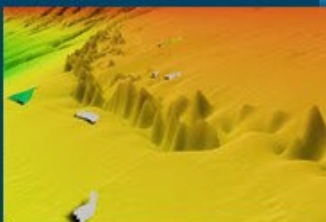




PROPOSAL FOR SCIENTIFIC ADVICE TO LDAC ON CONSERVATION OF BIODIVERSITY AND VULNERABLE MARINE HABITATS



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MARINE BIODIVERSITY

Despite the importance of the oceans for human existence and life on Earth, the over-exploitation of living resources by humankind over decades, the alarming increase in waste, particularly plastics, the exploitation of oil, gas and underwater mineral deposits, and the disproportionate shipping and tourism in coastal areas are causing an alarming level of degradation of our seas. At the same time, climate change is producing an extraordinary warming of the oceans, which can irreversibly affect all species, including the human species.

The combination of all these factors poses a serious threat to the richness of the seabed, which is home to more than 95 per cent of all ocean species, in particular to the most sensitive ecosystems known as Vulnerable Marine Ecosystems (VMEs). These include, for example, tropical and deep-water coral reefs around the world that are currently under terrible threat.

International agencies, such as the United Nations and the FAO, have echoed the state of emergency in our seas, which is why in 2015 they proposed and approved a series of goals that are essential to achieve sustainable development by 2030. The conservation and sustainable use of our seas, oceans and marine resources is Goal 14 among the 17 goals proposed by the UN 2030 Agenda (United Nations, 2015).



A yellow coral, vulnerable species, collected in 2009 from the submarine banks Almirante Leite, in the Mozambique Channel (Indian Ocean).

SOME BACKGROUND

The Long Distance Advisory Council, as a representative body for the fisheries sector, has the main role of advising the European Union and the Member States on matters relating to fisheries agreements with third countries, relations with Regional Fisheries Management Organisations (RFMOs) and fishing in international waters (ABNJ) where Community fleets operate.

The LDAC's advisory mission is part of a priority environmental objective: ***promoting the conservation of marine biodiversity and the sustainable use of fishery resources***, both under the Sustainable Development Goal SDG 14 of the United Nations 2030 Agenda "*conserve and sustainably use oceans, seas and marine resources*" (United Nations, 2015).

Both in the long and short term, the overall priorities of the LDAC are strongly committed to the most relevant lines of international policy on ocean governance, focusing on finding elements to help implement the EU and FAO recommendations for the blue economy, as well as meeting the goals of the United Nations 2030 Agenda. These elements include aspects related to the impact of climate change, reversing biodiversity loss and applying the ecosystem approach in fisheries management, as promulgated by the FAO.

The consolidation of new models enabling the application of the ecosystem approach to fisheries management and sustainable use of marine resources is another priority objective of the LDAC, strongly recommended for some of the Regional Fisheries Management Organisations (RFMOs). The problem is that the application of this holistic model to fisheries management requires sufficient information and scientific contributions from members, both from the fisheries sector and other interest groups or NGOs.

The LDAC also promotes coordination of external fisheries policy with the EU's environment and development cooperation policies, with the particular aim of strengthening the capacities of coastal states, especially in West Africa, and promote good practices in regional governance. Specifically, in the framework of the implementation of the Sustainable Fisheries Partnership Agreements (SFA) with African partner countries, the LDAC raises the need to improve existing scientific knowledge, especially in Morocco, Mauritania, Senegal, Guinea-Bissau and Gabon.

The ECOAFRIK Platform, thanks to its long history of research, of more than 20 years, in the waters of numerous African countries, has a wide and deep knowledge on

biodiversity and marine resources, as well as the problems associated with its conservation in Atlantic and Indian waters (www.ecoafrik-platform.org).

The Association brings together a team of marine researchers, currently active or retired, attached to the Spanish Institute of Oceanography and the Faculty of Marine Sciences of the University of Vigo. Some of them have more than 40 years of scientific activity dedicated exclusively to the study of exploitable stocks and biodiversity in African waters, as indispensable tools for the conservation of marine ecosystems and the sustainable management of fisheries resources.

