UAlg FCT
UNIVERSIDADE DO ALGARVE
FACULDADE DE CIÊNCIAS E TECNOLOGIA

Empowerment of the Fishing Community of Sesimbra Through a Participatory Process: MARGov – Collaborative Governance in Marine Protected Areas

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Doutoramento em Ciências do Mar, da Terra e do Ambiente, ramo de Ciências e Tecnologias das Pescas, especialidade em Avaliação e Gestão de Recursos

Trabalho efetuado sobre a orientação de: Doutora Margarida Castro
Doutor Anthony Davis
Doutora Lia Vasconcelos

2014

Capacitação da Comunidade Piscatória de Sesimbra Através de um Processo Participativo: MARGov – Governância Colaborativa em Áreas Marinhas Protegidas

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Declaração de Autoria do Trabalho

Declaro ser a autora deste trabalho, que é original e inédito. Autores e trabalhos consultados estão devidamente citados no texto e constam da listagem de referências incluída

Ao meu pai,

À Fernanda,

Ao Zappa,

Ao Luís,

A todas as mulheres da minha vida e…

"Aos pescadores a quem o mar se curva e a terra aclama"[1].

Monumento ao Pescador no Largo de Bombaldes em Sesimbra.

Crédito: João Aldeia (2013).

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[1] English version: *"To the fishermen whom the sea bends and the land acclaim"* – Monument to the fishermen in Bombaldes square, Sesimbra. Credit: João Aldeia (2013).

“Tens de fazer o que está certo, mas não te cabe a ti determinar o desfecho”. Bhagavad Gita

FINANCIAL SUPPORT

This PhD Thesis was financially supported by doctoral grant for research funded by Fundação para a Ciência e Tecnologia (SFRH/BD/29290/2006).

CITATION

Sá R. (2013). Empowerment of the Fishing Community of Sesimbra Through a Participatory Process: MARGov – Collaborative Governance in Marine Protected Areas. PhD. Thesis, University of the Algarve, Faro. iiii+146 p.

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Acknowledgements

This thesis was an intense and deep journey. Throughout the thesis I became another person. All this happen due to the several challenges faced and living up to its fullness and with courage, but mostly due to the many persons I met who in one way or another made me change my path. I want to thank them all.

To Professor Margarida Castro due to her advising and institutional support. I thank her for believing in the idea of this thesis since the very beginning and never stop encouraging me to progress, providing assumptions and creating solutions. Thanks for the wide vision that has enriched so much this thesis and for being always available to help me.

To Professor Anthony Davis for your availability and all your know-how. You opened my mind and made me a better person with another worldview. Thank you for that and for everything. I really appreciate all the help you have given me.

To Professor Lia Vasconcelos that have entered into this thesis already after its start and accepted me in MARGov Project. Though being my adviser in the FCT it was not possible to be in the University, in spite of her importance for a large part of this thesis. Thanks for the trust and support and to be the person you are making so much difference in so many moments of my life, as well as in my development as a person.

To the Foundation for Sciences and Technology due to its financial support given along the development of this thesis.

To the MARGov Project team for showing me how team work can be a special setting of collective learning. To Úrsula Caser, Graça Gonçalves, Maria João Pereira, Flávia Silva and Marilisa Coelho, thanks for everything.

To Sesimbra Fishermen and to all persons connected to fishing for having taught me so much. Especially: to Arsénio Caetano for his trust and smile. To António Pila for the

challenge and for so many conversations. To Carlos Macedo for his sharing and support. To all persons contacted in Sesimbra Municipality.

A special thanks to João Aldeia, author of the first photo presented here, and who has helped me so much to understand the “soul” of Sesimbra.

To the LPN Ocean Group that in some way has contributed, in several phases, for the maturity of many issues. To all the team behind PONG-Pesca, which I saw with joy “being born”. A hearty word to Cheila Almeida, to Giordano Bruno, to Vanja Karadizc and to WWF team that have support me so much in this final strecht.

To the special friends for all the moments. A special hug to Rita and Filipa and to the respective families. To Ana Amorim for everything but also for the beautiful image. To Carla Ng and troupe wonder, Marina Mendes and Ricardo Lopes for all the good moments. I want to leave a special thanks to so many women-Godnesses that emerged during these years and that have change the way I see the world. To my friends in Sesimbra that have given me so much support, especially Sofia Mendes and Rui Marques.

To my family for the unconditional support. To my father that I do not have words to say how much I miss him. To my mother for everything, for being always present even when the strength lacks and that smiling tried always to get around to all the twists and turns that we were going through. To my brother for his permanent support. To my sister in law Sofia Brito for being a wonderful aunt and for the sharing. To my brother in law Rui Marcelino for the companionship. To my father in law Fernando for all his support. To all uncles and cousins and nephews, one big thank you!

To Alice that made a mother being born and who is my major companion. To Olivia that shows me how I am and how I can be better. Thanks you for the patient and for accepting so well the absences.

To Luis without whom this thesis will not exist. Thank you from deep inside my heart.

Resumo

A Vila de Sesimbra é uma comunidade piscatória que está estabelecida no maior vale da costa da Arrábida. A sua ligação ao mar está patente desde sempre e foi sendo manifestada ao longo da sua história com uma intensa e rica pesca, construção naval e marinheiros para os Descobrimentos (Séculos XV e XVI), e como ponto importante na rota marítima e de trocas comerciais. Atualmente é o Turismo da praia e sol que, em paralelo com a atividade piscatória, dominam a vida local. Desta forma, e também influenciada pela sua proximidade à cidade de Lisboa, a zona de Sesimbra é palco de múltiplos usos comerciais e recreativos.

Dadas as excecionais condições e valores naturais de toda a Arrábida, os elevados níveis de exploração desta área fizeram surgir movimentos com preocupações ambientais, que desde os anos 40 do Século XX, procuraram criar condições legais para a sua proteção. A Reserva da Arrábida foi criada em 1971, mas apenas protegia a zona terrestre. Foi reclassificada em 1976, e passou a Parque Natural da Arrábida (PNA), mantendo a proteção limitada à zona terrestre. Em 1998, Ano Internacional dos Oceanos e da Exposição Mundial de Lisboa também dedicada aos oceanos, foi criado o Parque Marinho Luiz Saldanha (PMLS) com o intuito de proteger a área marinha do PNA. Apesar desta iniciativa reconhecer os valores marinhos a proteger na área, só em 2005, é que o Plano de Ordenamento do Parque Natural da Arrábida (POPNA) veio implementar regras aos seus múltiplos usos.

No entanto, dada a natureza *top-down* do POPNA surgiram muitos protestos e oposição no seio da comunidade de Sesimbra. Os pescadores foram parte da população mais ativa nas atividades de protesto, organizando um bloqueio do Porto de Abrigo e vários desfiles náuticos. Como resposta a este conflito, em 2009, o Projecto MARGov – Governância Colaborativa para Áreas Marinhas Protegidas, iniciou a sua atividade através da criação de plataformas de diálogo que envolvesse toda a população num Processo Participativo (PP) com o intuito de criar *empowerment* na comunidade.

Começou-se por fazer um enquadramento geral e por apresentar o objetivo geral da investigação, centrada na análise desta comunidade piscatória com a Área Marinha Protegida e a sua integração no Processo Participativo para criação de *empowerment* local. Para alcançar este objetivo, procedeu-se à (1) recolha de informação relativa à situação, (2) análise da informação obtida através da comparação com dados existentes e (3) integração de todos os componentes analisados no PP do Projeto MARGov de forma a criar condições para o *empowerment.*

De seguida, fez-se uma abordagem à lógica que suportou a metodologia aplicada de forma transversal a toda a tese e trabalhos desenvolvidos. As entrevistas foram complementadas com observação participante bem como conversas formais e informais com as pessoas e instituições que utilizam a área do PMLS, de forma a obter uma caracterização abrangente da situação existente.

A perspetiva neoliberal sobre a conservação da natureza é discutida através do caso de estudo do PMLS, implementado em 1998, como uma extensão marinha do Parque Natural da Arrábida, e com o POPNA aprovado em 2005. Dado que a conservação da natureza tem ganho muito peso na agenda neoliberal como um instrumento político para a concretização dos seus interesses, têm surgido muitas áreas protegidas que não passam de "parques de papel" ou, como no nosso caso de estudo, apresentam uma forte contestação das comunidades envolvidas. Assim, discute-se a subestimação generalizada da componente social em detrimento de questões económicas e/ou politicas. O sucesso de uma área protegida não pode ser apenas encarado pela perspetiva conservacionista sendo também necessário incluir a história e as características socio-culturais (como a identidade) da atividade humana que aí se desenvolve. O caso PMLS ressalva todas estas questões tendo sido referido a importância do envolvimento de todos os interessados.

A metodologia desenvolvida para o PP é desenvolvida se seguida. A metodologia foi sendo adaptada às necessidades e perfis dos *stakeholders*, tentando dar resposta e envolvendo todos os interessados. Para isso, criaram-se vários espaços de diálogo e várias formas de trabalhar os assuntos propostos. Neste capítulo, demonstrou-se que foi possível desconstruir o conflito existente e encontrar interesses comuns para a construção de soluções colaborativas. Assim, vários participantes, apesar de terem

diferentes pontos de vista, descobriram interesses comuns (como por exemplo, o facto de ninguém estar contra a área protegida, reconhecendo-lhe a importância devida, mas sim contra as regras existentes para a proteger) e a possibilidade de diálogo, criando oportunidades para possíveis negociações entre eles. O envolvimento dos vários *stakeholders* dependeu da possibilidade da sua participação ser verdadeira e o nível de importância que lhes foi dado. Além disso, concluiu-se que os participantes com empowerment podem realmente mudar uma situação muito polémica e podem atingir maturidade suficiente para assegurar o acompanhamento do processo. Desta forma, assumem um papel de liderança e de responsabilidade pela continuidade do processo.

O Conhecimento Ecológico Local relativo a questões associadas ao PMLS foi analisado tendo em conta a evolução deste tipo de conhecimento da comunidade de Sesimbra antes e depois do PP através de entrevistas em profundidade *(in-depth interviews)*. Embora a maioria dos membros da comunidade de pescadores concorde com a existência do Parque Marinho, as suas atividades têm vindo a ser controladas por regras que não concordam nem aceitam. Em 2009, o projeto MARGov iniciou a sua atividade com o objetivo de criar um modelo de governança coletiva através de um processo participativo estruturado e adaptável às características da comunidade local. Este PP decorreu de Outubro de 2009 até Dezembro de 2011 com uma atividade intensa e profícua. Observou-se que após o processo participativo houve um aumento do conhecimento da comunidade através de construção coletiva. Verificou-se também que todos os tipos de conhecimento são importantes na construção de processos participativos de sucesso.

Por fim, desenvolveu-se um sumário das conclusões de todos os capítulos anteriores, de forma a verificar a contribuição científica desta tese. Desta forma, é de salientar a importância das questões socio-culturais na tomada de decisão, que tantas vezes são subestimadas em detrimento das questões politico-económicas (politicas neoliberais). Outros PPs, tais como o Projecto MARGov, têm sido implementados por todo o mundo para resolver questões como esta, o que neste caso foi verificado através da construção de conhecimento coletivo, que foi identificado numa fase posterior ao PP. Para além disso, foram discutidos alguns dos temas que mostraram maior relevância

durante o desenvolvimento desta tese, como a ligação à natureza, identidade marítima, *empowerment* e modelos de gestão.

Palavras-chave: Comunidade Piscatória, Área Marinha Protegida, Processo Participativo, Análise de Discurso, Sesimbra.

Abstract

Sesimbra is a community established in the largest valley of the Arrábida coast. It is deeply connected to the sea through fishing, shipbuilding, sailors which contributed to the Portuguese expansion (XV and XVI centuries), as well as being an important maritime route and a trade point. More recently tourism became an important activity. During the 40's (XX century) the pressures for development led to the creation of a legal framework aimed at the protection of the Arrábida coast. The Arrábida Reserve was created in 1971 (became Arrábida Natural Park in 1976). In 1998 the Luiz Saldanha Marine Park (LSMP), the marine section of the Arrábida Natural Park, was created, and in 2005, Marine Protected Area was implemented.

The restrictions imposed to fishing and the top-down approached used, generated many protests and opposition within the Sesimbra fishing community. In response to these conflicts, in 2009, the Project MARGov - Collaborative Governance for Marine Protected Areas, started its activity to create platforms to involve the population in a participatory process aiming at community empowerment. To achieve this objective, the procedure followed was: (1) identification of the fishing community perception about the LSMP, (2) analyze of the information obtained through cross checking with the existence data, and (3) integration of all these components in the participatory process (PP) of the MARGov Project to create Empowerment.

Through the methodology of the PP, it was possible to deconstruct the conflict and find common interests to achieve collaborative solutions and build intellectual, social and political capital while increasing community knowledge. The importance of all types of knowledge (empirical/traditional as well as scientific) was demonstrated to be valuable in building of the PP. The importance of a maritime culture for Sesimbra´s identity and a strong man-nature relationship can be key factors to achieve successful socio-cultural results in nature conservation.

Key-words: Fishing Community, Marine Protected Area, Participatory Process, Discourse Analysis, Sesimbra.

Acronyms

ANP – Arrábida Natural Park
EEZ - Exclusive Economic Zones
EU - European Union
FAO – Food and Agriculture Organization
Geota - Grupo de Estudos de Ordenamento do Território e Ambiente
GIS – Geographic Information System
ICNB – Institute of Nature and Biodiversity Conservation
ICNF - Institute of Nature Conservation and Forests
ISA - Agronomy Superior Institute
IUCN - International Union for the Conservation of Nature and Natural Resources
LEK – Local Ecological Knowledge
LPN - Liga para a Protecção da Natureza
MARGov – Collaborative Governance of the Protected Marine Areas Project
MPA – Marine Protected Area
NGO – Non Governmental Organizations
LSMP - Professor Luiz Saldanha Marine Park
PA - Protected Area
POPNA – Arrábida Natural Park Development Plan
PP – Participatory Process
Quercus – Associação Nacional de Conservação da Natureza

PART I – THESIS FRAMEWORK

Chapter 1: General Introduction

““Begin at the beginning," the King said, very gravely, "and go on till you come to the end: then stop.””

— Lewis Carroll (English Writer, 1832-1898) In: “Alice in Wonderland”.

1.1 Statement of the problem: How we view the nature conservation now?

Despite the scientific purpose of this research, we can´t separate the scientist from the personal view. The importance of personal motivation needs to be considered in presenting this thesis. Initially, we felt a need to increase knowledge about the Sea culture and its relationship with the fishing activities. The general feeling was that "something was missing" and that there was an overvaluation of biological issues and undervaluation of socio-cultural issues in fisheries management. Thus, there was the aspiration to establish a multidisciplinary framework to contribute to the “correction” of this bias.

Sesimbra became a possible study case due to the existence of a strong emotional attachment to this fishing community, a familiarity with its people, the beach, the streets and the “community personality”. During the thesis planning, the conflicts with Sesimbra´s fisherman generated by the creation of the Professor Luiz Saldanha Marine Park (LSMP) became “the issue” to study. The personal conviction that the socio-cultural approach could bring benefits to everyone involved in the process produced a sort of "thesis-mission": to work in a Marine Protected Area (MPA) considering Environmental, Social, Economic and Cultural aspects.

Apart from the personal motivation, there was a scientific motivation related with the importance that Marine Protected Areas have for fisheries management plans, in particular for Portugal. The current form of how you think and apply nature conservation led us to wonder if this has been done in the best way and with better results. In fact, and given that we live in the ever-changing world, we question why we do nature conservation. We argue that often the arguments that are already accepted by society as sure need to be questioned and rethought to realize more deeply why we defend it, like Adams (2004) and Vaccaro *et al.* (2013) did.

Colcester (2003) tells a story of the nature conservation going to ancient Greece where the wild forces were dominated for female characteristics, like the amazons, against the masculine order of the civilization. There was the same rational in the roots of Judeo-Christian traditions where “man was given dominion over the beasts” (:1). For this author, this was applied with the civilized man against the “chaotic wilderness peopled with savages” during the European Middle Age and with the civilized Christian missionaries against indigenous peoples, like the society had a political imperative to domesticate the wild and “these precepts endure to this day” (:1).

Against this idea, in late XIX century there was “a new tradition of wilderness as a refuge from the ills of civilization, as something to be preserved for the recreation of the human spirit” (Colcester, 2003:2). This idea culminates in the creation in 1872 of the 1st natural park in the United States of America, the Yellowston Natural Park. This “notion that nature and human society are inherently antagonistic and incompatible rationalises the intense sense of alienation” (Colcester, 2003:3). It was an inspiration for the contemporary environmental activism (Adams & Hutton, 2007:152).

Thus, nature conservation became a global concern with the increasing of the protected areas (national parks, nature reserves, etc.) turning into one characteristic of the modern nation state (Jepson & Whittaker, 2002:130). These territorial exclusionary policies turn into a key cultural element of the relationship that dominantly urban Western societies develop with nature since the end of the XIX century (Vaccaro *et al.*, 2013:256). They became the centrepiece of nature conservation policy spread across the globe (Adams, 2004:3).

We live in a neoliberalist world for about two decades (Jun, 2013:16). As Buscher (2013:13) said it “is at the same time an ideology, a politics, a discourse, a system of rules and regulations, and much more”. However it is very difficult to define it (Mudge, 2008). According to Boas & Gans-Morse (2009), the neoliberalism is often associated with a radical form of market fundamentalism. In this scenario, researchers, managers and stakeholders start thinking in terms of the economic sustainability and long-term viability of each conservation policy (Vaccaro *et al.*, 2013:258) and thus appear the concept of Neoliberal Biodiversity Conservation. Igoe & Brockington (2007) have been

studying the current Neoliberal Biodiversity Conservation and defined its big implication for the transformation of the natural resources into a commodity to be traded on the world economic market.

According Santamarina (2008:149), the environmental crisis brings to the agenda the irresponsibility of our beliefs, assuming a break in the modern myth of absolute domination of nature. Since the 1970s, the attention to the human dimensions of conservation has increased significantly (Adams & Hutton, 2007:150). The attention was noticed during the 1980s in terms of policies and the missions of several major international conservation organizations (Bottril *et al.*, 2014:2). These started to promote and implement a large number of initiatives aimed at enhancing the benefits of nature conservation for populations at both local and wider scales, like integrated conservation and development projects, community-based natural resource management, community conservation and so on (Bottril *et al.*, 2014:1). This change resulted in a widespread shift in the discourse and practice of conservation ideology with regard to the acceptance of human use and housing within protected areas and they are now to be viewed more as an asset for conservation than a threat, with important capacity to build on, particularly given the often limited state resources for managing protected areas (Swiderska *et al.*, 2008:viii). In terms of governance, this meant a devolution jurisdiction of the central authorities to local partners, partly through co-management, or fairly as community-based conservation (Vaccaro *et al.*, 2013: 257).

Different kinds of protected areas, such as the MP) in Brazil studied by Gerhardinger *et al.* (2009:154), are using different types of local knowledge for different management approaches (top-down vs. bottom-up). The combination of scientific and local approaches can both build partnership and community consensus and at the same time complement and evaluate each other (Moller *et al.*, 2004). They can as well widen the range of strategies available to stakeholders (Bjørkan, 2009:25). This potential outcome has been increasingly recognized (Thornton & Scheer, 2012:1).

Berkes (2004:629) stressed that ‘‘knowledge is power, and the use of local and traditional ecological knowledge is a mechanism for co-management and empowerment’’. Several studies pointed that empowerment is a consequence of the

local knowledge engagement in protected areas management (Davis & Wagner, 2003; Gerhardinger *et al.*, 2009:154). Empowerment, according to Bjørkan (2009:24) is defined as "the enlarged capacity of individuals to change the material world and to transform the conditions of their own actions", which is also supported by. Giddens (1999). It is what many indigenous people and local communities urgently need for their development, rather than just money: political and scientific empowerment (Gari, 1999:12).

***

Our case study is located in Portugal which has a national maritime area 13 times bigger than its terrestrial area and the Exclusive Economic Zone (EEZ) is the largest in the European Union (EU) (EU, 2013)[2]. Portugal has one of the highest per capita fish consumptions (about 61.5 kg *per* capita/year for the 2008-2010 average) in Europe, only surpassed by Faroe Islands and Iceland (NMFS, 2012)[3]. However, the country has not been able to avoid a negative balance of fisheries products due to captures decrease and fish imports increase (Anon., 2004). This can be related with a very important traditional consumption of codfish which was captured by the Portuguese fleet in international accessible waters, situation that changes after the establishment of 200 nm EEZ (Coelho *et al.*, 2011). In addition, the type of fleet that operates in our waters since most of the fishing activity is undertaken by an artisanal fleet where 85% of the boats have less than 5 GTs (gross tonnage), 28% of which with no motor (DGPA, 2012). Such a fleet, of many small boats fishing close to shore, is enormously important for coastal communities but does not catch enough to supply the needs of the population at the national level. Low catches also derives from the nature of our shores, with a narrow continental platform and no permanent upwelling, resulting in productions far more reduced than in other areas of the North Atlantic such as the North Sea or the Canadian shelf.

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[2] Eurocean website - Available at http://www.eurocean.org/np4/80.html (accessed April 15, 2013).

[3] Available at http://www.st.nmfs.noaa.gov/Assets/commercial/fus/fus12/08_percapita2012.pdf (accessed April 15, 2015).

According to Nunes (2008), the decline of Portuguese fisheries had been reported for centuries. The author gives the example of works, such as "*Memória sobre a Decadência das Pescarias em Portugal*" by Lobo de Lacerda (1812) and "*Portugal nos Mares*" by Oliveira Martins (1889) where the ruin panorama is constant. According to Moniz & Godinho (2000), the continuous deterioration of natural resources and fish stocks has not been avoided due to the excessive technocratic nature of the decision processes. Thus, there are several issues that contribute for this situation, such as lack of social dialogue, lack of institutional coordination between the public administration, unions, academia, researchers and producers, gaps in the professional training, weak social status of fishermen and fast changes in consuming habits (Moniz & Kovács, 2000).

Resource exploitation must be based on biologic and socio-economic sustainability and management strategies aiming at sustainable fisheries are an important contribution towards social cohesion (Anon., 2001). Thus, management of marine resources must be addressed through a multidisciplinary approach. This is particularly important in small scale fisheries with a strong cultural and social importance, such as Sesimbra.

In 2005, the Arrábida Natural Park Development Plan (POPNA) was approved, aiming at protecting the natural values of the Arrábida area (land and coast) and regulating all the different uses. According to Gonçalves *et al.* (2003), the high level of exploitation of natural resources and the uncontrolled proliferation of leisure activities became threats to LSMP, the marine protected area of the Arrábida Natural Park (ANP). This top-down process generated conflicts mainly with the local fishermen who rejected the imposed fishing restrictions and claimed not having been involved in the decision making process (Vasconcelos *et al.*, 2013).

Understanding the perceptions of the traditional users of the LSMP, in particular the fisherman, is important for conducting processes leading to the establishment of other MPAs, and in 2008, the MARGov project[4], MARGov – Collaborative Governance of

[4] Available at http://margov.isegi.unl.pt/ (accessed April 5, 2013).

the Protected Marine Areas, aimed at the development of a collaborative model of governance for LSMP by a participatory process (Vasconcelos *et al.*, 2012). This project was the recipient of the Prize Calouste Gulbenkian Foundation / Lisbon Oceanary: “Sustainable Governance of the Oceans”. Moreover, it dealt to the already installed conflict creating dialogue platforms among the various parts (Vasconcelos *et al.*, 2013). The work developed in this thesis was largely integrated in the MARGov Project.

1.2 Research objectives

The general objective of this research was to identify the fishing community perception related to the MPA and its integration in the participatory process to create local empowerment, in the prospect of maintaining or progressing towards sustainability.

The specific objectives were:

1. A reflection about the MPA in a neoliberalist world

   Given the neoliberal global world in which we live and its big influence in the way that we look to nature, we analyse it based on LSPM case study, to examine its dynamic and the reasons for conservation of nature in a changing environment.

2. Participatory process in a MPA

   The MARGov project was built to answer to several conflicts between the community and the LSMP managers. To reach to participatory process it was necessary to engaged not only the fishermen but also managers themselves as well as the entire community and others institutions with responsibilities. For this, the methodology was developed in an iterative and adaptive way.

3. Identification of the Fishing Community perception and knowledge related to the situation

   We studied the fishing community perception of the MPA process (such as negotiations, implementation, protests, conflicts and day-to-day routine). In this study, we employed a mixed methodological approach involving visits, enquiries, interviews, participant-observation, and formal and informal conversations with people and institutions that use the LSMP area, to understand which knowledge was integrated in the participatory process and the empowerment created.

4. Analysis of co-management as a way for marine sustainability

   To conclude we examined if co-management is a real solution for the marine sustainability and the community empowerment and its social and political implications in the Portuguese framework.

This research examines how a fishing community, established for centuries, deals and reacts to the management of a public space that imposes rules and restrictions on its use, with the objective of preserving its natural values. Therefore, for the construction of our research question, it was important to take into account three issues raised by Vranjes (2006):

- Who has the legitimate right to control and govern a certain local area?
- Who has the right to create spatial policy that affects a certain local space and community?
- What should be the appropriative division of the decision-making power between the local community on the one hand and the state (and its institutions) on the other?

Thereby, the research question that served as a guideline to this study was:

How can the socio-cultural characteristics of a fishing community be used to empower it, in a MPA participatory process?

This research question was applied in the context of the fishing community of Sesimbra and the existent conflict with the LSMP and POPNA administrations, deriving from the implementation of restrictions to traditional users.

1.3 Thesis structure

Overall, this thesis was designed as shown in Figure 1.1. The two main key-points are the fishing community and the MPA, i.e., we studied its relationship from the community perspective.

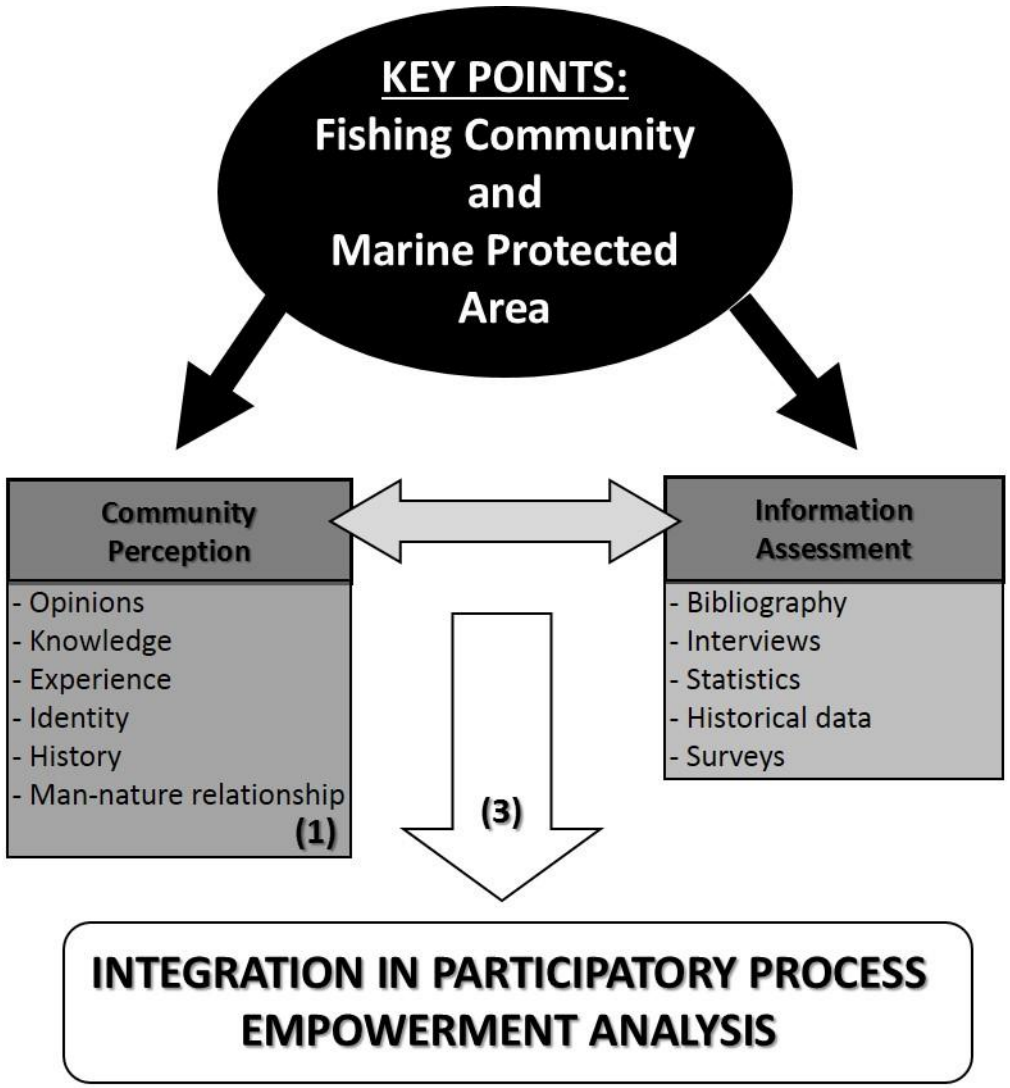

Figure 1.1 - Thesis overview.

The thesis was designed through (1) the identification of perception related to the situation, (2) analysis of the information obtained through cross checking with the existence data and (3) integrated analysis of all components.

The final document of this thesis was divided into 3 parts and into 7 different chapters, structured in paper-style format, suitable for publication with the exception of Part I (Thesis framework) and III (Conclusions), Chapters in Part II have their own Introduction, Methods, Results, Discussion and References sections. As such, some repetition is likely to occur. Following is the rational of the thesis structure:

Part I: Thesis Framework

- Chapter 1: Introduction – it is an explanation of “why” and “what” of this thesis through a presentation of the global rational. All the concepts presented will be developed through the thesis.
- **Erro! A origem da referência não foi encontrada.** Methodology overview – it i s a description of the thesis methodology.

Part II: The Studies

- Chapter 3: How do we do marine nature conservation – the case of the Luiz Saldanha Marine Park, Portugal
- Chapter 4: MARGOv – building social sustainability
- Chapter 5: MARGov - Setting the ground for the governance of marine protected areas.
- Chapter 6: Knowledge for empowerment: The role played by stakeholders’ knowledge within the MARGov project

Part III: General Discussion

- **Erro! A origem da referência não foi encontrada.** Major conclusions and f indings– it is the global discussion and findings from the papers with respect to the extant research literature

1.4 Limitations of the study

The research work was developed in an adaptive process. The participative methodology and the anthropological approach became complementary but it was a difficult process at the beginning. Such different fields created a wide working area with possible lacks in some areas, like Local Ecological Knowledge (LEK) analysis. This

type of approach would have justified further studies and collection of more specific data.

Like Thornton & Scheer (2012) said, a strong community/researcher relation can be one of the challenges to a successful collaboration in this participative and empower process. The thesis followed such a way, often exceeding the scientific structure plan, because this type of methodology needs long time and high availability to achieve results.

References

Adams M. (2004). Negotiating Nature: Collaboration and Conflict Between Aboriginal and Conservation Interests in New South Wales, Australia, Australian Journal of Environmental Education, 20(1): 3-12. . Available at http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1427&context=scipapers (accessed April 2, 2015).

Adams W.M. & Hutton J. (2007). People, Parks and Poverty: Political Ecology and Biodiversity Conservation. Conservation & Society, 5:147-83. Available at http://www.conservationandsociety.org/temp/ConservatSoc52147-5432978_150529.pdf (accessed April 3, 2015).

Anon. (2004). *Relatório da Comissão Estratégica dos Oceanos – O Oceano: um desígnio nacional para o século XXI: parte II – análise e propostas*. Presidência do Conselho de Ministros, Lisboa. 330 pp..

Anon. (2001). *Pescas e Aquicultura em Portugal: evolução das qualificações e diagnóstico das necessidades de formação*. INOFOR. Lisboa. 169pp.

Berkes F. (2004). Rethinking Community Based-Conservation. Conservation Biology, Vol. 18, No.3: 621-630. Available at http://www.tnrf.org/files/E-INFO_CONS_BIOL_Berkes.F_2003_Rethinking_Community-based_Conservation_0.pdf (accessed April 3, 2015).

