Workshop on "INVASIVE ALIEN SPECIES AND THEIR DRIVERS IN THE CANARY CURRENT LARGE MARINE ECOSYSTEM"

24 March 2022 – On-line meeting

Meeting report

Second 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 of UNESCO,
in partnership with the Instituto Español de Oceanografia (IEO), and funded by the Spanish Agency for International Development Cooperation (AECID)

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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 of projects 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.

The kick-off meeting of the project was held 24 February 2022, counting with the participation of 46 experts. The presentations and the meeting report are available in the dedicated meeting page.

2. Summary of the meeting, discussion and conclusions

The aim of this second meeting of the fourth phase of the project was to discuss invasive alien species in the region from a multiple ocean stressors approach. The agenda for the meeting is presented as Annex 1.

A total of 32 experts participated in the meeting. The list of participants is presented as Annex 2, and a screenshot taken during the meeting is presented in Annex 3.

2.1 Brief introduction to the project

Itahisa Déniz González, IOC Project Coordinator, reminded the scope of current fourth phase of the project with a focus on IAS activities. The presentation is available in the meeting dedicated page.

Follow-up required:

- *All participants are requested to revise the updated draft list of references and to indicate any references to complete the list.*

2.2. Setting the scene in the Canary Current Large Marine Ecosystem

2.2.1 Identifying stressors, related sectors, and the affected ecosystem components in the CCLME: a zoom in into Invasive alien species

Marcos Llope, researcher at the IEO-CSIC, presented stressors, the related sectors and the affected ecosystem components identified for the CCLME region, based on a case study elaborated using ODEMM (Options for Delivering Ecosystem-Based Marine Management), an Integrated Ecosystem Assessment (IEA) tool. The presentation is available in the meeting page.

Discussion focused mainly on questions about the tool and the methodology, and several clarifications were provided by Marcos. They are listed below for a better understanding of his presentation:

- The level of confidence is reflected in one of the graphics. The methodology takes into account uncertainty, in particular in the pressure-component linkages for which precise information might be missing for the region. A color-code is applied in linkages, in 3 categories, using different colors in case relying on studies; data or maps; or in case relying on experts' opinions and judgements. Data gaps can be identified through this exercise.

- A limitation of the tool is that it focuses on direct effects; non-linear effects are not included.
- The tool focuses mainly on management. Therefore, only sectors that are manageable are included in the horrendogram. Vectors such as sea turtles or seabirds are not included, as managing the movements of these species would be difficult; it is a natural component.
- Stressors not directly manageable are neither included, i.e. climate change, hypoxic events - not directly manageable, unless a sector directly affecting the stressor can be identified.
- The model is able to assess the degree of intensity of the stress – the degree of impact is one of the subcategories assessed by the tool before giving a final score: low, chronic and acute.
- Some clarifications about some of the sectors listed:

  Coastal infrastructure: They facilitate the establishment of alien species, e.g. jellyfish

  Tourism/Recreation: Tourist boats (biofouling)

  Non-renewable: Oil and gas platforms

  Invasive Species: Some experts contributing to the case study considered that species coming from an area or subregion region within the CCLME are not considered as invasive, this is to be rediscussed

  Research: It needs to be discussed if it is a relevant sector in what regards IAS in the region – not considered so far.
- ODEMM methodology: once pressures, sectors and ecosystem components are identified, management objectives can be set up (overall and regional objectives), with the participation of different stakeholders.