The team's research activity has been carried out within the framework of the main OROPs operating in African waters, in particular CECAF and SEAFO, and the two main projects being developed by the FAO in Africa (EAF-Nansen and CCLME). In this context, ECOAFRIK researchers have participated in numerous FAO Working Groups and 35 oceanographic surveys aimed at the evaluation and/or prospecting by bottom-trawling of commercial demersal resources and the study of vulnerable habitats, in particular in deep waters, both in the jurisdictions of many coastal countries and in international waters (ABNJ).

Due to Spain's fishing interest, the priority of research and bilateral surveys carried out between 2002 and 2010 on board the R/V '*Vizconde de Eza*' focused on the countries of North-West Africa, in particular Morocco, Mauritania and Guinea Bissau, in addition to Gabon, coinciding with some of the LDAC target countries.



Bottom trawling surveys with commercial gear are extraordinary platform for increasing knowledge on marine biodiversity. In the photos, two scenes onboard the spanish R/V '*Vizconde de Eza*'.

The contribution that the ECOAFRIK Platform can make to the LDAC is based on:

- More than twenty years leading a research project aimed exclusively at studying and expanding knowledge about biodiversity and Vulnerable Marine Ecosystems (EMVs) of African waters, in the framework of the institutional collaboration between the IEO and the University of Vigo through a specific agreement, and the maintenance by external funding of a team of young researchers specialized in the biodiversity of African fauna.
- Scientific coordination and/or participation in 35 international surveys for the evaluation and prospecting of fishery resources, study of biodiversity and characterization of EMVs in the Atlantic and Indian Oceans, particularly in the north-west African region, on board the Spanish research vessel '*Vizconde de Eza*'. Among the countries studied, of which we have and could provide information on marine biodiversity, are Morocco (including Western Sahara), Mauritania, Senegal, Gambia, Guinea-Bissau, Guinea, Cabo Verde, Gabon, Namibia and Mozambique. We have also worked in other Gulf of Guinea countries such as Sierra Leone, Liberia, Côte d'Ivoire and Ghana for the 1990 '*Guinea-90*' Survey that we conducted on behalf of FAO (Ramos *et al.*, 1991).
- Participation in 12 FAO campaigns under the EAF-Nansen Project (Ecosystem Approach to Fishing), for characterization of vulnerable habitats in the SEAFO Area Beyond National Jurisdiction (ABNJ), such as the seamounts and shoals of the Sierra Leone Ridge, Walvis Ridge, Valdivia, Discovery and Vema, among others, and in the ZEEs of Morocco and Mauritania. All these surveys were carried out on board the Norwegian cooperation oceanographic vessel '*Dr. Fridtjof Nansen*'.
- Voluminous faunistic collections, consisting of several hundred thousand of benthic invertebrates collected over 20 years and 35 campaigns, in almost 4,000 sampling stations carried out between 20 and 2000 m in the African seabed of the Atlantic and Indian oceans. These collections, which also include those collected in FAO surveys, represent one of the most important, if not the most important, global register of marine biodiversity in Africa.
- Important collections of photographs of all collected species and their morphological details, scientific work and manoeuvres taken on board during the surveys, and quantitative georeferenced databases by species and season, in addition to relevant environmental information (multibeam bathymetry, CTD hydrological profiles and seabed sediment parameters).
- Relevant scientific production, among which we highlight: 1) the presentation of six doctoral theses on biodiversity from North-West Africa, two theses currently under

preparation, and another two to be started next year 2025-2026; 2) 20 master's degree dissertations; 3) 80 articles in scientific journals and 100 contributions to international symposia, conferences and working groups; 4) Publication of a monograph on deep water ecosystems off Mauritania (Ramos *et al.*, 2017), which describes the biodiversity and the most important habitats of Mauritania's continental margin (the giant cold-water coral reef, the canyons and an underwater mountain discovered during our expeditions).

