situation with another scale than its own. The ICJ and the State stayed at their own scale of analysis, without taking into account lower levels of institutions. Regional institutions and small-scale fisheries have not been given - and did not take - the opportunity to express their views at higher levels of governance.

The ICJ judgement has acted as a revealing factor of diversity, complexity and dynamics of small-scale fisheries governance and governability in the San Andrés archipelago. In a matter of fact, the issues of governance and governability that the San Andrés' small-scale fisheries are facing are not different from issues of other small-scale fisheries in the world. This case is the expression of the intrinsic diverse, complex and dynamic nature of small-scale fisheries. Therefore, their governance should be thought over at different scales and levels and governability fostered by a dynamic interaction with multiple levels.

The analysis of governance comments on the overall governability of the system and the directions to take to improve the said governability. But governance and governability do not happen at only one level or one scale. Governance and governability should also be the acknowledgement of the existence of multiple levels and scales. Governance and

governability would be then considered within the multiple levels in which, and with which they interact.

In fact, globalisation is much more than just an idea or a concept. It is a daily experience that has repercussion at every level of society. Kidd and Shaw (2013) stress the interconnectedness of our modern world but note that administrative boundaries of modern States are still perceived as "more static, more localised and less interconnected [...]" (Kidd and Shaw, 2013, p.182). However, dynamics of our contemporary world shows increasing interconnectedness, relations and interactions between governing systems as wells as systems-to-be-governed. Therefore, in practice, the concept of boundary has become much looser. International relations have direct consequences not only on States but also on people; international relations have inter-societal effects. In other words, these interactions are not sealed to one scale; they do not gravitate in an enclosed area. State boundaries are much more porous than before with effects at various scales and levels; interactions are, more than ever, inter-scales. This porosity of interactions that do not limit themselves to governing systems but also include systems-to-be-governed might be a call for a shift in analytical framework from management to governance.

Kidd and Shaw (2013, p.188) use two terms: "hard governance arrangements" and "softer governance frameworks". The first describes national arrangements; the second relates to overlapping arrangements at lower levels or other scales in relation to the first. Such theoretical and practical questions appear increasingly in marine spatial planning discourse (Degnbol D. and Wilson, 2008; Kidd and Shaw, 2013). Therefore, importance of cross-levels and cross-scales analysis should be raised.

Small-scale does not mean smaller diversity, smaller complexity and smaller dynamics. Providencia, with a small size but a large population, displays a high level of complexity in its interactions, therefore lowering governability. The issue of scale and the risk of oversimplifications related to scale size should be acknowledged.

Similarly, large scale analysis, at an international level, does not mean that a small diversity, in the present case two States, will go without consequences at lower scales and levels.

Small-scale fisheries studies would gain from cross-scale and cross-level perspectives; they would be considered as integrated actors of a globalised world. How to integrate scales and levels more precisely in the analysis is a theme for further research.

7.4. Conclusion

Fisheries management should avoid a "tunnel vision" (Degnbol et al., 2006) in its analyses. In fact, a broader perspective is needed to grasp all the complexities of fisheries management; Small-scale fisheries are no exception to this proposition. Small-scale fisheries of the San Andrés archipelago confirm the diversity, complexity and dynamics of small-scale fisheries, but also that they are integrated in a globalised world.