Bjørkan M. (2009). Putting mpas to work: A Mexican Case Study on Community Empowerment. MAST 2009, 8(1): 11-31. Available at http://www.marecentre.nl/mast/documents/MastVol8-1_def_Bjorkan.pdf (accessed March 7, 2013).

Boas T.C. & Gans-Morse J. (2009). Neoliberalism: From New Liberal Philosophy to Anti-Liberal Slogan. Studies in Comparative International Development, 44(2): 137-161. Available at http://people.bu.edu/tboas/neoliberalism.pdf (accessed April 3, 2015).

Bottrill M., Cheng S., Garside R., Wongbusarakum S., Roe D., Holland M.B., Edmond J. & Turner W.R. (2014). What are the impacts of nature conservation interventions on human well-being: a systematic map protocol. Environmental Evidence, 3: 16. Availabe at http://www.environmentalevidencejournal.org/content/pdf/2047-2382-3-16.pdf (accessed April 3, 2015).

Buscher B. (2013). Transforming the Frontier: Peace Parks and the Politics of Neoliberal Conservation in Southern Africa. Duke University Press. Durham. 312pp.

Coelho M., Filipe J., Ferreira M. & Lopes R.J. (2011). Socio-economics of Portuguese cod fisheries: past, present and perspectives for the future. International Journal of Latest Trends in Finance & Economic Sciences, Vol-1, No. 3: 111-119.

Colchester, M. (2003). Salvaging Nature: Indigenous Peoples, Protected Areas and Biodiversity Conservation. World Rainforest Movement. Uruguay. 136. Available at http://www.wrm.org.uy/oldsite/subjects/PA/texten.pdf (accessed April 2, 2015).

Davis A. & Wagner J.R. (2003). Who Knows? On the Importance of Identifying "Experts" When Researching Local Ecological Knowledge. Human Ecology, Volume 31, Issue 3: 463-489. Available at http://www.msvu.ca/site/media/msvu/Who%20Knows.pdf (accessed April 3, 2015).

Garí, J.A. (1999). Biodiversity Conservation and Use: local and global considerations. Science, Technology and Development Discussion Paper No. 7: 19. Available at

http://archives.cerium.ca/IMG/pdf/biodiv_and_use_local_and_globa_Gari.pdf (accessed April 3, 2015).

Gerhardinger L.C., Godoy E.A.S. & Jones P.J.S. (2009). Local ecological knowledge and the management of marine protected areas in Brazil. Ocean & Coastal Management, Volume 52, Issues 3–4: 154–165. Avilable at http://www.sciencedirect.com/science/article/pii/S096456910800166X (accessed March 29, 2015).

Giddens A. (1999). Runaway World: How Globalisation is Reshaping Our Lives. Profile Books. 104pp.

Gonçalves E., Henriques M. & Almada V.C. (2003). Use of a temperate reef-fish community to identify priorities in the establishment of a marine protected area *In:* Beumer J.P., Grant A. and Smith D. (Eds). Aquatic Protected Areas: What Works Best And How Do We Know? Proceedings of the World Congress on Aquatic Protected Areas. Cairns, Australia – August 2002: 261-272.

Igoe J. & Brockington D. (2007). Neoliberal Conservation: A Brief Introduction. Conservation & Society, 5: 432-49. Available at http://www.conservationandsociety.org/temp/ConservatSoc54432-6431901_175159.pdf (accessed April 3, 2015).

Jepson P. & Whittaker R.J. (2002). Histories of Protected Areas: Internationalisation of Conservationist Values and their Adoption in the Netherlands Indies (Indonesia). Environment and History, 8: 129–172. Available at http://www.eci.ox.ac.uk/publications/downloads/jepson02-histories.pdf (accessed April 2, 2015).

Jun M. (2013). Governing Marine Protected Areas (MPAs) in California: Analysis of the MLPA Implementation process. PhD Thesis. University College London, Department of Geography. 426. Available at http://www.homepages.ucl.ac.uk/~ucfwpej/pdf/Minsuk_Jun_MLPA_PhD_Thesis.pdf (accessed March 25, 2015).

Moller H., Berkes F., Lyver P.O. & Kislalioglu M. (2004). Combining science and traditional ecological knowledge: monitoring populations for co-management. Ecology and Society, 9(3): 2. Available at http://www.ecologyandsociety.org/vol9/iss3/art2/ (April 3, 2015).

Moniz A.B. & Godinho M.M. (2000). *Cenários prospectivos para as pescas: resultados da aplicação do métodos Delphi In:* Moniz A.B., Godinho M.M. and Kovács I.(Organizadores). *Pesca e pescadores: futuros para o emprego e os recursos*. Editora Celta: 24-42.

Moniz A.B. & Kovács I. (2000). *Comunidades dependendentes das pescas: mudança socioeconómica e desenvolvimento de estratégias de planeamento In:* Moniz A.B., Godinho M.M. and Kovács I.(Organizadores). *Pesca e pescadores: futuros para o emprego e os recursos*. Editora Celta: 11-23.

Mudge S.L. (2008). What is neo-liberalism? Socio-Economic Review, 6: 703–731. Available at http://ser.oxfordjournals.org/content/6/4/703.full.pdf+html (accessed April 3, 2015).

Nunes F.O. (2008). *Dois Séculos de Arte de Xávega: Capitalismo, Decadência e Organização do Trabalho In:* Nunes O.F. (Coord) (2008). *Culturas Marítimas em Portugal*. Âncora Editora. Lisboa: 123-151.

Santamarina, B. (2008). Antropología y medio ambiente. revisión de una tradición y nuevas perspectivas de análisis en la problemática ecológica. Revista de Antropología Iberoamericana, 3: 143-184. Available at http://www.redalyc.org/pdf/623/62330203.pdf (accessed April 3, 2015).

Swiderska K., Roe D., Siegele L. & Grieg-Gran M. (2008). The Governance of Nature and the Nature of Governance: Policy that works for biodiversity and livelihoods. IIED. Biodiversity and Livelihoods Issue Papers 08. 184. Available at http://pubs.iied.org/pdfs/14564IIED.pdf (accessed April 3, 2015).

Thornton T.F. & Scheer A.M (2012). Collaborative Engagement of Local and Traditional Knowledge and Science in Marine Environments: A Review. Ecology and Society 17(3): 8.

Vaccaro I., Beltran O. & Paquet P.A. (2013). Political ecology and conservation policies: some theoretical Genealogies. Journal of Political Ecology, No., 15: 255-272. Available at http://jpe.library.arizona.edu/volume_20/Vaccaro.pdf (accessed April 2, 2015).

Vasconcelos L., Caser U., Pereira M.J.P., Gonçalves G. & Sá R. (2012). Journal of Coastal Conservation, 16: 523–530.

Vasconcelos L., Pereira M.J.P., Caser U., Gonçalves G., Silva F. & Sá R. (2013). MARGov - Setting the ground for the governance of marine protected areas. Ocean & Coastal Management, 72: 46-53.

Vranjes M. (2006). Cultural Landscape and Triglav National Park from “The Native Point of View”: The case of Trenta Valley, Slovenia *In:* Simonic P. (eds). Ethnography of Protected Areas. Univerza v Ljubljani: 71-84.

Chapter 2: Methodology overview

The thesis structure is shown in Figure 2.1, which shows the combination of the work based on interviews and the analysis of regional bibliography and data.

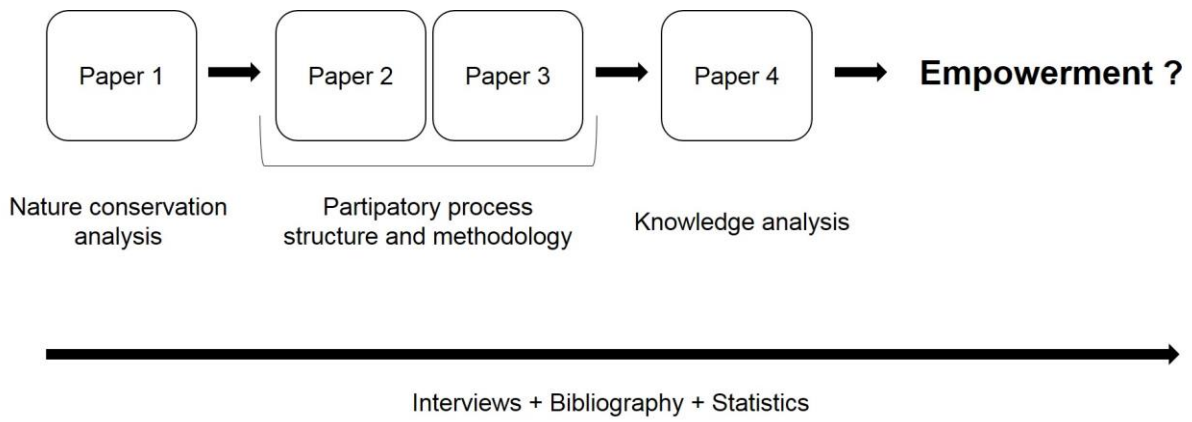

Figure 2.1 - Methodology scheme and relations between the different papers.

The participatory process developed by Project MARGov was the core of this research work and provided a consistent link along the four papers. In addition to the methodologies developed for the participatory meetings (Vasconcelos *et al.*, 2012; 2013), the interviews carried out (before and after the participatory process) were crucial for other types of analysis, such as the neo-liberal perspective and the LEK.

2.1 Mixed methodological approach

During the development of this thesis, it was necessary to take into account several important issues in order to gather relevant information from the main target group: the traditional community of fishermen from Sesimbra. Often fishermen have difficulty in expressing their opinions or perspectives (e.g. practical thinking versus abstract thinking). Moreover, they frequently are tired of standard surveys carried out by other research projects, and therefore do not respond well to these.

All these aspects are usually felt by those who need to work closely to fishermen and had to be taken in consideration in this thesis since there was a need to create an environment of trust and engagement. To create that environment, it was necessary to go beyond the classic traditional methods and select some that could overcome these challenges. For that reason and in order to understand the impact of POPNA

rules on their activities and their lives, it was employed a mixed methodological approach involving visits, enquiries, in-depth interviews, participant-observation, and formal and informal conversations with people and institutions that use the LSMP area.

Through in depth-interviews it was possible to create a trust connection with the interviewee and explore any new issues that may be raised. However, it is important to remember all of the factors that can make the analysis of interview data vary, such as personality, gender, level of familiarity with the interviewees and local culture as a whole, how the resulting data are interpreted, among others factors (Brook & McLachlan, 2005).

To analyse all the information obtained we employed the following procedure:

- identify key points of the data gathered;
- gather the different key-points of similar content in categories which allows us to group the data and,
- build an explanation with the broad groups of data in similar categories.

2.2 Interviews analysis

For the interview analysis we use the content analysis, one of the most common techniques in empirical research carried out by different social sciences (Vala, 2003). This technique has been used to understand the attitudes and values of the authors or persons whom they addressed as well as information about personality, motivations and attitudes of individuals (Vala, 2003).

The main themes focused by the interviewees were identified through an interpretative/phenomenological analysis of interview content. Like Azurro *et al.* (2011:1) to extract data and information from individuals' memory, semi-structured or unstructured conversations between the researcher and a participant are commonly used, a practice commonly called ‘‘oral history’’ which can be studied by narrative analysis.

A narrative analysis is a methodology that recurs to “narrative mode of knowing as an organizing experience with the help of a scheme assuming the intentionality of human

action” (Czarniawska, 2006:7). The same author advocates “narratives explaining deviations are socially sensitive, a form of story whose power does not reside in the difference between fact and fiction is convenient for such sensitive negotiations” (Czarniawska, 2006:9). According to Merrill (2007), people tell stories to themselves and others and, during the telling, they create themselves and each other, and the very social realities in which they live - this is the narrative construction of reality whereby good narratives typically can approach the complexities and contradictions of real life (Flyvbjerg, 2004).

Thus, to achieve desired outcomes, the interviewees are encouraged to tell their own "history" and to express its relationship with LSMP. The information they provided was the focus of our analysis. The fusion of various stories allowed us to build an aggregated, more general portrayal closer to their reality - what is called a "local-history". In this way, the causes of the conflicts were identified, as well as the aspects that the users valued the most in LSMP. The use of this methodology allowed the identification of the most important issues concerning this study i.e., the importance of the LEK in a MPA participatory process.

The analysis of the interviews involved the following steps: (1) transcription of the interview, (2) classification of the text into pertinent units of information and (3) coding and categorization of the pertinent units (categorization analysis). The entire procedure is governed by pre-established and pre-defined categories relating to the interest or value of the text. Once the text had been broken down and coded, different methods of analysis could then be used (Ruiz, 2009). Afterwards, the methodology proposed by Czarniawska (2006) was followed using its interpretation, analysis and deconstruction to put them together as one narrative of the whole process.

2.3 Different phases analyzed

To address the knowledge role we considered two phases (Figure 2.2): the existing conflict before the beginning of the project (Phase I), and the developments caused by the MARGov Project participatory process (Phase II). This allowed us to make the comparison between the two phases, thereby building a better understanding before and after the participatory process.

Figure 2.2 - The differents phases analysed.

In the beginning of the project (Phase I), a key-stakeholders identification was completed for this study. As Kelsey & Mariger (2002) specify, stakeholder identification was accomplished using the snowball technique, which is based in the initial interview, when stakeholders are asked to identify/recommend additional peers (Figure 2.3). The initial list of stakeholders was compiled through exploratory interviews with key participants associated in defining and coping with the MPA (e.g. municipality, MPA management, government authorities, fishers, NGO representatives). Data were collected until there were no new themes emerging from the interviews, indicating that the information saturation was achieved in key knowledge/experience domains.

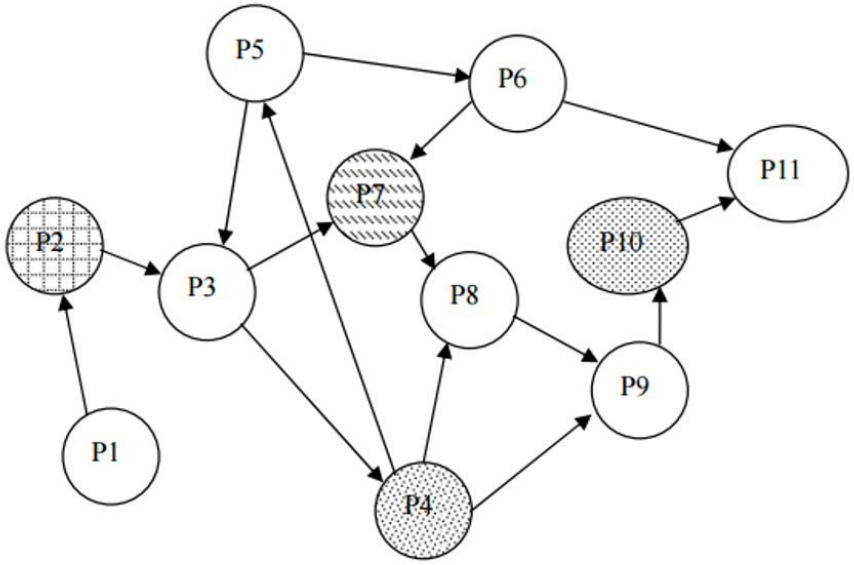

Figure 2.3 - Snowball sampling scheme.
Adapted from Ishak & Bakar (2014).

During Phase I, in order to characterize the conflict and to identify the entities to be involved in the research process, the MARGov team conducted exploratory interviews

(**Erro! A origem da referência não foi encontrada.**) with local stakeholders such as municipal officials, fishers, NGO leaders, and MPA management authorities for the purpose of contextualizing the conflict and to identify additional key informants (Snowball technique). The team completed 15 in-depth interviews within Sesimbra fisheries community in order to document the diversity of experiences and opinions. The intention was to ensure that the participants included users of all fishing gears, as well as fishers with holding different hierarchical positions in the boat within the community and local organizations and age groups. In addition, we conducted 17 semi-structured interviews and informal conversations involving 30 of the key informants that had been identified. These included local personalities, technical experts and representatives of local, regional or national institutions. The information collected through the interviews supported the mapping of the conflicts: type of conflicts, key issues and entities involved in each of them.

During Phase II (post-MARGov project) the objective was to understand the contributions towards the governance made by key stakeholders during the previous phase (**Erro! A origem da referência não foi encontrada.**). This analysis was based on 17 interviews (involving 30 informants) of the most assiduous and participative people. Some of the interviewees had also been selected for Phase I and others gained importance throughout the participatory process.

2.4 Literature review

The first step in data acquisition consisted of a literature review that allowed us to understand the specific characteristics of the *Sesimbra* fishing community, as well as to put in context all the events related to LSMP. This review included not only scientific papers but also technical reports, books, news, blogs, social networks and even, literary sources. The scope of the books read ranged from national to local publications. The first ones allowed us to understand broader issues such as national fisheries, policies for different areas (oceans, fisheries, nature conservation) and different locations, national history and oceans governance. The local books, mostly published by the *Sesimbra* municipality and written by local people (such as António Reis Marques and the philosopher Rafael Monteiro), were a very important value added to the knowledge of the community's roots and substance. Some important

books resulted from academic research as for example Cruz (1966) and Ramos (1982). The news, blogs and social networks analyzed were very important as sources to access and to perceive the different discourses and points of view associated with the LSMP history. In addition, they were also important for establishing some key reference information, such as dates, people involved, event locations and estimate the citizens participation.

Table 2-I - Overview of the interviews characteristics in the two phases of the participatory process.

Characteristics	Phase I	Phase II
Choice of the interviewees	Snowball technique	The most participative in MARGov project
Expected contribution of each group of interviewees to the research	Conflict mapping Stakeholders identification Local Ecological Knowledge	Impact of their participation on a participatory process Knowledge construction
Average time of each interview	Minimum 1h	Minimum 1h
Timing of the interviews	Before the MARGov participatory process	After the MARGov participatory process
Face-to-face interviews	Yes	Yes
Context of the interview script development for each group (Annex I)	Within the MARGov project Same script for this phase	Within the MARGov project Same script for this phase
Type of interviewees (Annex II)	Municipal officials, fishers, NGO leaders, MPA management authorities, local personalities, technical experts and representatives of local, regional or national institutions	Municipal officials, fishermen representatives, MPA management authorities, local personalities, technical experts and representatives of local, regional or national institutions
Number of interviews	22 (involving 32 persons)	17 (involving 30 persons)

Some of the scientific and technical information consulted about LSMP deserve special attention because of its importance to the conceptualization of the study area: MARGov Project reports[5] and papers (Vasconcelos *et al.*, 2012; Vasconcelos *et al.*, 2013); several reports about the LSMP implementation (e.g. Reis *et al.*, 2004); various reports, papers and thesis about LSMP such as Cabral *et al.* (2008), Silveira (2009), Carneiro (2011) and Batista (2014); Biomares Project reports[6] and papers (Horta e Costa *et al.*, 2013a; 2013b) and MAIA Project reports[7] and papers (Stratoudakis *et al.*, 2015a; 2015b). These sources have been particularly important to the perspective expressed herein.

References

Azzurro E., Moschella P. & Maynou F. (2011) Tracking Signals of Change in Mediterranean Fish Diversity Based on Local Ecological Knowledge. PLoS ONE 6(9): e24885. Available at http://www.plosone.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pone.0024885&representation=PDF (accessed March 28, 2015).

Batista M. (2014). Planning and management of Marine Protected Areas: methodological approaches to cope with data scarcity. PhD Thesis. Universidade de Lisboa, Faculdade de Ciências. Lisboa. 195pp.

Brook R.K. & McLachlan S.M. (2005). On using expert-based science to “test” local ecological knowledge. Ecology and Society, 10(2): 3p. Available athttp://www.ecologyandsociety.org/vol10/iss2/resp3/ (accessed March 30, 2013).

Cabral H., Batista M., Baeta F., Alves A. & Costa M.J. (2008). *Avaliação do impacto das condicionantes na Área Marinha do Parque Natural da Arrábida à actividade da pesca comercial e lúdica, à náutica de recreio e ao mergulho*. Relatório Final. Instituto de Oceanografia, FCUL, Lisboa. 242 pp. + Anexos.

[5] Available at http://margov.isegi.unl.pt/ (accessed March 1, 2013).

[6] Available at http://www.projetobiomares.com/ (accessed March 1, 2013).

[7] Available at http://www.maia-network.org/incio (accessed March 10, 2015).

Carneiro G. (2011). The Luiz Saldanha Marine Park: An overview of conflicting perceptions. Conservation & Society, 9: 325-33. Available at: http://www.conservationandsociety.org/article.asp?issn=0972-4923;year=2011;volume=9;issue=4;spage=325;epage=333;aulast=Carneiro (accessed February 7, 2013).

Cruz M.A. (1966). Pesca e Pescadores em Sesimbra: contributo para a narrativa do concelho. Câmara Municipal de Sesimbra. 2ª edition. 191pp.

Czarniawska B. (2006). Narratives in Social Science Research. Introducing Qualitative Methods – series. Sage Publication. 2nd edition. 157pp.

Flyvbjerg B. (2004). Five misunderstandings about case-study research In: Seale C., Gobo G., Gubrium J.F. and Silverman D. (Eds). Qualitative Research Pratice. London and Thousand Oaks, SA. Sage: 420-434.

Horta e Costa B., Erzini K., Caselle J.E., Folhas H. & Gonçalves, E. (2013a) - “Reserve effect” within a temperate marine protected area in the North-eastern Atlantic (Arrábida Marine Park, Portugal). Marine Ecology Progress Series, 481:11-24.

Horta e Costa B., Batista M., Gonçalves L., Erzini K., Caselle J.E., Cabral H.N. & Gonçalves E. (2013b) - Fishers´ behaviour in response to the implementation of a marine protected area. PLOS1, 8(6): e65057.

Ishak N.M. & Bakar A.Y.A. (2014). Developing Sampling Frame for Case Study: Challenges and Conditions. World Journal of Education, Vol. 4, No. 3: 29-35.

Kelsey K.D. & Mariger S.C. (2002). A case study of stakeholder needs for extension education. Journal of Extension, 40(1). Available at http://www.joe.org/joe/2002april/rb2.php (accessed April 4, 2015).

Ramos M.J. (1982). *Memórias dos Pescadores de Sesimbra: Santiago de Sesimbra no início dos Anos Oitenta do Séc. XX*. Sociedade de Geografia de Lisboa, Memórias nº10. Lisboa, 2009.98pp.

Reis C.S., Teigão F.S. & Venceslau T. (2004). *Avaliação da proposta de Plano de Ordenamento do Parque Natural da Arrábida: vol. II – componente Parque Marinho Luiz Saldanha*. Trabalho executado por contrato entre o Instituto da Conservação da Natureza (ICN) e o Instituto Superior de Agronomia (ISA), em colaboração com o Gabinete Coordenador do Programa Finisterra. Lisboa. 44. Available at http://www.repository.utl.pt/bitstream/10400.5/4406/2/REP-PNARRComponenteMarinha_VolII.pdf (accessed October 14, 2010).

Ruiz J.R. (2009). Sociological Discourse Analysis: Methods and Logic. Forum: Qualitative Social Research. Vol. 10, No. 2, Art. 26. Available at http://www.qualitative-research.net/index.php/fqs/article/view/1298/2882#g31 (accessed March 13, 2013).

Silveira C.D. (2009). *A Terra e o Mar: Um estudo sobre as políticas e a actividade de pesca artesanal em Sesimbra sob a perspectiva social*. Master thesis. Faculdade de Ciências Sociais e Humanas da Universidade Nova de Lisboa. 122p..

Stratoudakis Y., Fernándes F., Henriques M., Martins J. & Martins R. (2015ab) – *Situação ecológica, socioeconómica e de governança após a implementação do primeiro plano de ordenamento no Parque Marinho professor Luiz Saldanha (Arrábida, Portugal): I – informações e opiniões dos pescadores*. Journal of Integrated Coastal Zone Management. Available at http://www.aprh.pt/rgci/pdf/rgci-571_Stratoudakis.pdf (accessed March 29, 2015).

Stratoudakis Y., Fernándes F., Henriques M., Martins J. & Martins R. (2015b) – *Situação ecológica, socioeconómica e de governança após a implementação do primeiro plano de ordenamento no Parque Marinho professor Luiz Saldanha (Arrábida, Portugal): II – percepções de utentes*. Journal of Integrated Coastal Zone Management. Available at http://www.aprh.pt/rgci/pdf/rgci-572_Stratoudakis.pdf (accessed March 29, 2015).

Vala J. (2003). *A análise de conteúdo In:* Silva A.S. & Pinto, J.M. (2003). *Metodologia das Ciências Sociais*. Afrontamento: 101-128.

Vasconcelos L., Caser U., Pereira M.J.P., Gonçalves G. & Sá R. (2012). Journal of Coastal Conservation, 16: 523–530.

Vasconcelos L., Pereira M.J.P., Caser U., Gonçalves G., Silva F. & Sá R. (2013). MARGov - Setting the ground for the governance of marine protected areas. Ocean & Coastal Management, 72: 46-53.

PART II – THE STUDIES

Chapter 3: How do we do marine nature conservation – the case of the Luiz Saldanha Marine Park, Portugal

Sá R. & Davis A. *How do we do marine nature conservation – the case of the Luiz Saldanha Marine Park, Portugal*. - to submit in Coastal Management Journal

Abstract

Creating the Luiz Saldanha Marine Park (LSMP) was a top-down implementation process with some political implications. For years the biological importance of the LSMP area had been verified through several scientific studies and important international scientific projects. However, the Sesimbra community which lies within the LSMP did not accept the LSMP and its rules. Historically, fishing was the main activity of the community, with strong connections to its identity construction. Now, tourism and nature conservation are growing in importance. This paper aims to discuss the neoliberal perspective on nature conservation with respect to the creation of a Marine Protected Area case in Portugal, the LSMP. Nature conservation has gained much weight in the neoliberal agenda as a political instrument to advance its interests. Social scientists have isolated the failures of the current nature conservation strategy, as arguing that many protected areas are only "paper parks" because communities embedded in and/or impacted by them do not accept their creation and restrictions. To foster MPA successes it is necessary to stop underestimating the importance of the social component and the engagement of the impacted human community, particularly marine resource harvesters and their families. The protection of a marine area that features a long and complex history of human activity cannot succeed through the imposition of rules and decisions that do not account for the history and include impacted users and communities in all decision-making, implementation, and management processes. Success will not be an outcome from unaccepted and unrecognized processes. Furthermore, the LSMP case underscores the need for careful, evidence-based consideration of the purpose and social implications of environmental protection when ’conservation’ may be more about economic development than preservation of ever changing ecosystems.

Key-words: Marine Protected Area, Neoliberalism, Sesimbra, Fishing Community, Nature Conservation

3.1 Introduction – research problem

3.1.1 MPA in the Neoliberal Agenda

Over the past decades, Marine Protected Areas (MPAs) have been championed as a key approach to mitigate the negative impacts of overharvesting and related ecological damage in marine ecosystems (Dugan & Davis, 1993; Agardy, 1994; Creese & Cole, 1995; Allison *et al.*, 1998; Lauck *et al.*, 1998; Kelleher, 1999; Murray *et al.*, 1999; Palumbi, 2003). In the beginning, MPAs were developed commonly as an extension out from coastlines of some terrestrial protected areas such as national parks or game reserves, therefore as might be expected there are more terrestrial protected areas than MPAs. As Juffe-Bignoli *et al.* (2014:iii) notes:

> *"About 209,000 protected areas (PAs) cover 15.4% of the planet's terrestrial and inland water areas, and 3.4 % of the oceans. 8.4% of all marine areas within national jurisdiction (0-200 nautical miles) are covered protected areas while only 0.25% of marine areas beyond national jurisdiction are protected. In total, 2.2 million square kilometres of land and inland water areas and 2.2 million square kilometres of marine area within national jurisdiction will need to be designated as protected areas to cover 17% of the land and 10% of the marine and coastal areas".*

The scientific community generally argues that more MPAs are needed to protect the world´s oceans, ecosystems and species (Parravicini *et al.*, 2014). However, there is little understanding about the number and scale of MPAs needed to provide effective protection (Carr & Raimondi, 1999; Salomon *et al.*, 2006; Ruckelshaus *et al.*, 2008; Fenberg *et al.*, 2012).

Currently, there is not a commonly accepted definition or measure of MPA success (Segi, 2013). MPA success might be measured with respect to indicators such as the recovery of marine resources and ecosystems, biodiversity, trophic dynamics, species sizes and mobility, degrees of key species habitat dependency, commercial value, and/or local ecological and socio-cultural aspects (Selig & Bruno, 2010; Weeks *et al.*, 2010; Fox *et al.*, 2012; Prada *et al.*, 2014). These last features, local ecological and

socio-cultural aspects, have been observed through attributes such as the development of effective enforcement and compliance by local users and the adoption and internalization of the value of conservation among resource users (Christie, 2004; Christie *et al.*, 2009). Pollnac *et al.* (2001) suggest that MPA success can be assessed by examining the level of coral health, resource abundance perception, physical and organizational capacity, adherence to rules, and community empowerment. So, as Christie (2004) argues, measures of MPA success must be expressive of and capture both biological and social characteristics. This can "…provide an alternative long-term model for continuing the conservation efforts of local resource users, whereas a strict top-down application of rules and procedures frequently results in complete collapse" (Segi, 2013:344).

Nevertheless it is very difficult to confirm a MPA success. Some show limited biological success but it happens mainly when their critical socio-economic considerations are neglected (Leleu *et al.*, 2012). According to Kelleher (1999:xiii), "…socio-economic considerations usually determine the success or failure of MPAs". Some MPAs fail as a consequence of either marginalizing or entirely ignoring community participation (Kelleher, 1999; Christie, 2004; Hamilton, 2012). In many of these instances, while community participation may be specified as a requirement within a "community-based" protocol, community-level involvement was in fact peripheral and devoid of serious intent and substance.

According to Charles & Wilson (2009), the importance of community engagement in the formation, implementation and management of an MPA is indisputable. Failure to engage both local residents and resource harvesters thoroughly and throughout MPA design and implementation processes will almost inevitably result in negative outcomes, uncertain achievements, and in some cases outright failures. Given the impacts on and meanings for effective human communities, successful MPA design and implementation requires community partnership and buy-in. In partnership with the local setting, it is important that MPA design and implementation processes evaluate and account for real world considerations such as local community desire for an MPA within their context; local understandings of ecosystems and their dynamics; local understandings of what interventions may be needed to mitigate and reverse damages; local roles and contributions to determine MPA location, scope and scale;

and the degree and importance of local involvement in MPA implementation and management, including collaboration and 'voice' in all activities associated with measuring MPA impacts, success and limitations. Since the local community is centrally situated and impacted, the MPA success will depend in large measure on how thoroughly, effectively and sincerely the importance of community social values and practices are acknowledged and incorporated in the design of and engagement with the MPA.

MPAs have received some critical attention as a tool of nature conservation embedded in a relationship with the neoliberal agenda (Jun, 2013). Since 1980s in particular, this has "(...) coincided with a loss in faith that states could effectively manage their own economies" (Brondo & Bown, 2010:92).

According to Buscher & Whande (2007), the trends in nature conservation and its management are mostly influenced by global political and economic developments. Brondo & Bown (2010:92) defines "green neoliberalism" as a set of "(...) institutions, discourse, and practices that facilitate objectification and commodification of nature's values…[making] efficient use and exchange of 'natural capital'. In addition, "(...) neoliberal discourses often present the world as a pie that can grow bigger and bigger until everyone can have a piece" (Igoe & Brockington, 2007:434). One contemporary consequence of the linkage between nature conservation and neoliberal imperatives is the perspective that considers all natural resources as ecosystem services wherein there is an emphasis on determining the monetary values of nature (Jun, 2013), what McAfee (1999:133) has labelled as "selling nature to save it" because nature can only be "saved" through their submission to capital and its subsequent revaluation in capitalist terms (Buscher *et al.*, 2012:4).

Conceptually, one solution for solving the disconnection between local-level conditions and needs with nature conservation through means such as MPAs is found in situating local-level social and economic priorities as critical in the development, implementation and management of the MPA. To accomplish this outcome it is essential that affected communities be empowered as full partners and collaborators in MPA definition and implementation and management of the MPA be adjusted to value and privilege local social realities. So, many social scientists argue that MPA success is largely

dependent on local participation in MPA design and its management processes (Kelleher, 1999; Christie, 2004; Hamilton, 2012). Within this there is also recognition and debate concerning the need for creative reconciliation of local-level interests and participation with important considerations such as transboundary attributes and ecosystem-based determinations of MPA scales (Charles & Wilson, 2009).