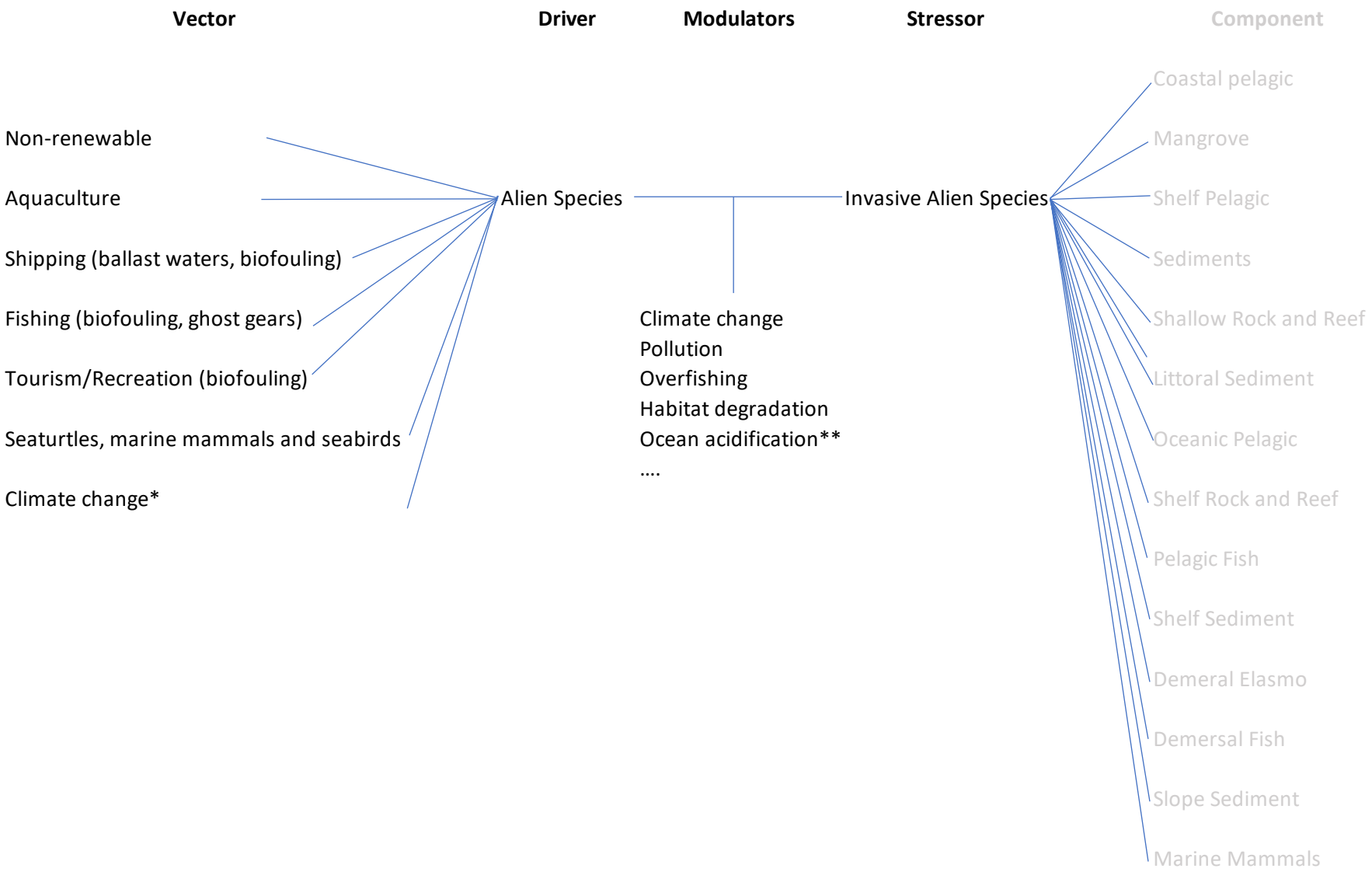
Some of the questions and comments in the discussion referred directly to the project and its objectives. Some clarifications were provided by the IOC Project Coordinator, which are listed below:

- An IAS database for the region is planned to be prepared within the project, based on desktop research, and to be used for the assessment to be elaborated in a collaborative way also within the project.
- The data gathered will be presented in the CCLME Eco-GIS Viewer, and ideally in any IOC relevant databases, such as OBIS.
- The project is expected to reinforce the collaboration, to create a network of experts, paving the ground for future collaborations and collaborative work on IAS in the CCLME region.
- No surveys are planned within our project.

An exercise to look at the horrendrogram presented, but from a MOS perspective, was proposed.

Some slides were prepared ahead of the meeting to remind the MOS terminology and to facilitate the discussion.

This first brainstorming resulted in the following draft theoretical framework. It is to be noted that the column in grey was not discussed in this occasion.



*Including climate change as a vector or not, will depend on the definitions agreed for alien and invasive species

** Potential modulators affecting the CCLME region, and in particular ocean acidification, require further discussion

2.3 Summary of the discussion and wrap-up

It was agreed to programme the third project meeting for 5 May 2022, 14-17 h CEST. The meeting will be shaped as a Workshop to discuss on the Alien Species database for the CCLME that will be elaborated under the framework of this project.