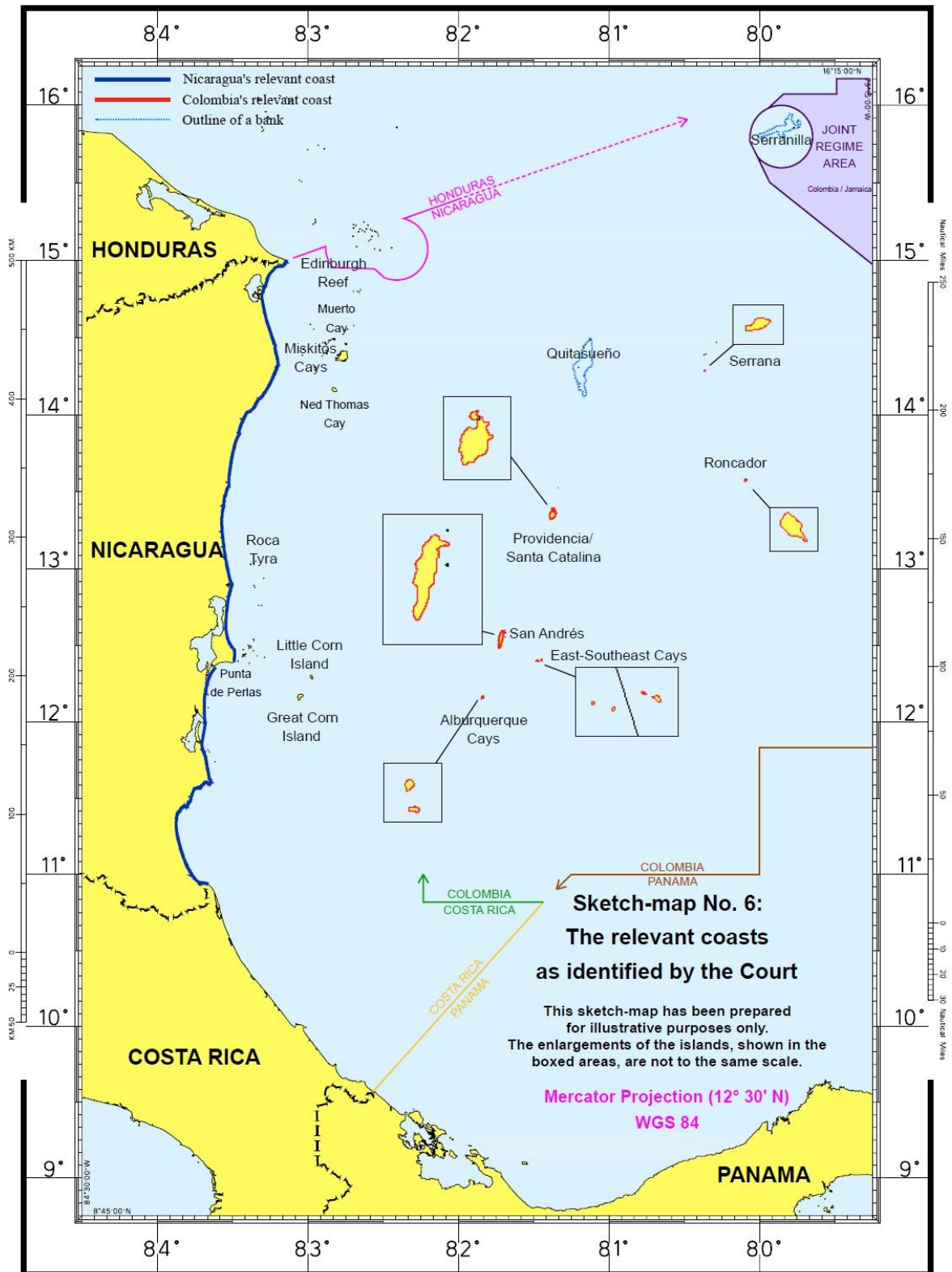
These islands embrace on a small area of land and a large extent of waters, questions and concerns that fisheries are facing in the rest of the world. Issues are multiple and diverse, and they stem from different levels and scales. Therefore, a governance analysis should include levels and scales aspects in governability assessment. New problems – and with them new opportunities – may appear with a perspective increased to other levels and scales.

Our image of small-scale fisheries may be too limited, too "neat". They may be perceived as belonging to the past or as the folklore of a nation (Jentoft, 2012). However, people met during this field study were far from folkloric. They were proud of their sea and did not imagine being away from it. The image and the stories they told were far from "neat". As they expressed in many ways, to be a fisher is not only a livelihood, a job, it is way of life, a culture; the sea and fishing is who they are. Small-scale fisheries deserve an analysis that links them and integrate them in a larger framework.

Our contemporary perception of the oceans is based on the "grotian" paradigm of a *Mare Liberum*. But in a world that grows smaller, diversity, complexity and dynamics of fisheries should be endorsed. With increased interconnectivity and interactions, a shift of paradigm should turn to a *Mare Nostrum* (Allott and Boroughs, 1992), where interactions between the local and the global are acknowledged. If a *Mare Liberum* is a call for a sea free-for-all, a *Mare Nostrum* might be a call for a principle of governance of the sea.