- Discovery of several new genera and 40 new species of decapods, molluscs, echinoderms and cnidarians, among the more than 70,000 specimens studied to date, collected on board the '*Vizconde de Eza*' and '*Dr. Fridtjof Nansen*' from the African seabed.
- Long-standing cooperation with the fisheries institutes of many African countries, in particular with IMROP of Mauritania, INRH of Morocco, INDP of Cape Verde and CRODT of Senegal, contributing to the capacity building of their researchers on biodiversity and habitat study. This training was carried out, not only during the surveys on board the oceanographic vessels '*Vizconde Eza*' and '*Dr. Fridtjof Nansen*', but also through academic training at the University of Vigo, where they have had long annual stays (4-6 months), official master's and doctoral thesis studies. We currently host a Moroccan student who is doing her doctoral thesis on the EMVs of Morocco, in particular from deep-waters, based on the material and data that we collected in seven bottom trawling campaigns between 2004 and 2023.



On-board training during a Fridtjof Nansen survey in Morocco, and the Cape Verdean student Keider Neves who completed his Master's studies on diversity at our laboratory at the University of Vigo.

- International cooperation with the FAO within the framework of its two major projects in Africa, CCLME (Conservation of the Canary Current Large Marine Ecosystem) and EAF-Nansen (Ecosystem Approach to Fishing). ECOAFRIK researchers participated, as invited experts, in meetings and working groups related to the

preparation of Nansen's Scientific Programs, ecosystem characterization and mapping of seabed habitats. We have also organised international working groups and training programmes in third countries. As partners of the CCLME project, between 2010 and 2020, ECOAFRIK has been the only Spanish representative in all annual meetings of the Steering Committee and specialized Working Groups on "*Biodiversity, habitats and water quality*" and "*Planning and analysis of ecosystem surveys*".

- Some ECOAFRIK researchers, with more than 40 years' experience in biological and fisheries research in Africa, have been regular participants in FAO's Working Groups on Fisheries Resource Assessment, particularly for demersal stocks (cephalopods, hake, crustaceans) of the CECAF Area.
- Advice to conservation forums in the African area, such as PRCM (Partenariat Régional pour la Conservation de la zone côtière et marine en Afrique de l'Ouest) or PNBA (Parc National du Banc d'Arguin), leading the preparation of what was the first proposal for the creation of a Marine Protected Areas Network on the Mauritanian slope, at the request of local ministries (Ramos *et al.*, 2018)
- Information and management of GIS tools for the location of areas of high biodiversity (*hot-spots*), indicator species of vulnerable ecosystems or Areas of Special Ecological Interest.
- Ecological Vulnerability Analysis, based on the best scientific knowledge, in extractive projects of international oil and gas companies (Ramos *et al.*, 2023), and the impact of Spanish bottom trawling fleets on vulnerable ecosystems (Ramos *et al.*, 2024).



PRCM Forum on 2017 in Conakry (Guinea) and meeting of the FAO EAF-Nansen project in Bergen (Norway).

The extensive curriculum of the ECOAFRIK team and the list of projects implemented between 2007 and 2025, as well as the scientific output are presented as annexes at the end of this document.

OUR ADVICE PROPOSAL

Although about 50 organisations are currently associated with the LDAC, all of them belong to industry or the fisheries sector, or they are NGOs, only some of which are related to marine conservation.

It is striking that, among their partners, the LDAC does not have any scientific body, and this is the reason why we present this proposal for advice by ECOAFRIK, a team of Spanish researchers with a clear African vocation, some of which we have devoted 40 years of scientific career exclusively to the study of marine resources and ecosystems in the African Atlantic and Indian regions.

As a result of our long history of research and extensive knowledge on biodiversity, ecosystems and marine resources, focusing on cooperation with third countries, our team is ideally placed to provide scientific advice and support to the LDAC on issues that are among the Council's priority objectives, such as those related to:

- Conservation of marine biodiversity and ecosystems, marine spatial planning and Marine Protected Areas (MPAs).
- Ecological impact analysis of anthropogenic activities (bottom trawling and extraction of oil, gas and mineral resources) on biodiversity and vulnerable ecosystems
- Applying the ecosystem approach to fisheries management, following the FAO guidelines.
- Hydrological conditions linked to climate change, in particular in the main upwelling zones in Africa, and their potential impact on biodiversity and fisheries resources.
- Improvement and building of scientific capacities in third countries.

