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# **PROGRESS REPORT OF THE PROJECT “TOWARDS SOLUTIONS TO INTERACTIONS BETWEEN FISHERIES AND CETACEANS IN MOROCCAN AND TUNISIAN WATERS”**

## **PROGRESS REPORT OF THE PROJECT “TOWARDS SOLUTIONS TO INTERACTIONS BETWEEN FISHERIES AND CETACEANS IN MOROCCAN AND TUNISIAN WATERS”**

### **❖ Project background and objectives**

Depredation, which occurs when predators such as cetaceans partially or completely remove catches from fishing gear (which is often also damaged in the process), is a matter of increasing concern in several Mediterranean fisheries as it causes economic loss to fishers and can generate conflict, likely to make conservation efforts more difficult.

The 2018-2020 project “Towards solutions to interactions between fisheries and cetaceans in Moroccan and Tunisian waters” (the MAVA Depredation project) aims to reduce depredation by bottlenose dolphins (*Tursiops truncatus*) in small pelagic purse seine fisheries in Morocco and Tunisia.

The overall coordination of the project is ensured by the ACCOBAMS and GFCM Secretariats, in collaboration with SPA/RAC for the activities carried out in Tunisia. It is implemented in areas identified by the scientific national partners, namely the National Institute for Fisheries Research (INRH) of Morocco and the National Agronomic Institute (INAT) and National Institute of Marine Sciences and Technologies (INSTM) of Tunisia.

Building upon the pilot actions on cetacean depredation carried-out through the 2015-2018 project<sup>1</sup> “Mitigating the negative interactions between threatened marine species and fishing activities”, the MAVA Depredation project focuses on the priorities identified in the context of the Moroccan pilot action “Dolphin interactions with purse seine sardine fisheries in the Moroccan Mediterranean” and the Tunisian pilot action “Dolphin and seabird interactions with purse seine small-pelagic fisheries in Kelibia”.

The 2015-2018 pilot actions had supported the reinforcement in Morocco of the purse seine net to limit the tears caused by dolphins and an experimentation with a strengthened purse seine, the effectiveness of which is still being tested. In Tunisia, the pilot action had concluded on the need to test new acoustic deterrent devices (pingers) presenting features likely to be more efficient than the ones previously tested and to assess the feasibility of strengthening the most fragile parts of the purse seine nets; interactions between dolphins and aquaculture (fish farms) were also identified as an issue to be monitored.

The continuation of these activities through the MAVA Depredation project aims to ensure a technical follow-up of the monitoring activities and experiments - the reinforced seine and the acoustic repellents - and to improve, in parallel, the understanding of the behaviour of bottlenose dolphins and their interactions with the fisheries, and with aquaculture in the case of Tunisia.

The project focuses on the following:

- detailed analysis of the interaction between bottlenose dolphins and fisheries/aquaculture;
- study of ecological and population dynamics of bottlenose dolphins in relation to fisheries and aquaculture activities;
- experimentation of mitigation technologies - exchange of experience with international experts;
- awareness raising of fisheries sector stakeholders in the conservation of the marine environment, its species and habitats;
- assessment of the long-term sustainability of the small pelagic fisheries in a context of stock reduction and competition for the resource;
- dissemination of information and relevant material, including on lessons learned.

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<sup>1</sup> The MAVA1 project

### ❖ **State of progress of the Moroccan component**

A coordination meeting with the INRH scientific team was organized on 30 January 2019 to present the project and discuss the INRH provisional work plan.

During this meeting, the INRH highlighted the need to better understand dolphin behaviour and assess dolphins populations involved in depredation, asking for high level expert(s) to support them in developing a strong scientific programme on these issues. Considering the different techniques that could be used to monitor dolphins populations and behaviour (aerial/marines drones, satellite tracking, etc.), it was pointed out that photo-identification would be the most efficient technique allowing to collect several information at the same time.

Regarding mitigation measures, it was pointed out that the reinforced purse seine would probably not always be as effective in the long term and that dolphins might find a way to adapt to the net and increase the frequency of their attacks. Consequently, efforts for monitoring depredation and testing mitigation solutions should be continued.

On this basis, two experts – in fishing gear technologies and in cetacean population monitoring and photo-identification – were recruited in December 2019 to provide technical support to the INRH team in implementing project activities, in particular in the monitoring and assessment of the interactions between purse seines and dolphins and in setting up a photo-identification program, respectively. These experts are recruited by the ACCOBAMS Secretariat and work under the joint supervision of the ACCOBAMS and GFCM Secretariats, in coordination with the INRH team.

A first mission of the two experts was organized in Morocco on 28-29 January 2020. This mission was aimed at supporting INRH in defining their work plan in relation to depredation and cetaceans monitoring activities and test of mitigation techniques.

### ❖ **State of progress of the Tunisian component**

A coordination meeting was organized with INAT, INSTM and the ACCOBAMS Focal Point (Ministry of Agriculture, Water Resources and Fisheries / General Directorate for Fisheries and Aquaculture) on 28 January 2019 to present the project and the INAT/INSTM provisional work plan.

A Memorandum of Understanding between the ACCOBAMS Secretariat, INAT, INSTM and SPA/RAC was signed in March 2019 to define the collaboration arrangements between the project partners.

Two experts – namely an expert in fishing gear technologies and an expert in underwater acoustics and use of acoustic repellents – were recruited in April 2019 to provide technical support to the INAT/INSTM team in implementing project activities, in particular in the identification of the mitigation technologies to be tested. These experts are recruited by the ACCOBAMS Secretariat and work under the joint supervision of the ACCOBAMS and GFCM Secretariats, in coordination with the INAT/INSTM team.

A first mission of the two experts was organized in Tunisia on 23-26 June 2019. This mission was aimed at exchanging with fishers and INAT/INSTM teams, defining the details of the work plan related to the test of mitigation techniques and agreeing on project priorities.

The activities related to the testing of mitigation techniques are therefore being implemented by focusing on two main objectives:

- Objective 1: Reinforcing the Tunisian seines to reduce the number of tears caused by dolphins and consequently diminish (net-mending) repair costs
- Objective 2: Identifying a repellent system effective enough to stop dolphins in case of depredation, without risking physiological damage or addiction.

Experimental protocols have been finalized, the acquisition of equipment is now underway and the field work related to the monitoring of depredation and cetacean populations involved in depredation is planned to start soon.