Appendix

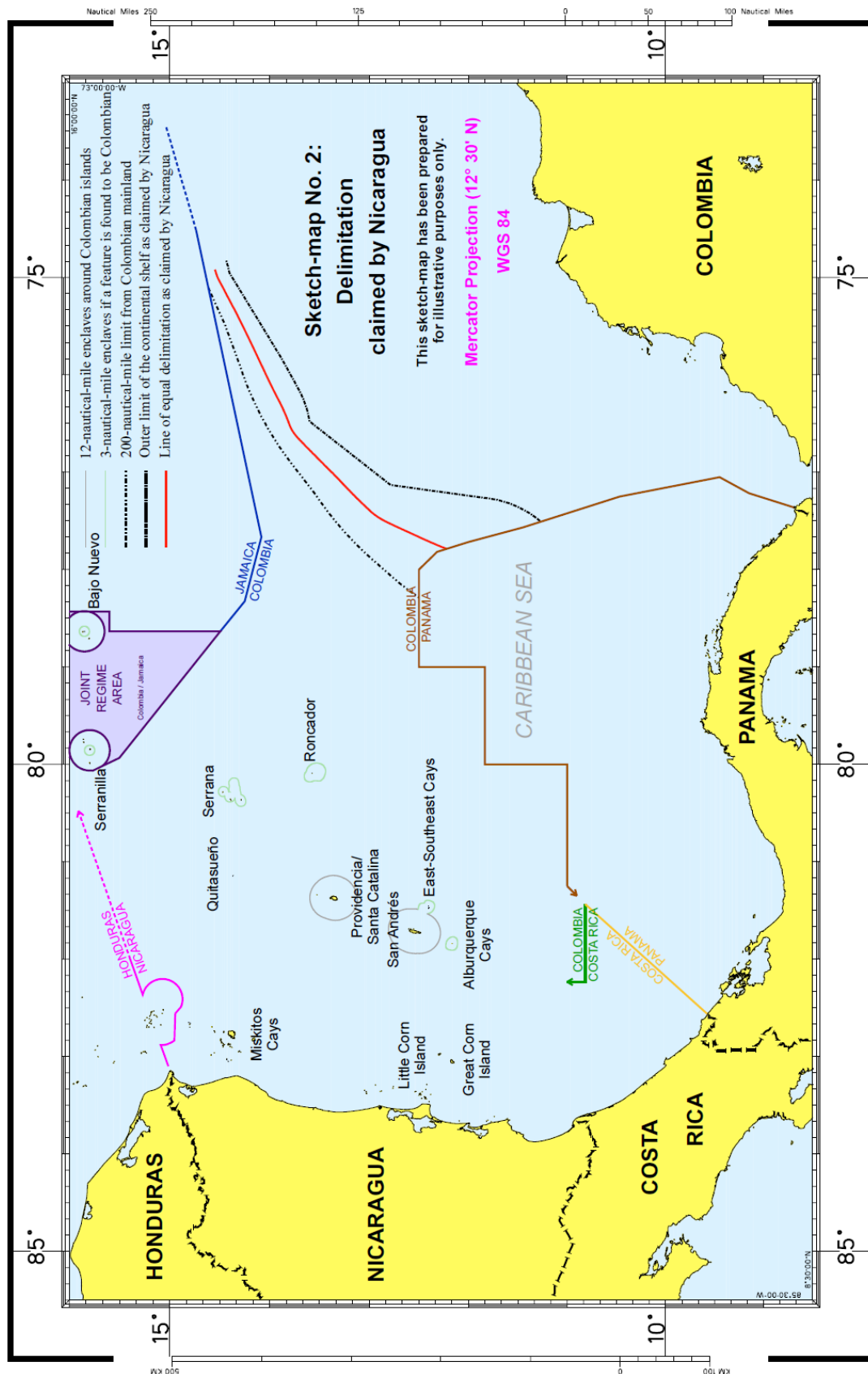
Appendix I: Colombian and Nicaraguan islands and cays. The border prior to ICJ judgement was marked by the 82° meridian. Enlargement in boxed areas are not at scale. (ICJ, Nicaragua vs. Colombia, Judgement, 2012, p. 58)