In addition, researchers such as Segi (2013) assert the importance of taking into account "environmental subjectivity" through creation of a flexible MPA model which will better account for each local context as a means of reconciling resource conservation needs and goals with social justice. As Igoe & Brockington (2007:436) argue, in reality there can only be models and approaches that include "(...) uncertainties, paradoxes and complex inequities of undertaking conservation".

3.1.2 Paper objectives

This paper examines and discusses nature conservation as a political instrument largely concerned with advancing neoliberal imperatives. This focus in animated through an analysis of the history and socio-economic interests associated with the development of a Portuguese MPA, the Luiz Saldanha Marine Park (LSMP) on the Arrábida coast of Portugal. In this way, we documented and examined the effects for nature conservation and local conditions of top-down decision-making by government officials embedded within a neoliberal worldview and preferences. Through this approach, we examine the extent to which the MPA approach offers prospects for creatively and effectively addressing the challenges and needs for marine habitat nature conservation.

3.2 A Note on methodology

After review of the extant literature, the research proceeded to identify key stakeholders. As Kelsey & Mariger (2002) specify, stakeholder identification was accomplished using the snowball technique; that is, stakeholders were asked to identify/recommend additional persons they thought knowledgeable and/or experienced. The initial list of stakeholders was compiled through exploratory interviews with key informants (e.g. municipal officials, MPA managers, local

authorities, marine resource harvesters, and NGO personnel). Data were collected until no new themes emerged from the interviews.

After identifying the main themes that interviewees focused on, the concerns they expressed were examined through an interpretative/phenomenological analysis of the content of in-depth interviews. Thus, the interviewees were encouraged to tell their own "history" from their own perspective and to express what they know best. The information they provided was the focus of the analysis. The fusion of various stories allowed us to build a general and comprehensive version encapsulating their "local-history". This way, the causes of the conflicts were identified, as were the features of these most valued by and noteworthy for the various users. This isolated the most important issues of concern to this study, i.e. the factors informing MPA success as a conservation tool in a neoliberalist world.

As in Carneiro (2011), the data collected for this study were exclusively qualitative. So, a qualitative analysis was carried out, based on (1) semi structured and in-depth interviews, (2) observation of the participants, (3) document analysis and (4) discourse analysis.

3.2.1 MARGov project - Collaborative Governance of Marine Protected Areas

The data relayed here were gathered during the development of the MARGov project - Collaborative Governance of Marine Protected Areas[8] (Vasconcelos *et al.*, 2012; Vasconcelos *et al.*, 2013). MARGov proposed to build a Model of Collaborative Governance for MPAs, using LSMP as a case study.

In order to characterize the conflicts and to identify important actors, the MARGov team conducted interviews with key stakeholders between February and June 2009. The team completed 15 in-depth interviews within the Sesimbra fisheries community in order to capture as thoroughly as possible the diversity of experiences and opinions. The intention was to ensure that the participants included users of all fishing gears, as

[8] Available at http://margov.isegi.unl.pt (accessed March 1, 2013).

well as fishers with different hierarchical positions within the fishery and age groups. In addition, we completed 17 semi-structured interviews and had informal conversations involving 30 informants that had been identified. These included local personalities, technical experts and representatives of local, regional or national institutions. The information collected enabled the mapping of the conflicts, e.g. types of conflicts, key issues and entities involved in each of them. Mapping next further enabled the MARGov project's participative process.

The analysis of the interviews involved the following steps: (1) transcription of the interview, (2) brake down or fragmentation of the text into pertinent units of information and (3) coding and categorization of the pertinent units (categorization analysis). The entire procedure is governed by pre-established and pre-defined categories related to the interest or value of the text, how to break it down and, most importantly, how to classify the fragments. Once the text had been broken down and coded, different methods of analysis can then be used (Ruiz, 2009).

3.3 Research case study: Sesimbra and the Luiz Saldanha Marine Park

3.3.1 Sesimbra identity

"The trilogy, Sea-Fishing-Fishermen, will persist as cause, effect and symbol of the old "piscosa".

Marques (1993)

Archaeological records from the Palaeolithic to the Roman and Arabic occupation, testify that fishing in Sesimbra has been exercised regularly and continuously for at least 2000 years (Monteiro, 1973; Vieira, 2008). In 1165 Sesimbra was retaken from the Arabs by king Afonso Henriques (Arsénio, 2001). Sesimbra contributed actively to the Portuguese expansion of the XV and XVI centuries by acting as a "school" for sailors and navigators (Monteiro, 1960). In the XVI century, almost half of Sesimbra population emigrated (Ramos, 1982). Sesimbra´s contribution was recognized through royal permissions such as the authorization to cut timber from neighbouring forests, allowing the development of the shipbuilding activity (Monteiro, 1960; 1973). In the XIX

and XX centuries Sesimbra fishermen went to the seas again, journeying to the African coast as fishing masters and shipbuilders and out to Newfoundland, Greenland and Baffin Island (Monteiro, 1960).

Artisanal fishing goes beyond being a simple economic issue (Silveira, 2009). In addition to ensuring the livelihoods of those who depend on it, fishing is a core aspect of the Sesimbra people's identity (Ribeiro, 2000).

Fishermen are visible and a dominant feature of the human landscape on the streets of Sesimbra. For instance, a typical scene in Sesimbra's streets in the 1980s and early 1990s would involve people preparing long lines, likely to fish deep-water Black scabbard. At that time, vacationers had to share the town with these sorts of activities. In addition, the fishermen's warehouses were everywhere, with fishermen working to the sound of loud music, fish drying in the sun, and fishing gear lying everywhere.
Life in such a setting requires a set of accepted standards for individual behaviour in relation to the group, within the community, in the fishing team and between fishing teams, resulting in the development of social ties, codes and practices, both at sea and on land (Ramos, 1982). These ties and relations are central to coping with a life that is extraordinarily hard and not economically rewarding, (Ramos, 1982). Ribeiro (2000) says despite the difficult parts of fishing it has also good things like freedom and greatness.

To understand all this fishing community is important to look to Cruz (1966), who states that Sesimbra people know their worth. They do not have inferiority feelings, and have a sense that everything they have belongs to them by right, without ambition or selfishness. They are rude, sincere and loyal. A key aspect in their lives is a strong sense of honour (Ferreira, 2000). For them it is a value above everything else (Ramos, 1982).

3.3.2 POPNA: The development of Arrábida Natural Park plan

After many years of sustained interest in the region's biodiversity, the Arrábida Reserve was created and declared on August 16, 1971. Following this, there were several civil attempts to protect the Arrábida coastline. For instance, in November 2, 1973, Pierre

Clostermann[9] said that: "…between England and Gibraltar, the Sesimbra sea is an exceptional place with exceptional conditions. Unfortunately, the other bays in Europe can no longer be saved. So, save this one!" (Reis *et al.*, 2004:3). This statement alone motivated local organization for coastline Arrábida protection, headed by Rafael Monteiro. This initiative and leadership pulled together fishermen, researchers and several regional personalities for the purpose of achieving coastline protection. In fact, this important local philosopher was able to mobilize a nationwide campaign, including mass media and many prestigious personalities, who supported and endorsed the project. This proposal was formally delivered to the Government in January, 1974 (Marques, 1993). However, despite all the attention given to the marine zone, the Arrábida Natural Park (ANP) was created without including coastline protection.

In January 9, 1980, the ANP preliminary development plan was approved, defining several specific areas in accordance with their natural importance and in 1988, the ANP was integrated in the European Network of Biogenetic Reserves. Since August 28, 1997 it became part of the Natura 2000 network.

During 1998, United Nations declared the International Year of the Ocean and happened the Lisbon World Exhibition, there was a series of political movements developed to value the national and international seas. On the October 14, 1998, the ANP was reclassified by the Portuguese government and the maritime public field from Sesimbra to Praia da Foz became ANP with the name of Luis Saldanha Marine Park. The creation of the LSMP called for a development plan to all this area, terrestrial as well, and it called the Arrábida Natural Park Development Plan (POPNA).

As ANP neared its 25 year mark and a daily newspaper published an article entitled *"*Marine Park is the Arrábida new battle*"* (Publico, July 28, 2001). This article revealed once again that implementing the POPNA was not an easy task. In June 2002, POPNA's work ended, as disclosed by the newspapers, and in December 17, 2002, the Quercus ENGO accused the government of bending to the pressures from Sesimbra municipality to stop the POPNA**.**

[9] A Belgian aviator, author of books on fishing and a member of the International Game Fish Associations (Reis *et al.*, 2004).

Public discussions of POPNA were scheduled between February 3 and June 23, 2003. These took place in concert with many protests and much confusion throughout Sesimbra, Setúbal and Palmela. On June 2003 the POPNA final draft report was released. Between October-November 2003, there was a moment of indecision concerning protected areas. In fact, in January 2004, the *Secretaria de Estado do Ordenamento do Território* decided to hire *Instituto Superior de Agronomia* (ISA) to evaluate the POPNA. During Spring-Winter 2004 several problems emerged. Among them, there were the absence of a development plan that threatened the classification of Arrábida as a protected area and some controversy concerning irregularities and house demolitions as reported by the newspapers. In October 2004 the POPNA evaluation by ISA was finished. Its major conclusion was that there should have been more public participation and community involvement in decision making. After four months, in February 28, 2005, the three municipalities – Setubal, Sesimbra and Palmela - demonstrated in the media their opposition to POPNA.

The Portuguese Government approved the POPNA in June 5, 2005, during an Extraordinary Ministers Council in Sagres in the World Environmental Day. Starting on the same day, there were several protests organized by the Sesimbra fishing community against the POPNA approval as well as meetings involving the executive and Sesimbra fishermen. The LSMP issues were not the only POPNA conflicts but also the fact that on land there was a lot of controversy concerning matters such as demolition, quarries and co-incineration. The *Secretários de Estado do Ambiente e Pescas* analyzed the fishermen's proposals for altering POPNA**.** On June 9, 2005 the LPN and Quercus ENGOs released a statement supporting the POPNA and arguing for fishermen financial compensation. Then, the law that regulates POPNA was published (on August 23, 2005). The summer of 2005 featured many protests, especially organized by fishermen, which culminated with the harbour blockade on September 14, 2005. On September 20, 2005, the Environment Minister had to explain the POPNA in the Parliament, and the local municipal elections on 9 October 2005, saw protests featuring black armbands. The summer of 2006 was "hot" again, featuring a boating protest between Portinho da Arrábida and Anicha Stone that attracted much media coverage and which led to an interim injunction by the *Supremo Tribunal*

Administrativo de Lisboa to suspend POPNA (delivered in September 4, 2006). One year later (September 1, 2007), the court assumed an opposing opinion.

What was a bottom-up process, with the local personalities and fishermen movements, to protect their marine zone transformed into a top-down political action inserted in a well-defined policy Agenda with strong popular contestation creating serious problems in terms of dialogue or collective work as well as appropriation of this MPA. Reflecting this perspective, one key-informant observed that “the Berlin Wall fell and now they built another in Sesimbra” (the LSMP). Other told us that during the popular movements against LSMP the Prime Minister Jose Socrates said that they are only 300 fishermen which reflect their sense of being less important throughout the process regarding policies that do not involve them. The most interesting quality about this is that despite all dispute, the fishermen were not against LSMP. However most of the fishermen said they do not understand its restrictions (e.g. "I do not understand the reasons to prohibit longline fisheries") and even species to be protected (e.g. “The species protected by the LSMP don´t have commercial interest”). Several fishermen also refer to the lack of dialogue in the public discussion phase (e.g. “They tried to fool us”) which extended to the implementation (e.g. "Nobody listened to us") and enforcement of established rules (e.g. “The LSMP managers are very radical and lacking in sensitivity”).

On June 19, 2009, the MARGov project had its first public presentation in Sesimbra. The participatory meetings open to the entire community only started in October of that year. During this time everything was more peaceful and everyone seemed to be resigned to the situation. However, on the POPNA’s 4th Anniversary (August 5, 2009), there was another nautical protest against it, demanding a review.

The LSMP, which covers 38 km of rocky coast from Figueirinha Beach, in Sado estuary, to North of Cape Espichel (Figure 3.1) (Vasconcelos *et al.*, 2012), is the first marine park with a development plan on mainland Portugal. It is integrated in the Natural Park of Arrábida and in the Nature 2000 – Arrábida-Espichel site. The marine park was established in 1998, enclosing an area of high marine biodiversity. This area is under the government supervision through ICNF (The National Natural Conservation Institute) and three local municipalities: Sesimbra, Setúbal and Palmela.

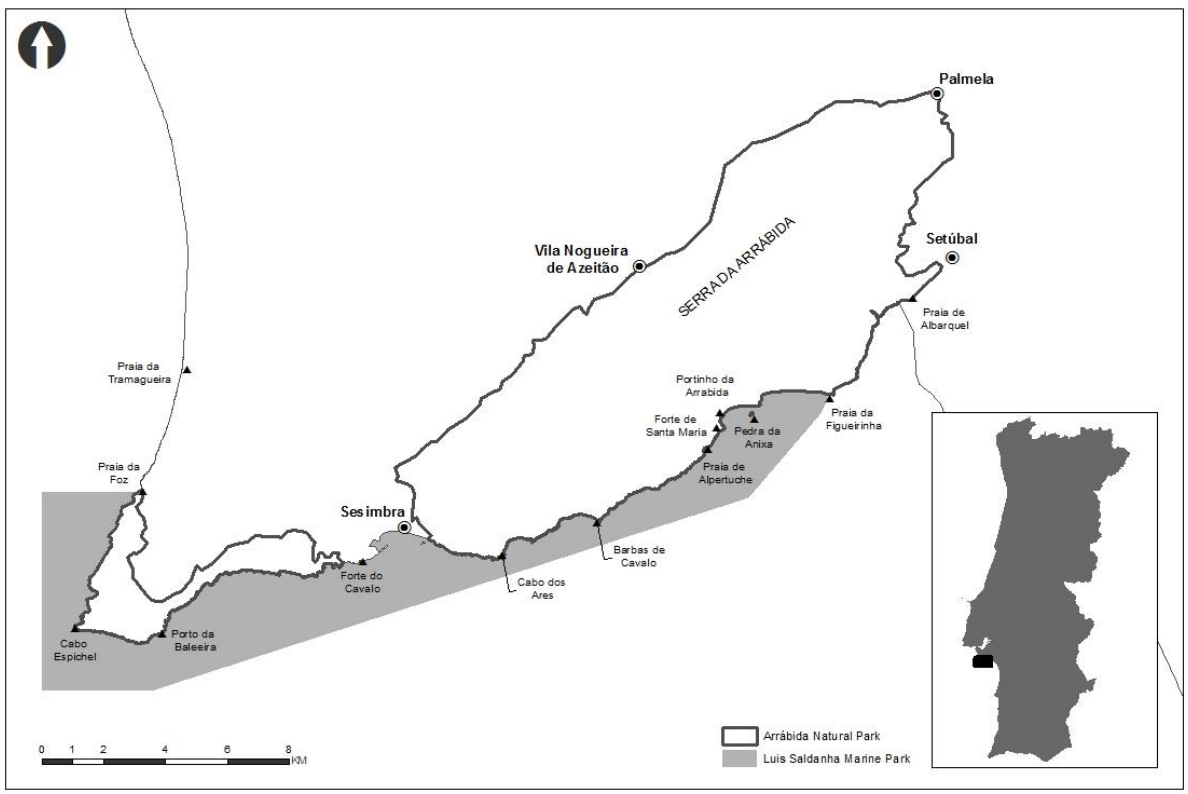

Figure 3.1 – Map of the Arrábida Coast.

The planning document, intended to regulate the activities within the MPA, was published in August 2005 titled the Development Plan of ANP (*Regulamento do Plano de Ordenamento do Parque Natural da Arrábida*, hereafter *POPNA*)[10] (Vasconcelos *et al.*, 2013). This plan was implemented on the day after its publication, with a specified transitional period of four years applicable to commercial fishing and recreational boating (Carneiro, 2011). This transitional regime aimed to facilitate adjustment in administrative and socio-economic impacts and took place between 2005 and 2009. The POPNA presents three distinct areas of protection: total, partial and complementary, ranging over nearly total exclusion of activities (in the area of total protection), to a relatively strict regulation of commercial and recreational activities (in the areas of partial and complementary protection) (Vasconcelos *et al.*, 2013).

[10] Ministers Council Resolution No.141/2005 – August, 23. Available at http://dre.pt/pdf1sdip/2005/08/161B00/48574874.pdf (accessed April 7, 2013).

3.4 Discussion

3.4.1 Consequences for the tourism

In LSMP there is an emergent tourism movement with businesses in diving, natural walks, recreational fisheries and boat trips. One of the key-informants observed "…they forced the tourism and excluded fishermen" since they felt that recreational activities are a nature friendly activity as opposed to the "bad guy" meaning the commercial fisheries. In pursuit of conservation, marine resources were rapidly commoditized as tourism attractions (Segi, 2014:573).

In the neoliberal reality in which we live, nature-based tourism is well recognized as a desired outcome linked to environmental conservation policies (Ahebwa *et al.*, 2012). In pursuit of conservation, marine resources were rapidly commoditized as tourism attractions (Segi, 2014 573). In addition to the development and use issues associated with this linkage, there are also various eco-tourism impacts (Brondo & Bown, 2010). If we are looking for a more adaptable MPA model, those impacts need to be considered and evaluated also.

According to one of the key-informants, "the ban of the back scabbard fish longline preparation in the village pulled away the fishermen, losing local tradition and culture". This is an example to explain the general feeling that fishing, which has always been the symbol of the identity of Sesimbra, is being replaced by more acceptable tourist scenarios or recreational activities which have benefits realized by activities centred on mainly private companies that belong to outsiders. For instance, a key-informant questioned where the money earned by these companies goes, noting that if it mainly goes to outsiders MPA, the tourism development does not benefits the local community. From this point of view the MPA does not represent a win-win solution. In addition to a sense of injustice in relation to tourism, another key informant called attention to "the many illegalities in fisheries by other entities that are not fishermen" which can be activities such as "fish sold in black market", "larger catches than permitted" and/or "recreational fishermen financially dependent on fisheries". To say the least, these conditions and perceptions have not created a positive vision about tourism among most local residents.

In this sense, it is important to think about who really benefits from the implementation of an MPA. The tourism, as a win-win solution or a “golden pill” to achieve sustainable local development while conserving valued ecosystems, is another side which is rarely considered. Brondo & Bown (2010) who studied the Cayos Cochinos Marine Protected Area in Honduras provided a review about the negative impacts of the tourism in the local communities. Key among these are an unequal distribution of revenues from tourism activities among local populations resulting in various inequalities; the presence of tourists and its pressure on natural resources; the increased land-use conflicts, requiring a new, often alien, relationship between people and nature; “the devaluation of local environmental knowledge” and the need for local residents to move to other locations because of real estate pressure, commercialized environmental projects or conservation programs.

In this sense, key informants noted another unwelcomed change that tourism has brought. As one key-informant declares "[It] has mischaracterized and depopulated the center of Sesimbra". The dramatic increase of “sun and beach” tourism in Sesimbra has inflated houses prices in the Sesimbra center. This has been the main reason for the residents’ forced movement into cheaper housing, “especially the young people” as a key-informant observed. This movement has been mainly into the nearby countryside, leaving their town houses to the tourists. Beyond this real state pressure (Brondo & Bown, 2010), the construction of new homes and tourist buildings (e.g. hotels and apartments) has been very active in recent decades. Because of this, the identity of Sesimbra buildings has been altered over the years in a very disorderly and uncharacteristic way. As one key-informant observed: “most of these changes didn´t happen just with LSMP, but they have been a trend reinforced by the importance been given to tourism activities in nature against commercial fishing.” Reflecting this perspective, another key-informant observed that "in this marine park the local fishing has its days counted".

3.4.2 MPA as a political instrument - perverse effects

Neoliberal modes of devolved governance have become the general (self-) regulatory, structural principles for (rational, economic) behaviour in conservation, particularly through tourism and payment for environmental services (Buscher, 2013:220).

The growing importance of neoliberal preferences and policies has been extended into conservation as a requirement to justify its legitimacy in economic terms (Buscher, 2013). Over the last two decades, in fact, policy around the globe regarding MPAs has been shaped by the neoliberal agenda (Jun, 2013). Other case studies highlight the neoliberal underpinnings of nature conservation. One of the predicted consequences, as observed by Brondo & Bown (2011:92), is “heightened inequalities at the local level”.

So, in many cases MPAs are a political instrument employed to impose neoliberal sensibilities on conservationist initiatives. These have perverse effects, particularly in circumstances where impacted communities neither believe in nor accept the MPA and its’ rules. In LSMP, “the regulations weren´t well achieved and the very high number of traps at sea is one example of this” observed a key-informant. Reinforcing this observation, another stated that “90% of LSMP restrictions are not respected by fishermen and other users”.

MPA rules are supposedly based on scientific and not on local knowledge. Local knowledge is frequently considered to be less valid or serious (Brondo & Bown, 2010). Thus, the entire LSMP MPA process was conducted without the appropriate involvement of the population. According to one key-informant, “there was lack of dialogue in the discussion of LSMP areas”. Another observed, “the fishermen suggestions in LSMP design were not accepted”. Another concluded that “it was all done badly in LSMP”. In addition, in Portugal over the last decades international politics has exaggerated the situation by forcing the national political level to adopt environmental goals, policies, and outlooks, without an accompanying appropriate framework that would address the citizens’ real needs and priorities. As another key-informant observed “many laws come from the EU and are made by people who do not know Portugal”. In this process local priorities and the local knowledge are pushed aside as priority is given to the concerns and priorities of national environmental politics, like Brockington (2004) observed in his discussion about myths of power in Protected Area Management.

In the LSMP case, the MPA became situated as the national government's conservation flag within the country and for the international community. Reflecting this perspective, a key-informant noted "the LSMP was a government flag". So, despite the environmental importance of the area, LSMP and its processes also came to represent many important attributes to those in positions of political and economic power. These qualities became expressed in the quick adoption of intransigent positions on the part of government planners and science. From the beginning, dialogue with the local residents was limited. Residents' concerns were dismissed, discounted or ignored. As another key-informant observed, "the LSMP is a dictatorship". In such circumstances and experiences it is not surprising to observe that many local residents have not been supportive of and compliant with the MPA and its governance. As commonly observed in such situations, those with political and economic power are in the position to designate legitimacy, concerning the knowledge, interests and outcomes that matter to them.

3.4.3 What do we want to protect?

"Nature is not a place to visit. It is home."

Gary Snyder (Beat Poet, 1930)

One of the most powerful uses of nature since the XVIII century has been this selective sense of goodness and innocence. Nature has meant the "countryside", the "unspoiled places", plants and creatures other than humans. This orientation is especially evident and current in contrast between town and countryside: nature is what man has not made, though if he made it long enough ago it will usually be included as natural (O´Neill *et al.*, 2008).

According Heine & Arnold (2006) a lengthy debate within the social sciences has recognized that nature, as well as landscape, is not something objective but rather a cultural construction. Perceptions of nature are formed through dynamic processes (Heine & Arnold, 2006) and are "mentally organized (structured) and transformed through development" (Burgess & Mayer-Smith, 2011:28). Nature is a place to commune with living things, including urbanized natural areas, parks and pristine wilderness largely untouched by civilization (Burgess & Mayer-Smith, 2011). Since

humankind is a part of the natural world, human well-being is considered an environmental consideration (Burgess & Mayer-Smith, 2011). Nature is more than its outer appearance (the world that surrounds us), it is a “reflection of dynamic relationship between ecological, economic, political and social factors” (Heine & Arnold, 2006:149). It is the interplay that establishes a specific relationship between the individual and the environment (Heine & Arnold, 2006). The human–nature relationship is, on the other hand, nostalgia for the lost paradise and simultaneously, a primitive fear of natural forces but also the urge to dominate nature (Bourdeau, 2004). Most of the fishermen interviewed expressed that they were proud to be fishermen, but at the same time also noted that they didn’t want their children to take up fishing. While their knowledge will likely continue to be transferred to younger generations and will probably induce environmental concerns, if separated from fishing these will be abstract in nature as removed from experience and application. (Burgess & Mayer-Smith, 2011) offers a psychological account of how the world has become environmentally fragile as successive generations unknowingly experience an increasingly degraded environment. Currently children and young adults have a weak nature connection. Many do not play outside, rather they watch the “outside” on TV or through videogames. So, their conception of what nature is and what a life in relation to nature is forms through others views and not from their life experiences. This brings various problems in terms of conceptualization because usually the flag species and habitats for conservation are very distant from their reality. For example, in Portugal all the children know the clown fish (a tropical fish) from “Finding Nemo” a Disney movie; but probably most could not identify the codfish - a fish very important to Portuguese history, society and culinary traditions. Many children express care and concern for the polar bear and other Artic mammals; but probably could not identify the sea mammals and shark species that occur within Portuguese coastline. In Sesimbra many young people express similar disconnects despite the fact that their houses are located near by the sea. They are in the process of losing their connections with local traditions and livelihoods. As one fisherman observed: “with my son’s age, I was already a fisherman”.

3.5 Conclusions

First of all, we want to say that this article is not intended to extract value from MPAs; but, rather it is intended to advance a critical discussion of the influence of a neo-liberal agenda on important social issues that have been largely discounted throughout the MPA's design and implementation. This paper has examined the growing importance of tourism, the political impetus underwriting MPA design, implementation and management, the disconnect between MPA governance and community support, and the loss of community-based local knowledge. These attributes expressed and reflect of the manner in which a neoliberal framework has guided the implementation the LSMP. The general feeling left within the impacted local community is that conservation objectives supersede local social issues and needs.

The 12th anniversary of LSMP was celebrated with a big campaign highlighted by the dissemination of scientific results demonstrating the success of this MPA. The increase in catches, in biomass, in species such as rays, lead to the conclusion that "…these results indicate that the protective measures implemented in the Marine Park are contributing to the development of sustainable fisheries, one important legacy for future generations" (CCMar, 2010). However, Stratoudakis *et al.* (2015: 12) in a study concerning the LSMP fishermen's perceptions observed that they generally saw no change in the system's biodiversity, in predators' size, in target species recruitment, or in spill-over biomass out of LSMP. And furthermore, Carneiro (2011: 331) stressed "…the LSMP's administration is already experiencing difficulties in fulfilling all its obligations in terms of nature conservation because time and resources all too often have to be assigned to dealing with resource users and their claims". These contradictory results between biological and social issues demonstrate that a successful MPA also has to be respected and established to make a contribution, for those impacted and implicated, to community social and economic wellbeing (Christie 2004). It is therefore necessary to pay attention to various local qualities and issues such as livelihood attachments, power dynamics, and cultural characteristics (e.g. identity) (Davis & Ruddle, 2012). Similar to what Segi (2014) observes in his research, our paper argues that conservation measures such as MPAs, should not allow the economic and political interests to simply prevail over social interests, as is the case with the neo-liberal driven policies and practices. When this happens, the measures

implemented foster social dissatisfaction and contribute to social inequalities which, in turn, generate an environment of disrespect for and rejection of the MPA and its management rules and procedures.

According Guidetti & Claudet (2009), greater outreach work with fishermen may result in increased fishing catches, thus promoting the MPA's benefits. Such engagement can be done in various ways, such as oriented anthropological studies based on the use of local ecological knowledge (Berkes *et al.*, 2000) or across participative platforms such as the MARGov project (Carneiro, 2011; Vasconcelos *et al.*, 2012; Vasconcelos *et al.*, 2013) or the creation of co-management committees (Lleonart *et al.*, 2014). From what we observe, individually or in combination these approaches offer prospects for complimenting and advancing the development of successful and locally supported MPAs. Stratoudakis *et al.* (2015: 13) noticed that a considerable number of LSMP managers did not consider co-management as a clear option nor anticipated collective measures or inclusive approaches. Yet, accounting for and engaging with those impacted by MPA implementation, particularly the user groups whose livelihoods are directly affected, is key to developing the framework and operating practices necessary to achieve the desired outcomes and MPA success, as Davis & Ruddle (2012) draw into attention. Thus, our proposal is to strengthen this type of initiatives to involve communities with a focus on their effective empowerment by creating joint learning spaces for opportunities to participate in decision taking.

References

Agardy M.T. (1994). Advances in marine conservation: the role of marine protected areas. Trends in Ecology and Evolution, 9:267-270.

Ahebwa W.M., V. Van der Duim R. & Sandbrook C.G. (2012). Private-community Partnerships: Investigating a New Approach to Conservation and Development in Uganda. Conservation and Society, 10(4): 305-317.

Allison G.W., Lubchenco J. & Carr M.H. (1998). Marine reserves are necessary but not sufficient for marine conservation. Ecological Applications, 8:S79-S92.

Arsénio J. (2001). *Gentes do mar*. José Arsénio (Ed.): 9pp.

Berkes F., Colding J. & Folke C. (2000). Rediscovery of traditional ecological knowledge as adaptive management. Ecological applications, 10 n.5: 1251-1262.

Bourdeau P. (2004). The man nature relationship and environmental ethics. Journal of Environmental Radioactivity, 72: 9–15. Available at http://www.environmentalmanager.org/wp-content/uploads/2007/12/the-man-nature-relationship-and-environmental-ethics.pdf (accessed March 17, 2013).

Brockington D. (2004).Community conservation, inequality and injustice: Myths of power in protected area management. Conservation and society, 2 (2): 411-432.

Brondo K.V. & Bown N. (2011). Neoliberal Conservation, Garifuna Territorial Rights and Resource Management in the Cayos Cochinos Marine Protected Area. Conservation and Society, 9(2): 91-105.

Burgess D.J. & Mayer-Smith J. (2011). Listening to children: Perceptions of nature. Journal of Natural History Education and Experience, 5: 27-43.

Buscher B. & Whande W. (2007). Whims of the Winds of Time? Emerging Trends in Biodiversity Conservation and Protected Area Management. Conservation and Society, Volume 5, No. 1: 22–43.

Büscher B., Sullivan S., Neves K., Igoe J. & Brockington D. (2012). Towards a Synthesized Critique of Neoliberal Biodiversity Conservation. Capitalism Nature Socialism, Volume 23, Issue 2: 4-30.

Buscher B. (2013). Transforming the Frontier: Peace Parks and the Politics of Neoliberal Conservation in Southern Africa. Duke University Press. Durham. 312pp.

Carneiro G. (2011). The Luiz Saldanha Marine Park: An overview of conflicting perceptions. Conservation & Society, 9: 325-33. Available athttp://www.conservationandsociety.org/article.asp?issn=0972-

4923;year=2011;volume=9;issue=4;spage=325;epage=333;aulast=Carneiro (accessed February 7, 2013).

Carr M.H. & Raimondi P.T. (1999). Marine protected areas as a precautionary approach to management. CalCOFI Report, 40:71-76.

Charles A. & Wilson L. (2009) Human dimensions of Marine Protected Areas, ICES Journal of Marine Science, 66, 6–15.

Christie P. (2004). Marine Protected Areas as Biological Successes and Social Failures in Southeast Asia. American Fisheries Society Symposium 42:155–164.

Christie P., Richard B., Pollnac R.B., Oracion E.G., Sabonsolina A., Diaz R. & Pietri D. (2009). Back to Basics: An Empirical Study Demonstrating the Importance of Local-Level Dynamics for the Success of Tropical Marine Ecosystem-Based Management. Coastal Management, 37:349–373.

Creese R.G. & Cole R.G. (1995). Marine conservation in New Zealand. Pacific Conservation Biology, 2:55-63.

Cruz M.A. (1966). *Pesca e Pescadores em Sesimbra: contributo para a narrativa do concelho*. Câmara Municipal de Sesimbra. 2nd edition. 191pp.

Davis A. & Ruddle K. (2012). Massaging the Misery: Recent Approaches to Fisheries Governance and the Betrayal of Small-Scale Fisheries. Human Organization 71(3): 244–254.

Dugan J.E. & Davis G.E. (1993). Applications of marine refugia to coastal fisheries management. Canadian Journal of Fisheries and Aquatic Sciences, 50: 2029-2042.

