



# Context



The Spanish Institute of Oceanography, with a history of **more than 100 years** in marine research, has a specific program devoted to the study and evaluation of fishery resources from **African waters** of the Atlantic and Indian Oceans.

**Ana Ramos & EcoAfric Teams**  
 Instituto Español de Oceanografía  
 Centro Oceanográfico de Vigo  
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# EcoAfric

An unique opportunity for Capacity-building on Study and Conservation of Biodiversity and Marine Habitats in Africa

Photo: Senckenberg

Reunión Anual de Coordinación LDAC – ATLAECO/COMHAFAT  
 Bilbao, February 12, 2019

Universidad de Vigo  
 Spanish Institute of Oceanography



The African Program that the IEO has been developing for **40 years**, has a strong component of **cooperation** with the research institutes of the coastal countries, in Research Projects, Working Groups and Surveys at sea.



Despite having constituted traditional fishing grounds of the Spanish fleets, the African seas were among the most unknown in the world at faunistic level.

#### COMMERCIAL SPECIES

Fishes, decapods and cephalopods were better known

**Biodiversity and benthic habitats  
ALMOST UNKNOWN**



Until 2002, the scientific activity of the IEO in Africa was based on the monitoring of the Spanish fisheries in African fishing grounds and on the study and evaluation of the main commercial stocks.

Information taken in landing ports



In 2002 the R/V Vizconde de Eza began a series of scientific surveys in African countries in the framework of bilateral political agreements

This fact allowed to extend the objectives of the IEO research





In 2004

within the framework of the African program and thanks to a Specific Agreement, a team of researchers from the IEQ and the University of Vigo, launched the **EcoAfrîk Project**



Universidade de Vigo  
Spanish Institute of  
Oceanography



## Scientific Objective

Study of the Biodiversity and Ecosystems of the African seabed



Location and Conservation of vulnerable marine habitats



# EcoAfrik Team

- 16 researchers and technicians
- Spanish Institute of Oceanography and Faculty of Marine Sciences from University of Vigo
- Coordinated from Vigo



Universidade de Vigo



# More than gender parity!!

## >80% Women



Paqui Salmerón  
IEO Málaga



Concha Andara  
Pasquero Africa



EM Muñoz  
IEO Cadix



Susana Soto  
UVIGO IEO



Carmen Prezas  
IEO Tenerife



Uxía Silió  
UVIGO IEO



Patricia Ilgo



Alfonso Ilgo

Well, we also have some fantastic male specimen in the team !!

Dr Fran Ramil, coordinator of the faunistic study and the best professor of Marine Zoology



## Main pillars

Research

Capacity-  
building

Advisory

Outreach



## Stages of Research

### FIRST STAGE

Surveys on sea



Collecting samples & data



## Stages of Research

### SECOND STAGE

Study on labs



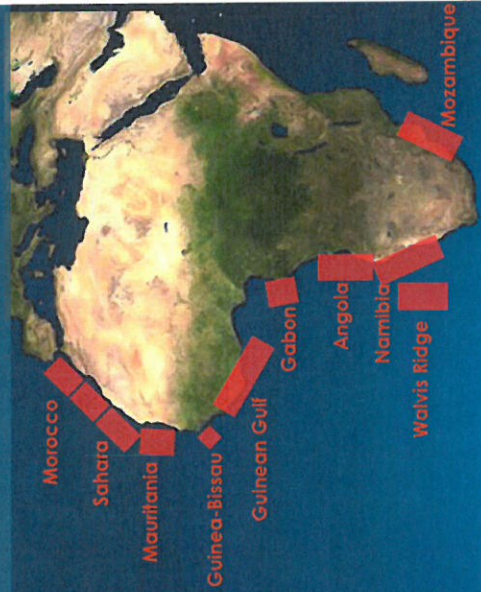
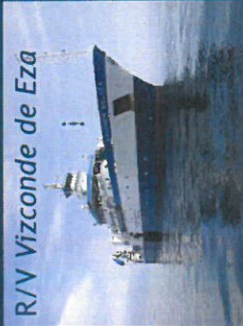
ID Collections & data analysis