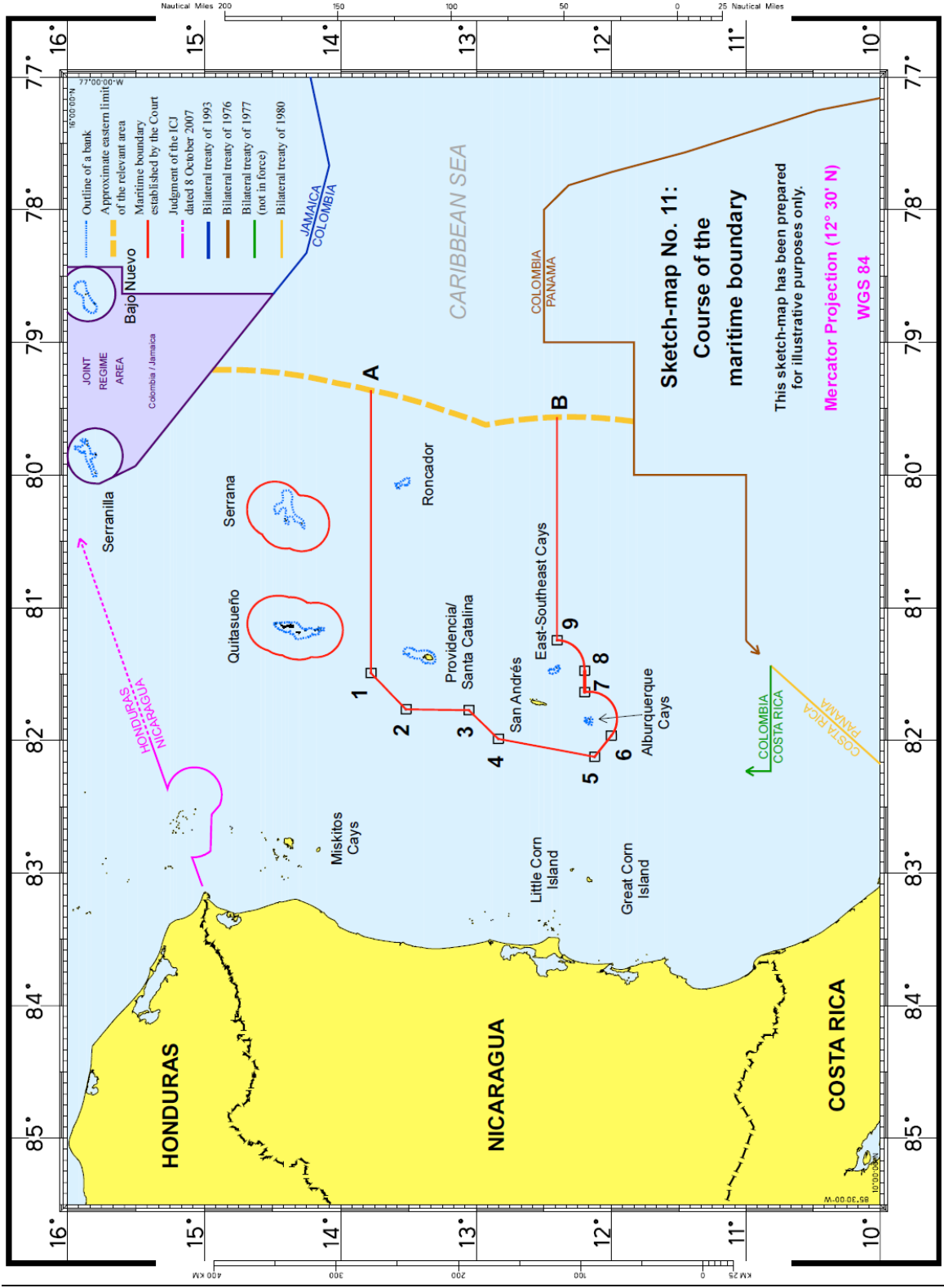
Appendix II: Fish of the Seaflower MPA present in the IUCN red list (CORALINA, 2010).