Fenberg P.B., Caselle J. E., Claudet J., Clemence M., Gaines S.D., Garcia-Charton JA., Goncalves E.J., Grorud-Colvert K., Guidetti P., Jenkins, S.R., Jones P.J.S., Lester S.E., McAllen R., Moland E., Planes S. & Sorensen T.K. (2012). The science of

European marine reserves: Status, efficacy, and future needs. Marine Policy 36(5): 1012-1021.

Ferreira P.I. (2000). *Características sociais e tendências de mudança: o caso de sesimbra* In: Moniz A.B., Godinho M.M. & Kovács I. (Organizadores). *Pesca e pescadores: futuros para o emprego e os recursos*. Editora Celta: 223-257.

Fox H.E., Soltanoff C.S., Mascia M.B., Haisfield K.M., Lombana A.V., Pyke C.R. & Wood L. (2012).Explaining global patterns and trends in marine protected area (MPA) development. Marine Policy, 36(5): 1131-1138.

Guidetti P. & Claudet J. (2009). Co-management practices enhance fisheries in marine protected areas. Conservation Biology, 24(1): 312-318.

Hamilton M. (2012). Perceptions of fishermen towards marine protected areas in Cambodia and the Philippines. Bioscience Horizons, Volume 5: 24.

Heine B. & Arnold S. (2006). One day the Governement became clever *In:* Simonic P. (eds). Ethnography of Protected Areas. Univerza v Ljubljani: 147-161.

Guidetti P. & Claudet J. (2009). Co-management practices enhance fisheries in marine protected areas. Conservation Biology, 24(1): 312-318.

Igoe J, & Brockington D. (2007). Neoliberal Conservation: A Brief Introduction. Conservat Soc 2007;5: 432-49.

Juffe-Bignoli D., Burgess N.D., Bingham H., Belle E.M.S., de Lima M.G., Deguignet M., Bertzky B., Milam A.N., Martinez-Lopez J., Lewis E., Eassom A., Wicander S., Geldmann J., van Soesbergen A., Arnell A.P., O'Connor B., Park S., Shi Y.N., Danks F.S., MacSharry B. & Kingston N. (2014). Protected Planet Report 2014. UNEP-WCMC: Cambridge, UK. Availabe at http://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/289/original/Protected_Planet_Report_2014_01122014_EN_web.pdf?1420549522 (March 3, 2015).

Jun M. (2013). Governing Marine Protected Areas (MPAs) in California: Analysis of the MLPA Implementation process. PhD Thesis. University College London, Department of Geography. 426pp. Available at http://www.homepages.ucl.ac.uk/~ucfwpej/pdf/Minsuk_Jun_MLPA_PhD_Thesis.pdf (March 25, 2015).

Kelleher G. (1999). Guidelines for Marine Protected Areas. IUCN, Gland, Switzerland and Cambridge, UK. xxiv +107 pp.

Kelsey K.D. & Mariger S.C. (2002). A case study of stakeholder needs for extension education. Journal of Extension. Available at: http://pubs.aged.tamu.edu/conferences/sraerc2002/KelseyMariger.pdf (accessed February 7, 2013).

Lauck T., Clark C.W., Mangel M. & Munro G.R. (1998). Implementing the precautionary principle in fisheries management through marine reserves. Ecological Applications 8: S72-S78.

Leleu, K., Alban, F., Pelletier, D., Charbonnel, E., Letourneur, Y. & Boudouresque, C. F. 2012. Fishers' perceptions as indicators of the performance of Marine Protected Areas (MPAs). Marine Policy, 36: 414-42.

Lleonart J., Demestre M., Martín P., Rodón J,, Sainz-Trápaga S., Sánchez P., Segarra I. & Tudela S. (2014). The co-management of the sand eel fishery of Catalonia (NW Mediterranean): the story of a process. Scientia Marina, 78.S1: 87-93.

Marques A.R. (1993). *Em memória de Rafael Monteiro In:* Monteiro R. (2001). *Alguns Mareantes Desconhecidos da Terra de Sesimbra e outros textos*. Câmara Municipal de Sesimbra (Ed.). Colecção Livros de Sesimbra. 141-149.

McAfee K. (1999). Selling Nature to Save It? Biodiversity and the Rise of Green Developmentalism. Environment and Planning D: Society and Space April 1999 17: 2: 133 -154.

Monteiro R. (1960). *Alguns Mareantes Desconhecidos da Terra de Sesimbra In:* Monteiro R. (2001). *Alguns Mareantes Desconhecidos da Terra de Sesimbra e outros textos*. Câmara Municipal de Sesimbra (Ed.). Colecção Livros de Sesimbra. 23-51.

Monteiro R. (1973). *Esclarecimento da história da vila piscatória de Sesimbra In:* Monteiro R. (2001). *Alguns Mareantes Desconhecidos da Terra de Sesimbra e outros textos*. Câmara Municipal de Sesimbra (Ed.). Colecção Livros de Sesimbra. 53-71.

Murray S.N., Ambrose R.F., Bohnsack J.A., Botsford L.W., Carr M.H., Davis G.E., Dayton P.K., X Gotshall D., Gunderson D.R., Hixon M.A., Lubchenco J., Mangel M., MacCall A., McArdle D.A., Ogden J.C., Roughgarden J., Starr R.M., Tegner M.J. & Yoklavich M.M. (1999). No-take reserve networks: sustaining fishery populations and marine ecossystems. Fisheries, 24: 11-25.

O´Neill J., Holland A. & Light A. (2008) Environmental Values. Routledge. 233pp.

Palumbi S.R. (2003). Population genetics, demographic connectivity, and the design of marine reserves. Ecological Applications 13: S146–S158.

Parravicini V., Villéger S., McClanahan T.R., Arias-González J.E., Bellwood D.R., Belmaker J., Chabanet P., Floeter S.R., Friedlander A.M., Guilhaumon F., Vigliola L., Kulbicki M. & Mouillot. D. (2014). Global mismatch between species richness and vulnerability of reef fish assemblages. Ecology Letters, Volume 17, Issue 9: 1101–1110.

Pollnac R.B., Crawford B.R. & Gorospe M.L.G. (2001). Discovering factors that influence the success of community-based marine protected areas in the Visayas, Philippines. Ocean & Coastal Management, Volume 44, Issues 11–12: 683–710.

Prada M.C., Bent O., Taylor E. & Castro E. (2014). Management and Conservation of Reef Biodiversity and Reef Fisheries: A Successful CLME Pilot Project in the Seaflower MPA. Proceedings of the 66th Gulf and Caribbean Fisheries Institute, November 4 – 8, 2013, Corpus Christi, Texas USA: 360-364. Available at http://flseagrant.ifas.ufl.edu/GCFI/papers/086.pdf (March 8, 2015).

Ramos M.J. (1982). *Memórias dos Pescadores de Sesimbra: Santiago de Sesimbra no início dos Anos Oitenta do Séc. XX*. Sociedade de Geografia de Lisboa, Memórias nº10. Lisboa, 2009. 98pp.

Reis C.S., Teigão F.S. & Venceslau T. (2004). *Avaliação da proposta de Plano de Ordenamento do Parque Natural da Arrábida: vol. II – componente Parque Marinho Luiz Saldanha*. Trabalho executado por contrato entre o Instituto da Conservação da Natureza (ICN) e o Instituto Superior de Agronomia (ISA), em colaboração com o Gabinete Coordenador do Programa Finisterra. Lisboa. 44. Available at http://www.repository.utl.pt/bitstream/10400.5/4406/2/REP-PNARRComponenteMarinha_VolII.pdf (accessed October 14, 2010).

Ribeiro M.I. (2000). *Prefácio In:* Arsénio J. (2001). *Gentes do mar*. José Arsénio (Ed.): 9pp.

Ruckelshaus M., Klinger T., Knowlton N. & DeMaster D.P. (2008). Marine Ecosystem-based Management in Practice: Scientific and Governance Challenges. BioScience 58(1): 53-63pp.

Ruiz J.R. (2009). Sociological Discourse Analysis: Methods and Logic. Forum: Qualitative Social Research. Vol. 10, No. 2, Art. 26. Available at: http://www.qualitative-research.net/index.php/fqs/article/view/1298/2882#g31 (accessed March 13, 2013).

Salomon, A. K., Ruesink J. L. & DeWreede R. E. (2006). Population viability, ecological processes and biodiversity: Valuing sites for reserve selection. Biological Conservation. 128:79-92.

Segi S. (2013). The Making of Environmental Subjectivity in Managing Marine Protected Areas: A Case Study from Southeast Cebu. Human Organization, Vol. 72, No. 4: 336-346.

Segi S. (2014). Protecting or Pilfering? Neoliberal Conservationist Marine Protected Areas in the Experience of Coastal Granada, the Philippines. Human Ecology, 42 (4): 565-575.

Selig E.R. & Bruno JF (2010) A Global Analysis of the Effectiveness of Marine Protected Areas in Preventing Coral Loss. PLoS ONE 5(2): e9278. doi:10.1371/journal.pone.0009278

Silveira C.D. (2009). *A Terra e o Mar: Um estudo sobre as políticas e a actividade de pesca artesanal em Sesimbra sob a perspectiva social*. Tese de Mestrado em Ecologia Humana, Faculdade de Ciências Sociais e Humanas da Universidade Nova de Lisboa. 122 pp.

Stratoudakis Y., Fernández F., Henriques M., Martins J. & Martins R. (2015). *Situação ecológica, socioeconómica e de governança após a implementação do primeiro plano de ordenamento no Parque Marinho Professor Luiz Saldanha (Arrábida, Portugal): I – informações e opiniões dos pescadores*. Journal of Integrated Coastal Zone Management, 15: 14.

Vasconcelos L. Pereira M.J.P., Caser U., Gonçalves G. & Sá R. (2012). MARGov – Setting the ground for the governance of marine protected areas. Ocean & Coastal Management, 72: 46-53.

Vasconcelos L., Caser U., Pereira M.J.P., Gonçalves G. & Sá R. (2013). MARGOv – building social sustainability. Journal of Coastal Conservation, 16: 523-530.

Vieira B.M.S. (2008). *As Elites e as Classes Populares em Sesimbra 1890-1926*. Câmara Municipal de Sesimbra (Ed.). 183 pp.

Weeks R., Russ G.R., Alcala A.C. & White A.T. (2010). Effectiveness of marine protected areas in the Philippines for biodiversity conservation. Conserv Biol., 24(2): 531-540.

Chapter 4: MARGOv – building social sustainability.

Vasconcelos L., Caser U., Pereira M.J.P., Gonçalves G. & Sá R. (2012). MARGOv – building social sustainability. Journal of Coastal Conservation, 16: 523-530.

Abstract

Structured in three components - Governance, Citizenship and Dynamic-Spatial Structure – the MARGov project aims to build a Model of Collaborative Governance for Marine Protected Areas using as case study the Marine Park Professor Luiz Saldanha. The objective is to empower local communities enabling them to be agents for change for the sustainable governance of the Ocean, through an eco-social dialogue supported by active participation. This intends to reinforce competences and the co-responsibility of all the actors involved. In this paper the authors present the work developed in the first component – Governance – essential to assure social sustainability.

A successful Marine Protected Area strongly depends on the balance between man and environment, and therefore, on the eco-social dialogue that is possible to be established among all actors. According to the literature, the building up of participatory formats that assure the articulation between different groups, enhancing the constructive dialogue aiming at achieving sustainable management, contributes to the overlay of knowledge and different perspectives, and generates enriched and more robust solutions. It also says that such processes generate new synergies and potentiate the exchange of ideas, experiences, technical-scientific cooperation, as well as the integration of knowledge and good practices, and that they frequently create the conditions for the emergence of innovative alternatives.

This paper is about the participatory sessions created and conducted as part of the Governance component of the project, describing the methodology developed for the expanded involvement of local communities aiming at building a model of Collaborative Governance. It also presents the strategy developed by the MARGov team to reinforce the social component, through continuous improvement of a communication strategy and the setting up of a constructive participatory process. Finally, it presents the results of the dialog generated in these fora and it discusses all this in the context of a general

conceptual framework. It also identifies what made an actual difference, and the lessons learned, theorizing from action and exploring how to pursue.

Keywords: Governance, Public participation, Marine protected areas, Empowerment, Knowledge

4.1 The issue

The 53 km2 of the first Marine Park in Portugal integrated in the Natural Park of Arrábida and in the Nature 2000 – Arrábida-Espichel site (Figure 4.1), was established in 1998[11], enclosing an area of high marine biodiversity. The Marine Park Professor Luiz Saldanha covers 38 km of rocky coast from the Figueirinha Beach in the Sado estuary to the North of Cape Espichel. Within the Lisbon region, this Marine Protected Area (MPA) is a privileged spot and generates a strong attraction. This implies a strong human pressure, conflicting with its natural values. The establishment of the Park defining zones with restrictions of use aims to address this problem.

Though next to an already consolidated Natural Park, the top-down decision of implementing a Marine Protected Area, imposing stronger management restrictions, put at stake the traditional fishing activity, in particular affecting adversely the local fisherman community of Sesimbra town. The project MARGov[12], aiming at the development of a collaborative model of governance, emerged as a response to an already installed conflict. The project intends to facilitate and build synergies by a participatory process, creating dialogue platforms that allow a safe and constructive interaction among the parts, acknowledging the different views and collectively constructing shared views over them. Stakeholders to be involved are direct users of the Marine Protected Area and users of the surrounding areas, namely the Territorial Protected Area.

[11] Regulamentar Decree Nº23/98 – Oct. 14.

[12] Available at http://margov.isegi.unl.pt (accessed March 1, 2013).

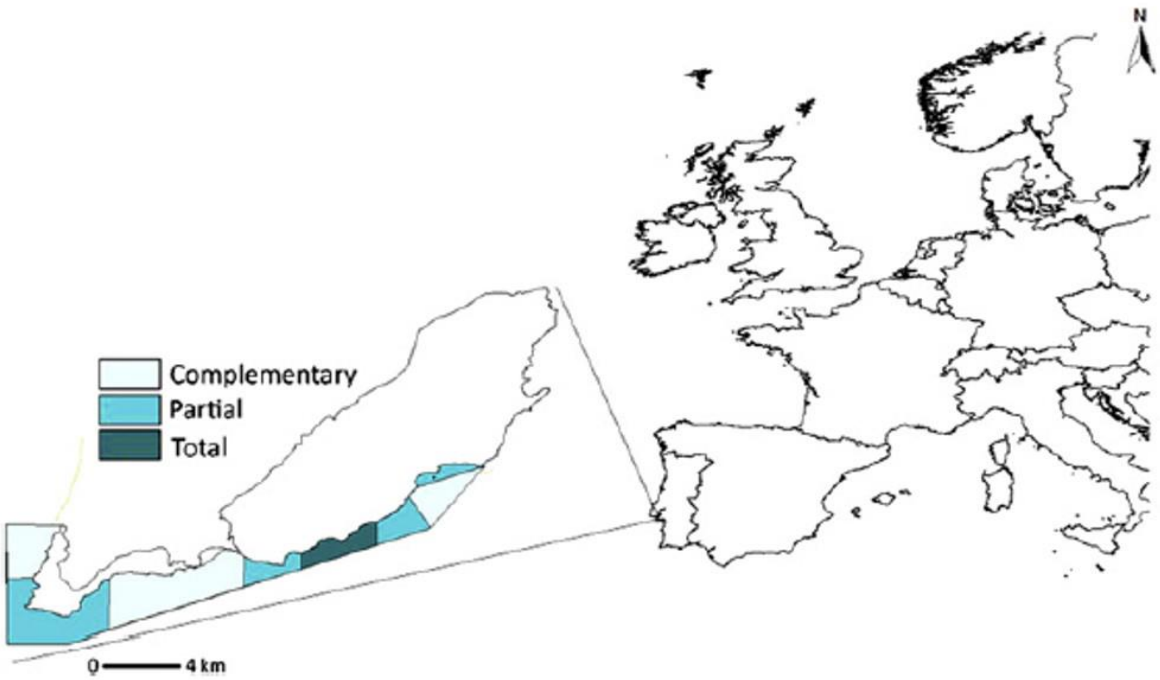

Figure 4.1 - Location of the Marine Park Professor Luiz Saldanha with indication of the protection level of each área.

The model now being developed within the project defends the sharing of responsibilities among stakeholders, namely in areas of coastal habitats and artisanal fisheries. The project aims to:

- Empower actors for change in order to improve the sustainable governance of the Ocean, by the intensification of the eco-social dialogue;
- Strengthen the social and human component to enhance sustainable management of marine protected areas, promoting active participation of local communities;
- Structure a GIS for the integration of data to support the collaborative process and to become a database of information/knowledge to support the development of actions for long term management;
- Develop a platform for supporting integrated management, namely including a system of sustainability indicators and management indexes.

MARGov intends to encourage:

- The sharing of management responsibilities by the different social and institutional stakeholders related to coastal habitats and artisanal fisheries;

- The involvement of stakeholders, contributing to the exchange of ideas and experiences and technical-scientific cooperation, as well as the integration of knowledge and good practices;
- The focus on the conflict as a core-strategy in the search for collaboration among the stakeholders to build joint definitions of more robust and less contested decisions.

The project resulted from the acknowledgement that weak governance and absence of local stakeholders' participation in the management of Marine Protected Areas are obstacles to the sustainability of the Ocean. This is due to the inexistence of a social agreement about conservation and use of marine resources, and the weak articulation between entities with different competences and legitimacy. Therefore, the proposal consists in developing a model of collaborative governance supported by all types of existing knowledge and by interactive participation techniques. As such the project intends to contribute to sustainable management through the development of a model of collaborative governance that can be extended to a future Marine Protected Areas Network.

4.2 MARGov – Model of Collaborative Governance

The project MARGov aims to develop a model of collaborative governance assuring shared responsibilities between stakeholders, including the users of the Park (e.g. fishermen) but also institutional and local authorities.

The MARGov Project is structured in three main components (Figure 4.2): (1) Governance – which includes participation, collaboration and decision making. This includes most of the participatory process; (2) Citizenship – that focuses on awareness, education and training, including all the components referring to education for sustainability; (3) Spatial Dynamic Support – targeting information, simulation and management, including geo-referenced registering, sustainability indicators and management indexes.

These three components work in intense mutual articulation, simultaneously potentiating the various dimensions of the project.

In this paper the authors will focus mainly on the first component, and hereby with especial emphasis on the participatory process of the project.

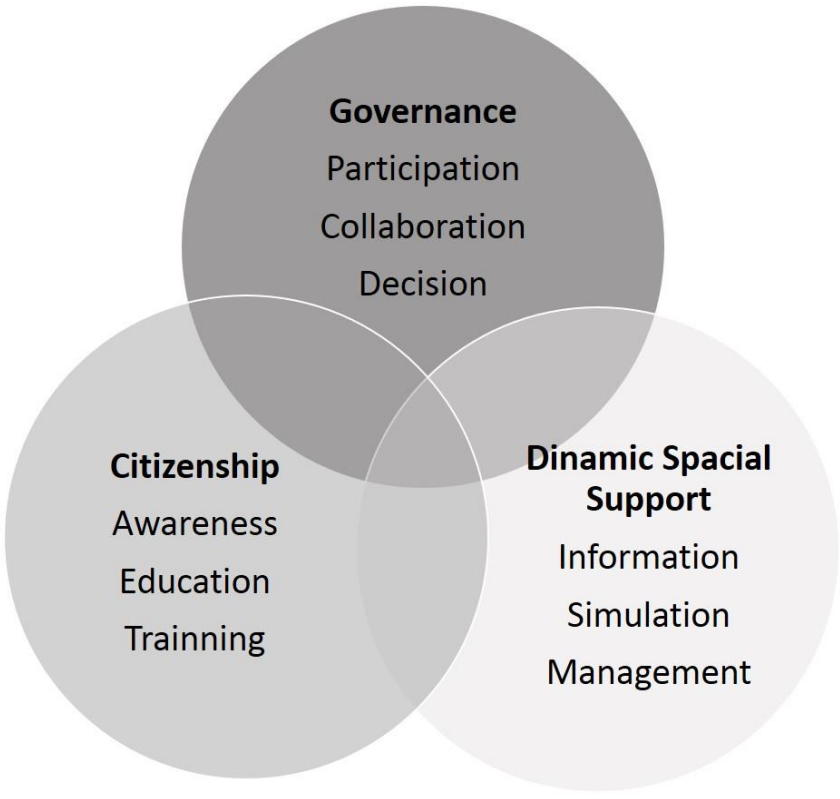

Figure 4.2 - Scheme of the overall structure of the project MARGov.

4.3 Collaborative Model and Stakeholder Participation

The participatory component develops under 4 main phases:

- A preliminary diagnosis and establishment of the baseline, which includes the identification of the stakeholders and the mapping of the conflicts;
- The structuring and steering of the participatory and collaborative processes;
- The elaboration of the process for public awareness and education; and finally,
- The elaboration of a proposal for the collaborative management.

Along the process, a GIS and a platform for supporting integrated management is being built, and it will be a key tool to support the participatory process and the long-term management actions. GIS will be crucial to the collection and sharing of the information that result from the diagnosis and the participatory workshops and fora.

The platform will also integrate outputs of a dynamic conflict simulation model, management alternatives and prospective scenarios.

Launched at the end of 2008, the first part of the project (until July 2009) was dedicated to stakeholder identification and analysis, and the associated development of contacts. Intensive qualitative in-depth interviews were carried out along with intense document analysis in order to develop a sound initial diagnosis. Methodologically, the project team used SWOT Analysis and conflict mapping. Specific entities to be involved for the various key issues that emerged out of this process were also identified. The collected information allowed afterwards the team to characterize the situation of reference. From July to September 2009, the project concentrated on the design and structuring of the participatory process.

Since October 2009, MARGov is implementing collaborative negotiation techniques with the stakeholders aiming to involve users and to identify, acknowledge and address the existing conflicts. We target to create a collective process that will allow reaching joint decisions. These on-site actions promote a constructive dialogue and a “pedagogic development”: Stakeholders learn to be constructive and to build added value as they turn into responsible changing agents. Empowerment of the local agents is intended to result in sustainable co-management of the area. The overall target is to create the key conditions for the development of a collaborative governance model on the long run. Several participatory fora and workshops were already carried out, either open to the overall community or specifically involving the fishermen, each of them concentrated on key issues.

4.4 The Participatory Process

This process aims to develop interventions, based on the results of the diagnosis. The team promoted already some, but assertive, steps for public participation in Sesimbra region. In the first phase of the participatory process from Oct to Dec 09, the team worked more closely with the fishermen – the most direct users of the Marine Park. Nevertheless the other stakeholders of the process were provided with continuous information. The process, in accordance with the methodology, developed further with

particular emphasis on the cycle of Participative Fora and Workshops with key actors and the creation of the interface WebGIS.

Participatory sessions

- 1st Expanded Forum – 19 Oct 09
    - 1st Workshop – 21 Oct 09
    - 2nd Workshop – 26 Nov 09
    - 3rd Workshop – 16 Dec 09
- 2nd Expanded Forum – 13 Jan 10

The participatory sessions during this initial period were launched and concluded with an expanded Forum. Between these fora, a series of workshops were organized, for promoting the direct involvement and empowerment of the specific group of direct users of the Marine Park – the fishermen. The methodological strategies of the performed participative events were adjusted along the process to make the most out of the three components supporting the project. For example: during first meetings with the fishermen the project team felt that a more informal model – an informal meeting in a space of proximity (the room where the fishermen' association meets regularly) – would be more appropriate for this target-group. As a result, the MARGov team switches the way it was working with the fishermen from workshops to informal meetings in their own association, and could observe in the following period a significant increase in participation attendance and proposals/suggestions contribution by them.

4.5 Building over the conflict

4.5.1 Responsible collaboration

The nineties showed a growing call for participation in conservation projects (Little 1994) that led to an increase of grassroots involvement in the design and management of protected areas (Pimbert and Pretty 1997). Participation emerged to "amplify the diminished voices" through the empowering of the community, sharing the idea that imposition of MPA without broad consensus leads to failure (Christie and White 2007; Few 2000).

Participation per se is not panacea to all the problems. It can have many features, and – quite often - is innocuous. Pretty (1995) identifies a variety of interpretations for community participation. The range goes from manipulative and passive participation privileging informing to consulting interventions, up to self-mobilization which means that people take initiatives on their own, independent of any institutional intervention. MARGov aims at the latter type, promoting and exercising “active participation”. However, even in active participation processes there is space for a large spectrum of community involvement of all types: from passive functional participation to active empowerment of communities and stakeholders. Evidently, the type of participation in a certain project stage depends on the level of interven.

tion in the decision process that is considered desirable or allowed by the status quo. Moreover, the idea is not being just palliative as reported by West and Brechin (1991) in Few (2000): “even when the park administrators and planners really listen to local concerns, it is often to let them blow off steam in the hopes of deflating conflict”. As such MARGov is to create a constructive dialogue, able to assure continuity on the long run and contributing to shape change agents who find themselves actively involved in co-management.

The main purpose of active participation is assuring interventive and responsible collaboration by all interested stakeholders. Strategies for collaboration have gained grounds by assuring means to address issues related to social-ecological systems, which – again – respond to the growing demand for participation. Supported by two main ideas – the “Social Exchange” and the “Network Approach” – the concept of collaboration is proven to contribute to long term social relationships, essential for long term sustainability (Nkhata *et al.* 2008).

The central idea is to enhance relational change contributing to two types of capital: “relational capital” and “connectedness”. The amount of relational capital refers to the stock of socio-psychological attributes of social relationships, integrating two attributes: “trust” and “commitment”. The degree of connectedness refers to the social relationships and the strength of those links that mediate change in social relationships, which may be settled through bonds, activities and resources. Growing

social relationships “gives way to conservation as relational connectedness expand and relational capital is consolidated” contributing for change from conflict-based relationships to cooperative interactions (Nkhata *et al.* 2008). This emergent phase is seen as the collaborative state (Nkhata *et al.* 2008).

The MARGov Team believes strongly that the existing conflict, if adequately addressed through constructive dialogue, can be a decisive asset to the building up of expanded overall responsible management and of a collaborative governance model for the area. In opposition to a more generalized view, conflict can be an asset at start. In fact it can be an opportunity for change and maturity (Maldonado 2010; Vinyamata 2005; Lipset 1985). However, it has to be adequately addressed. This is crucial, because the involved stakeholders obviously have already reflected on their positions, collected data and information to support their views, searched alliances with others that share their perspectives. Therefore, they already developed intellectual and social capital that, if not present, had to be constructed along the way. This allows the intervention to start in a more advanced phase. It also allows the process to be focused in the most conflicting issues at stake.

4.6 Participation process, stages and advantages

Traditional decision making processes are based on majority voting or hierarchical administrative decisions. As to conflict management, these approaches are constitutionally and legally legitimated. Hence, the question on whether the traditional decision making process is in all cases appropriate or wise arises. We do not think so. Especially in conflict situations, dialogue between stakeholders does not happen naturally any more. If stakeholders had no chance to talk before the conflict arose, manifest adversarial dynamics cut contact partially or completely. Conflict takes over and stakeholders remain somewhere in between grumbling silence or open protest.

The participatory approach of conflict management opens a path to dialogue and consequently to mutual education and understanding of the involved interests of stakeholders, aiming at consensus construction as far as possible. Basically there is a need to design a process that addresses and satisfies the procedural needs of involved stakeholders towards constructive dialogue and to bring all relevant stakeholders “to the table”. At first sight it is obvious that participatory processes will very probably not

result always in an overall consensus. Hence dialogue and mutual understanding of stakeholders can lead to solutions everybody can, at least, live with.

Participatory processes have their own dynamics and procedural demands. The crucial point is offering a well elaborated process to all participants (politicians, civil servants, entrepreneurs of all kind, and organized or individual citizens) to open an arena where they can talk and reach a consensus on the maximum items of discussion, working together towards a sustainable solution to the given situation. Huge amounts of technical and non-technical information have to be collected, structured or elaborated, to serve as input for competent decision making. Often there is a need to perform different types of large-group methodologies, like public participation workshops, focus groups, parallel group dynamics, etc., interfacing with traditional meeting structures in order to involve all stakeholders according to their possibilities and needs.

The implementation of any participatory process is complex and demands the intervention of facilitators with sound methodological knowledge, considerable professionalism, experience-proved competence and undoubted trustworthiness.

In the following we will present a short paradigmatic overview of stages of Participatory Processes (PP) building over conflict. We will highlight advantages of a dialoguing process compared to traditional top-down decision making.

I. Preliminary works in all PP consist of a sound stakeholder analysis and a preparation of a preliminary process design
   Advantages:
   - PP aim to include all interested parties in the process and to open an arena for them to have their say.
   - The process is steered by independent professional facilitators. Process and content are separated, which allows all stakeholders to concentrate exclusively on content.

II. In a PP a number of stakeholder workshops are hold. The first meetings are dedicated to issue definition and agenda setting. This includes the collaborative elaboration of the agenda and commonly accepted working rules.
   Advantages:

- As facilitators are impartial, all stakeholders understand that there is no hidden agenda or process manipulation.
- The facilitators' process, guiding authority, creates confidence and works towards the participants' commitment to the process.
- Each stakeholder may provide information on the case and describe his perception of the situation. All knowledge is important, all information and perspectives are valuable and legitimate.
- Stakeholders educate each other on their perspectives, promoting a mutual acceptance of different visions and "truths".
- As a result, a common range of issues to be discussed is established and the agenda is set to the convenience of all involved stakeholders.

III. The next step would be a joint conflict analysis, including consideration of emotions and values. The focus in this stage lies on working with interests and needs as these determine a sustainable solution. Stakeholders are encouraged to present the perceived conflict and to explore their interests and needs. Super ordinate values are also translated into interests, and serve as input for the elaboration of solutions.

Advantages:

- Considering involved emotions provokes a decompression of tensions, helps parties to build trust and enhances the capacity of productive dialogue.
- Ethical, aesthetical or doctrinal values of each stakeholder are openly addressed and persuasion mechanisms are stopped.
- Stakeholders recognize the degrees of commonality of their naturally different interests. Understanding common and compatible interests changes discussion dynamics from adversarial discussion to joint reflection.
- With growing mutual understanding, exclusive interests will be perceived as common problems, and discussion can concentrate on possible consensus and acceptable solutions.

IV. Following meetings and workshops will concentrate on generating alternatives for settlement. Stakeholders are invited to propose and discuss alternatives for solutions, aiming at the elaboration of consensual or acceptable solutions for the given conflict.

Advantages:

- Consensus dynamics and search for solutions are only initiated when interests are explored, emotions clarified and defended values known. At that stage all stakeholders contribute with equal forces and decision-making power.
- As facilitators are responsible for process guiding, time will be given to an exhaustive generation of alternatives. Creativity and innovation is encouraged.

V. The PP ends with the joint selection of implementable solutions and - if appropriate - formal settlement.

Advantages:

- In order to select the most practical solutions, facilitators help stakeholders to revise the stated interests and needs, have them eliminate unacceptable alternatives and encourage the modification of identified alternatives for better satisfaction.
- The stakeholders select collaboratively mutually acceptable solutions and transform these into an agreement.
- A joint elaboration of terms of implementation, monitoring and evaluation allows defining criteria for success or failure of the settlement.

As we demonstrated, a well-structured Participatory Process adequately combines formal and informal models of decision making, separating clearly the process from the content. Efficient articulations between intervening stakeholders as well as continuously used and clear rules of interaction meet the necessity of open ground and transparency. A basic condition for success, however, is a good process design on the one hand, but on the other hand sufficient flexibility to change the process design, if necessary or convenient.

Participatory Processes intensify the personal relationship between stakeholders which interact according to commonly defined rules of participation and therefore profit from structured interaction and constructive debate. As PP promotes the exchange of information and ideas, it results in a better understanding of the problems or opportunities offered by given situations and in growing relations of mutual trust.

Besides the undoubtedly useful tangible results like formal settlements, action plans or management models as a basis for the implementation of sustainable solutions, there are – as we saw - a number of intangible societal results, too, that – on the long run – help to establish peaceful actively participating societies

4.7 The logic of strategic options

Stakeholder discourses gathered from the intensive in-depth interviews, participant observation and document analysis, namely the results of participatory fora and workshops showed strong emotional conflicts that called for the creation of space to allow for constructive dialogue. Without working with the existing conflicts, a collective collaborative joint solution would not be possible.