Follow up:

- *Participants to propose names of speakers and/or indicate relevant articles or publications, including examples of databases, the related literature research, and the criteria met for the selection of species included in the database.*
- *Third meeting will focus on the database, as its elaboration may require some time. The database will focus on alien species, including movements of species within the CCLME, as they could potentially generate stress in new areas reached.*
- *In parallel, a list of terminology and definitions concerning the topic of IAS will be circulated for review and later discussion. Definitions will be addressed during the fourth project meeting.*
- *The fact that climate change is to be considered or not as a vector for alien species in the assessment, will depend on the definitions agreed. The elaboration of the database, and the future review of the draft theoretical framework, shall be undertaken taking this into account.*

Annex 1. Agenda for the meeting

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WORKSHOP ON "INVASIVE ALIEN SPECIES AND THEIR DRIVERS IN THE CANARY CURRENT LARGE MARINE ECOSYSTEMS"

VENUE: ON-LINE MEETING (GOTOMEETING)
DATE: 24 MARCH 2022
TIMES INDICATED IN CET (UTC+1)

AGENDA

TIME	
11:00-11:15	**WELCOME, MEETING AGENDA AND BRIEF INTRODUCTION** Itahisa Déniz González (IOC-UNESCO)
11:15-12:15	**SETTING THE SCENE IN THE CANARY CURRENT LARGE MARINE ECOSYSTEM** Moderators: Bouya M'bengue (Institut Mauritanien de Recherches Océanographiques et de Pêches, Mauritania) and Itahisa Déniz González (IOC-UNESCO) *IDENTIFYING STRESSORS, RELATED SECTORS, AND THE AFFECTED ECOSYSTEM COMPONENTS IN THE CCLME: A ZOOM IN INTO INVASIVE ALIEN SPECIES* Marcos Llope (Instituto Español de Oceanografía-CSIC, Spain) *DISCUSSION*
12:15-12:30	HEALTH BREAK
12:30-13:50	*DISCUSSION (continued)*
13:50-14:00	SUMMARY OF THE DISCUSSION AND WRAP UP

Annex 2. List of participants

- Javier ARÍSTEGUI (Instituto de Oceanografía y Cambio Global – Universidad de Las Palmas de Gran Canaria, Spain)
- Kandè BANGOURA Centre de Recherche Scientifique de Conakry Rogbanè, Guinea)
- Hocein BAZAIRI (Mohammed V University in Rabat, Morocco)
- Tijani BOJANG (Ministry of Fisheries and Water Resources, Gambia)
- Cheikh Baye BRAHAM (Institut Mauritanien de Recherche Océanographique et des Pêches, Mauritania)
- Mamadouba CAMARA (Centre de Recherche Scientifique de Conakry Rogbanè, Guinea)
- Aina CARBONELL (Instituto Español de Oceanografía-CSIC, Spain)
- Guilherme DA COSTA (Ministério do Ambiente e da Biodiversidade, Guinea-Bissau)
- Anis DIALLO (ENVOCEAN SARL, Senegal)
- Bintou DIBBA (University of The Gambia, Gambia)
- Sam DUPONT (University of Gothenburg, Sweden)
- Hassan EL OUIZGANI (Université Ibn Zohr, Morocco)
- Jesús FALCÓN (Instituto Español de Oceanografía-CSIC, Spain)
- Eva GARCÍA-ISARCH (Instituto Español de Oceanografía-CSIC, Spain)
- María GELADO-CABALLERO (Universidad de Las Palmas de Gran Canaria, Spain)
- Rafael GONZÁLEZ-QUIRÓS (Instituto Español de Oceanografía-CSIC, Spain)
- Cheikh INEJIH (DDECOMAR, Mauritania)
- Mamudou JALLOW (University of The Gambia, Gambia)
- Marcos LLOPE (Instituto Español de Oceanografía-CSIC, Spain)
- Samir MARTINS (BIOS.CV - Associação para a Conservação do Ambiente e Promoção do Desenvolvimento Sustentável, Cabo Verde)
- Bouya M'BENGUE (Institut Mauritanien de Recherche Océanographique et des Pêches, Mauritania)
- Edwin MWASHINGA (Intergovernmental Oceanographic Commission of UNESCO, Kenya)
- Ismaïla NDOUR (Centre de Recherches Océanographiques Dakar-Thiaroye, Institut Sénégalais de Recherches Agricoles, Senegal)
- Amadou OURY BARRY (Centre de Recherche Scientifique de Conakry Rogbanè, Guinea)
- Josep L. PELEGRÍ (Institut de Ciències del Mar-CSIC, Spain)
- Fran RAMIL (Universidade de Vigo, Spain)
- Carlos SANGIL (Universidad de La Laguna, Spain)
- Aboubacar SIDIBÉ (FAO Fisheries and Aquaculture Department, Senegal)
- Raül TRIAY-PORTELLA (Universidad de Las Palmas de Gran Canaria, Spain)
- Victor Manuel TUSET (Instituto de Oceanografía y Cambio Global – Universidad de Las Palmas de Gran Canaria, Spain)
- Luis VALDÉS (Instituto Español de Oceanografía-CSIC, Spain)
- Itahisa DÉNIZ GONZÁLEZ (Intergovernmental Oceanographic Commission of UNESCO, France)

Annex 3. Screenshot of the meeting