MULTIPLE OCEAN STRESSORS AND INVASIVE ALIEN SPECIES: INTRODUCTION AND INSIGHT INTO THE CCLME

24 February 2022 – On-line meeting

Meeting report

Kick-off meeting of the project *Invasive alien species and other ocean stressors: Furthering the scientific knowledge and capacity basis in the Canary Current Large Marine Ecosystem*

A project implemented by the IOC-UNESCO,
in partnership with the Instituto Español de Oceanografia, and funded by the
Spanish Agency for International Development Cooperation (AECID)

unesco
Intergovernmental
Oceanographic
Commission

GOBIERNO DE ESPAÑA
cooperación española

Table of contents

1. Context of the meeting

The Intergovernmental Oceanographic Commission (IOC) of UNESCO is currently implementing the project *Invasive alien species and other ocean stressors: Furthering the scientific knowledge and capacity basis in the Canary Current Large Marine Ecosystem* (CCLME), which is funded by the Spanish Agency for International Development Cooperation (AECID). The project is implemented in collaboration with the Instituto Español de Oceanografía (IEO, Spain). This is the fourth of a series a project implemented in the CCLME region, the first one started in 2013.

The project aims at furthering the scientific knowledge and capacity basis in the countries in the region (Cabo Verde, Gambia, Guinea, Guinea Bissau, Mauritania, Morocco, Senegal and Spain (Canary Islands)) by adding a focus on the effects of multiple ocean stressors to the knowledge base of the Canary Current system. This new focus will include a collaborative approach to the question of invasive alien species (IAS), its connection with other ocean stressors, and an assessment of IAS and other ocean stressors in the region.

2. Summary of the meeting, discussion and conclusions

The aim of this first meeting of the fourth phase of the project, was to introduce the project, the concepts of multiple ocean stressors and invasive alien species. The agenda for the meeting is presented as Annex 1. The list of participants is presented as Annex 2, and a screenshot taken during the meeting is presented in Annex 3.

2.1 Introduction to the project

Itahisa Déniz González, IOC Project coordinator, introduced the background of the project and the scope of current phase IV. The presentation is available in the meeting dedicated page.

Discussion focused on two things. First, the need to ensure close coordination within the project and the FAO CCLME project, to be sure we do not repeat efforts and we build synergies – FAO is now implementing a Medium Size Project in preparation for the implementation of the Strategic Action Programme for the CCLME. Second, there was a request of clarifications on the focus of the project as addressing to big topics: IAS and MOS – the main focus is on IAS, disentangling its drivers and the connection of this stressor with other stressors in the CCLME region.

Follow-up:

- *This meeting and the meetings to come have as objective to facilitate scientific discussions for the production of and assessment of IAS and other multiple ocean stressors in the CCLME. Such report will be based in scientific literature and a regional IAS database will be prepared. All participants are requested to revise the draft list of references already prepared and to indicate any references to complete the list, including references in the different languages spoken in the region and national databases.*
- *The IOC Secretariat will provide the new regional coordinator of the FAO CCLME project with further information about the background of the collaboration between the IOC and the FAO in the CCLME, in a bilateral exchange.*

2.2. Introduction to Multiple Ocean Stressors and Invasive Alien Species

2.2.1 Introduction to Multiple Ocean Stressors

Sam Dupont, researcher at the University of Gothenburg, introduced the topic of Multiple Ocean Stressors, based on a document by the IOC working group on MOS that will be published very soon. The presentation is available in the meeting page.

Discussion focused mainly on the link science-policymaking, showing participants interest on listening to opinions on what should be the speech to be addressed to politicians and how to transfer the knowledge to them. In what regards the message to be addressed to politicians, Sam advised to not delay action, to raise our voices and use existing clear messages, to push for the solutions already available (i.e. mitigation, adaptation); the faster we act, the better. After that, one could move to the identification of the real research gap to implement a solution, how to optimize (including our capacity), and to present a realistic timeline. In case one is too blocked, it might be useful to check at the societal level what is the potential for change. In what regards how to transfer science knowledge to politicians taking into account that there is a certain level of uncertainty of some information, and how to communicate that scientist might be wrong, this relates to science communication, and it is important to understand what policy-makers want from scientists. Sam advised to provide answers and options and to simplify, to use tools as the evidence gathered in the IPCC reports, which put things in context and take into account uncertainty/level of confidence, as well as to not overuse uncertain data to keep our credibility.

In what regards to the research strategy, it was discussed that in case of limited resources, some activities might not be the best option, i.e. monitoring takes too long time and it is not always easy to maintain. To take action, we might need to prioritize. For that reason, biological monitoring could be promoted as a tool for action, as an early warning system; it is easier that it used to be. It was also highlighted the importance of the identification of local expertise as a strength, the identification also of the real needs, and see what can be done with the existing expertise.