At the start of the project it was clear that while the expression of the conflict had somehow “lowered the pressure”, it was obviously quite ingrained, hindering the overall acceptation and full compliance to the restrictive rules by the various users of the area. On the other hand, interviews revealed a general recognition that the local values justify the creation of a marine protected area. Stakeholders expressed throughout the participatory process that their disagreement was not principally based on the setting of the marine protected area. Their frustration grew obviously with – to stakeholders’ opinion – the process of implementation. Certain stakeholders felt completely excluded from the decision making process. This originated several levels of disagreement with specific rules established for the MPA.

Having identified an absence of collective discourse from the part of the direct users (especially the fishermen) and difficulties in expressing themselves in more expanded arenas, it was obvious that the project team had – in a first step – to give special attention to them. Therefore, as we showed, first participatory workshops were dedicated to the more direct users, Intensively, and afterwards the process was expanded to account for the other users.

As shown the initial phase of the participatory process in situ aims to privilege four moments:

(1) Conflict Identification - identification of the conflict and of the entities to be involved;

(2) Deconstruction of the Conflict - creation of a space for the emotional and antagonistic discourse to permit deconstruction of conflicts and myths;

(3) Mutual Interests/Perspectives Recognition - joint identification of common, compatible and conflicting interests by the participants, and mutual education and understanding;

(4) Development of Joint Proposals - development of joint proposals/solutions.

Some key results:

I. The antagonistic speech that characterized the initial sessions changed gradually to more constructive discourses. This seems to indicate progress in the deconstruction of the conflict, which is essential for a constructive collaborative effort and to progress in future steps;

II. First proposals for constructive solutions have emerged in some of the sessions;

III. Presumable “opponents” in the participatory sessions – to their own surprise – found out common interests; others discovered that a dialogue is possible, even when there is disagreement on facts and situations. These “discoveries” contribute to a change in attitude and play a key role in facilitating a more genuine and open dialogue among participants with opposite views, gaining space for possible negotiations;

IV. Various groups begin to feel much more comfortable with their participation in the process, namely in the public sessions. They become more vocal and intervene more often. This proves already some empowerment.

The project still has a long way to go. It is now in a turning point since it is, at the moment, launching the thematic fora that are expected to turn the discourse into something much more concrete and will require greater focus from the participants. This is expected to pave the path for long-term collaborative relations and for reducing the conflicts.

4.8 Final considerations

The understanding that the successful management of nature protected areas depends on the balance between man and environment, and on the constructive dialogue among different stakeholders was the basis to launch the project MARGov. MARGov aims to build a Model of Collaborative Governance for Marine Protected Areas using as case study the Marine Park Professor Luiz Saldanha. The project employs innovative techniques, focusing in building up synergies by an active participatory process. Ultimately, the project aims to empower local communities enabling them to be agents for change towards the sustainable governance of the Ocean.

Presently the project has identified the main conflicts among the diverse stakeholders of the civil society – mostly users of the Marine Protected Area - and between these and the authorities with management and surveillance responsibilities. Long lasting user rights were restrained by a management plan implemented by a top-down model generating those conflicts.

By deconstructing the conflicts, and through the implementation of face-to-face collaborative negotiation techniques, the project team has gradually gained the trust of the main stakeholders involved in the process. This trust is mostly supported by the fact that the project facilitators are impartial, not involved in any way in the management structure of the protected area, and thus with no hidden agenda or interest in manipulating the process in any way. So, the facilitator role exclusively focuses in creating safe dialogue spaces for all the participants, in improving the dialogue to lead to genuine constructive contributions, and assuring the same level of intervention to all involved.

The various stakeholders just started to understand the position and interests of each other. Furthermore, there is a consensus about the origin of some conservation and management problems, such as the serious erosion of the coast and its impacts on the local activities and biodiversity, and the lack of institutional coordination; gaps in technical and scientific knowledge have also been identified. The acknowledgement of all these aspects by the participants, favored the change from a general negative

discourse to constructive collective discourses. This is allowing for the construction of collaborative solutions, including the proposal of technical resolutions, the suggestion of problem oriented scientific studies, and the idea of creating an informal co-management body open to a diversity of stakeholders from different organizations of the society.

In a “shared power world” with “no one in control”, where “institutions and organizations should share objectives, activities, resources and power or authority to achieve collective gains and minimize losses” (Bryson and Crosby 1992), it seems close to impossible to attain sustainability without a more intense involvement and collaboration of a growing number of stakeholders.

Moreover, as public institutions in most countries nowadays have suffered profound restructuring, the diversity of competences and responsibilities got much more complex. This development goes at pace with drastic shrinking of public resources, resulting in restrained possibilities of tight supervision. Therefore, bringing stakeholders to the process seems inevitable, a must for assuring sustainability in the future.

References

Bryson J.M. & Crosby B.C. (1992). Leadership for the Common Good. Tackling problems in a shared-power world. Jossey-Bass, San Francisco: 367-396.

Christie P. & White A. (2007). Best practices in governance and enforcement of marine protected areas: an overview. FAOExpertWorkshop on Marine Protected Areas and Fisheries Management: Review of Issues and Considerations. FAO, Rome: 183-220.

Few R. (2000). Conservation, participation and power: protected-area planning in coastal zone of Belize. J Plan Educ Res 19: 401–408.

Lipset M.S. (1985). *Consenso e Conflito*. Gradiva (eds) Lisboa. 486pp.

Little P.D. (1994). The link between local participation and improved conservation: a review of issues and experiences. In: Western D, Wright RM (eds) Natural connections: perspectives in community based conservation. Island Press, Washington, D.C: 347–372.

Maldonado M.T. (2010). *O Bom Conflito, Guerra e Paz* (eds) Lisboa.160 pp.

Nkhata A.B., Breen C.M. and Freimund W.A. (2008). Resilient social relationships and collaboration in the management of social-ecological systems. Ecol Soc 13.2.

Pimbert M.P. & Pretty J.M. (1997). Parks, people and professionals: putting “participation” into protected area management. In: Ghimire K.B., Pimbert M.P. (eds) Social change and conservation: environmental politics and impacts of national parks and protected areas. Earthscan Publications, London: 297–330.

Pretty J. (1995). The many interpretations of participation. In Focus 16: 4–5.

Vinyamata E. (2005). *Aprender a partir do Conflito: conflitulogia e educação*. Artmed (eds) Porto.144pp.

Chapter 5: MARGov - Setting the ground for the governance of marine protected areas.

Vasconcelos L., Pereira M.J.P., Caser U., Gonçalves G. & Sá R. (2013). MARGov – Setting the ground for the governance of marine protected areas. Ocean & Coastal Management, 72: 46-53.

Abstract

Started in 2008, the MARGov project proposes to build a Model of Collaborative Governance for Marine Protected Areas (MPA), using as a case study the Marine Park Luiz Saldanha (MPLS), Sesimbra, Portugal. The project works through an eco-social dialogue supported by active participation and aims to empower the local communities making them active agents for the sustainable governance of the coast and the ocean. In fact, successful MPA depend on the balance between man and environment, and on the eco-social dialogue established among all actors. The MARGov project is structured in three components - Governance, Citizenship and Dynamic-Spatial Structure. Here we present the work already developed in two of the components – Governance and Citizenship. The first component mainly aims at reinforcing competences and the co-responsibility of all key-actors within MPLS. Several participatory sessions, involving the local community, have been organized since the end of 2009 improving the communication and to set up a constructive dialog – reducing sources of conflict – among all the stakeholders. The Citizenship component targeted to re-establish the traditional affective link between the local community and the ocean, mostly by means of environmental education sessions in elementary schools. In this paper we present the methodology, the main results and discuss the lessons learned, theorizing from action and exploring how to pursue in the future for the sustainable management of Portuguese MPA. Intermediate outcomes include specific actions (e.g., strategy to promote sustainable tourism, enhance co-liability of users in inspection and surveillance); as well as comprehensive ones, such as a proposal to expand the existing strategic council of the MPA towards a satellite structure of co-management that includes representatives of different stakeholder groups in continuing articulation. The methodology developed for the collaborative

process as, so far, revealed to have a substantial potential in enhancing trust building and empowerment. Stakeholders now show greater autonomy to pursue independent initiatives within the social network consolidated during the project.

5.1 Introduction

The literature in governance for protected areas has two main currents. One defends the re-structuring and re-adjusting of responsibilities and competences of formal government institutions to improve the response from these institutions, and is strongly marked by a top-down formal approach (De Santo *et al.*, 2010; Duncan, 2008; Le Sann, 2008; Mathew, 2008; McDonald, 2008). The other departures from a bottom-up informal approach and constructs the models of collaborative governance (Ansell and Gash, 2008) with the direct users of the areas, frequently seeking the involvement of more formal entities later on (Camargo *et al.*, 2009; Diegues, 2008; Fraga and Jesus, 2008; Jones & Burgess, 2005; Le Sann, 2008a, 2008b; Mwaipopo, 2008; Prasertcharoensuk & Shott, 2010; Rajagopalan, 2008; Sunde and Isaacs, 2008). Both are important and complementary, and they have to converge to make the most out of the potential for governance of Marine Protected Areas (MPA).

Whatever the option chosen, local stakeholders assume a key role and there are strong advantages in bringing them to the process (Berkes, 2009). Managing MPA using exclusively governmental structures has proved rather difficult, if not impossible (Gutiérrez *et al.*, 2011). There is an urgent need to recur to others for complementing the long and complex governmental work in hand. Besides the articulation of institutional efforts, one of the most common pitfalls, it is essential to involve and empower the citizens to become co-responsible for the management process. This means a management supported by the governmental institutions together with all the others with interest in the MPA. To assure this is to achieve a sustainable continuous management at the long range (Armitage *et al.*, 2009; Charles & Wilson, 2009; De la Torre-Castro, 2006; Gray and Hatchard, 2007; Gutiérrez *et al.*, 2011; Jones, 2006; Kullenberg, 2010; Le Quesne, 2009; Rosendo *et al.*, 2011; Samonte *et al.*, 2010; Sanchirico *et al.*, 2010).

This paper reports to the case of the Luis Saldanha Marine Park (LSMP), in Sesimbra, Portugal, (Figure 5.1), that complements a previously existing territorial protected area – the Natural Park of Arrábida. This MPA, created by a top-down process, generated conflicts mainly with the local fishermen who were unable to accept the imposed fishing restrictions and claimed not having been involved in the decision making process.

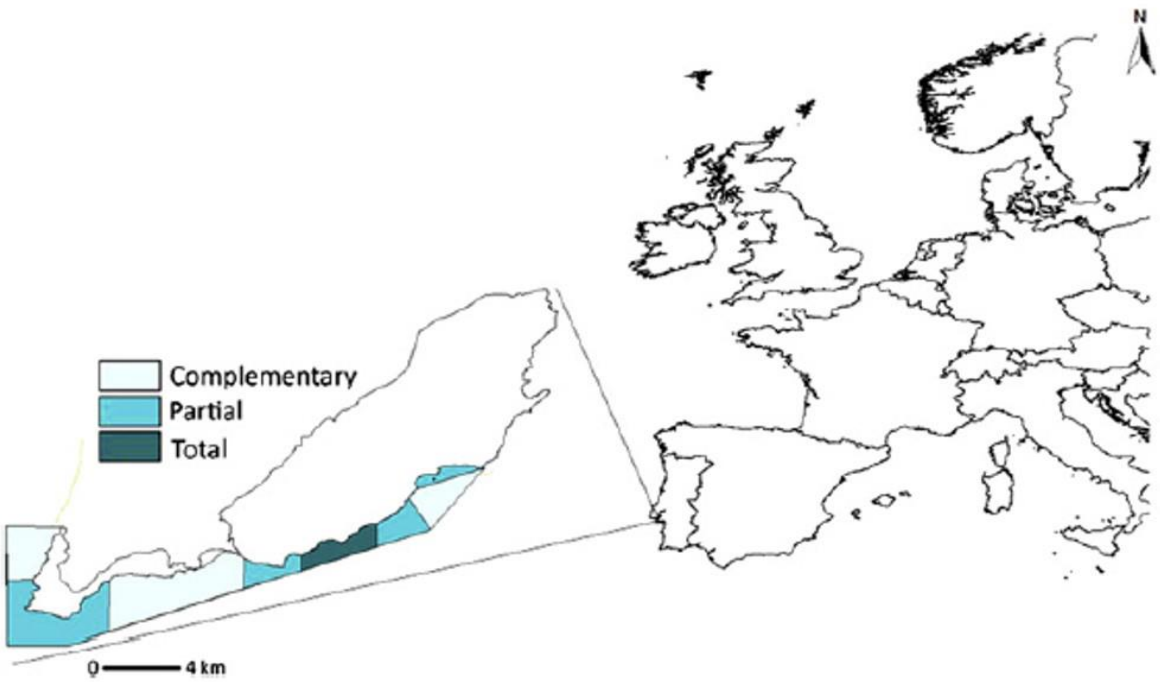

Figure 5.1 - Location of the Marine Park Professor Luiz Saldanha and identification of the protection level for each area.

The MPL was created in 1998 with an area of 53 km^2 corresponding to 38 km of rocky coast. It belongs to the European Network NATURA 2000 and harbors more than 1000 species of marine fauna and flora. To regulate the activities within the MPA, a planning document was published in August 2005, presenting three distinct areas of protection: total, partial and complementary, going from nearly total exclusion of activities (in the area of total protection) to a relatively strict regulation of commercial and recreational activities (in the areas of partial and complementary protection). A truly management plan is still to be developed and approved. The planning document states the main objectives of the MPA: i) the preservation of the marine biodiversity; ii) habitat recovery; iii) scientific research applied to nature conservation; iv) environmental education, information and awareness; v) gradual adaptation of general standards of effluent emissions to the capacity of the receiving environment; vi) promotion of ecotourism

under a perspective of sustainable development; and vii) sustainable development through the promotion of traditional economic activities of the region.

Initially, the draft document was subject to public consultations, though more informative than truly consultative. After this public debate, a slightly different plan was approved but still, several stakeholders felt excluded from the decision-making process mostly because, when confronted with a written document, they assumed that it could not be altered. During the implementation phase some stakeholders, namely professional and recreational fishermen, scuba divers, tour operators and local associations, became actually aware of the changes, impacts and restrictions on their activities. At this stage several movements against the implementation of the plan and in favour of its review arose.

It is known that weak governance, in particular resulting in a limited articulation between entities with distinct competences and legitimacy, and the weak participation of local stakeholders in the management of MPA are obstacles to sustainability, mostly due to the inexistence of a social agreement about conservation and the use of marine resources (Christie & White, 2007; De Santo *et al.*, 2010).

The project MARGov[13] (Collaborative Governance of Marine Protected Areas; http://margov.isegi.unl.pt) proposes to change this situation, by building up of a Model of Collaborative Governance through the promotion of a constructive dialogue and joint actions among stakeholders, aiming to address the existing conflicts and to overcome the present difficulties. With the support of the existing scientific, technical and local knowledge and through the use of interactive participation techniques, the key idea is to work towards the sustainable management of the MPA. The model now being developed defends the sharing of responsibilities among stakeholders, namely in areas of coastal habitats and artisan fisheries.

[13] MARGov – Collaborative Governance of the Protected Marine Areas – Eco-social dialog in the empowerment of agents of change towards sustainability.

The project aims to:

1. Empower actors towards a change for the sustainable governance of the ocean, by the intensification of the eco-social dialog;
2. Strengthen the social and human component for the management of MPA promoting active participation of local communities;
3. Structure a Geographic Information System (GIS) for the integration of data to support the collaborative process and to become a database of information/knowledge to support the development of actions for long range management.

It intends to encourage:

1. The sharing of management responsibilities by the different social and institutional stakeholders of the coastal habitats and artisan fisheries;
2. The involvement of stakeholders, contributing to the exchange of ideas and experiences and technical-scientific cooperation, and the integration of knowledge and good practices;
3. The focus on the conflict as the core of the strategy in the search for collaboration among the stakeholders and then the building of joint definitions of more robust and less contested decisions.

Overall, MARGov intends to facilitate the building of synergies through a participatory process that creates dialogue platforms, allowing for a safe and constructive dialogue among the various parts, and acknowledging the different views, constructing collectively over them. The stakeholders involved are mostly the public administration bodies with responsibilities and competences over the area, the direct users of the MPA and other users, including some from the surrounding areas. The final goal is to converge into a model of governance that adequately responds to the local context.

5.2 Material and Methods

MARGov has proposed to create communities of practice (Lave & Wenger, 1998) that potentiate the mobilization, involvement and intervention of co-responsible, informed and empowered stakeholders in the Marine Park Luiz Saldanha. These communities of practice are basically a group of people who share an interest, a craft, and/or a profession. This group has a common interest, or wants to gain knowledge in a specific field. The process of sharing information and experiences makes members learn from each other, and offers the opportunity for them to develop personally and professionally (Lave & Wenger, 1998). The term emerged in 1990s, though this type of process existed for long, as people have learned and shared their experiences through storytelling.

Seven principles for designing communities of practice constituted the basis for the design of the methodology of MARGov (Wenger *et al.*, 2002):

1. Design for evolution;
2. Open a dialogue between inside and outside perspectives;
3. Invite different levels of participation;
4. Develop both public and private community spaces;
5. Focus on value;
6. Combine familiarity and excitement;
7. Create a rhythm for the community.

These principles embody our understanding of how elements of design work together. They reveal the thinking behind a design, and make it possible to be more flexible and improvisational (Wenger *et al.* 2002).

Having in mind these seven principles, the team developed the two key components of the project: Governance that includes participation, collaboration and decision, and

Citizenship, integrating education and awareness. The convergence of these two main components of activity are to contribute to the model of governance to be proposed.

The participatory process aiming at the building of the collaborative model was developed in three main phases (Figure 5.2):

1. A preliminary diagnosis and establishment of the baseline, which includes the identification of the stakeholders and the mapping of the conflicts;
2. The structuring and steering of the participatory and collaborative processes;
3. The elaboration of a proposal for the collaborative management.

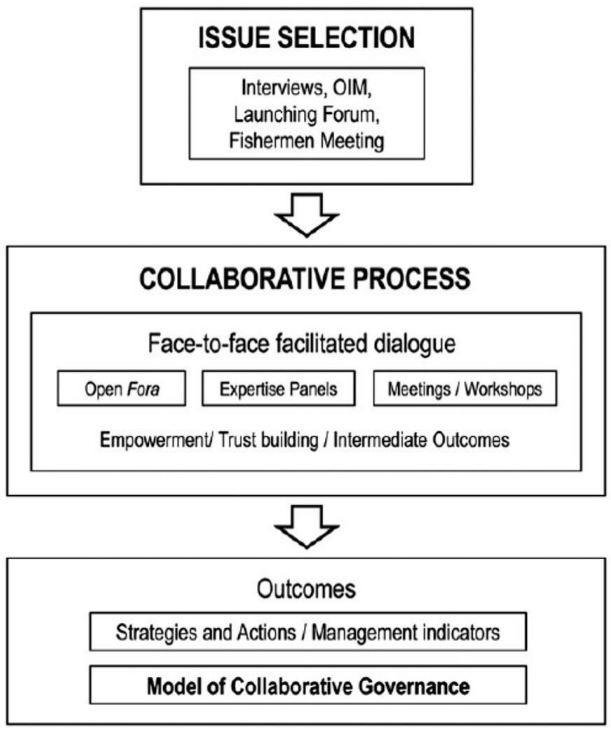

Figure 5.2 - Collaborative process scheme.

Simultaneously, an awareness and education scheme was developed. A GIS and a database platform for supporting integrated management have been built along these phases. The GIS component is crucial for collecting and sharing the information that emerges during the process. It integrates the outputs of a dynamic conflict simulation model, the management alternatives and prospective scenarios, operating as a key tool to support the participatory process and the long-term management actions.

Launched at the end of 2008 the project initially concentrated in an overall collection of information through development of contacts, documents analysis and interviews, aiming at i) the development of a sound initial diagnosis, ii) the mapping of the existing conflicts, and iii) the identification of the entities that should be more intensely involved in the participatory process. This provided the basis for structuring the active participatory process that started in October 2009. Since then, MARGov is implementing collaborative negotiation techniques with the stakeholders aiming to involve users and to identify, acknowledge and address the existing conflicts. The overall idea is to create a collective process encouraging joint decision making and empowering the stakeholders. These on-site actions promote a constructive dialogue and a “pedagogic development”. From October to January 2010, the MARGov team worked more closely with the fishermen who are the most direct users of the MPA. In parallel, the other stakeholders were provided with continuous information, but were not directly involved. However, during this period, other users of the MPA, complained about not being involved in the participatory sessions. Due to this, and understanding the anxiety of these users, the team decided to structure an online brainstorming, creating a virtual platform for these stakeholders to express themselves. This online interaction diversified the possibilities to involve stakeholders creating alternative devices for participation. In January 2010 an online interaction for questions and answers was launched. In this process participants were to present up to five questions that they would like to have the answer for, without any restrictions regarding the content, thematic perspective or issue about the Marine Park. We considered important to place the emphasis in asking questions rather than in making statements to avoid the opportunity of polemic statements based on previous unilateral and possibly misinformed assumptions and positions. This was done directly to the email address of the project. All identified stakeholders received detailed information about the procedure, relevant dates to get involved and they could be clarified directly by phone. The questions received were then categorized and fed back to the participants (Table 5-I). Finally, we asked them for answers and prioritizing issues, and this process culminated with a workshop structured on the basis of the received questions, challenging the participants to identify who should be involved for further contributions to the issues identified (Figure 5.3).

Table 5-I - Categories of questions resulting mainly from the online interaction (some additional questions resulted from the following fora, panels, meetings and workshops).

A	MPA - Focus on “Seaside”
A 1	Concept / Philosophy
A 2	Financial Management
A 3	General Management
A 4	Use
A 5	Scientific Support and Monitoring
B	Focus on “Non-marine Territory”
B 1	Beaches, Mountains and Forests
B 1.1	Use/Planning
B 1.2	Accessibilities
B 1.3	Cleaning
B 1.4	Dredging Beaches
B 2	Quarries
B 3	Stray dogs
C	Monitoring of Environmental Indicators
C 1	General
C 2	Marine Water Pollution
C 3	Estuary Pollution
D	Surveillance / Inspection
D 1	Surveillance and Inspection Mechanisms
D 2	(In) effectiveness
D 3	Zeal (too much)
D 4	Zeal (too less)
D 5	Behaviour of Inspectors
E	Commercial Fishing
E 1	Specific Legislation
E 2	Law Felt 'Unfair'

E 3	"Re-Definition" of Rules
E 4	Commercial Fishing - Marketing
E 5	Commercial Fishing – Sustainability Issues: Fishing in itself
E 5.1	Fishing in itself
E 5.2	Boats
E 5.3	Fishermen's Life
E 6	Specific Questions
F	Tourism
G	Marine Leisure Activities
G 1	Nautical Leisure Activities
G 1.1	Specific legislation
G 1.2	Law Felt 'Unfair'
G 1.3	Problems for Navigation
G 1.4	Anchoring vs. Buoy / Mooring
G 1.5	Specific Questions
G 2	Fishing / Spear Fishing
G 2.1	Specific legislation
G 2.2	Law Felt 'Unfair'
G 2.3	"Re-Definition" of Rules
G 2.4	Scientific Support
G 3	Leisure Fishing
G 4	Diving
G 5	Surf / Bodyboard
G 6	Motorbikes / Power Boating
H	Awareness
H 1	(Insufficient) Information and Dissemination
H 2	Environmental Education
I	Governance and Public Participation
I.1	Governance

I.2	Public Participation
I.3	Participation Fishermen
J	Various (Other Topics)
J.1	Underwater Cultural Heritage
J.2	Artificial Riffs
J.3	Economic Model / Workplace
J.4	Renewable Energy
J.5	Scientific Projects
J.6	Security

The second phase of the participatory process occurred along 2010. It consisted mostly in a monthly *forum* outreaching the general public (including the key-stakeholders previously identified) and a monthly closed meeting with the fishermen, the direct users of the MPA. These meetings were important to maintain a special space for the fishermen to express themselves; here they had the opportunity to present their questions, to evaluate the previous enlarged *fora*, and to be prepared for the upcoming ones.

The monthly *forum* functioned as an open space of dialogue, usually beginning with a short presentation from an expert answering some of the priority questions previously raised by the stakeholders (e.g. pollution, surveillance). Following, a debate around the specific theme of the *forum* (see Table 5-I for details), was professionally facilitated by one of the team members; often, this debate was replaced by structured team work, where the participants were divided in subgroups, randomly assigned, or specifically divided by stakeholder type, according to the specific objectives of the session. At the end, one representative of each group presented the major results of the working session. The methodology for each session was carefully designed by the team to assure the targeted results and products. An example of one of the worksheets used in the *forum* dedicated to marine leisure activities (May 2010) is presented in Table 5-II. In this case the form was to be worked during the *forum* by groups of five elements

randomly assembled. Afterwards the results were presented to all participants in the session and debate followed.

Table 5-II - Working sheet presented during the working session developed during the forum dedicated to marine leisure activities.

Activity:
Action:
Proposal (succinctly describe your proposal)
What are the problems/obstacles to the eventual implementation of this action?
How to overcome the identified problems/obstacles?
How and when to do it? (necessary means and timing)
Who to involve? (people/entities to involve to assure the implementation of the action)
What would you like to see done? (in five years)
What would you like to see done? (after five years)

The meetings with the fishermen followed a much more informal protocol: their doubts, questions and suggestions were simply registered in written form, focusing a specific topic of discussion previously defined.

Simultaneously, the team met with different public entities with responsibilities and competences in the area to explain the goal and the methodology of the project, to search their involvement, and to get their feedback and evaluation about the process. These were particularly intense and systematic in what concerns the entity with the overall management competence of the MPA – the Institute of Nature and Biodiversity Conservation (ICNB[14]).

Finally, the team organized several discussion panels to debate specific issues and to address articulation difficulties between different bodies. The issues for these panels focused mainly on MPA surveillance, sustainable tourism, and the role of non-governmental organizations (NGO) and researchers within the area.

[14] Now is ICNF - Institute of Nature Conservation and Forests. Available at http://www.icnf.pt/portal (accessed April 23, 2015).

Simultaneously to the participatory process an awareness and education scheme was put into action. Initially, the MARGov team characterized the situation regarding activities connected to environmental awareness and education.t. Several stakeholders were identified by means of interviews to focal educational and administration agents; then the different interviewees suggested other active entities – the snowball technique. The method used allowed to cover most of the targeted stakeholders (e.g., municipality, public library, MPA management authorities, NGO). One of the team members participated in a training with the Oceanarium of Lisbon[15], one of the sponsors of MARGov, and with whom joint awareness and education actions were developed. This methodology allowed to design a whole structure of diffusion of the project and to guarantee the involvement of the entities with competences and responsibilities in the region, giving visibility to the project and setting the ground for the development of several multi- generational activities. Four distinct areas were covered:

1. Diffusion of the MARGov project in the local media and events;
2. An environmental educational program entitled “Our sea – the sea of the different generations” aiming to involve children and students with ages between 3 and 15 years;
3. Educational outreach community events;
4. Cultural events.

These two project fronts - participation and education - were crucial to create the grounds for mobilization, involvement and interaction among stakeholders, since it potentiated the outreach to an expanded diversity of publics.

[15] Available at http://www.oceanario.pt/ (accessed April 23, 2015).

1998-2005	The Creation of the MPA	**Top-Down** **Marine Park Luiz Saldanha Designation**
		Management Plan Development (with reduced public participation)
		Opposition Local Community (due to use restrictions)
Sept. 2008	MARGov	Development of a **Model of Collaborative Governance** for MPA
Jan-Jun 2009	**Identification of Stakeholders and Conflict Mapping**	**Key-stakeholders Identification** (Exploratory interviews to key informants, e.g. municipality, MPA managing authorities, fisherman, NGOs)
		Interviews to key-stakeholders **Further key-stakeholders Identification** (Snowball technique)
		1st round **Conflict Mapping** (Identification of the conflicts and stakeholders involved)
Jul 2009 – Jan 2010	**Selection of issues for the participatory process structuring**	**1st Participatory Forum** (launching of participation on the ground)
		Online Interaction Methodology (OIM) (Email interaction)
		Fishermen Meeting (FM) (contribution to OIM output)
		Categorization of the Questions Collected (OIM)
		2nd round **Conflict Mapping** (Identification of the conflicts and stakeholders involved)
		Categorization of the Questions Collected (OIM / FM)

Figure 5.3 - Start-up phases supporting the collaborative process.

5.3 Results and Discussion

Overall, the results of outreaching the different stakeholders and of intensively working with them resulted in a set of collaborative learning, creating more constructive contexts that are expected to make the difference in the long range.

Below, we present the specific actions and a synthesis of the evaluation of the results for each component, Governance and Citizernship.

5.3.1 Governance

The specific actions, in particular the participatory sessions organized up to now, are summarized in Table 5-III. The first key result from these sessions was the transformation of the initial antagonistic speech into a more constructive discourse. This happened with all kinds of stakeholders, from local fishermen to public administrators. The second key result was the evident gain of space by the different stakeholders who have become more vocal and interventive. These two results revealed progress in the deconstruction of the conflict, and provided an essential basis for future steps. Later on, common interests between presumable 'opponents' were found and constructive solutions are now starting to emerge.

Table 5-III - Types of participatory sessions conducted in 2009 and 2010.

Type	Goal	Involvement	Sessions
Forum	Expanded gatherings publicly open to everybody	ALL – general public	1. Project Presentation 2. Outreach 3. Building on online interaction 4. General key themes 5. Pollution and coastal dynamic 6. Leisure activities 7. MPA opportunities 8. MPA creation, management and users 9. Building collaborative management actions 10. State-of-the Project
Workshop	Structured meetings with focus on a pre-defined issue supported by specific activities and worksheets	Semi-public targeting a specific type of stakeholder	1. Fishing in the MPA 2. Fishing arts 3. Fishing rights and responsibilities and the role of associations of producers
Panel	Structured "closed door" meetings, involving specific stakeholders to address identified key issue(s), mostly aiming to improve the interface between entities and/or addressing or mediating specific types of detected conflicts.	Specific type(s) of stakeholder(s) (*e.g.* administration, NGO)	1. Surveillance 2. Sustainable tourism 3. NGO and local organizations
Ongoing Meetings	Informal meetings for hearing stakeholders' concerns. Different from workshops as the participants do not produce tangible material (e. g.: no worksheets) They present their views orally and debate issues. The team facilitates and registers the interventions.	Closed door meetings with specific stakeholders	1. Building proposals for the online interactions 2. Indicators of sustainability 3. Fishing legislation 4. Feedback on the scientific studies seminar 5. Pollution 6. General themes
Assessment Meetings	Informal gatherings aiming to hearing stakeholders about the ongoing work. The team registers the information, feedback, evaluation and/or suggestions.	Closed door auditions with specific stakeholders	1. Central and local administrative authorities 2. Technical and scientific teams working on MPA
OnLine Interaction Methodology (OIM)	Interaction activity with stakeholders through emails to collect and/or to provide information.	ALL with access to the email	1. General questions about the creation and management of the MPA 2. Indicators of sustainability I 3. Indicators of sustainability II

There is now a general consensus about the origin of conservation problems – *e.g.* coastal erosion, pollution – and management problems – *e.g.* lack of funding and of

institutional coordination. Scientific gaps in technical and scientific were identified; these are mostly related to the absence of a definition of indicators for the effective monitoring of the management actions implemented in the MPA. The acknowledgement of all these aspects is now allowing for the construction of collaborative solutions, including the proposal of technical resolutions (*e.g.* controlling coastal erosion), the suggestion of problem-oriented scientific studies (*e.g.* impacts of different types of pollution on fisheries) and the proposal of the creation of an informal co-management body, open to a diversity of stakeholders from different organizations of the society.

5.3.2 Citizenship

5.3.2.1 Diffusion of MARGov in local and national media

Specifically used to make the most of local activities that could accommodate the diffusion of MARGov, the dissemination of the projects' events and results was assured by using the local media – online TV, radio and journals. Public sessions, such as the "Talks in the chapel", were also used to present the project to the local community. Whenever possible, the project was also referred in the national radio and TV, especially when some of the team members were invited to discuss the theme of participatory processes in Portugal.