# Surveys on sea

22 SPANISH  
Trawling

Surveys  
2002-2010



# Surveys on sea

5 NORWEGIAN  
FAO Surveys

2011-2019





## An 'opportunistic' approach

### Taking advantage of fishing surveys

Fantastic, not expensive methodology

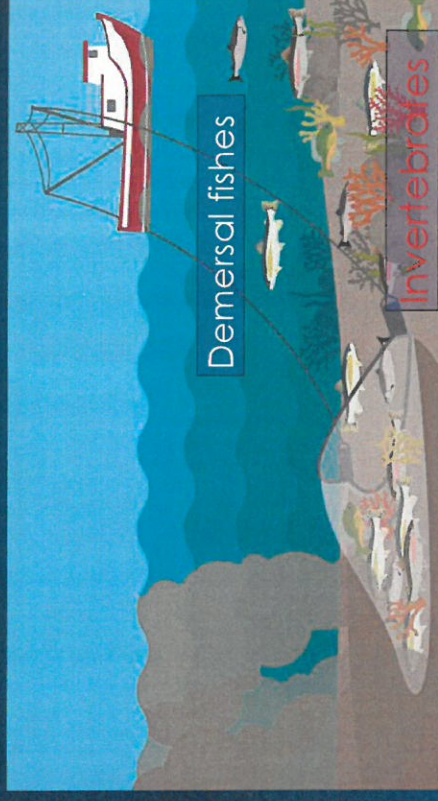
Source of data on biodiversity and habitats

Environmental information

- Seabed bathymetry
- Sediments
- Water column



## Commercial bottom-trawl







## Bottom-trawl Surveys

Faunistic collections

Biological data

Pictures in fresh



## Species Identification

**Basic work to know biodiversity!**

Contamination  
Habitats  
Key-species

.....



Giving name to thousands specimens...

**The main problem on biodiversity research!**

Huge effort

Time-consuming task

Not immediate results

**Tons of patience**



Biodiversity..... very nice images.....



Biodiversity.....

A widely used  
term by  
managers and  
politicians.....



**But .....**  
**A science of very difficult financing**

## Main goal

CCLME Region

2010 - 2019

**11 Surveys**

**1350 stations**

20-2000 m depth

IEO + UVIGO

**500.000 € /year**

## Main achievements

Collections of benthic invertebrates

Databases  
Faunistic quantitative + Environmental

Bibliography (10,000 papers)

Collections of photographs



# Major outcomes

## 4 Doctoral Thesis Biodiversity of Northwest Africa



- 2 PhD developing
- 4 Master works
- 6 Degree works
- 30 papers
- 60 Communications Symposium & Conferences
- Support to Regional GIS

## A monograph on deep-sea ecosystems off Mauritania (Ramos *et al.*, 2017)

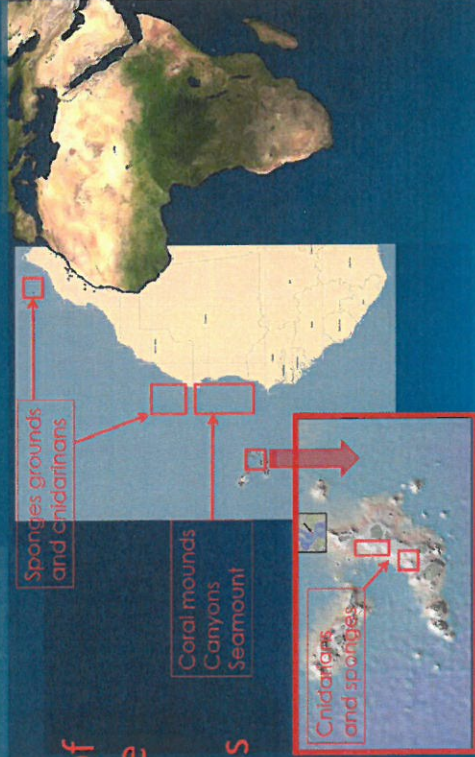
### 17 Chapters

- Geology
- Oceanography
- Biodiversity
- Assemblages
- VMEs
- Faunistic collections
- General overview