2.2.2. Invasive Alien Species: terminology and definitions. An introduction to diversity and patterns of marine alien species in the Macaronesia

João Canning-Clode, researcher at MARE, Centro de ciências do mar e do ambiente, ARDITI, introduced the terminology and definitions for invasive alien species and patterns of marine alien species, based on a literature review recently published for the Macaronesia. The presentation is available in the meeting page.

Discussion focused on different questions. First, there was a question about the production of the paper itself, which is the first baseline study for the Macaronesia region, based solely in literature review. The authors know there are already other new species reported, and next step is already on place which is the deployment of experimental units.

Another question was about considering ocean circulation as a vector for IAS. João clarified that circulation was not addressed in the study, only indirectly. They addressed climate change and range expansions, which according to his opinion are to be considered as non-native species.

Discussion also addressed what can be done in terms of prevention of introductions, which is considered the best tool. In this regard, monitoring is important as it is better to early detect alien species; once a species is established, it is almost impossible to eradicate it. But one thing is detecting one species and a different one is measuring its impact on the environment, or on the economy. It was highlighted that in Madeira Island none of the identified alien species have become invasive so far. Another idea evoked in what regards what can be done to prevent introduction was that countries could adhere the Ballast Waters Convention, which entered into force a few years ago, and implement measures, such as clean the oil and gas drilling platforms in the port of origin. It is a question of money.

There was interest to know if healthy ecosystem are less prone to invasive alien species, which could be also used as an argument to promote ecosystem health in general. Indeed, the more diversity in the community, the more resistant to invasions, i.e. marine protected areas, there is biotic resistance.

Ideas requiring further discussion/for later consideration:

- *The focus of the project is on IAS and its drivers, which are conceptually known. They must be mapped with the MOS concept in mind – something that has been never done for the region. Further, the assessment shall also address how IAS interact with other ocean stressors in the region. The group needs to decide if climate change is to be considered or not as a driver for IAS, and if the species reaching new places by range expansions (dispersal by natural mechanisms into a region) will be considered in the assessment as alien species or not.*
- *Provided that there is no standardization in what regards definitions in the topic of IAS, there is a need to choose the definitions to be employed, which will need to be presented upfront in the assessment.*
- *In what regards IAS, the best tool is prevention. Therefore, in the assessment, the links of IAS with the different drivers could be used as an argument to communicate. In the end, the purpose is to avoid having the negative impact in the ecosystem. Example: the probability of introduction could be limited by preventing marine litter or ballast waters; reduction of marine litter may also reduce alien species, which could potentially become invasive.*

2.3 Summary of the discussion and wrap-up

The second meeting of the project is programmed for 24 March 2022. A draft agenda was presented.

Follow up:

- *Participants to propose names of experts who could introduce climate change as a driver for invasive alien species in the region.*

Annex 1. Agenda for the meeting

unesco
Intergovernmental
Oceanographic
Commission

GOBIERNO DE ESPAÑA
cooperación española

"MULTIPLE OCEAN STRESSORS AND INVASIVE ALIEN SPECIES: INTRODUCTION AND INSIGHT INTO THE CCLME"

Kick-off meeting of the project *Invasive alien species and other ocean stressors: Furthering the scientific knowledge and capacity basis in the Canary Current Large Marine Ecosystem*

VENUE: ON-LINE MEETING (MICROSOFT TEAMS)

DATE: 24 FEBRUARY 2022

TIMES INDICATED IN CET (UTC+1)

AGENDA

TIME	
11:00-11:40	**WELCOME AND INTRODUCTION TO THE PROJECT** Itahisa Déniz González (IOC-UNESCO) *OPENING REMARK* *MEETING AGENDA/ORGANIZATION* *INTRODUCTION TO THE PROJECT*
11:40-12:40	**INTRODUCTION TO MULTIPLE OCEAN STRESSORS AND INVASIVE ALIEN SPECIES** Moderators: Aicha Berrada (Institut Agronomique et Vétérinaire Hassan II, Morocco) and Rui Freitas (Atlantic Technical University, Cabo Verde) *INTRODUCTION TO MULTIPLE OCEAN STRESSORS* Sam Dupont (University of Gothenburg, Sweden) *DISCUSSION*
12:40-12:50	HEALTH BREAK
12:50-13:50	*INVASIVE ALIEN SPECIES: TERMINOLOGY AND DEFINITIONS. AN INTRODUCTION TO DIVERSITY AND PATTERNS OF MARINE ALIEN SPECIES IN THE MACARONESIA* João Canning-Clode (Marine and Environmental Sciences Centre, ARDITI, Portugal) *DISCUSSION*
13:50-14:00	SUMMARY OF THE DISCUSSION AND WRAP UP

