



Universidade Federal de Pernambuco UFPE, RECIFE, BRASIL, 27-28<sup>th</sup> November 2019  
CEERMA (Centro de Estudos e Ensaio em Risco e Modelagem Ambiental)  
Av. da Arquitetura, 211-351 - Cidade Universitária, Recife - PE, 50740-550, Brésil

**« The good, the beast and the ugly: integrating biodiversity conservation and artisanal fisheries into marine spatial planning while avoiding the risk of ocean grabbing by one of the many users of the space at sea».**



## Background

Implementing Marine Spatial Planning in tropical countries raises specific and interlinked challenges:

### (1) Dealing with the ecological specificities of natural ecosystems in tropical regions

Except for locally enriched areas (e.g. upwelling ecosystems), marine tropical ecosystems are characterised by low productivity and high species richness. More acutely than other ecosystems, their resilience relies on the maintenance of their structural and functional biodiversity. Unfortunately, climate change is expected to challenge this key of resilience : in contrast to temperate and polar regions, which are expected to increase their species abundance richness, tropical ecosystems are expected to suffer from a decline and even extinction of local species. As a consequence, it is of crucial importance for the sustainability of these ecosystems to foster those of the human activities at sea that respect as much as possible the **integrity of biodiversity architecture**.

### (2) Dealing with the specificities of human uses in tropical ecosystems.

Governance weaknesses, legal and political instabilities, stakeholders of unbalanced representations and powers may constitute the basic ingredients of a risk of ocean grabbing. The term « **Ocean grabbing** » refers to the capturing of control by powerful economic actors of crucial decision-making processes, leading to a preferential access to resources and/or areas. Traditional small-scale fisheries, which contribute to food security of many tropical countries, may be victim of such process because of the weakness of their representation in decision-making arenas. While the political dimension of this risk is obvious, it may also contribute to an ecological problem. Indeed, traditional, polyvalent, small-scale, artisanal fisheries are probably the fleets most adapted to a balance harvesting strategy. The concept of **balanced harvest** proposes to distribute a moderate fishing pressure across the widest possible range of species, stocks, and sizes of an ecosystem, in proportion to their natural productivity so that the relative size and species composition is maintained. It has been proposed as a way for fisheries management to achieve the requirements of both the Law of the Sea Convention (LOSC)—to maintain stocks at the level at which they could produce MSY—and the Convention on Biological Diversity (CBD)—to maintain ecosystem structure and functioning. Considering the importance of the integrity of biodiversity architecture pointed out above, balanced harvesting may constitute a pertinent target for fisheries management in tropical regions. In that sense, securing a balanced representation of artisanal fisheries in the marine spatial planning process may contribute to both governance equity and ecosystem resilience.

### (3) Dealing with knowledge uncertainty, data gaps and data heterogeneity

Conserving biodiversity architecture, fostering 'balanced-harvest' resources exploitation, avoiding ocean grabbing risk are targets that all require a good level of information/data

on resources at-sea, on the spatio-temporal patterns of human uses at sea and on the vision of future scenarios for the sea of the different stakeholders. Yet, data on tropical ecosystems are often heterogeneous, in terms of spatio-temporal coverage and quality, if not deficient. In consequence, there is also a major challenge in setting up tools for the simulation of management scenarios that would be robust to data gap and efficient in representing uncertainty on data.

Because of the specificities of these tropical marine ecosystems, a Marine Spatial Planning Process needs to be tailored-made and adaptive in those regions. The purpose of this workshop will be to illustrate and discuss those three aspects, with the Brazilian Nordeste as a showcase.

### Workshop animation



**Betty Queffelec (Université de Bretagne Occidentale, UBO)**  
Environmental law and law of the sea



**Béatrice Padovani (U. Federal de Pernambuco, UFPE)**  
Marine ecology



**Solange Teles da Silva (U. Presbiteriana Mackenzie)**  
Environmental law and law of the sea  
(could not attend because of health emergency)



**Sophie Bertrand (IRD)**  
Marine Ecology

## Participants

The workshop provided the occasion to gather 19 professors, experienced researchers and students involved in Marine Spatial Planning research, from 6 institutions from Brazil and France (see detailed list participants in annex): UFPE, UFRPE, UnB, UFAM, from Brazil and UBO and IRD from France. A wide range of disciplines, from physical oceanography, marine biology, marine ecology, fisheries science, law and governance were represented and allowed fruitful exchanges on how to handle the compromise between conservation, exploitation and equity in a marine spatial planning process. A variety of study cases, in particular Brazilian, were examined and discussed through this multidisciplinary lens.

