

Ecosystem Approach to the management of fisheries and the marine environment in West African waters (AWA): Mid term

‘Trilateral German-French-African research initiative in Sub-Sahara Africa’

Subject area: ‘Environment’ and fisheries



Conference "French-German cooperation in Africa, in the field of climate change, food security and water resources" (June 1-2 2015, Berlin)
Session 1. Climate change in sub-Saharan Africa. The physical basis and challenges



Main objectives of the AWA Project

What are challenges and threats to the West African marine environment?

How does it evolve under human activities and ongoing climate change?

How to improve knowledge, local expertise and capacity to manage the marine environment sustainably?

Long term objective of this consortium is to develop a platform to monitor, simulate and predict key parameters of the ecosystem of North West Africa

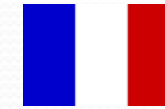


Build the foundation of a **West African observatory**

Establish a **sub regional task force**
on the ecosystem management of
fisheries and marine environment
in West African waters under the
effect of climate change



The AWA international consortium



Benin, Cabo-Verde, Ivory Coast, Gambia, Guinea, Guinea Bissau, Mauritania, Senegal



Associated partners:

United Kingdom, Greece, Belgium, Portugal, USA



Main consortiums or clusters of excellence of several AWA partners





AWA an integrated project at sub-regional level

- Climatology
- Physical oceanography
- Meteorology
- Acoustics
- Ecology
- Biology
- Fisheries
- Conservation
- Spatial oceanography
- Marine chemistry
- Biogeochemistry
- Paleoceanography
- Geology
- Law
- Geography
- Economics
- Sociology

2014 Welcome to
ANACIM, CSE, Oceanium, IUPA,
University of Barcelona, of
Bergen, UCT, FIBA, etc





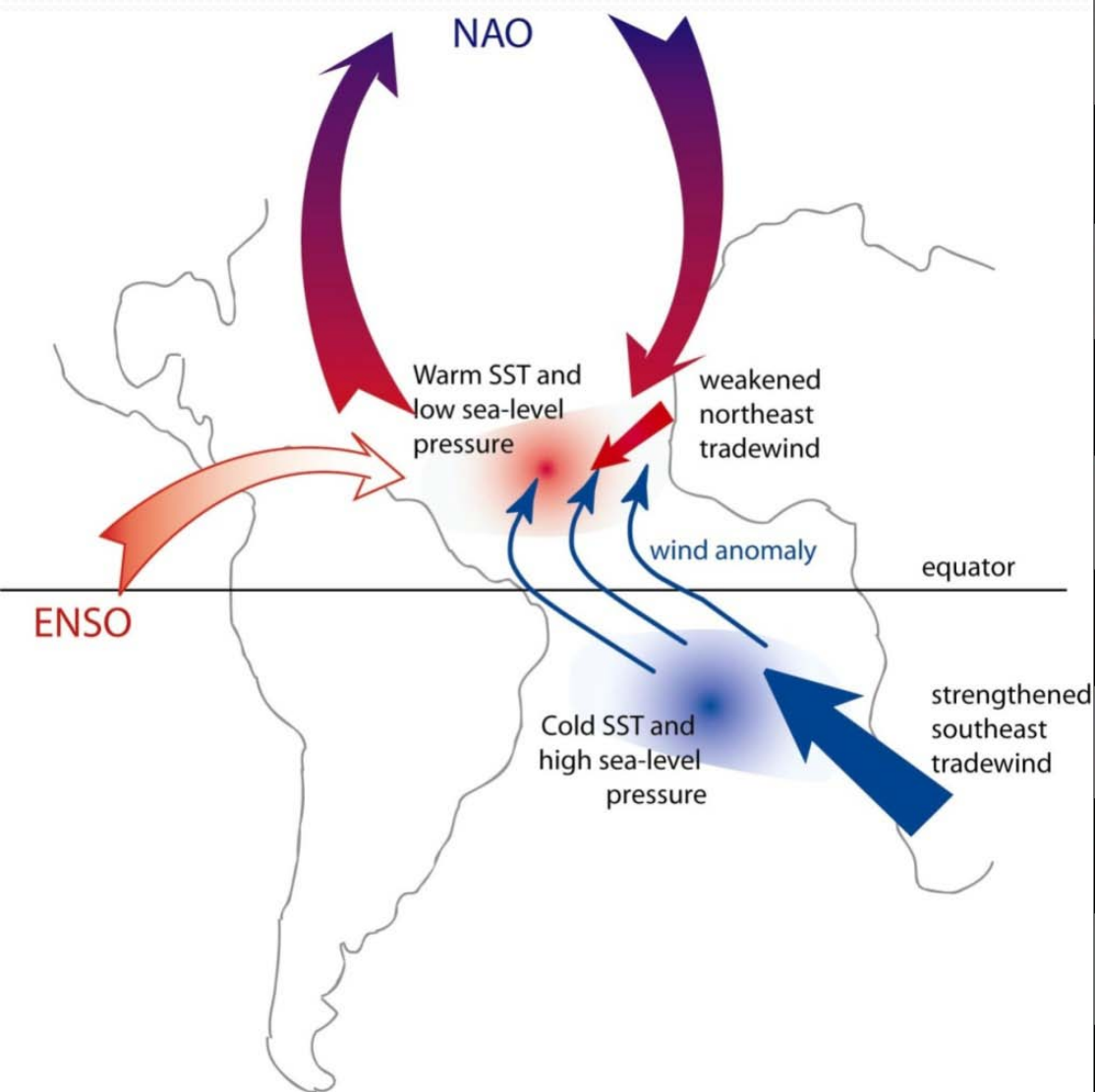
- Collect, analyze and synthesize existing data series;
- Improve existing monitoring activities and develop new data collection programs;
- Conduct process studies;
- Develop disciplinary and integrated research.