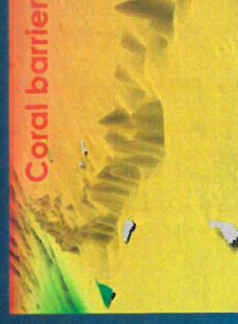
# Major outcomes

## Location of Vulnerable Marine Ecosystems

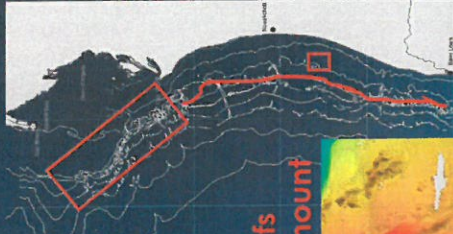
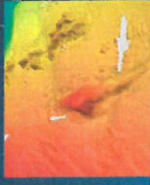


# Mauritania: the best know area

## Vulnerable Marine Ecosystems in the slope of Mauritania



## Wolofs Seamount





## Major outcomes

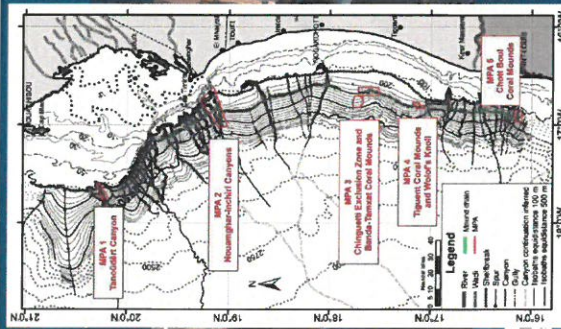
**In 2018**

Commissioned by the Mauritanian Ministries an International Experts Panel prepared a proposal for the creation

A Marine Protected Area network on the Mauritanian slope for prosperous fisheries and improved understanding of marine biodiversity



**SENCKENB**  
WORLD OF BIODIVERSITY



## Our greatest strengths

- **Experts** on the study of biodiversity of coastal and deep-sea fauna from Africa
- **International leader** in marine research in West Africa.
- **Multidisciplinary** team with expertise in habitat's characterization.



More than a decade  
**exclusively** devoted to the  
study of benthic fauna in

**Africa**

**Unique research group  
worldwide**



## Intercontinental Framework

### PARTNERS

Two main current Projects in Africa

**FAO**

**CCLME Project**

Protection of Canary Current Large Marine  
Ecosystem



**EAF-Nansen Project**

Ecosystem Approach to Fisheries



## Support to the FAO

- Experts in the preparation of the Nansen Scientific Program 2017-2021
- Participation as experts in Ecosystemic Surveys
- Specialized training courses for African researchers
- Organization of International Working Groups
- Preparation of visual guides for fauna identification
- Training programs in Third Countries.

## Intermacional Framework

Development of geo-referenced database (GIS) of the CCLME (2014-2015)



Enhancing oceanographic capacities in Western Africa countries (2013-2017)



Catalog of species and benthic habitats in West Africa (2013-2018)



# Joint International Research

**Senckenberg am Meer (Germany)**

**2015-2019**

**VMEs Mauritania**

Angola et Namibia

University Museum of Bergen

Marine Research Institute (Norway)

Musée National d'Histoire Naturel  
de Paris (France)