In general, ECOAFRIK could support the LDAC in its commitment to the EU and Member States to provide based on the scientific-evidence elements and technical advice for the implementation of the recommendations on the blue part of the European Green Agreement, within the framework of the International Ocean Governance.

ECOAFRIK could provide the best information, based on current scientific knowledge and/or its own data, in all those consultations to which the Advisory Council is called upon to respond, particularly in relation to the topics above-mentioned.

This contribution could be considered both for the jurisdictional waters of African third countries, as well as for international waters, and could be channelled through involvement in Working Groups 4 (Bilateral relations and sustainable fisheries agreements with third countries) and 5 (Horizontal themes).

The actions we propose for scientific advice to the Advisory Council could focus, for example, on:

1. Scientific advice on issues related to **Regional Fisheries Management Organizations (RFMOs)** in Africa. Although the Council has not so far been involved in organizations that affect African waters, such as CECAF, SEAFO or SIOFA, ECOAFRIK could provide the necessary scientific information related to both Atlantic and Indian Ocean organizations, including international waters.
2. Support in the negotiation of new **Sustainable Fisheries Partnership Agreements (SFPA)** or implementation of existing ones with African Atlantic and Indian countries, by collecting and contributing the best existing scientific knowledge and making recommendations on how this knowledge could be implemented in the respective country.
3. Assistance to the LDAC in its exploration of relations between the **EU's Marine Action Plan** and international bodies such as the CBD, OROPs, BBNJs or the Global Dialogue SOI —which promote the protection and restoration of **marine ecosystems** for sustainable fisheries— and its implementation within the framework of the international oceans governance agenda.
4. Support to the Council when it participates in **international fora** related to sustainable fishing and human activities at sea that have an impact on fisheries, such as FAO, UNGA, CBD or CITES.
5. Strengthen the exchange of knowledge and provide the best available scientific information to LDAC members by strengthening the role of the Advisory Council in collecting information and transmitting initiatives to the EU, to serve as a basis for political decision-making.
6. ECOAFRIK could act as a liaison with marine research institutes and conservation organizations, especially in the North-West African region, such as the PRCM (Regional Partnership for the Conservation of the Marine and Coastal Region of North-West Africa), the PNBA (Banc d'Arguin National Park, Mauritania) or the RAMPAN (Regional Network of West African Marine Protected Areas).
7. Provide the best available scientific information, in particular in the two upwelling areas of the Eastern Tropical Atlantic, on hydrological conditions linked to **climate change**, as are the global warming and the extension of the Minimum Oxygen Zone (OMZ), which have a strong impact on biodiversity, stock movements and fisheries.
8. Identification of major scientific weakness and knowledge gaps in different countries, and support for the implementation and development of training programmes aimed at strengthening the capacities of coastal states in West Africa, in cooperation with

the Marine Research Institutes. This activity could be carried out within the framework of the Understanding Agreements (MoU) that LDAC has signed with COMHAFAT/ATLAFCO and AFRIFISH-NET under a priority regional approach.



Location and model of the buildings in Porto do Molle where the Marine Biodiversity Center will be installed (the arrow indicates its location).

9. In terms of communication and outreach, ECOAFRIK could disseminate the activities and events developed by LDAC directly through its website and social networks (www.ecoafrik-platform.org), and through the permanent exhibition of the Marine Biodiversity Centre that the Platform will soon install in the Porto do Molle Business Park, in the municipality of Nigrán (Pontevedra).
10. Also in the communication field, we propose to start a new section in the e-newsletter of the LDAC, with the publication of small articles that disseminate both basic concepts and specific topics on biodiversity and marine ecosystems of African waters, in order to enhance existing and/or emerging scientific knowledge in the region.

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