## Detailed Agenda

### 27<sup>th</sup> November 2019

09:00 - 12:00 and 13:00-15:00 Presentations of ongoing works

- Queffelec B., Bonnin M., Padovani Feirrer B., Bertrand S., Ndiaye F., Trouillet B., Teles Da Silva S., Cudennec A., Toonen H.

Marine Spatial Planning and Ocean grabbing in the world wild blue: the good, the bad and the ugly in tropical atlantic.

- Brunel A., Bertrand S.

Scenarii simulation for marine spatial planning in tropical Atlantic : development of a standardized decision support platform

- Silva S., Costa da Silva A., Bertrand S.

A Aplicação do Planejamento Espacial Marinho

na identificação de áreas de relevância para conservação no Estado de Pernambuco

- Brasil C., Padovani Ferreira B.

Habitat diversity, connectivity and human impacts in coastal reefs: an integrated analysis for MSP

- Domalain G. Bente N., Simier M.

Artisanal fisheries from the sky in a data-poor context

- Domalain G., Bente N., Gal M., Bertrand S.

Restoring and collating existing information on human uses at sea

- Bertrand S.

Collecting information on fisheries space-use for MSP in data-poor contexts

- Suassuna L., Coutinho L., Oliveira M.

Marine protected areas in Brazil: Challenges on granting the right of use for traditional communities

- Suassuna L.

Community-based tourism in Brazilian marine protected areas

15:00-17:00 Round table on « « The good, the beast and the ugly: integrating biodiversity conservation and artisanal fisheries into marine spatial planning while avoiding the risk of ocean grabbing by one of the many users of the space at sea».



**28th November 2019**

09:00-16:00 Work in subgroups

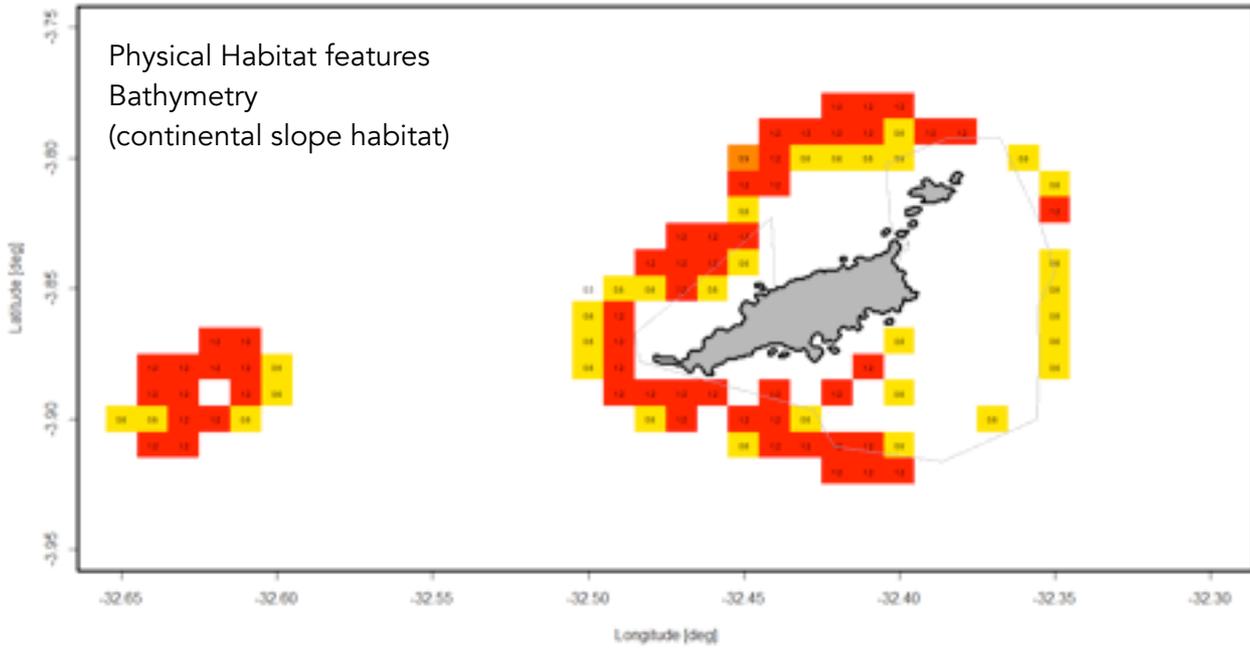
- Writing session for a publication preparation on « How to avoid MSP to become an ocean grabbing tool in tropical region »
- Implementation of Marxan pilot experiments on available Brazilian Nordeste small datasets (e.g. Fernando de Noronha)