to...

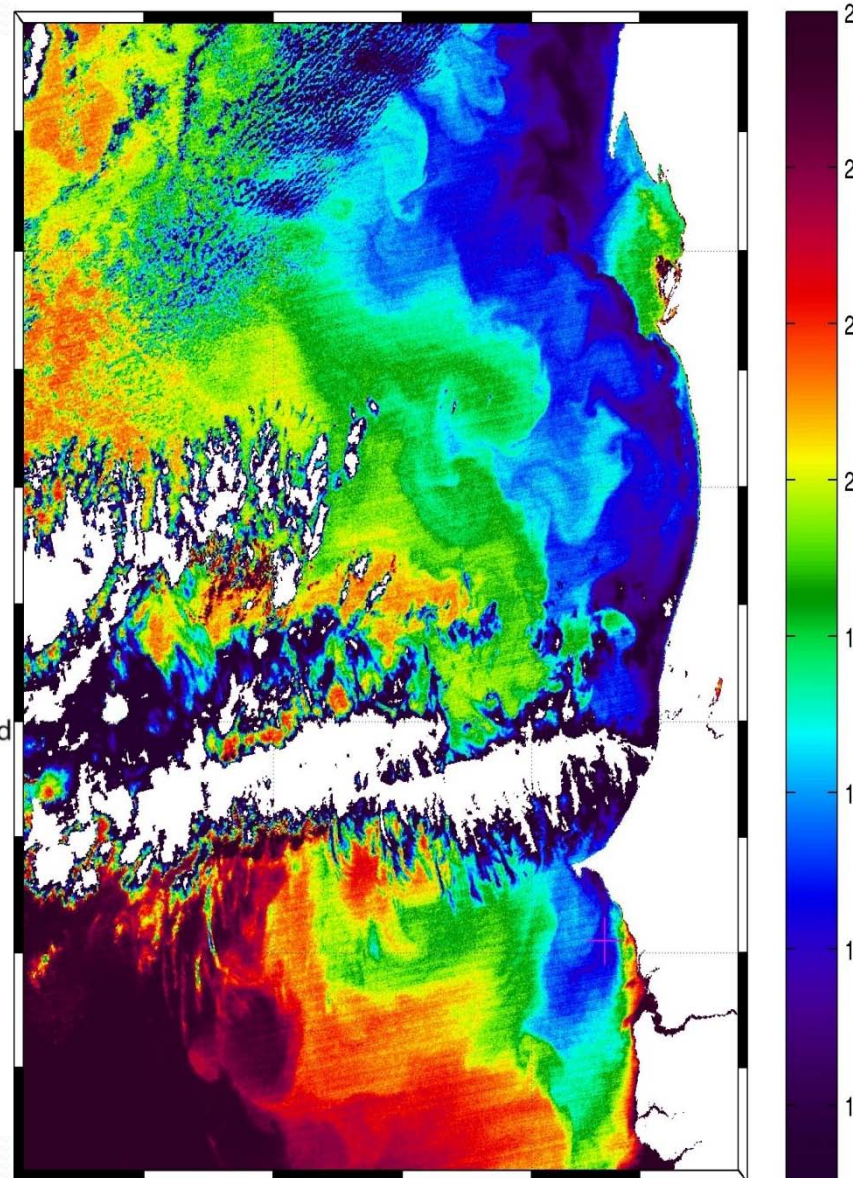
- Better understand scales and magnitude of variability throughout all layers of the system;
- Enhance our predictive capacity of physical and ecosystem responses to different stressors;
- Provide evidence-based decision support for managing the ecosystem.