Annex 2. List of participants

- Jesús ARRIETA (Instituto Español de Oceanografía-CSIC, Spain)
- Luis ARTIGAS (Centre National de la Recherche Scientifique - Université du Littoral Côte d'Opale - Université de Lille, France)
- Hocein BAZAIRI (Mohammed V University in Rabat, Morocco)
- Aicha BERRADA (Institut Agronomique et Vétérinaire Hassan II, Morocco)
- Tijani BOJANG (Ministry of Fisheries and Water Resources, Gambia)
- Mohamed El BOUZOUMA (Institut Mauritanien de Recherche Océanographique et des Pêches, Mauritania)
- Cheikh Baye BRAHAM (Institut Mauritanien de Recherche Océanographique et des Pêches, Mauritania)
- Eva CACABELOS (MARE – Marine and Environmental Sciences Centre, Portugal)
- Bakary CAMARA (University of The Gambia, Gambia)
- Mamadouba CAMARA (Centre de Recherche Scientifique de Conakry Rogbanè, Guinea)
- João CANNING-CLODE (MARE - Centro de Ciências do Mar e do Ambiente, ARDITI, Portugal)
- Aina CARBONELL (Instituto Español de Oceanografía-CSIC, Spain)
- Sabrina CLEMENTE (Universidad de La Laguna, Spain)
- Guilherme DA COSTA (Guinea-Bissau)
- Hervé DEMARCQ (Institut de Recherche pour le Développement, France)
- Mamadou DIA (Institut Mauritanien de Recherche Océanographique et des Pêches Mauritania)
- Anis DIALLO (ENVOCEAN SARL, Senegal)
- Bintou DIBBA (University of The Gambia, Gambia)
- Sam DUPONT (University of Gothenburg, Sweden)
- Khalid EL KHALIDI (Université Chouaib Doukkali, Morocco)
- Jesús FALCÓN (Instituto Español de Oceanografía-CSIC, Spain)
- Katia FREIRE LOPES (BIOS.CV - Associação para a Conservação do Ambiente e Promoção do Desenvolvimento Sustentável, Cabo Verde)
- Rui FREITAS (Universidade Técnica do Atlântico, Cabo Verde)
- Eva GARCÍA-ISARCH (Instituto Español de Oceanografía-CSIC, Spain)
- María GELADO-CABALLERO (Universidad de Las Palmas de Gran Canaria, Spain)
- Marta GONZÁLEZ CARBALLO (Instituto Español de Oceanografía-CSIC, Spain)
- Marcos GONZÁLEZ-PORTO (Instituto Español de Oceanografía-CSIC, Spain)
- Rafael GONZÁLEZ-QUIRÓS (Instituto Español de Oceanografía-CSIC, Spain)
- Cheikh INEJIH (DDECOMAR, Mauritania)
- Mamudou JALLOW (University of The Gambia, Gambia)
- Lamin JAMMEH (University of The Gambia, Gambia)
- Jose LANDEIRA (Instituto de Oceanografía y Cambio Global – Universidad de Las Palmas de Gran Canaria, Spain)
- Marcos LLOPE (Instituto Español de Oceanografía-CSIC, Spain)
- Eric MACHU (Institut de Recherche pour le Développement, France)
- Bouya M'BENGUE (Institut Mauritanien de Recherche Océanographique et des Pêches, Mauritania)
- Ivonne MONTES (Instituto Geofísico del Perú, Peru)
- Birane NDOM (Université Assane Seck de Ziguinchor, Senegal)
- Ismaïla NDOUR (Centre de Recherches Océanographiques Dakar-Thiaroye, Institut Sénégalais de Recherches Agricoles, Senegal)
- Josep L. PELEGRÍ (Institut de Ciències del Mar-CSIC, Spain)
- Fran RAMIL (Universidade de Vigo, Spain)
- Adriana RODRÍGUEZ (Universidad de La Laguna, Spain)
- J. Magdalena SANTANA-CASIANO (Instituto de Oceanografía y Cambio Global – Universidad de Las Palmas de Gran Canaria, Spain)
- Aboubacar SIDIBÉ (FAO Fisheries and Aquaculture Department, Senegal)
- Raül TRIAY-PORTELLA (Universidad de Las Palmas de Gran Canaria, Spain)
- Luis VALDÉS (Instituto Español de Oceanografía-CSIC, Spain)
- Itahisa DÉNIZ GONZÁLEZ (Intergovernmental Oceanographic Commission of UNESCO)

Annex 3. Screenshot of the meeting