Indian Ocean

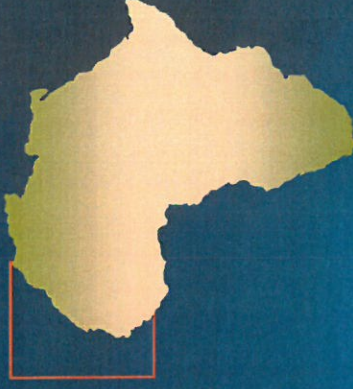
**SENCKENBERG**  
world of biodiversity



# Our greatest strength

## OPORTUNITY

Transferring our  
knowledge and  
experience in  
research and  
management of  
biodiversity to African  
countries



# In Africa?

Food security is the main priority

Fishing is a  
basic  
economic  
activity



Research on biodiversity and  
habitats



Is not a priority for  
African Institutes



Lack of capacities



## Improving Capacities

**Filling the gap**  
..... Trying to  
improve capacities  
and fund activities ....  
from 2010!!



## Training activities

Cours sur benthos  
ÉCOLE DOCTORALE DU CERESCOR  
Professeur Ramil  
Conakry, Juin 2013

Atelier étude du benthos  
INDP de Cap Vert

Professeur Ramil et Belen Calero  
Coordination: Vanda Monteiro  
Mindelo, Mars 2014



## Training activities

Séjours de formation Vigo

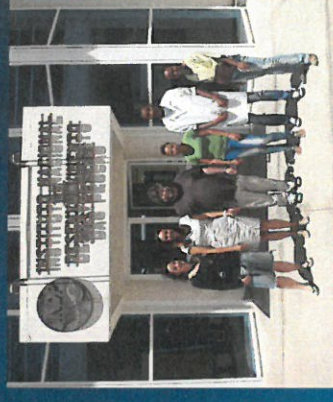
**2012**

- **GUINEA**  
CERESCOR, Amadou O. Barry  
2012 (2 mois)
- **MAURITANIA**  
IMROP, Sidi Mohamed  
2014, 2015, 2016, 2017 (4-5 mois)
- **CABO VERDE**  
INDP, Keider Neves  
2015, 2016(4-5 mois)  
Master 2017-2019



## Participation in Funding Calls

- Fundation Biodiversidad. **2010**
- MAE - AECID. **2011**
- Fundation Biodiversidad. **2011**
- Xunta de Galice. Prog. Coopération. **2012**
- FAO - Proyecto CCLME. **2013**
- Agence Espagnole de Coopération. **2014**
- Xunta de Galice. Prog. Coopération. **2015**



## Current Training activities

Capacitation program with  
Mauritanian and Cabo Verde Marine  
Institutes from 2014

- MAURITANIA  
Sidi Mohamed  
Thèse Doctoral  
**Benthos de la Mauritanie**  
2015-2020
- CABO VERDE  
Keider Neves  
Master 2017-2019  
Thèse Doctoral  
**Benthos du Cabo Verde**



Other countries are  
interested in  
training  
Senegal, Guinea, Guinea-  
Bissau, .....  
Mozambique .....



# Improving Capacities: The Future

## Nôtre Objective

Projet capacitation au niveau régional

Building capacities for research, conservation and management of marine biodiversity and habitats in Northwest Africa (CCLME Region)

- Creating a network of laboratories for biodiversity studies.
- Seven local institutes
- Long-term training program

- Improve skills in Identification of benthic invertebrates

- Specific training workshops

- Equipment of local laboratories

- Telematic support and guidance of Spanish experts

- Lectures, courses, masters degrees & PhDs

- On-board sampling methodology
- Training stays in Vigo



- Dissemination of research results and outreach

## Our objective

Set-up and fund a pioneer  
Observatory on African Marine  
Biodiversity

**A Long-term Training Program for  
young African marine researchers**



## Requirements

Flexible and autonomous management

Financing

**Non-profit association  
or Foundation**

Sponsors are welcome!!!

Thanks you very  
much!!!