Species	Common Name	IUCN Red List Status
<i>Balistes vetula</i>	Queen triggerfish	Vulnerable
<i>Carcharhinus acronotus</i>	Blacknose shark	Near Threatened
<i>Carcharhinus falciformis</i>	Silky shark	Least Concern
<i>Carcharhinus leucas</i>	Bull shark	Near Threatened
<i>Carcharhinus limbatus</i>	Blacktip shark	Near Threatened
<i>Carcharhinus obscurus</i>	Dusky shark	Near Threatened
<i>Carcharhinus perezii</i>	Caribbean reef shark	Near Threatened
<i>Carcharhinus plumbeus</i>	Sandbar shark	Near Threatened
<i>Carcharhinus altimus</i>	Bignose shark	Data Deficient
<i>Galeocerdo cuvier</i>	Tiger shark	Near Threatened
<i>Negaprion brevirostris</i>	Lemon shark	Near Threatened
<i>Rhizoprionodon porosus</i>	Caribbean sharpnose shark	Least Concern
<i>Chimaera cubana</i>	Cuban chimaera	Data Deficient
<i>Dasyatis americana</i>	Southern stingray	Data Deficient
<i>Ginglymostoma cirratum</i>	Nurse shark	Data Deficient
<i>Coryphopterus dicrus</i>	Colon goby	Data Deficient
<i>Lachnolaimus maximus</i>	Hogfish	Vulnerable
<i>Isurus oxyrinchus</i>	Shortfin mako shark	Vulnerable
<i>Lutjanus analis</i>	Mutton snapper	Vulnerable
<i>Lutjanus cyanopterus</i>	Cubera snapper	Vulnerable
<i>Aetobatus narinari</i>	Spotted eagle ray	Near Threatened
<i>Manta birostris</i>	Giant manta	Near Threatened
<i>Rhincodon typus</i>	Whale shark	Vulnerable
<i>Scarus guacamaia</i>	Rainbow parrotfish	Vulnerable
<i>Acanthocybium solandri</i>	Wahoo	Least Concern
<i>Thunnus albacares</i>	Yellowfin tuna	Least Concern
<i>Thunnus atlanticus</i>	Blackfin tuna	Least Concern
<i>Thunnus obesus</i>	Bigeye tuna	Vulnerable
<i>Alphistes afer</i>	Mutton hamlet	Least Concern
<i>Cephalopholis cruentata</i>	Graysby	Least Concern
<i>Cephalopholis fulva</i>	Coney	Least Concern
<i>Epinephelus adscensionis</i>	Rock hind	Least Concern
<i>Epinephelus falvolimbatus</i>	Yellowedge grouper	Vulnerable
<i>Epinephelus guttatus</i>	Red hind	Least Concern
<i>Epinephelus itajara</i>	Jewfish	Critically Endangered
<i>Epinephelus cf. morio</i>	Red grouper	Near Threatened
<i>Epinephelus mystacinus</i>	Misty grouper	Least Concern
<i>Epinephelus niveatus</i>	Snowy grouper	Vulnerable
<i>Epinephelus striatus</i>	Nassau grouper	Endangered
<i>Gonioplectrus hispanus</i>	Spanish flag	Least Concern
<i>Hypoplectrus providencianus</i>	Masked hamlet	Vulnerable
<i>Mycteroperca bonaci</i>	Black grouper	Near Threatened
<i>Mycteroperca interstitialis</i>	Yellowmouth grouper	Vulnerable
<i>Mycteroperca phenax</i>	Scamp	Least Concern
<i>Mycteroperca tigris</i>	Tiger grouper	Least Concern
<i>Mycteroperca venenosa</i>	Yellowfin grouper	Near Threatened
<i>Paranthus furcifer</i>	Creole fish	Least Concern

Appendix III: Map of maritime claim made by Nicaragua with an outer continental shelf. Islands of San Andrés, Providencia and Santa Catalina are Colombian enclaves (ICJ, Nicaragua vs. Colombia, Judgement, 2012, p. 40).



Appendix IV: New borders according to the ICJ between Colombia and Nicaragua (ICJ, Nicaragua vs. Colombia, Judgement, p. 89).



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