5.3.2.2 Environmental educational program "Our sea – the sea of the different generations"

The educational program focused on the creation of learning environments under the theme – *sea and its species*, under the transversal matrix of the local reality and cultural tradition. The project worked with almost 1000 children belonging to eight schools of the region, with the direct support of 45 teachers during the 2009/2010 school year. Presently almost 300 more are under the reach of the educational program. Once agreed on the biodiversity value of the area, children were encouraged to evaluate behaviours and attitudes towards the sea, learning which ones are the most appropriated, and encouraging sustainable practices. At the end of the year, most children were aware of the value of *their sea*, they acknowledged the animal species

present in the MPA, and valued the local natural and cultural heritage. The educational project was so successful that the teachers of kindergartens have showed a great interest in applying the activities to the youngster. Among other requests, the team was also asked to advise on similar practices developed in schools and to lecture about specific themes for the older students.

5.3.2.3 Educational outreach community events

This component took advantage of two key articulations. One was done with the Oceanarium of Lisbon, which supplied the *Vaivém*, an environmental education van, for staying for one week in Sesimbra. This van presents several activities related to the sea and its resources and was visited by over 1000 people, including students involved in the educational program, people with disabilities and elders from local institutions, and the general public. The other was with the Sesimbra municipality, which, together with MARGov, promoted beach libraries, where environmental awareness activities (for the large number of families that use the beaches during the summer vacancies) were developed.

5.3.2.4 Celebrating 'special' days

Children up to 12 years were invited to participate in several activities in the public library to celebrate *special* days, such as the Children's Day (1 June), the World *Environment Day* (5 June), and the World Oceans Day (8 June). These activities included a presentation of the biodiversity of the MPA, games, short documentaries, maps of the region, storytelling, and building marine landscapes with several materials.

5.3.2.5 Cultural events

The cultural events targeted the general public and aimed to bring together the different generations to activities such as i) storytelling (where a storyteller and the public shared stories related to the sea), ii) an evening of poetry related to the sea, iii) a theater play related to the sea, developed by a local amateur theater company, and iv) a photo contest about the local sea involving all generations from '6 to 106' years old.

All these fronts involving the human component, operating simultaneously and supported by an intensive and enlarged active communication, have contributed to create the appropriate synergies to anchor an autonomously model of governance. A lot of emerging parallel activity has been noticed. Other projects in the field found that it is much easier nowadays to work with the local stakeholders. Also, new activities including some users' initiatives are taking place and the entities and citizens involved in MARGov find themselves particularly close and responsible for the success of the ongoing process. This is indicative of the empowerment already gained by the stakeholders.Some proposals emerged out of the participatory process of the MARGov Project including:

1. The need to articulate the National Fisheries Legislation with the Specific Legislation of the Marine Area;
2. Revise the commercialization system promoting consumer and fisherman responsibility in stock management;
3. Develop a strategy to promote sustainable tourism;
4. Enhance co-liability of users in inspection and surveillance;
5. Assure long term and permanent monitoring of the MPA;
6. Define a strategy to diversify the funding sources for the actions to be developed within the MPA.

Moreover, there is already a very specific proposal for one of the institutional bodies of the existing management model: to expand the existing Strategic Council of the MPA towards a Satellite Structure of Co-management that includes representatives of different stakeholder groups in continuing articulation. Presently, the MARGov Project is exploring with the stakeholders possible alternative Models of Governance for the PMLS. This work is planned to be pursued during the next semester, to stabilize in a consensual collective model.

It is the conviction of the team that to achieve success, autonomy and empowerment of the stakeholders have to be created. Once this is attained stakeholders have a greater potential to genuinely participate, intervene and contribute to the solution.

MARGov has accomplished this by facilitating the reinforcing of social networks, promote the development of intellectual capital and enhance political capital. Stakeholders are now ready to take action on they hands and to build with each other solutions in a more autonomous way.

It is time to further explore the collaborative learning developed contributing to a negotiated computer model of management. They are now ready to operationalize the Plan of Action and the Model of Management. These two are expected to be developed, as far as possible, during the second half of 2011.

5.4 Conclusions

What seem to be rather simple methodologies can have a strong impact if well thought, developed and applied. A key element for success is associated to the conceptualization of these methodologies, giving special attention to issues related with interpersonal relationships and development of joint collaboration settings.

Despite the controversial context that characterized the reference situation at the start of the MARGov project, these results show that, with the adequate approaches, stakeholders can be brought gradually to the process; if they feel genuinely involved, and that their contributions matter, they move from being part of the problem to become part of the solution. This case-study shows a way to move from a very controversial situation to a context of opportunity for stakeholder involvement and co-responsabilization. Empowering the stakeholders, in particular the ones frequently left out of the processes, reveals to be essential.

The generation of joint problem-solving and collaborative management measures is of the utmost importance for the growing number of areas in the threshold of survival. Therefore, the lessons learned along this project might inspire others to conduct similar processes turning citizens into active, interventive and co-responsible agents in the management of MPA.

References

Ansell C. & Gash A. (2008). Collaborative Governance in Theory and Practice. Journal of Public Administration Research and Theory Advance, 18: 543-571.

Armitage D.R., Plummer R., Berkes F., Arthur R.I., Charles A.T., Davidson-Hunt I.J., Diduck A.P., Doubleday N.C., Johnson D.S., Marschke M., McConney P., Pinkerton E.W. & Wollenberg E.K. (2009). Adaptive co-management for social ecological complexity. Frontiers in Ecology and Environment, 7: 95-102.

Berkes F. (2009). Evolution of co-management: Role of knowledge generation, bridging organizations and social learning. Journal of Environmental Management, 90. 1692-1702.

Camargo C., Maldonado J., Alvarado E., Moreno-Sanchez R., Mendoza S., Manrique N., Mogollon A., Osorio J., Grajales A. & Sanchez J. (2009). Community involvement in management for maintaining coral reef resilience and biodiversity in southern Caribbean marine protected areas. Biodiversity and Conservation, 18: 935-956.

Charles A. & Wilson L. (2009). Human dimensions of Marine Protected Areas. ICES Journal of Marine Science, 66: 6–15.

De la Torre-Castro M. (2006). Beyond regulations in fisheries management: the dilemmas of the “beach recorders” Bwana Dikos in Zanzibar, Tanzania. Ecology and Society 11, 35. Available at http://www.ecologyandsociety.org/vol11/iss2/art35/ (accessed November 16, 2010).

De Santo E.M., Jones P.J.S. & Miller A.M.M. (2010). Fortress conservation at sea: a commentary on the Chagos marine protected area. Marine Policy, 35: 258-260.

Diegues A.C. (2008). Marine Protected Areas and Artisanal Fisheries in Brazil. International Collective in Support of Fishworkers. SAMUDRA Monograph. 54pp.

Duncan L. (2008). The future reserved? in: Reserved Parking: Marine Reserves and Small-scale Fishing Communities. A collection of articles from SAMUDRA Report. International Collective in Support of Fishworkers. SAMUDRA Dossier: 11-14.

Fraga J. & Jesus A. (2008). Coastal and Marine Protected Areas in México. International Collective in Support of Fishworkers. SAMUDRA Monograph.79pp.

Gray T.S. & Hatchard J. (2007). Environmental stewardship as a new form of fisheries governance. ICES Journal of Marine Science, 64: 786-792.

Gutiérrez N.L., Hilborn R. & Defeo O. (2011). Leadership, social capital and incentives promote successful fisheries. Nature. Available at http://www.nature.com/nature/journal/vaop/ncurrent/full/nature09689.html / (accessed January 11, 2011).

Jones P.J.S. & Burgess J. (2005). Building partnership capacity for the collaborative management of marine protected areas in the UK: a preliminary analysis. Journal of Environmental Management, 77: 227-243.

Jones P.J.S. (2006). Collective action problems posed by no take zones. Marine Policy 30: 143-156.

Kullenberg G. (2010). Human empowerment: Opportunities from ocean governance. Ocean and Coastal Management, 53: 405-420.

Lave J. & Wenger E. (1998). Communities of Practice: Learning, Meaning, and Identity. Cambridge University Press, Cambridge. 336pp.

Le Quesne W.J.F. (2009). Are flawed MPAs any good or just a new way of making old mistakes? ICES Journal of Marine Science, 66: 132-136.

Le Sann A. (2008a). An integrated approach. *in*: Reserved Parking: Marine Reserves and Small-scale Fishing Communities. A collection of articles from SAMUDRA Report. International Collective in Support of Fishworkers. SAMUDRA dossier: 53-56.

Le Sann A. (2008b). Reversing from a dead end. *in:* Reserved Parking: Marine Reserves and Small-scale Fishing Communities. A collection of articles from SAMUDRA Report. International Collective in Support of Fishworkers. SAMUDRA dossier: 64-66.

Mathew S. (2008). Jammed in Jambudwip. *in*: Reserved Parking: Marine Reserves and Small-scale Fishing Communities. A collection of articles from SAMUDRA Report. International Collective in Support of Fishworkers. SAMUDRA dossier: 15-18.

McDonald B. (2008). Filleting Nemo. *in*: Reserved Parking: Marine Reserves and Small-scale Fishing Communities: A collection of articles from SAMUDRA Repor. International Collective in Support of Fishworkers. SAMUDRA dossier: 26-29.

Mwaipopo R.N. (2008). The Social Dimensions of Marine Protected Areas: A Case Study of the Mafi a Island Marine Park in Tanzania. International Collective in Support of Fishworkers. SAMUDRA Monograph. 38pp.

Prasertcharoensuk R. & Shott J. (2010). Time for a Sea Change: A Study of the Effectiveness of Biodiversity Conservation Measures and Marine Protected Areas Along Southern Thailand's Andaman Sea Coastline. International Collective in Support of Fishworkers. SAMUDRA Monograph. 81pp.

Rajagopalan R. (2008). Marine Protected Areas in India. International Collective in Support of Fishworkers. SAMUDRA Monograph. 69pp.

Rosendo S., Brown K., Joubert A., Jiddawi N. & Mechisso, M. (2011). A clash of values and approaches: A case study of marine protected area planning in Mozambique. Ocean & Coastal Management, 54: 55-65.

Samonte G., Karrer L. & Orbach M. (2010). People and Oceans. Science and Knowledge Division, Conservation International, Arlington, Virginia. 19pp.

Sanchirico J.N., Eagle J., Palumbi S. & Thompson B.H. (2010). Comprehensive planning, dominant-use zones and user rights: a new era in ocean governance. Bulletin of Marine Science, 86: 273-285.

Sunde J. & Isaacs M. (2008). Marine Conservation and Coastal Communities: Who Carries the Costs? A Study of Marine Protected Areas and Their Impact on Traditional Small-scale Fishing Communities in South Africa. International Collective in Support of Fishworkers. SAMUDRA Monograph. 49pp.

Wenger E., McDermott R. & Snyder W. (2002). Cultivating communities of practice: a guide to managing knowledge*. Harvard Business Sc*hool Press, Cambridge. 284pp.

Chapter 6: Knowledge for empowerment: The role played by stakeholders' knowledge within the MARGov project

Sá R. & Davis A. *Knowledge for empowerment: The role played by stakeholders' knowledge within the MARGov project.* - to submit in Oceans and Coastal Management.

Abstract

The implementation of a Marine Protected Area (MPA) aims to foster nature conservation and/or planning activities. In 1998, Professor Luiz Saldanha Marine Park was implemented as a marine extension of Arrábida Natural Park, and in 2005 its Development Plan was approved. The Sesimbra village, with strong ties to marine activities including fishing, is embedded in this protected area. Although they agree with the existence of the Marine Park, the fishing community of Sesimbra has seen their activities regulated by rules they do not agree with or accept. As a result conflict has arisen between the various stakeholders. During 2009, the MARGov project - Collaborative Governance for Marine Protected Areas - started its activity with the aim of creating a collective governance model through a participatory process structured and adaptable to the characteristics of the local community. This paper aims to analyse the Local Ecological Knowledge (LEK) issues associated with this process. The paper also examines the extent to which these have been expressed by and realized in the community. Here we find that outcomes are related to the extent that LEK is acknowledged and empowered. Our primary conclusion is that all kinds of knowledge are important for a successful participatory process and must be taken into account to obtain useful results in the management of common natural resources, particularly when developing and implementing MPAs that impact local established livelihoods and ways of living.

Key-words: knowledge, participatory process, MPA, fishery community, empowerment, collective learning.

6.1 Introduction

MPAs are being championed globally as a proactive and necessary marine management initiative; yet, their design and implementation have been observed as insufficiently attentive to local and impacted livelihood practices, knowledge and needs (Scholz *et al.*, 2004:335; Bjørkan, 2009:11).

The International Union for Conservation of Nature (IUCN) has a new overall IUCN protected area definition which supersedes the 1999 Marine Protected Area (MPA) definition in marine areas (see Kelleher, 1999) and it loses the specific reference to the marine environment: “A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values” (Dudley, 2008; 60). An MPA can protect marine ecosystems by conserving multiple species, critical habitats such as spawning areas and contribute to enhancing the growth of larger species populations through effects such as larval transport and adult spillover (Pomeroy, 2005). It is now clear that the successful design, establishment and stewardship of any MPA does not rest solely on biological data (Diegues, 2005). Marginalizing or ignoring the human dimension of MPAs risks igniting prolonged and counterproductive user conflicts, legal challenges, processional delays, and ineffective outcomes for both the protected ecosystems and the human users they support (Wahle *et al.*, 2003).

Conflicts over MPA implementation emerge due to various reasons such as different types of knowledge or diversity of perception scales (Christie & Pollnac, 2011). In this paper, we pay specific attention to the attributes of knowledge systems and their use because we think that every type of knowledge is important to the participatory process. For instance Gadgil *et al.* (2000:1307) observe that “(…) all knowledge and wisdom ultimately flow from practices, but their organization differs among the different streams of knowledge”.

Furthermore, in this paper we target for analysis the LEK that emerged during the process of consultations and meetings that preceded and followed MPA

implementation, how this knowledge type was employed and their contributions to this process and outcomes.

6.1.1 Conceptualizing fishermen's knowledge

> *"Managing ocean resources requires looking into the past, and into traditional knowledge, bringing historical baselines to the present and improving public awareness."*
>
> *- Bender et al. (2014:1).*

According to Daniel *et al.* (2003), "knowledge is result of the combination of information, context, and experience". While knowledge is often thought to be the property of individuals, a great deal of knowledge is both produced and held collectively. Such knowledge is readily generated when people work together in the tightly knit groups known as "communities of practice" (Brown & Duguid, 1998:91).

A common definition of community emerged as a group of people with diverse characteristics who are linked by social ties, share common perspectives, and engage in joint action in geographical locations or settings (MacQueen *et al.*, 2001:1929) and each culture contains a knowledge base from which its members receive understanding and an interpretation of the world (Mchombu, 2002:39). Thus, the term "fishing community " used in this paper refers to the community created by fishermen and for stakeholders who deal directly with them, i.e., the fishers' social networks as described by Barnes-Mauthe *et al.* (2012:1): *"*can consist of other fishers as well as supply store owners, industry leaders, scientists, management officials, or any other individual that fishers may share information with in order to mediate against the uncertainty associated with fishing*".*

Fishing is the most ancient form of exploitation of coastal resources (Bender *et al.*, 2014:1). According Bjørkan (2009:23) the vocabulary of fisheries management has changed over the years, the expansion of bottom-up approaches as an alternative to top-down policies shows that the centralized government fisheries' management interventions have proven to be inadequate in the face of the current crisis in world fisheries (Gerhardinger *et al.*, 2009a:158).

In the last two decades, interest in fishermen's Local Ecological Knowledge (LEK) has increased significantly (Ruddle, 1994; Berkes *et al.*, 2000:1251; Huntington, 2000; Diegues & Arruda, 2001; Davis & Wagner, 2003; Drew 2005; Shackeroff & Campbell, 2007; Gerhardinger *et al.*, 2009a:94). At the same way, there is an increased interest in its application as a complement to the scientific information in marine management, expanding the knowledge base on the status of marine resources (Rasalato *et al.*, 2010: 90; Thornton & Scheer, 2012:1).

According to Scholz *et al.* (2004:336), LEK refers to the body of knowledge held by a specific group of people about their local ecosystems which it is often site-specific and can be a mixture of practical and scientific knowledge, regarding environmental factors, behavioural attributes and ecological dynamics (Gerhardinger *et al.*, 2009b:155; Azurro *et al.*, 2011:1). It is best conceptualized as a body or system of knowledge rather than a mere assemblage of facts (Thornton & Scheer, 2012:1). It is qualitative, intuitive and holistic rather than quantitative, analytical and reductionist, and it is transmitted across generations through cultural processes (Rasalato *et al.*, 2010:90). In addition, LEK is adaptive. Once humans have modified natural systems, local perceptions of the status of species and ecosystem resources are unlikely to remain constant over time (Bender *et al.*, 2014:2).

Currently, this type of marine knowledge is being used to provide historical and contemporary baseline information, suggest stewardship techniques, improve conservation planning and practice, and to resolve management disputes (Thornton & Scheer, 2012:1).

Fisheries biologists and ecologists have recognized the need to engage with local knowledge holders (Shackeroff & Campbell, 2007:344). This can play a central role in local marine resource management (Gerhardinger *et al.*, 2009b:94) and in biodiversity monitoring (Anadón *et al.*, 2009). The potential of its application is varied and in the literature ranges from the need to fill the shortage of historical marine ecological data (Shackeroff & Campbell, 2007:344; Gerhardinger *et al.*, 2009a:155), since older fishers are also often the only source of information on historical changes in local marine stocks and in marine environmental conditions (Johannes *et al.*, 2000:257), through low cost analysis compared with information collected by transect surveys (Anadón *et*

al., 2009). Moreover, the use of fishers' sketch maps is a promising tool for marine conservation with special regard to adaptive co-management regimes, where frequent environmental re-evaluations are needed (Gerhardinger *et al.*, 2009b:93). They can also help in improving the management of target stocks, rebuilding the marine ecosystems or play important roles on the siting of marine protected areas and in the environmental impact assessment (Johannes *et al.*, 2000). The relationship between fishers' ecological knowledge and their fishing success has been probed (Thornton & Scheer, 2012:2). Johannes *et al.* (2000:257) go further and argue that by ignoring fishers' ecological knowledge, marine researchers and resource managers may put fishery resources at risk, or unnecessarily compromise the welfare of resource users.

According Thornton & Scheer (2012:1), genuine collaborative projects are rare and often insufficient in scope and depth to address the critical, multiscale conservation, adaptation, and management issues that marine management is facing today (Thornton & Scheer, 2012:1). Possible justifications are the methodological barriers (Gerhardinger *et al.*, 2009b:94). Another can be the possible conflict of interest between the conservation agenda and the needs of the LEK-holders (Shackeroff & Campbell, 2007:344-345). In addition, it is necessary to consider issues of scale and how knowledge might be affected by personal interests (Gerhardinger *et al.*, 2009a: 159), the complexities of creating trustful spaces, leadership of community organizations, cultural barriers, community–researcher relations, time constraints (Thornton & Scheer, 2012:11), and power and politicization (Shackeroff & Campbell, 2007:343). These are important issues in order to achieve the viability, equality, integrity, and resilience required for real collaborative projects (Thornton & Scheer, 2012:11-12).

6.1.2 The importance of the LEK inclusion in a MPA process

As Johannes *et al.* (2000:257) noted, LEK "…can play important roles in the siting of MPA", affirming what many other authors such as Gerhardinger *et al.* (2009a:154) argue in linking the relevance of LEK to MPA management. Although it is arguably clear that LEK has a role within marine conservation initiatives, the ways through which it is integrated, represented and validated within MPAs management and design still need further exploration (Gerhardinger *et al.*, 2009a:155).

According to Scholz *et al.* (2004:336), eliciting and using local knowledge in the early stages of the planning process for MPAs may well be an effective way to foster this participation, and empower stakeholders in the governance of marine resources. Gerhardinger *et al.* (2009a:155-159) agrees with this observation, asserting that engaging with and incorporating LEK and LEK holders would enhance the long-term sustainability of MPAs through increased stakeholder participation. It also heightens awareness of the benefits from effective management regimes; increases stakeholder buy-in; improves effectiveness of MPA communication through incorporating LEK, honouring customs and beliefs, and in evaluating the MPA's biological success.

Despite the fact that LEK is separate and different from scientifically generated information and sometimes difficult to compare (Gerhardinger *et al.*, 2009a:155). Nevertheless, LEK can be used to corroborate scientific data and to fill in gaps in the scientifically generated data (Scholz *et al.*, 2004:336). Both science and community knowledge are imperative for MPAs if ecological and cultural sustainability are to be achieved (Gerhardinger *et al.*, 2009a:157).

Nevertheless, the informal and oral character of LEK systems do not have, particularly within government perceptions and preferences, the same power and strength as conventional scientific knowledge, which is perceived as being well organised and built upon rigid methodologies (Gerhardinger *et al.*, 2009a:158).

6.1.3 Brief review and conceptualization of 'participatory processes'

Berkes (1999) observed that giving priority to the use of indigenous knowledge is a political decision because it changes the power balance between indigenous groups and governments, developers, and conventional resource management scientists. Berkes refers to this as knowledge for empowerment and argues that such would be a challenge to the dominant positivist-reductionist paradigm. Furthermore, Berkes (2010) observes that government scientists and managers in charge reject local and traditional knowledge because it does not fit the positivist-reductionist paradigm, it is transparent to the state, and scientists and managers do not want to share the legitimacy of expertise. These attributes and processes interfere with the capacity to

access and include LEK through a community-based participatory process. According to Lafon (2002), public involvement also may influence managers' knowledge of constituents and alter the attitudes and opinions about stakeholders and issues. Furthermore, several studies have suggested that active participation in natural resource management can improve stakeholder knowledge. Social science researchers have also reported the positive effects of active participation on knowledge.

Bjørkan (2009:14) refers to empowerment as a "…social process that promotes participation of people, organizations and communities towards the goals of increased individual and community control, political efficiency, improved quality of community life and social justice". This notion is linked with a concept of investing in communities' social capital as a means to improve the quality of life, as well as levels of local organization and engagement. Further, valuing and including peoples' experiences and understandings increases the likelihood of levels of engagement that will support the objectives of MPA design and implementation.

> *"(…) far more important than modelling the ideal design of MPAs or networks of MPAs is building local social and community support for them"*
>
> *- Gerhardinger et al. (2009a:163).*

6.1.4 Research questions and objectives

As in Scholz *et al.* (2004:336), this study begins with the premise that lessons in local knowledge and participation from other countries are applicable to Portugal, where fishery and marine resource management has seen increasing discord between user groups and managers in recent years.

Although there are various studies of participatory processes in the development of MPAs, they focus mainly on the participatory process during the implementation phase. This case has a distinctive feature. The participatory process happened following the implementation phase and with the conflict underway. Thus, in this case study it is relatively straightforward to identify the knowledge attributes of this MPA's user community through the participatory methodologies.

MPAs are spatial planning tools widely used in nature conservation. When accompanied by a participatory process they can be an asset for the consolidation, learning and empowerment of the community involved. Thus, this study aims at evaluating the empowerment generated by a participatory process in a MPA context, from a perspective of collective knowledge.

This paper aims to understand the relationship and the potentiality for MPA design, implementation and success of LEK during a participatory process sited in a coastal fishing community.

The following research questions have informed this approach:

1. What importance and emphasis are given community- and livelihood-sited LEK within a participatory process?
2. Will valuing and including LEK ensure meaningful community involvement during the design and implementation of a MPA?
3. Why should local communities and LEK be taken into consideration during MPA design and implementation?

The research processes required to address these questions and their linked attributes have been exercised through a participatory research design and the associated methodology.

6.1.5 POPNA - The Development Plan of Arrábida Natural Park

The Professor Luiz Saldanha Marine Park (LSMP), which covers 38 km of rocky coast from the Figueirinha Beach in the Sado estuary to the North of Cape Espichel (Vasconcelos *et al.*, 2012b), is the first Marine Park with a development plan on mainland Portugal. It is integrated in the Natural Park of Arrábida and in the Nature 2000 – Arrábida-Espichel site. The marine park was established in 1998, enclosing an area of high marine biodiversity (Figure 6.1).

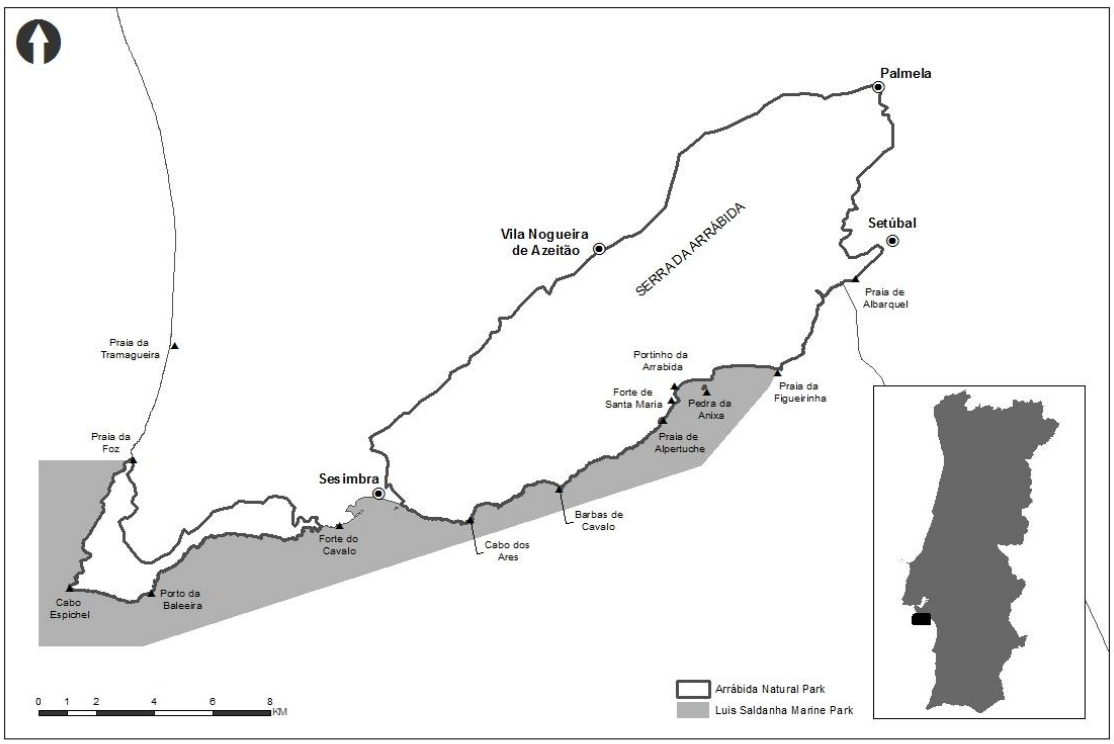

Figure 6.1 - Map of the Arrábida Coast.

To regulate the activities within the MPA, a planning document was published in August 2005 titled the Development Plan of ANP (*Regulamento do Plano de Ordenamento do Parque Natural da Arrábida*, hereafter POPNA) (Vasconcelos *et al.*, 2013). This plan was implemented on the day after its publication, with a specified transitional period of four years applicable to commercial fishing and recreational boating (Carneiro, 2011). This transitional regime aims to facilitate adjustment in administrative and socio-economic impacts and took place between 2005 and July 2009. The POPNA presents three distinct areas of protection: total, partial and complementary, ranging over nearly total exclusion of activities (in the area of total protection), to a relatively strict regulation of commercial and recreational activities (in the areas of partial and complementary protection) (Vasconcelos *et al.*, 2013).

6.2 Research design and methodology.

The MARGov project (Collaborative Governance of Marine Protected Areas) proposed to build a Model of Collaborative Governance through the promotion of a constructive dialogue and joint actions among stakeholders. Using interactive participatory

techniques supported by existing scientific, technical and local knowledge. The key idea of the project was to work collectively with the stakeholders towards a sustainable management of the MPA. The joint model developed defends the sharing of responsibilities among stakeholders, namely in areas of coastal habitats and artisan fisheries (Vasconcelos *et al.*, 2012b; Vasconcelos *et al.*, 2013).

To address the knowledge role we considered two phases: the existing conflict before the beginning of the project (Phase I), and we identified and analyzed the developments caused by the MARGov Project participatory process (Phase II). This allowed us to make the comparison between the two phases, thereby building a better understanding before and after the participatory process.

Key-stakeholders identification was completed for this study using the snowball technique, like Kelsey & Mariger (2002) specify. Data were collected within key-stakeholders (e.g. municipality, MPA management, government authorities, fishers, NGO representatives and so on) until no new themes emerged from the interviews, indicating the achievement of information saturation in key knowledge/experience domains. The main themes focused on by the interviewees were then identified by discourse analysis to discuss the most important issues concerning this study, i.e., the importance of the LEK in a MPA participatory process.

This paper was supported through an extensive literature review of relevant academic research journal articles, legislation, policy, and “grey literature” (e.g. technical reports, government publications). This literature review drew primarily from material related to LEK. However, some of participation-oriented literature was also considered.

6.3 The knowledge of the LSMP users

The interpretative analyses of the interviewees discourse allowed us to develop the knowledge construction along the LSMP story. The quotations presented below were selected from the transcripts or records of the interviews, in order to represent the diversity of opinions, experiences and dynamics of the participants, reflecting the perceptions of these fishermen and key-informants through their LEK.

Phase I - Pre-MARGov: The fishermen knowledge – the departing point

In Phase I the interviews were with people with strong links with Sesimbra's fishing activity (professional, institutional, recreational or emotional). Fifteen fishermen were interviewed (ages between 40-82 years), with different roles in fishing (fishing master, single fishermen and fisherman companion) covering all fishing gears allowed in LSMP (traps, gill nets, jigging, longline and beach seine) and other non-permitted gears (purse seine and longline for black scabbard fish). We also included industry representatives (the biggest local Fishermen Association and a Producer Organization administration). Of the 30 informant interviewed, only 4 were not representatives of any institution with influence in LSMP, but were contacted because of their knowledge about the area or issues of interest.

The interviewees offered a set of arguments that characterize the way they see their context. Although "cultural issues have not been of government interest", it was decided that it was important to understand the particularities of each region in order to conduct effective and appropriate planning. In this case it was found that the Sesimbra community has some important characteristics, namely: "Sesimbra always grew up against something", and " communities of Setúbal and Sesimbra are very different because Sesimbra is based in around 4-5 families" and "in Sesimbra there are backyards " (at the sea). It seems that the backyards play an important part in the perception of space and sense of ownership at the sea.

For many fishermen the sea is more than just a workplace. It is part of their lives in a way it is fundamental. It is woven into and expressed through home, family, joy and fears: "the community of Sesimbra lives with her back to the sea; the sea is where they make their living, where they die, it is not a good thing"; "to me the sea is born inside me"; "the sea is everything, is more than anything else" and "I inherited fishing and the sea". The intensity and meaning of this attachment, arising from family backgrounds and personal experiences, is expressed in practically every remark and opinion, as well as in the understanding of what the LSMP has meant to their lives and livelihoods.

Given the nature of the southern countries of Europe, the parallel markets and the widespread breach of the legislation is common and accepted as common practice within local community (Schneider & Enste, 2000; Davidson *et al.*, 2007). Thus, supervision assumes an important role for defending the overall model. In Portugal, in addition to the features described, there is the culture of the "good student" (Macedo, 2005) in which, for example, European legislation is transcribed frequently even in more restrictive terms, then implemented and monitored more restrictively than in any other country. In Portuguese fisheries, this issue becomes more complicated because of the large number of institutions involved and the implementation of the rules for big fisheries being applied to small scale fishing, resulting in inadequate regulations for the activity. Therefore, those who practice the activity express a widespread feeling of persecution as one participant observed: "fishermen persecution is through surveillance".

The competition between Commercial Fishing and Recreational Fishing embodies and expresses the opposition between professional and subsistence work versus what are commonly viewed as leisure activities. This is supported by observations such as, "the fishermen are leaving the local fisheries and go to the recreational fisheries; they run away from the auction and fish more than allowed making enough money; they live from it [also illegal]". However, commercial fishermen often have and share opinions about what should be done about this situation, with solutions in the direction of further regulating and restricting recreational fishing through measures such as further limiting the number of days they are permitted to fish. For example, one informant argued that resolution would be achieved through "[r]egulaton of the tourist and recreational fishing by limiting fishing to three days a week". Another suggested that: "recreational fishing should only be allowed to fish two days a week, e.g., the 3rd and 5th days of the week such as it is currently the case for hunting and the same should be appiled to recreational fishing by retired people".