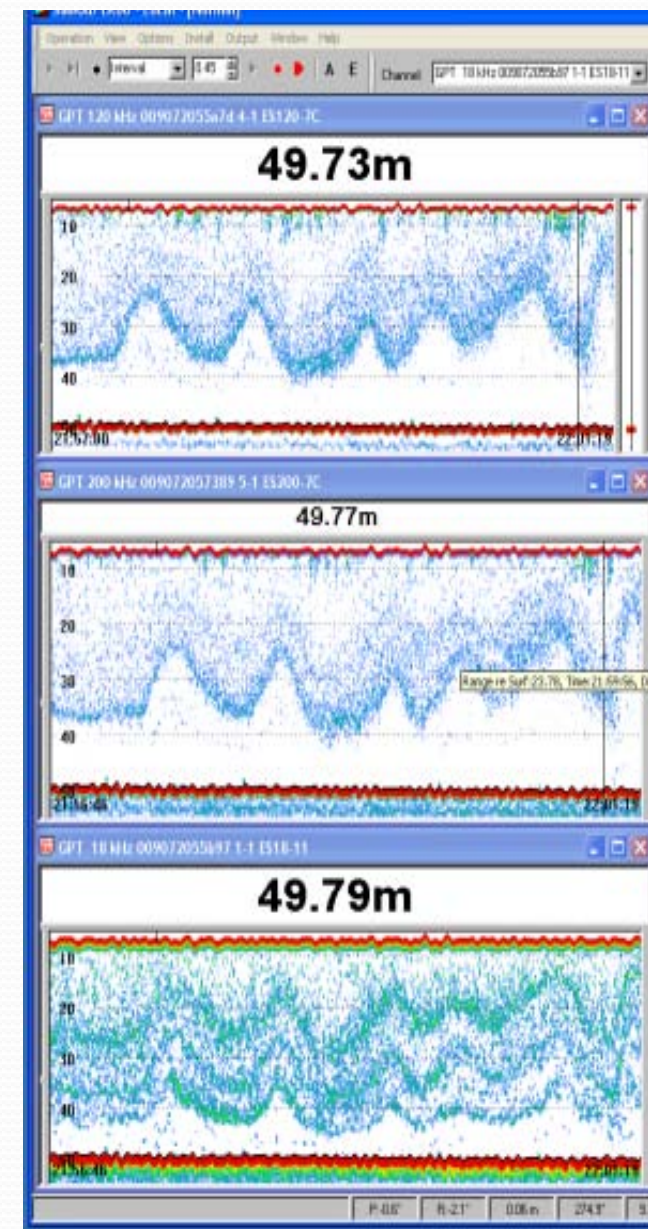
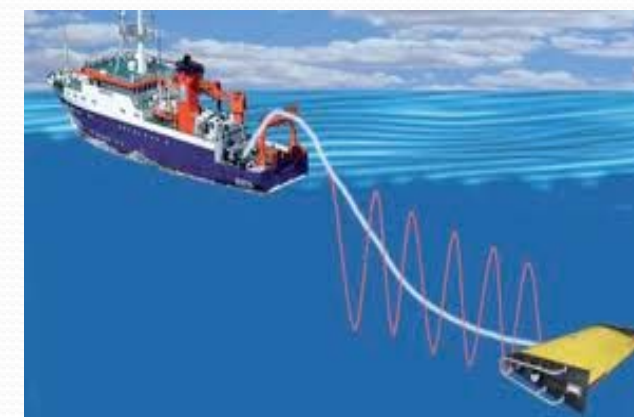
AWA Approach: large, small and fine scales