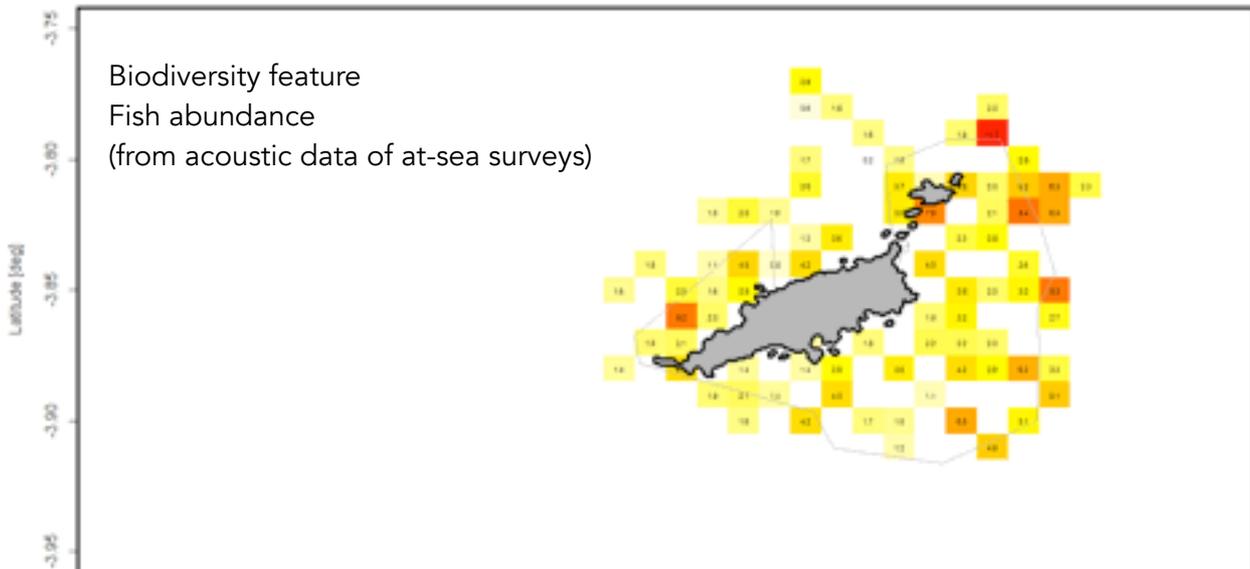
### **Output examples**

The sub-working group on decision support tool for MSP (with the example of Marxan) was organised in order to didactically produce input files for Fernando de Noronha study case, based on data previously gathered (fishing sites, acoustic data, bathymetry and coast lines) benefiting from exchanges of both Tapioca International Joint Laboratory (UFPE,UFRPE,IRD) and Paddle MSP workshop. This group of young researchers from UFPE, UFRPE and IRD will follow up this activity in the next months and plans to produce a chapter for the Paddle Handbook on MSP on a Marxan application to this offshore archipelago.