The problem of marine pollution is another issue that greatly affects marine resources; yet, water quality, sediment and local contaminations, are phenomena very difficult to identify and quantify their impacts. A major source of marine pollution is the consequence of untreated effluents being pumped into the sea. In this case, it is important to highlight that the protected area is situated at the mouth of a major national

river, the Sado River, along which are located intensive agriculture (e.g. rice production) and industries of various types and dimensions (e.g. pig farms and ship repair industry) (Santos-Reis *et al.*, 2006): As one informant observed: "[t]he park is located near one of the most polluted rivers in Europe, the Sado River" and "the pollution of Lisnave and Setenave [is a major issue]" said another. Sewage treatment in Sesimbra is done through a wastewater treatment plant that is next to the Port Shelter. Although there are some studies for the LSMP area (some even related to environmental impact studies of the dredging of the River Sado made by the governmental institutions), the lack of knowledge of the present situation is generalized: "…there is little information about the true effects of pollution". And this knowledge gap often ends up being used as a “scapegoat.” In fact, at this point in time it is not possible to assess the levels of pollution, and whether "the River wastewater treatment plant does not work well" said an informant. The fishermen claim that the need to protect the area is not related to overfishing but from the impact of pollution that comes from the river: "pollution in the Sado and Tagus River [is the reason of the disappearance of certain species]”.

Through the course of MPA definition and implementation fishermen offered a number of ideas and proposals intended to account for their experiences and needs, while accommodating those of others. Among these were proposals to implement restricted areas that would periodically close and open; the payment of economic compensation, particularly for the 60% of fishermen nearing in retirement age; recreational fishing should only be permitted 2 days per week and occur in a zone of up to 50m from the shore until 1:30 a.m., allowing fishing of species such as squid; and a buffer zone should be established only for Sesimbra fishermen. From their perspectives, proposals such as these, expressing their LEK and livelihood interests, received little or no consideration. Facts that further supported the understanding that LSMP authorities had no interest in and dismissed the fishermen concerns and acquired knowledge of the local people. This outcome also demonstrated for many that LSMP authorities were not at all interested in including local people in the design, implementation and management of this marine park.

Phase II - Post-MARGov: Growing together - how a participatory process can build community knowledge

In Phase II the people interviewed ranged across the several sectors who are interested in LSMP. We interviewed the 17 people who participated more often throughout the participatory process. Several of these (3) had also been interviewed in the exploratory phase (Phase I).

In Phase II nobody talked about pollution, surveillance, competition between the professional fishing and recreational fishing, or strong links of fishermen and the sea. Nevertheless, these themes were very constantly noted through Phase I, and served as a focus for the MARGov Project. This can be related to the MARGov project since one of its goals was to demystify some issues that were considered barriers to dialogue between the various parties involved and also demonstrated an evident collective learning about some important issues.

The general feeling expressed by most non-fishing stakeholders is that the implementation and management of LSMP had to be done with primary emphasis on nature conservation and biodiversity, instead of economic activities. As one participant observed: "…the emphasis has been given to biology and ecology issues, the scientists in this area tend to be very arrogant and think your scientific area overlaps the other, they are not humble about how they enforce their ideas and then this leads to very serious problems throughout the MPA implementation process. This case is particularly sensitive because it was a first attempt. It was very important that it go well. Poor performance complicates future projects in the area of conservation and the establishment of more marine protected areas"

Many agreed that there was a lack of information and that this was one of the main reasons for the existing conflicts. As one informant stated, "(...) I think what is very much needed here in the Marine Park is (…) that information reaches the people because sometimes people do not accept some rules because they do not know the rules, and there are many myths". During the development of this participatory process, "hearing the other" was one of the highest growth priorities and allowed some issues to be demystified and understood (which does not mean that they were accepted). The

fact that each stakeholder only knew their position meant that sometimes their versions of the facts hid the real problems or possible solutions. As one remarked, "(...) I had the idea [about the marine park issues] that there were many veils (...) in this process, each one put on his veil (…) and these veils increasingly contributed to hide the problem".

The evaluation of all types of knowledge within the participatory process was a collective learning experience shared among the stakeholders. However, given that scientific and technical knowledge have always been taken into account, the appreciation of the fishermen's knowledge, particularly LEK, by the other stakeholders is a quality that constitutes a meaningful identifiable outcome. For example, one participant remarked that "[b]ecause people sometimes have much to convey, even to us who who have high education and PhDs, I think the experience of fishermen day-to-day is very important. Sometimes fishermen know when there is a lack of fish, when the fish spawn, why they are dying, why they fish a little bit. Sometimes they have the solution but do not know how to put it into practice but they have their own ideas".

6.4 Discussion and case study analysis

"Working within a multidisciplinary context, conservation biologists often find themselves playing the roles of anthropologist, political advisor, economist, and sociologist"

Drew (2005: 1286)

Prior (2012) asserts that well-designed participatory processes can contribute significantly to building social capital among natural resource and user groups. Moreover Hastings (2011) suggests that the quality of a decision is strongly dependent on the quality of the process that leads to it. So, the full engagement of local knowledge can also be regarded as a means of empowering local communities and promoting responsibility, but only if a more inclusive praxis of participation is put in work (Gerhardinger *et al.*, 2009a). Nevertheless Andrade & Rhodes (2012) add that putting such concepts into practice is not an easy task because there are no simple formulae for combining conservation objectives with local community needs. What has worked in one Protected Area (PA) may not work in another. Understanding the peculiarities

of each PA and the people who live in it and around them is paramount for the success of each PA conservation program. How we effectively manage today's PAs will determine whether those areas will remain under protection or whether we will continue to see their gradual degradation (Andrade & Rhodes, 2012). Scholz *et al.* (2004: 336) states that MPA managers who ignore the concerns of affected user groups affected with perceived costs and benefits from the management measures run the risk of deepening the schism between fishery managers and fishing communities. Accommodating socioeconomic concerns while adhering to ecological standards or criteria forms the core of the policy process (Scholz *et al.*, 2004: 347). Despite all the efforts of the LSMP managers to solve the current conflicts, these efforts have been insufficient because they didn´t take into account the socio-cultural characteristics of Sesimbra. Given the nature of the Sesimbra community, particularly its connection to the sea and importance of this connection to local identity construction, it would be important for the MPA managers to work more in developing and including local involvement. Such approach would support the MPA success. This would also assist LSMP management to foster processes such as trust, respect and compliance, which are essential for MPA sustainability and success over the long term.

Fishers often have challenges in communicating their knowledge in ways and means comparable with that commonly associated with scientific knowledge. Rather than being disempowered in their discourse (Bjørkan, 2009: 23-24), it is essential that MPA design processes and managers do as much as possible to involve fishermen and other local community members in a more participatory processes. Thornton & Scheer (2012:3) analyzed several studies and find that while LEK does not simply erode or ossify in the wake of social, technical, and environmental change, its content, resilience, and adaptive development are not guaranteed and depend on a range of interrelated facts. Therefore, in this process it is important to ensure that favourable contexts and attributes for LEK input in the MPA management will hopefully guide the process, as specified and stressed by Gerhardinger *et al.* (2009a: 163). Among these contexts and attributes are: i) the presence of managers known by the community; ii) employing an individual approach adopted by a given officer; iii) employ bottom-up and mixed approaches; iv) work with any existing representative council or body; v) identifying the issue of LEK in MPA management as a priority; vi) enable the inclusion of active LEK research groups; vii) emphasize the development of strong trust relations

between authorities and local people; and, viii) take the necessary steps to assure that LEK is being made readily available through systematised documentation.

There is a broad literature on empowerment in many academic fields, and in relation to fisheries, Jentoft (2005) made a valuable contribution. According to Gerhardinger *et al.* (2009a: 154), the full engagement of local knowledge can also be regarded as empowering local communities and promoting their responsibility, but only if inclusive participation is put in pratice. Similarly, IUCN (2008:23) presented a strategy for change based on the assumption that when knowledge is available and people and institutions are empowered to use it, they participate more effectively in decision making to improve laws, policies, instruments and institutions. This idea reinforces the findings of Vasconcelos *et al.* (2012b: 114) about this participatory process: *"*at the end of the process established, it is found that there is a sense of belonging, ownership and articulations project created by their own initiatives. Thus, it appears that it has built the necessary empowerment to promote changing agents with active and responsible role in co-management*"*.

These findings fit the strategy advocated by Siochrú (2001:26) to the International Fund for Agricultural Development (IFAD)[16] which is based on knowledge for empowerment. This author considers that IFAD Projects should develop a strategy around knowledge for empowerment that includes the continued emphasis on a participative approach within project processes; the use of knowledge in supporting project measures; and an emphasis on the more general capacity building of communities in effective use of knowledge to achieve their structural aims. The first concerns interactions with communities around the processes of the projects, such as identifying and planning actions, monitoring and impact evaluation. The second comprise knowledge interactions that are specifically developed to support implementation the project actions. The third are intended to promote empowerment, covering all aspects of the lives of poor communities, and focusing on building the capacity to use knowledge.

[16] Available at www.ifad.org/ (accessed March 14, 2013).

We must not forget that knowledge is not only produced in the minds of the experts. The production of knowledge is a human creation and expresses human creativity arising from meaningful experiences and interactions within the world around them, as often framed within the needs and activities to satisfy the material and social requirements of life (Mchombu, 2002). Therefore, MPA management approaches and effectiveness would benefit considerably through the adoption of a 'knowledge-building' instead of 'knowledge-using' approach (Gerhardinger *et al.*, 2009a).

6.5 Conclusions and lessons learned

MPAs are a relatively new tool in the repertoire of marine resource managers which has been proposed and advocated primarily by biologists, ecologists and conservationists, these professionals consider MPAs to be a key tool to developing and sustain the integrity of marine and coastal ecosystems (Bjørkan, 2009:11-12). Yet, this preference and its associated ways and means have equally attracted scientific support and political controversy (Scholz *et al.*, 2004: 335), like it happened in LSMP.

Diegues (2005) presented a keynote address at a MARE Conference titled: "Multi-use Marine Protected Areas and Coastal Conservation in Tropical Countries." This address raised many issues similar to those identified and examined through the Sesimbra community research, particularly regarding the disconnection between the scientific-political community and the local community. This author argues that a hegemonic conservation approach fails to include culture and local knowledge as basic with respect to nature conservation (Diegues, 2005). He also observed that it is incumbent on social scientists to find ways to become more fully engaged in multi-disciplinary scientific and resource management debates concerning MPAs, and to contribute to the critical thinking, knowledge, policy-making assistance and services needed to support of traditional (artisanal) and indigenous fishing communities (Diegues, 2005).

The project outcomes demonstrated that there is a prevalent misconception among those in positions of authority, thinking that marine management is techno-scientific and does not need to include people (Diegues, 2005). However protected areas cannot co-exist with communities that do not support the purposes of conservation, irrespective of whether such developments invariably generate social conflict and

privilege some groups while marginalizing others (Diegues, 2005). However, a clear paradigm shift in this regard is underway. PA managers are beginning to notice the advantages of working with locals, of engage in participatory and co-operative processes, and of considering their needs, while also coming to understanding that such approach is necessary to, rather than jeopardizing for, the PA's ecological integrity (Andrade & Rhodes, 2012).

However, it is not advocating MPA management without scientific knowledge and consideration/inclusion of nature conservation concerns. The 'mixed approach' is important as advocated by Gerhardinger *et al.* (2009a: 156). This author states that management councils can act as collective learning and knowledge formation platforms, catalysing processes and constituting a promising tool for collaboration among LEK and western scientific forms of knowledge, especially in situations where council representatives and council coordinators are conscious of their potential (Gerhardinger *et al.*, 2009a: 163). We conclude that all kinds of knowledge are important for a successful participatory process and must be taken into account to obtain results in the management of common natural resources, particularly when developing and implementing MPAs that impact local established livelihoods and ways of living.

The MARGov participatory process provided successful methodologies that contributed to the demystification of certain issues, the deconstruction of power "hierarchies" between stakeholders, and the creation of safe environments where everyone could speak and listen. Given the fragility of the fishermen in the processes early stages, there evidence that since the field work was developed it contributed to the development of trust between fishermen and the project team. The approach enabled the fishermen to create their own space and collective voice in defense of their interests and points of view, without losing their place and roles in the relationship of learning with the other stakeholders involved.

The qualities of the existing knowledge, its use and attributes, are crucial to understanding the added value of a participatory process. Most of the literature has focused on evaluating the instrumental results of a participatory process. Few literature has focused on what we can call the processional results, despite these being

considered to be more relevant to the maturity and consolidation of the community and therefore for achievement and maintenance of sustainability. Having this in mind, and the intention herein to explore the processional results of participation, it is important to understand the role of knowledge, how it is used and shaped, including LEK. A better understanding of this may contribute to wiser choices of methodologies for the MPA definition and implementation.

References

Anadón J.D., Giménez A., Ballestar R. & Pérez I. (2009). Evaluation of Local Ecological Knowledge as a Method for Collecting Extensive Data on Animal Abundance. Conservation Biology, Volume 23, Issue 3: 617–625.

Andrade G.S.M. & Rhodes J.R. (2012). Protected areas and local communities: an inevitable partnership toward successful conservation strategies? Ecology and Society 17(4): 14.

Azzurro E., Moschella P. & Maynou F. (2011) Tracking Signals of Change in Mediterranean Fish Diversity Based on Local Ecological Knowledge. PLoS ONE 6(9): e24885. Available at http://www.plosone.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pone.0024885&representation=PDF (accessed March 28, 2015).

Barnes-Mauthe M., Arita S., Allen S. & Leung P. (w/ date). A Network Analysis of Fisher's Social Capital and the Effects of Ethnic Diversity in Hawaii's Longline Fishery. SOEST 12-03, JIMAR Contribution 12-381. Available at: http://www.soest.hawaii.edu/pfrp/soest_jimar_rpts/barnes_arita_leung_ethnic_longline.pdf (accessed February 1, 2013).

Bender M.G., Machado G.R., Silva P.A., Floeter S.R., Monteiro-Netto C., Luiz O.J. & Ferreira C.E.L. (2014) Local Ecological Knowledge and Scientific Data Reveal Overexploitation by Multigear Artisanal Fisheries in the Southwestern Atlantic. PLoS ONE 9(10): e110332 Available at

http://www.plosone.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pone.0110332&representation=PDF (accessed March 28, 2015).

Berkes F. (1999). Sacred Ecology: Traditional Ecological Knowledge and Resource Management. Taylor & Francis. 217 pp. Available at http://books.google.pt/books?id=5b8RAgZtxxIC&pg=PA168&lpg=PA168&dq=%22knowledge+for+empowerment%22&source=bl&ots=Hxa1hsU7eY&sig=qdfw-m2KWD9NZU9SVgkZF8u3uVk&hl=en&sa=X&ei=38FBUb7xFobdPYCOgJAO&ved=0CFIQ6AEwCA#v=onepage&q=%22knowledge%20for%20empowerment%22&f=false (accessed March 14, 2013).

Berkes F., Colding J. & Folke C. (2000). Rediscovery of Traditional Ecological Knowledge as Adaptative Management. Ecological Applications, 10(5): 1251-1262. Available at https://www.umanitoba.ca/institutes/natural_resources/canadaresearchchair/EA2000.pdf (accessed March 28, 2015).

Berkes F. (2010). Shifting perspectives on resource management: Resilience and the reconceptualization of 'Natural Resources' and 'Management'. MAST, 9(1): 13-40. Available at http://www.marecentre.nl/mast/documents/Mastvol9no1_Berkes.pdf (accessed March 25, 2013).

Bjørkan M. (2009). Putting mpas to work: A Mexican Case Study on Community Empowerment. MAST 2009, 8(1): 11-31. Available athttp://www.marecentre.nl/mast/documents/MastVol8-1_def_Bjorkan.pdf (accessed March 7, 2013).

Brown J.S. & Duguid P. (1998). Organizing knowledge. California Management Review, Vol. 40, No. 3: 90-111. Available at https://www.ischool.utexas.edu/~i385q/spring2005/readings/Brown_Duguid_1998_Organizing%20Knowledge.pdf (accessed March 6, 2013).

Carneiro G. (2011). The Luiz Saldanha Marine Park: An overview of conflicting perceptions. Conservation & Society, 9: 325-33. Available at: http://www.conservationandsociety.org/article.asp?issn=0972-

4923;year=2011;volume=9;issue=4;spage=325;epage=333;aulast=Carneiro (accessed February 7, 2013).

Christie P. & Pollnac R. (2011). Socio-economy – Social dynamics of scaling-up marine protected area declarations and management *In*: Claudet (Ed.). Marine Protected Areas: a multidisciplinarity approach. Cambridge University Press: 121-140.

Daniel B., Schwier R. & McCalla G. (2003). Social Capital in Virtual Learning Communities and Distributed Communities of Practice. Canadian Journal of Learning and Technology, Vol. 29(3). Available at http://cjlt.csj.ualberta.ca/index.php/cjlt/article/view/85/79 (accessed March 13, 2013)

Davidson C., Martin L. and Wilson J.D. (2007). Efficient black markets? Journal of Public Economics, 91: 1575–1590. Available at https://www.msu.edu/~davidso4/BlackMarketJPubE.pdf (accessed January 10, 2013).

Davis A. & Wagner J. R. (2003). Who knows? On the importance of identifying "experts" when researching local ecological knowledge. Human Ecology, 31(3): 463-489.

Diegues A.C. (2005). Multi-use Marine Protected Areas and Coastal Conservation in Tropical Countries. Keynote address at MARE CONFERENCE -Amsterdam, 7-9 July. 16. Available at http://nupaub.fflch.usp.br/sites/nupaub.fflch.usp.br/files/amsterdam.pdf (accessed March 14, 2013).

Diegues, A.C & Arruda R. S. V. (2001). Saberes Tradicionais e biodiversidade no Brasil. (Biodiversidade 4). Ministério do Meio Ambiente, Brasília, São Paulo: USP, 176 pp.

Drew J.A. (2005). Use of Traditional Ecological Knowledge in Marine Conservation. Conservation Biology, Volume 19, Issue 4: 1286–1293. Available at http://doc.nprb.org/web/BSIERP/Drew%202005%20LTK%20and%20marine%20cons.pdf (accessed March 28, 2015).

Dudley N. (Editor) (2008). Guidelines for Applying Protected Area Management Categories. IUCN. Gland, Switzerland.: 86. Available at:http://data.iucn.org/dbtw-wpd/edocs/paps-016.pdf (accessed March 25, 2013).

Gadgil M., Seshagiri Rao P.R., Utkarsh G., Pramod P., Chhatre A. & Members of the People´s Biodiversity Initiative (2000). New Meanings for old Knowledge: The People´s Biodiversity Registers Program. Ecological Applications, 10(5): 1307–1317. Available at http://eprints.iisc.ernet.in/1682/1/new_meaning.pdf (accessed December 12, 2012).

Gerhardinger L.C., Godoy E.A.S. & Jones P.J.S. (2009a). Local ecological knowledge and the management of marine protected areas in Brazil. Ocean & Coastal Management, Volume 52, Issues 3–4: 154–165. Available at http://www.sciencedirect.com/science/article/pii/S096456910800166X (accessed March 29, 2015).

Gerhardinger L.C., Hostim-Silva M., Medeiros R.P., Matarezi J., BertoncinIl A.A., Freitas M.O. & Ferreira B.P. (2009b). Fishers' resource mapping and goliath grouper Epinephelus itajara (Serranidae) conservation in Brazil. Neotropical Ichthyology, 7(1): 93-102. Available at http://www.scielo.br/pdf/ni/v7n1/a12v7n1.pdf (accessed March 28, 2015).

Hastings K. (2011). Engaging stakeholders in marine conservation planning: Recommendations for moving forward with a bioregional marine protected area network on the Scotian Shelf [graduate project]. Halifax, NS: Dalhousie University. Available at http://dalspace.library.dal.ca/bitstream/handle/10222/14291/Hastings_2011_MMM.pdf?sequence=1 (accessed March 4, 2013).

Huntington, H. P. (2000). Using traditional ecological knowledge in science: methods and applications. Ecological Applications 10: 1270-1274.

IUCN (2008). Shaping a sustainable future: The IUCN programme 2009–2012. The IUCN Programme 2009–2012 adopted at the World Conservation Congress,

Barcelona, Spain, 5 – 14 October 2008. 36pp. Available at http://data.iucn.org/dbtw-wpd/edocs/wcc-4th-006.pdf (accessed March 14, 2013).

Jentoft S. (2005). Fisheries co-management as empowerment. Marine Policy, 29 (1): 1-7.

Johannes R.E., Freeman M.M.R. & Hamilton R.J. (2000). Ignore fishers' knowledge and miss the boat. Fish and Fisheries, 1: 257–271.

Kelleher G. (1999). Guidelines for Marine Protected Areas. IUCN, Gland, Switzerland and Cambridge, UK. 107pp. Available at www.vliz.be/imisdocs/publications/64732.pdf (accessed March 14, 2013).

Kelsey K.D. & Mariger S.C (2002). A case study of stakeholder needs for extension education. Journal of Extension, 40(2): 11.

Lafon N.W. (2002). Evolution of stakeholder knowledge, attitudes, and opinions throughout a participative process to develop a management plan for black bears in Virginia. Master Thesis on Science in Fisheries and Wildlife Sciences. Virginia Polytechnic Institute. 162 pp. Available at http://scholar.lib.vt.edu/theses/available/etd-02082002-174607/unrestricted/lafon-nw.pdf (accessed March 13 1, 2013).

Macedo J.B. (2005). European Governance Matters for Portugal. Instituto Português de Relações Internacionais, Working Paper no.11. Estudos Regionais - Europa. 17pp. Available at http://www.ipri.pt/publicacoes/working_paper/pdf/WP11_JBrMacedo.pdf (accessed January 11, 2013).

MacQueen K.M., McLellan E., Metzger D.S., Kegeles S., Strauss R.P., Scotti R., Blanchard L. & Trotter II R.T. (2001). What Is Community? An Evidence-Based Definition for Participatory Public Health. American Journal of Public Health, Vol. 91, No. 12: 1929-1938. Available at http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.91.12.1929 (accessed March 6, 2013).

Mchombu K.J. (2002). Sharing Knowledge for Community Development and Transformation: A Handbook. Oxfam Canada. 104 pp. Available at http://www.vdic.org.vn/data/File/sharing%20knowledge.pdf (accessed March 14, 2013).

Pomeroy R. (2005). Marine protected areas: an ecosystem-based management tool. The University of Connecticut: Sea Grant-Fisheries Sheet. Publication N. CTSG-03-09 16. Available at http://nupaub.fflch.usp.br/sites/nupaub.fflch.usp.br/files/amsterdam.pdf (accessed March 14, 2013).

Prior J. (2012). Participation and Social Capital in Sustainable Land Management: Lessons Learned from International Landcare. Scientific Workshop on Sustainable Land Management to Enhance Food Production of APEC Members, Chiang Mai, Thailand, 28 - 30 November 2012. 19pp. Available at http://worldagroforestry.org/projects/landcare/sites/worldagroforestry.org.projects.landcare/files/Participatory%20SLM%20and%20Landcare%20-%20Julian%20Prior%20-%20APEC%20Tech%20Workshop%202012.pdf (accessed March 14, 2013).

Rasalato E., Maginnity V. & Brunnschweiler J.M. (2010). Using local ecological knowledge to identify shark river habitats in Fiji (South Pacific). Environmental Conservation, 37 (1): 90–97. Available at http://journals.cambridge.org/action/displayFulltext?type=1&fid=7819774&jid=ENC&volumeId=37&issueId=01&aid=7819772&bodyId=&membershipNumber=&societyETOCSession= (accessed March 28, 2015).

Ruddle K. (1994) Local knowledge in the folk management of fisheries and coastal marine environments. In: Dyer C. L., McGoodwin J. R., editors. Folk Management in the World's Fisheries. Niwot, USA: University Press of Colorado: 161-206.

Schneider F. & Enste D.H. (2000). Shadow Economies: Size, Causes, and Consequences. Journal of Economic Literature, Vol. XXXVIII: 77–114. Available at http://www.econ.jku.at/members/Schneider/files/publications/JEL.pdf (accessed January 5, 2013).

Scholz A., Bonzon K., Fujita R., Benjamin N., Woodling N., Black P. & Steinback C. (2004). Participatory socioeconomic analysis: drawing on fishermen's knowledge for marine protected area planning in California. Marine Policy, Volume 28, Issue 4, July 2004: 335–349. Available at http://www.sciencedirect.com/science/article/pii/S0308597X03001118 (accessed March 29, 2015).

Shackeroff J.M. & Campbell L.M. (2007). Traditional Ecological Knowledge in Conservation Research: Problems and Prospects for their Constructive Engagement. Conservation and Society, Volume 5, No. 3: 343–360. Available at http://people.duke.edu/~lcampbe/docs_lmc/Shackeroff_&_Campbell_2008.pdf (accessed March 28, 2015).

Siochrú S. Ó. (2001). From Knowledge Management to Knowledge for Empowerment. ENRAP: Electronic Networking for Rural Asia/Pacific Projects. NEXUS Research Cooperative. 37. Available at http://asia.ifad.org/enrap/partners/projects/Project%20stories/India/ENRAP%20Strategy%20Development/Doc2%20-%20From%20Knowledge%20Management%20to%20Knowledge%20for/view (accessed March 15, 2013).

Thornton T.F. & Scheer A.M (2012). Collaborative Engagement of Local and Traditional Knowledge and Science in Marine Environments: A Review. Ecology and Society 17(3): 8.

Vasconcelos L., Caser U., Sá R., Coelho M., Silva F., Ferreira J.C., Pereira M.J., Gonçalves G., Painho M., Oliveira T.H., Calbet O.V., Costa H., Ramos T., Caeiro S., Marques A.S., Videira N., Cabral P. & Bastos M. (2012a). Final Report of “MARGov - Governância Colaborativa de Áreas Marinhas Protegidas” and “Cientistas Como Cidadãos E Cidadãos Como Cientistas”. Part A. 133pp. Available at: http://margov.isegi.unl.pt/filesFTP/docMARGov00679_PARTEA_Rel_MARGov_TOTAL_10_Jun_12.pdf (accessed January 16, 2013).

Vasconcelos L. Pereira M.J.P., Caser U., Gonçalves G. & Sá R. (2012b). MARGov – Setting the ground for the governance of marine protected áreas. Ocean & Coastal Management, 72: 46-53.

Vasconcelos L., Caser U., Pereira M.J.P., Gonçalves G. & Sá R. (2013). MARGOv – building social sustainability. Journal of Coastal Conservation, 16: 523-530.

Whale C., Lyons S., Barba K., Bunce L., Fricke P., Nicholson E., Orbach M., Pomeroy C., Recksiek H. & Uravitch J. (2003). Social Science Research Strategy for Marine Protected Areas. Santa Cruz, California: National Marine Protected Areas Center. National Oceanic and Atmospheric Administration-NOOA. 36pp. Available at http://marineprotectedareas.noaa.gov/pdf/publications/ssr_strategy.pdf (accessed March 6, 2013).

PART III – GENERAL DISCUSSION

Chapter 7: Major conclusions and findings

"We are not certain, we are never certain."

- Albert Camus (French Philosopher, 1913-1960)

The main research question of this thesis is

How can the socio-cultural characteristics of a fishing community be used to empower it, in a MPA participatory process?

through the study case of the Sesimbra community located within the LSMP, Arrábida.

Within this context, existing and generated knowledge played a key role in the beginning, along and at the end of the LSMP creation and implementation processes. The generated knowledge highlighted the relevance of it for the build up of empowerment.

It is clear that Sesimbra socio-cultural characteristics (see Chapter 3: and Chapter 6:), like its identity strongly interconnection to the fishing activity, assume a key role in the community behavior in what concerns to the LSMP implementation and recognition. Curiously, from all the stakeholders interviewed individually, there was none that had ever mentioned that he/she did not want the Marine Protected Area, despite some being strongly against the rules implemented.

On the other hand, the lack of participation during the LSMP implementation generated serious conflicts between the community and the government and the LSMP managers. These conflicts were addressed with the MARGov methodology (see Chapter 3: and Chapter 6:) through the creation a safe space for a constructive dialogue among the stakeholders and promoting an opportunity for the building up of empowerment, through building on their knowledge (see Chapter 4: and Chapter 5:).

As final conclusions of this thesis there are the several chapters conclusions and the overview discussion following the structure of the Figure 7.1 which tries to explain the thesis rational through the several thematic issues studied. The start point was the fishing community and the top-down implementation of the LSMP.

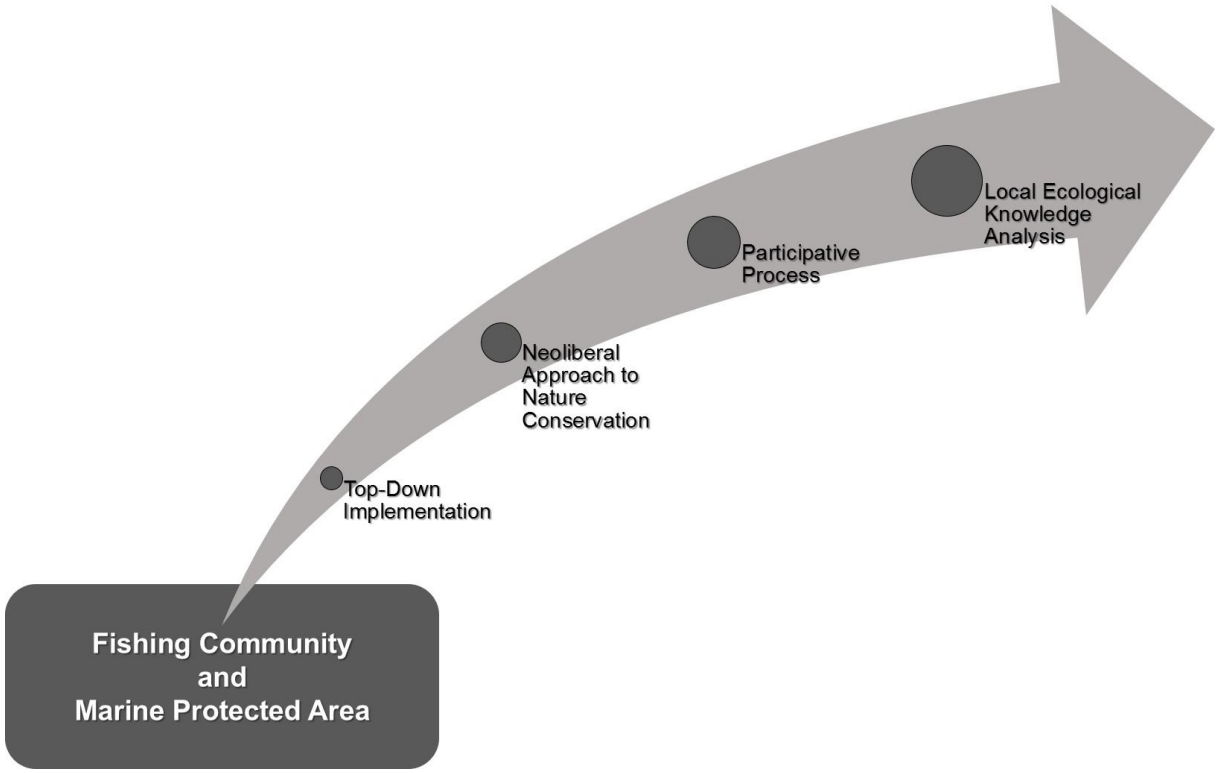

Figure 7.1 - Thematic integration

In Chapter 3: it was studied the importance of the neoliberalism agenda in the current implementation of protected areas contextualizing with the Sesimbra socio-cultural framework and the LSMP history. Despite this approach, the intention was to do a critical analysis of the nature conservation in the current neoliberal world and not extract value from MPAs. In the LSMP case we examined the growing importance of the tourism; the political impetus underwriting the MPA design, implementation and management; the disconnection between MPA governance and community support; and the loss of community-based local knowledge. These attributes express and reflect of the manner in which a neoliberal framework has guided the implementation of the LSMP. The general feeling left within the impacted local community is that conservation objectives overtook local social issues and needs. In the study presented it was argued that conservation measures such as MPAs, should not allow the

economic and political interests to simply prevail over social interests, as it is the case with the neo-liberal driven policies and practices. When this happens, the measures implemented foster social dissatisfaction and contribute to social inequalities which, in turn, generate an environment of disrespect and rejection of the MPA and its management rules and procedures. To foster MPA successes it is necessary to stop underestimating the importance of the social component and the engagement of the impacted human community, particularly marine resource harvesters and their families.

In the Chapter 4: and Chapter 5: we concluded that the in MARGov participatory process, aiming towards the deconstruction of the conflict, performed an important role in the constructive and collaborative effort, revealed by the first joint solution proposals. Moreover several participants, despite their different points of view and interests, found out common interests and the possibility to dialogue, which opened up opportunities for possible negotiations between them. We have to point out the interventions of some groups (namely fishermen), who, initially did not feel comfortable in speaking to big audiences and overcame this issue, becoming more participative, revealing a begin of empowerment development. With the consolidation of the social network, the stakeholder´s engagement was analyzed. Their involvement depends on the possibility of being genuine and the level of importance of their participation - they have moved from being part of the problem to become part of the solution (e.g. groups with conflicting opinions were able to hear the ideas of each other and even applauded it). Additionally, it was concluded that the stakeholders empower can change a controversial situation, since they can get maturity to assure the follow up of the process, assuming a leading role and being responsible for the process continuity.

In Chapter 6: we analyzed the Local Ecological Knowledge (LEK) identified through the MARGov Project in two phases, before the participatory process *versus* after the process. This analysis allowed the identification of the impact of the participative methodologies such as the demystification of certain issues, the deconstruction of power "hierarchies" between stakeholders, and the creation of safe environments where everyone could speak and listen. For the fishermen it was possible to create their own space and collective voice during this participatory process, learning with the other stakeholders involved, and showing that a better understanding of the role of

their LEK may contribute to wiser choices methodologies for MPA definition and implementation. Therefore, we conclude that both the knowledge of fishermen and scientists taking place in a process like this have a very enriching and complementary role. In other words, all kind of knowledge is important for a participatory process and must be taken into account to obtain useful results in the management of common natural resources.

7.1 Dilemmas and their relation with nature connection

> *"We often forget that WE ARE NATURE. Nature is not something separate from us. So when we say that we have lost our connection to nature, we've lost our connection to ourselves."*
>
> *— Andy Goldsworthy (British sculptor)*

One of the key aspects that is generally evident from the analysis of this thesis is a long lasting relation man-nature revealed by the Sesimbra community. In fact, Sesimbra community always had a strong connection with nature, especially with the sea.

Until the 60-70´s of the XX century, Sesimbra younger men knew that their future work would be at the sea, working as fishermen or something related with the fishing activity. The children grew up at the beach, on the seashore, near the boats and the fish. In this way, they learned all the sea concepts as an integrated part of their daily life, something like playing. This learning process has established the community legacy and the children became men and women that knew and respected the nature because they recognized the good things (good catches, freedom, subsistence) and the bad things (uncertainty, fear, death). The man–nature relationship has always been quite ambiguous, with nature being seen as both a provider and an enemy (Bourdeau, 2004).

Throughout the XX century, the Sesimbra artisanal fishing activity increased its economic importance and stopped being a subsistence activity. This amplified the existing competition among fishermen and the necessity of more fishing to get more money with environmental, socio, economic and cultural consequences. The activity

regulation became more complex during these years, and got more complicated with the entrance to the European Community in 1986, with the wide top-down legislation and no consideration of local realities and difficulties to implementation it *in situ*.

At the same time, tourism becomes a stronger economic activity in Sesimbra. This opened up new opportunities to young people and to fishermen themselves, who as fathers discourage their children to become fishermen. Pushed away from the seashore by the urban expansion demand, generated by the touristic activity, children of fishermen are nowadays far from being able to deal with the sea on a daily basis.

In recent years, Portuguese coastal communities had to deal with numerous “new” problems such as lack of biodiversity, overfishing, pollution, etc., and the Arrábida coastline is not an exception. As soon as the area was protected, its users saw their access conditioned by restriction rules, weakening their connection with the area (and with nature).

For example, the case of a 30-35 years old woman from Sesimbra who perhaps spent part of her childhood in her father boat with the family, slept on the beach in the summer, swam, dived and fished, knowing all the coastal species and creating a close bonding with nature. Now, she still a person who knows and respects the area, but, she cannot do the same with her child due to the rules and restrictions imposed, and consequently her children will not attain the type of connection she had with the nature. This is in line with social dilemmas generated by introducing science and technology in a capitalist society, disassociating nature from culture (Garrido, 2010). According to Burgess & Mayer-Smith (2011), fishermen child are losing their sensitivity and connection to the natural world; its gentle slowness and ordinariness are being replaced by electronic stimulation and virtual experiences. The same author argues that contact with the natural world, especially during middle childhood, assumes a surprisingly important role in a child’s emotional responsiveness and receptivity.

7.2 The sea culture or an identity construction

"It is in Portugal that the rivers of Spain find their way to the sea. It could be thought that, since Spain has rivers, it should also have a relationship with the sea; but this relationship was particularly developed by Portugal."

- Hegel (1968 in Soromenho-Marques, 2007)

Sesimbra community has a strong man-nature relationship and the sea has a relevant role in it because it is the groundwork for its identity construction.

From the analyses and observations made in this thesis, the sea is central for the whole Sesimbra community. It assumes a multitude of roles such as livelihood provider (e.g. fishing activity and shipbuilding), connection and communication to the outside (e.g. Portuguese expansion, trade and maritime routes), inspiration, religion and mysticism, and provider of the conditions for recent development (tourism associated to the beach use and nautical sports). The sea assumes the utmost importance in their community construction of the "code of honor", as a moral mechanism, with several cultural implications like the family importance, the family stability and the women behavior. All this makes of Sesimbra a singular community with particular characteristics which distinguishes it from the other communities.

Despite the singularity of Sesimbra community, sea culture is part of the collective identity and is a common transversal characteristic which crosses the whole Portuguese territory. The sea as a Portuguese national heritage links the past to the present, and during that process it produces an identity (Peralta, 2008). There is a diversity of historical reasons for this but the most significant for this thesis is: the location of Portugal between Spain (large and strong) and the open sea. This encouraged historically looking to the sea as the expansion opportunity, the sea turned to be an expansion symbol for culture, identity and even economy.

The Portuguese literature and culture are inspired with the sea. From the beginning, the sea was a daily landscape, deeply impregnating the psychology, traditions, literature, art and even the Portuguese gastronomy (Martins, 1998). The literature is a good example of the sea influence in the Portuguese identity. Many Portuguese writers

“sang” the sea, namely Antero de Quental, António Nobre, Álvaro de Campos, Camões, Eugénio de Andrade, Fernando Pessoa, Florbela Espanca, Miguel Torga, Ricardo Reis, Sophia de Mello Andresen. For example, the "Message" (*Mensagem*) book, from Fernando Pessoa, is representative of the Portuguese intensive connection to the sea, whose theme is the glorious past of Portugal:

> *“The Portuguese Sea*
>
> *Oh salt-laden sea, how much of your salt*
> *Is tears of Portugal!*
> *To cross you, how many mothers wept,*
> *how many sons in vain prayed!*
> *How many brides-to-be brides remained,*
> *So you were ours, oh Sea!*
>
> *Was it worth? Everything is worth,*
> *If the soul is not small.*
> *Whoever wants to go beyond (cape) Bojador,*
> *Has to go beyond pain.*
> *To the sea gave God peryl and the abyss,*
> *But in it He also mirrored heaven.”*
> *- Fernando Pessoa (Portuguese Poet, 1888-1935) from “Mensagem” (1934)*

The Portuguese people have an unquestionable link to the sea, predominantly lyrical and superficial, like a childhood memory (Garrido, 2010). The romantic exaltation of Portugal and the sea persists, without establishing the true nature of this relationship (Amorim, 2008). The sea as a national identity narrative is a symbolic support which refers to the imaginary time of the epic memory of chimeric universe, and nothing similar to the reality and materiality of fishing activities that constitute the *"corpus"* of local maritime heritage (Peralta, 2008). The fishing techniques, boats, dialects, costumes, or even the fishermen character, are seen as a survival of a "traditional"

way of life that fits in the authenticity and heroic epic narrative of the nation, but these are also solid elements for defining a decadent image (Nunes, 2008).

According to Bauman (2013), we are living a Liquid Modernity, a theory which defines our time a changing Era with constant movements, where nothing “solidifies” and everything is instable, fragmented and disperse, set by the short-term and by permanent uncertainty. Thus, the search for identity is the ongoing struggle to arrest or slow down the flow, to solidify the fluid, to give form to the formless (Bauman, 2013). Furthermore, the sea culture is a sociocultural field often marginalized and, in general, it is not considered as a link value chain generated by Portuguese "maritime economy" or as an element of social cohesion (Garrido, 2010).

The Portuguese identity is presently made by these key-concepts and in some way, a marginalization and decadence of the sea culture. Thus, the sea, although articulated around a past strongly myth maker, contains a strong prospective dimension that invents and reinvents the successive future (Peralta, 2008). Nevertheless, currently the sea culture is not seen as a symbol of decadence identity but as future national purpose, supported by strong political and economic network[17],[18],[19]. According to Garrido (2010), if the sea culture becomes a country development factor it implies to assume that the first beneficiaries of a sea policy must be the fishermen and the maritime people in general because the sea culture is the social language of the maritime communities, i.e. it is their own identity.

The potential of identity and culture as important individual and community resources within social action takes further significance within the globalized contexts (Williams *et al.*, 2003). Thus, its preservation, promotion and emphasis can be the basis for the creation and strength of a collective discourse and can empower the people and community involved.

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[17] Estratégia Nacional para o Mar 2013-2020 - Available at http://www.dgpm.mam.gov.pt/Documents/ENM.pdf (accessed April 7, 2015)

[18] Website Cluster do Mar – Available at http://www.clusterdomar.com/ (accessed April 7, 2015)

[19] Message from Republic President in October 23, 2010 – Available at http://www.presidencia.pt/?idc=45&idi=52749 (accessed April 7, 2015).

“There's only sea in my country”.

- Afonso Duarte (Portuguese Poet, 1884-1958) (In Moreira, 2008)

7.3 Empowering a fishing community in a MPA management context

“Power can be taken, but not given. The process of the taking is empowerment in itself.”

- Gloria Steinem (American feminist, journalist, and social and political activist)

The participatory process carried out in Sesimbra through the MARGov Project had as main purpose to create empowerment through creating the conditions – safe spaces of dialogue for the key actors – for the building up of intellectual, social and political capital.

This ultimate goal - empowerment - compelled us to study Sesimbra community in detail. We had to understand this community´s past and the reasons for its singularity and its conduction through its history. While doing this we recognize the importance that nature had, in particular the sea, in the construction of community identity. Therefore, we understood that the sea identity had to be assumed as the collective common foundation for the development of the participatory process. Despite the social actors different points of view, the existence of a common foundation which united all the stakeholders, could open the possibility for a genuine dialogue which promoted empowerment through a collective discourse construction.

Empowerment is conceptualized as a narrative of self-transformation (Drury, 2005) and its results can be very subtle and not obvious.

The representativeness and its legitimacy are the “Achilles' heel” of a participatory process because it is not easy to assure its consistency. In this case study, the authors

created methodologies adaptable to emerging circumstances and needs to promote and encourage wide stakeholders' participation.

During the process, the social actors that participated were diverse and quite variable over time: citizens, institutional technicians, political representatives, "Arrábida lovers" citizens, recreational sportsmen, businessmen, fishermen, lay people, and researchers, among others. The knowledge about Sesimbra imprinted in the sessions, through the invitation of expert speakers in different areas, was identified by the stakeholders as relevant, creating local social group dynamics that were quite useful to allow prediction, understanding, integration and adaptation of all of the different stakeholders' contribution. This great variety of views, concerns and interests have created a richer and more representative process (Annex III). At the end, it was possible to identify more clearly which of the actors (local leaders, institutions, civil society, economic and recreation activities), are representative and have the legitimacy to constitute a representative core to debate, and eventually decide about LSMP issues, either formally or informally.

Finally, in an attempt to respond to Vranjes (2006), it is possible to say that from this case study, there were the stakeholders that collectively won some space to "control and govern" the LSMP in articulation with the Park managers and other key actors/stakeholders such as a few administrative institutions (e.g. *Direcção Geral dos Recursos Marinhos, Segurança e Serviços Marítimos*). This will necessary be reflected in the community acquiring a role within spatial policy decision making. The discussion here is not so much "What should be the appropriative division of the decision-making power between the local community on the one hand and the State (and its institutions) on the other" but how the different parts can be brought together into a collective participatory process and how they can find ways to share responsibilities and commitments within the decision making power.

7.4 Is the co-management and local participation the only solution to management? - Possible solutions: the paradigm shift

"Make things as simple as possible. But no simpler."

- Albert Einstein

According to Holling (2000), neither conservationists, developers or community activists are completely certain or wrong when defending their theories in nature conservation but they are partial and very simple.

From the research literature, it is possible to identify major guidelines for future paradigms in the management of common resources, including the MPA. A new paradigm arising out of integrated, multi-disciplinary science, management and education/outreach efforts must be adopted to help in promoting flexible, diverse and effective MPA management strategies (Agardy *et al.*, 2003). For instance, a combination between top-down and bottom-up approaches to governance was studied and applied in countries like UK (Jones, 2012) and USA (Sievanen *et al.*, 2011).

However, it is important not to forget the theory defended by Ostrom *et al.* (2007), which make two false assumptions:
(i) all problems, whether they are different challenges within a single resource system or across a diverse set of resource systems, are similar enough to be represented by a small class of formal models and;
(ii) the set of preferences, possible roles of information, and individual perceptions and reactions are assumed to be the same as those found in developed Western market economies.

Therefore, to move beyond panaceas and build a solid field of sustainability science, a more fruitful approach is to recognise that complex systems cannot be separated into linear independent parts, but are only partially decomposable into their structure (Dedeurwaerdere, 2013).

Small-scale fisheries and the coastal social–ecological systems in which they are embedded are complex systems and they are difficult to govern because they are dynamic and unpredictable (Evans *et al.*, 2011). Alternative management paradigms, including integrated, collaborative, and ecosystem based management, address a number of the failings of conventional and hierarchical management but do not explicitly aim to manage this uncertainty. On the other way, adaptive management does it since it is unique as a framework for managing the uncertainty, nonlinearity, and emergent properties inherent in complex systems (Evans *et al.,* 2011).

Diegues (2005) refers to an alternative approach to the hegemonic conservation theory and practice called ethno-conservation. The basic assumption of this new approach is the idea that science is above all social practice influenced by other social practices, including political and theoretical ones (Diegues, 2005). According to the same author, it criticizes the dichotomy between man and nature and the idea that man is intrinsically a nature destroyer, recognizing that there are different types of relationship between human beings and nature according to different socio-cultural organizations.

Moreover, Dedeurwaerdere (2013) analyses the key features of transdisciplinary research as an integration of scientific and various scientific expertise from the relevant stakeholder communities and the linking of scientific problems with societal problems. The same author said the transdisciplinary research program of ecological economics integrates the idea that sustainability is also a matter of rights and ethics, and is not confined to economic and ecological considerations alone and presents the transition approach as a new paradigm. This can be triggered by a combination of niche innovations, pressures from changes in the landscape and problem solving at the regime level but this approach, even if they have mainly been used in a sustainable development context, essentially develop a general theory of socio technological transitions, and not a theory of strong sustainability or integrated socio ecological relations.

In common-pool resource systems, the structure of resource user’s social networks may be particularly important to consider because of the high levels of uncertainty and competition over resource use often impede real collaborative management and sustainable resource use (Barnes-Mauthe *et al.*, 2013).

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From the MARGov project results, this thesis concludes that neo-liberal driven policies and practices allowing economic and political interests to prevail over social interests have to be overcome to implement successful nature conservation policies. Avoiding a merely conservationist perspective and using the right methodologies, flexible and adjustable - to the context and to the stakeholder needs and profiles - it is possible to involve and engage the interested parts in a participatory process, promoting interactive platforms operating as joint learning spaces. In this case, through the methodology of the participatory process, it was possible to deconstruct the conflict and find common interests to achieve collaborative solutions and build intellectual, social and political capital while increasing community knowledge.

The spaces created for dialogue among the parts constitute genuine collaborative contexts able to address in scope and depth the critical, multiscale conservation, adaptation, and management issues (Thornton & Scheer, 2012:1). Doing this, it is possible to exceed the methodological barriers (Gerhardinger *et al.*, 2009b:94) and to overcome the conflict of interest between the conservation agenda and the needs of the LEK-holders (Shackeroff & Campbell, 2007:344-345).

Reinforcing successfully the ties between the scientific-political community and the local community promotes the use of different types of knowledge, creating value added crucial to overcome the “prevalent misconception among those in positions of authority that believe that marine management is techno-scientific and it does not need to include people (Diegues, 2005). Furthermore, the present study concludes that all kinds of knowledge are important to be present in the participatory process and must be taken into account to obtain useful results in the management of common natural resources, in particular when developing and implementing MPAs that impact local established livelihoods and ways of living.

The importance of a maritime culture for Sesimbra´s identity and a strong man-nature relationship can be viewed as key factors to achieve successful socio-cultural results in nature conservation.

References

Agardy, T., Bridgewater P., Crosby M.P., Day J., Dayton P.K., Kenchington R., Laffoley D., McConney P., Murray P.A., Parks J.E. & Peau L. (2003). Dangerous targets? Unresolved issues and ideological clashes around marine protected areas. Aquatic Conservation: Marine and Freshwater Ecosystems, 13: 353–367.

Amorim I. (2008). *Homens da Terra ou Homens do Mar: um percurso historiográfico In:* Nunes O.F. (Coord) (2008). *Culturas Marítimas em Portugal*. Âncora Editora. Lisboa: 27-70.

Barnes-Mauthe M., Arita S., Allen S. & Leung P. (2013). A Network Analysis of Fisher's Social Capital and the Effects of Ethnic Diversity in Hawaii's Longline Fishery. SOEST 12-03, JIMAR Contribution 12-381. Available at http://www.soest.hawaii.edu/pfrp/soest_jimar_rpts/barnes_arita_leung_ethnic_longline.pdf (accessed February 1, 2013).

Bauman Z. (2013) Liquid modernity. John Wiley & Sons. 240pp.

Burgess D.J. & Mayer-Smith J. (2011). Listening to children: Perceptions of nature. Journal of Natural History Education and Experience, 5: 27-43.

Dedeurwaerdere T. (2013). Sustainability Science for StrongSustainability. Report prepared in the context of the public tender on a Scientific Report on the Organisation of Scientific Research, with the support of the Minister for Sustainable Development and Public Administration of the Walloon Government of Belgium. Available at http://biogov.uclouvain.be/staff/dedeurwaerdere/2013%2001%2011_sustainability%20science-EN.pdf (accessed February 1, 2013).

Diegues A.C. (2005). Multi-use Marine Protected Areas and Coastal Conservation in Tropical Countries. Keynote address at MARE CONFERENCE -Amsterdam, 7-9 July. 16pp. Available at http://nupaub.fflch.usp.br/sites/nupaub.fflch.usp.br/files/amsterdam.pdf (accessed March 14, 2013).

Dury J., Cocking C., Beale J., Hanson C. & Rapley F. (2005). The phenomenology of empowerment in collective action. British Journal of Social Psychology, 44: 309–328. Available at: http://www.sussex.ac.uk/affiliates/panic/Drury%20et%20al%202005.pdf (accessed April 2, 2013).

Evans, L.S., Brown K. & Allison E.H. (2011). Factors influencing adaptive marine governance in a developing country context: a case-study of southern Kenya. Ecology and Society 16(2): 21. Available at: http://www.ecologyandsociety.org/vol16/iss2/art21 (accessed July 19, 2012).

Garrido A. (2010). *Capítulo 7: A Cultura do Mar – Perspectivas e Desafios In:* Matias N.V., Soromenho-Marques V., Falcato J. & Leitão A.G. (Org) (2010). *Políticas Públicas do Mar*. Esfera do Caos: 277-289.

Holling C.S. (2000). Theories for sustainable futures. Conservation Ecology 4(2): 7. Available at: http://www.ecologyandsociety.org/vol4/iss2/art7/ (accessed March 22, 2015).

Jones P.J.S. (2012). Marine protected areas in the UK: challenges in combining top-down and bottom-up approaches to governance. Environmental Conservation, 39 (3): 248-258.

Martins J.C. (1998). *O Mar e a Vocação*. Revista Mensageiro. Available at http://alfarrabio.di.uminho.pt/vercial/letras/candid02.htm (accessed March 20, 2013).

Nunes F.O. (2008). *Dois Séculos de Arte de Xávega: Capitalismo, Decadência e Organização do Trabalho In:* Nunes O.F. (Coord) (2008). *Culturas Marítimas em Portugal*. Âncora Editora. Lisboa: 123-151.

Ostrom E., Janssen M.A. & Anderies J.M. (2007). Going beyond panaceas. Proceedings of the National Academy of Sciences, 104(39): 15176-15178.

Peralta E. (2008). *O Mar como Património: Considerações acerca da identidade nacional portuguesa In:* Nunes O.F. (Coord) (2008). *Culturas Marítimas em Portugal*. Âncora Editora. Lisboa: 73-91.

Sievanen L., Leslie H.M., Wondolleck J.M., Yaffee S.L., McLeod K.L. & Campbell L.M. (2011). Conservation Letters, Volume 4, Issue 4: 298–303.

Soromenho-Marques V. (2007). The environment: a brief geographical description of Portugal. Available at http://www.viriatosoromenho-marques.com/Imagens/PDFs/Environment%20in%20Portugal%202007.pdf (accessed April 2, 2013).

Vranjes M. (2006). Cultural Landscape and Triglav National Park from “The Native Point of View”: The case of Trenta Valley, Slovenia In: Simonic P. (eds). Ethnography of Protected Areas. Univerza v Ljubljani: 71-84.

Williams L., Labonte R. & O´Brien M. (2003). Empowering social action through narratives of identity and culture. Health Promotion International Vol. 18, No.1: 33-40. Available at http://heapro.oxfordjournals.org/content/18/1/33.full.pdf (accessed January 23, 2013).

ANNEXES

Annex I: Interview scripts

Phase I – Pre-MARGov Project

Annex Table I - Summary of the interview script to the Sesimbra fishing community in order to achieve variety of opinions (Phase I).

SUMMARY OF INTERVIEW SCRIPT

(1) Personal path

Residence and Workplace

(2) Study Area

Best areas

Most important areas

Problematic areas

(3) Strengths and limitations issues in the area

(4) Ideas / Contributions

Phase II – Post-MARGov Project

Annex Table II - Summary of the interview script for the MARGov Project movie about Governance and named "The Look of the participants" (Phase II).

(1) Identification

- Name
- How did you find MARGov Project? How was your participation (expert, stakeholder, just interested) in Project MARGov?

(2) Margov project by the stakeholders

- What is Project MARGov for you?
- What did you like most? What did you like less?
- If the project continues, would you like to continue your involvement? Why?
- Choose a word or expression that best defines what MARGov project was for you.
- Any other thing to mention?
- In general there was equal treatment to all participants?

(3) Knowledge aquired

- How does your participation in Project activities contributed to your knowledge or personal experience? Was there any change in your way of seeing or doing things (way of working, learning, etc. ..)

(3) LSMP perceptions

- What do you like to change in LSMP?
- What would you do differently?
- Anything else to add?

Annex II: Stakeholders identification

Phase I – Pre-MARGov Project

Annex Table III - Phase I: Characterization of the fishermen interviews

No.	AGE (years old)	FISHING GEAR	ROLE	FISHING AREA	NOTES
1	82	Gillnets	Ex-fisherman / Gillnets arrangement	"Land fisherman"	
2	56	Longline to black scabbard fish	Fishing Master	Outside LSMP	
3	49	Traps	Fishing Master	Outside LSMP	But he has a fishing license to fish within the LSMP
4	46	Traps	Fishing Master	LSMP and adjacent areas	Fishing with another person
5	55	Jigging	Fishing alone	LSMP	
6	40	Trammel nets	Fishing Master	LSMP and adjacent areas	Fishing with another person
7	43	Traps	Fishing Master	LSMP and adjacent areas	Fishing with another person
8	55	Traps and Gillnets	Fisherman companion	Outside LSMP	President of the Fishermen Association
9	55	Purse seine	Fishing Master	Outside LSMP	
10	-	Longline to black scabbard fish	A Producer Organization direction	Outside LSMP	
11	41	Traps and Gillnets	Fishing Master	Outside LSMP	But he has a fishing license to fish within the LSMP
12	54	Jigging and Lonline	Fishing Master	LSMP (jigging) and adjacent areas (longline)	
13	64 and 76	Beach seine	Fishing Master	LSMP (Sesimbra and Meco beaches)	
14	52	Traps	Fishing Master	LSMP	Fishing with another person

Annex Table IV - Phase I: Characterization of the Key-informants and Institutional representative's interviews.

No.	INSTITUITION	WHO	ACTION AREA
1	Sesimbra Municipality	Techincal	Sesimbra
2	Local newspaper	Director	Sesimbra
3	Maritime Delegation of Sesimbra[20]	Person in charge	Sesimbra
4	Sesimbra library	Person in charge	Sesimbra
5	Mutual Fisherman[21]	President	Portugal and islands with a local delegation in Sesimbra
6	Port Administration of Setúbal and Sesimbra[22]	Technical	Setúbal and Sesimbra
7	Setúbal Captaincy Harbour[23]	Harbour Captain	Setúbal and Sesimbra
8	Research Institute for Fisheries and the Sea[24]	Researchers	Portugal
9	Speleology Center of Blue Coast[25]	Collaborators	Arrábida
10	Tridacna - Association of Underwater Activities[26]	Collaborators	Arrábida

[20] Portuguese version: Delegação Marítima de Sesimbra.

[21] Portuguese version: Mútua dos Pescadores. Available at http://www.mutuapescadores.pt (accessed July 23, 2012).

[22] Portuguese version: Administração Portuária de Setúbal e Sesimbra. Available at http://www.portodesetubal.pt/ (accessed July 23, 2012).

[23] Portuguese version: Capitania do Porto de Setúbal.

[24] Portuguese version: Instituto de Investigação das Pescas e do Mar (IPIMAR). Available at http://www.inrb.pt/ipimar/ (accessed July 23, 2012).

[25] Portuguese version: Núcleo de Espeologia da Costa Azul (NECA). Available at http://espeleologia-neca.blogspot.pt/ (accessed July 23, 2012).

[26] Portuguese version: Tridacna - Associação de Actividades Subaquáticas.

No.	INSTITUITION	WHO	ACTION AREA
11	FindKelp Project	Investigators	Portuguese Coastline
12	Setúbal Municipality	Alderman and Technicals	Setúbal
13	Nautical Club of Sesimbra[27]	President	Sesimbra
14		Researcher in Nature Tourism	Arrábida
15	Sesibal - Fishing Cooperative of Purse Seine in Setubal, Sesimbra and Sines	Direction	Setubal, Sesimbra and Sines
16		Researcher in Sustainable Development	Various sites
17		Sesimbra Writer	Sesimbra

[27] Portuguese version: Clube Náutico de Sesimbra. Available at http://www.naval-sesimbra.pt/ (accessed July 23, 2012).

Phase II – Post-MARGov Project

Annex Table V – Phase II - Characterization of the interviews for project evaluation.

No.	ROLE
1	- LSMP Fisherman - Direction of Fisheries Shipowners' Association of Local and Artisanal Fisheries of the Centre and South (AAPCS)
2	- Fisherman - Direction of Fisheries Shipowners' Association of Local and Artisanal Fisheries of the Centre and South (AAPCS)
3	- Researcher at the Centre of Marine Sciences, University of Algarve (CCMAR / UAlg)[28] - Coordinator of the Biomares Project[29]
4	Technical of Sesimbra Municipality (CMS) in the Division of Fisheries and Local Economy[30]
5	Head of Internal Resources Division of the Fisheries and Aquaculture Directorate-General (DGPA)[31]
6	- Professor and Researcher at the Hotel and Tourism Estoril School (ESHTE)[32] - PhD Student in active tourism in protected natural areas
7	- Member of the Arrábida Club - Resident of Arrábida Natural Park
8	Technical of Nature Conservation and Biodiversity Institute (ICNB)[33] in Arrábida Natural Park
9	- Tourism Adviser of Sesimbra Municipality (CMS) - He has been Advisor for Economic Activities of CMS
10	- President of the Association of Sesimbra Commercial Marine Tourist Operators (ACOMTS) - "Vertente Natural" Business Owner
11	Professor and Researcher at the Centre of Marine Sciences, University of Algarve (CCMAR / UAlg)

[28] Available at http://www.ccmar.ualg.pt/ (accessed January 18, 2012).

[29] Available at http://www.projetobiomares.com/ (accessed January 18, 2012).

[30] Available at http://www.cm-sesimbra.pt/ (accessed January 18, 2012).

[31] [Available at http://www.dgrm.min-agricultura.pt/ (accessed January 18, 2012).

[32] Available at http://www.eshte.pt/ (accessed January 18, 2012).

[33] Available at http://www.icnf.pt/ (accessed January 18, 2012).

No.	ROLE
12	- Researcher at the Oceanography Institute, Sciences Faculty, University of Lisbon (IO/FCUL)[34] - PhD student in MPA
13	Technical of Nature Conservation and Biodiversity Institute (ICNB)
14	President of the Arrábida Club
15	Director of the Management Department of West and Lisbon Coast Classified Areas, Nature Conservation and Biodiversity Institute (ICNB)
16	Technical of Sesimbra Municipality (CMS) in the Division of Fisheries and Local Econom
17	Researcher at Fisheries and Marine Research Institute (IPIMAR)[35]

[34] Available at http://co.fc.ul.pt (accessed January 18, 2012).

[35] Available at http://www.inrb.pt/ipimar (accessed January 18, 2012).

Annex III: During the participative process

Among the interviews conducted in Phase I and this 2nd phase, Post-MARGov, there were some situations that should be referred:

- Beginning of the participatory process with Fishermen workshops in a noble area of the Municipality Sesimbra (in 1st, 2nd and 3rd Fishermen Workshops on October, November and December 2009) (Annex Figure 1.a);
- Changing the format of Fishermen workshops for more family meetings at the headquarters of the Fishermen Association (in 1st Fishermen Meeting on January 2010) (Annex Figure 1.b);
- Turning point in May: Proposals for action relating to recreational activities within the PMPLS was applaud by everyone: they reached a consensus (in 5th Participatory Forum for all on May 2010) (Annex Figure 1.c); Evolution from not speak to all talk: The fishermen showed greater autonomy bringing the issues they want to discuss (in 5th Participatory Forum for all on May 2010) (Annex Figure 1.d);
- Problems and developments of the Fishermen association (before the Summer of 2010);
- MARGov contacts extra meetings and negotiations extra MARGov to answer important questions of everyday life;
- Parallel activities had much more active (like the boats parade organized by recreational boating on the shore of Arrábida during August) (in August 2010) (Annex Figure 1.e);
- During the 6th Participatory Forum, there was an unusual influx with many new people not knowing the MARGov Project rules, there was a very strong recreational boating presence and the fishermen left the room and the work took place without any of their representatives (in 6th Participatory Forum for all on September 2010);
- Evidence of the large number of institutions involved in the LSMP management and their difficulties to reach consensus (in 7th Participatory Forum for all on October 2010) (Annex Figure 1.f);
- Fishermen proposed a series of actions relating to the co-management LSMP (in 8th Participatory Forum for all on November 2010) (Annex Figure 1.g).

Annex Figure 1 - Some changes and important moments during the participative process: a) 1st Fishermen Workshops on October 2009; b) 3rd Fishermen Meeting on January 2010; c) 5th Participatory Forum for all on May 2010; d) 5th Participatory Forum for all on May 2010; e) Boats parade on the shore of Arrábida during August 2010; f) 7th Participatory Forum for all on October 2010 and g) 8th Participatory Forum for all on November 2010. From: MARGov Project (Photos a), b), c), d), f) and g) and a-sul blog (Photo e).