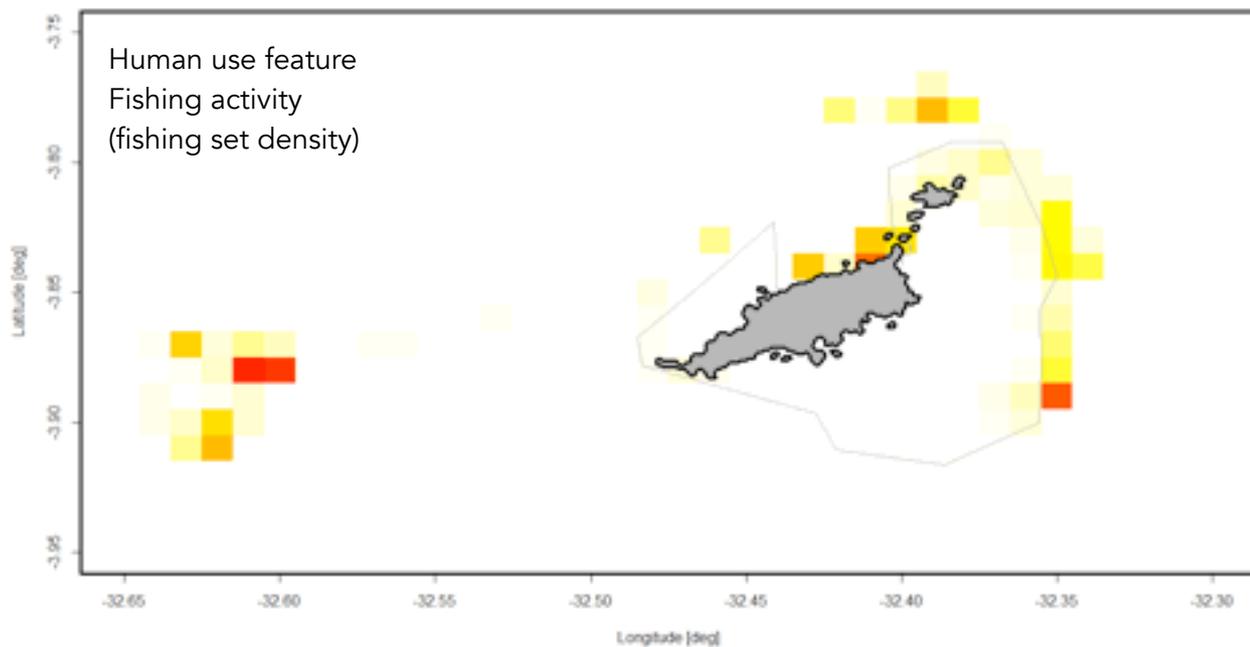
PU vs CF4



PU vs CF1



PU Cost



LISTA DE PRESENÇA	
DATA: 27/NOV/2019	LOCAL: CEERNA - UFPE - BRASIL
HORÁRIO:	COORDENADOR: Sophie BERTRAND
TEMA: Interdisciplinary Workshop PADDLE	

ITEM	NOME	Instituição	e-mail	telefone	assinatura
1	Beatrice P. Ferreira	UFPE	beatrice@ufpe.br	81 996083982	
2	Thiago B. M. de Oliveira	UFPE	thiago_bmv@uol.com.br	11 99314 7456	
3	Camila B. L. da Silveira	UFPE	camilablsl@hotmail.com	81 998 195549	
4	Rosângela Lessa	UFPE	rosangelal@uol.com.br	81 99725060	
5	Alessandra R. Pessoa	UFPE	alexpeessoa@gmail.com	81 9 99169899	Alessandra Pessoa
6	Suelen C. Silva	UFPE	CSILVA.SUELEN@MAIL.COM	81 99764151	Suelen
7	BRUNEL Adrien	IRD	adrien.brune1.p@protonmail.com	06 33181924	
8	Latifa Pelage	UFRPE	latifa.pelage@gmail.com	81 998971553	
9	Samantha A. Pereira	UFAM	samanthacca1@gmail.com	(92) 9244-8425	
10	Catarina Cardoso de Melo	UFRPE	cmelo.catarina@gmail.com	(81) 99982-4401	Catelo
11	Tatiana Beltrão	UFRPE	tatiana.beltrao.ac@hot	(81) 99728 8025	Tatiana
12	Sophie BERTRAND	IRD	sophie.bertrand@ird.fr	(81) 99999 2583	
13	Gilles Domafain	IRD	gilles.domafain@ird.fr		
14	Betty Queffelec	UBO	betty.queffelec@univ-brest.fr	+33 7 6227 13 61	

1/2

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ITEM	NOME	Instituição	e-mail	telefone	assinatura
1	FLAVIA L. Freilou	UFRPE	flavia.l.freilou@ufrpe.br	996410981	
2	Thierry Freilou	UFRPE	thierry.freilou@ufrpe.br	996410981	
3	Alexandre da Silva	UFPE	alexandre@ufpe.br		
4	ARNAUD BERTRAND	IRD	arnaud.bertrand@ird.fr	99992553	
5	LARISSA SUASSUNA	UNS	LARISSA_SUASSUNA@HOTMAIL.COM	399470308	
6	Prof.ª Betty	UBO	betty.queffelec@univ-brest.fr	+33 7 6227 13 61	
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