Chang et al. 2006



Capet et al. 2014



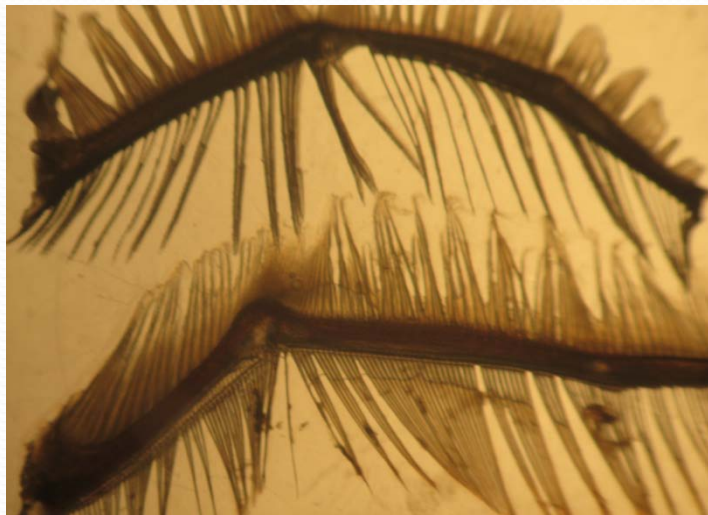


AWA Approach: large, small and fine scales

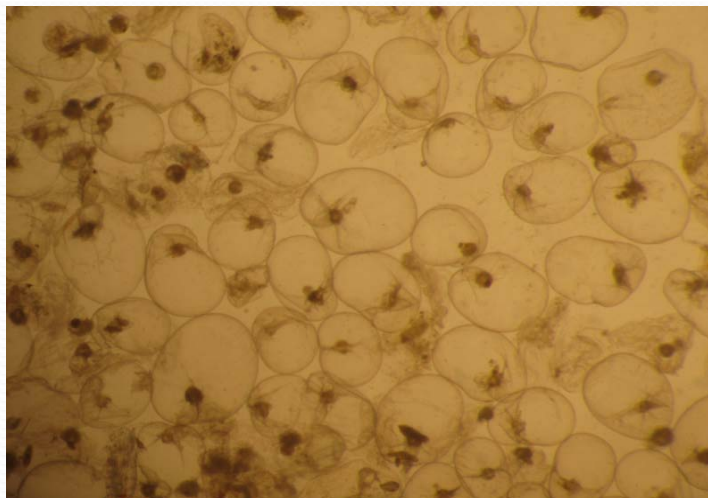


Phyto and zooplankton

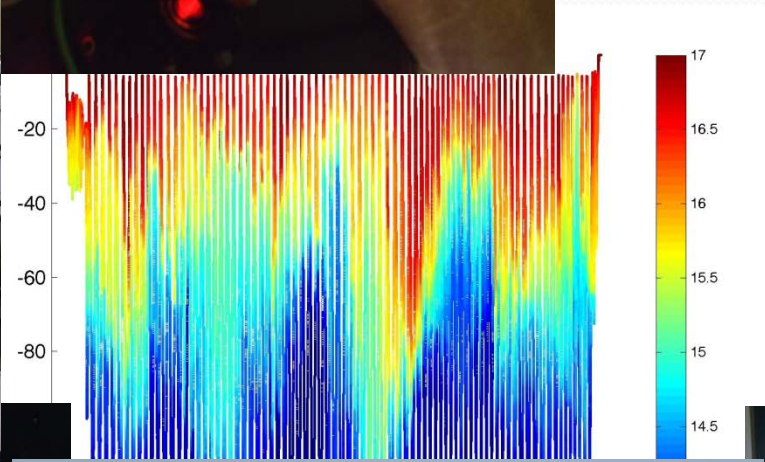
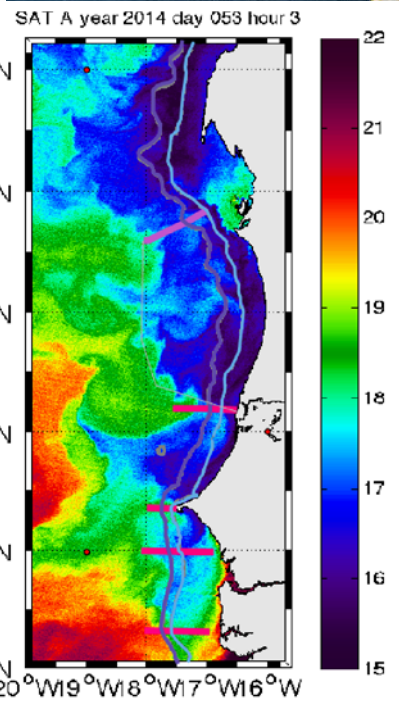
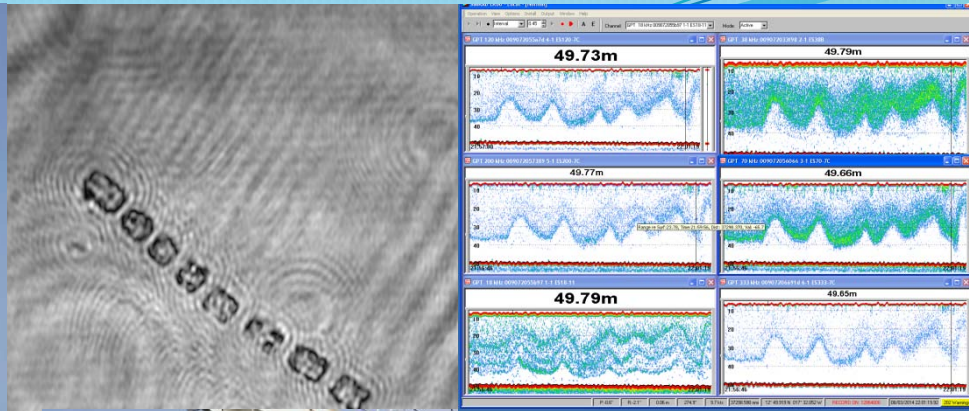
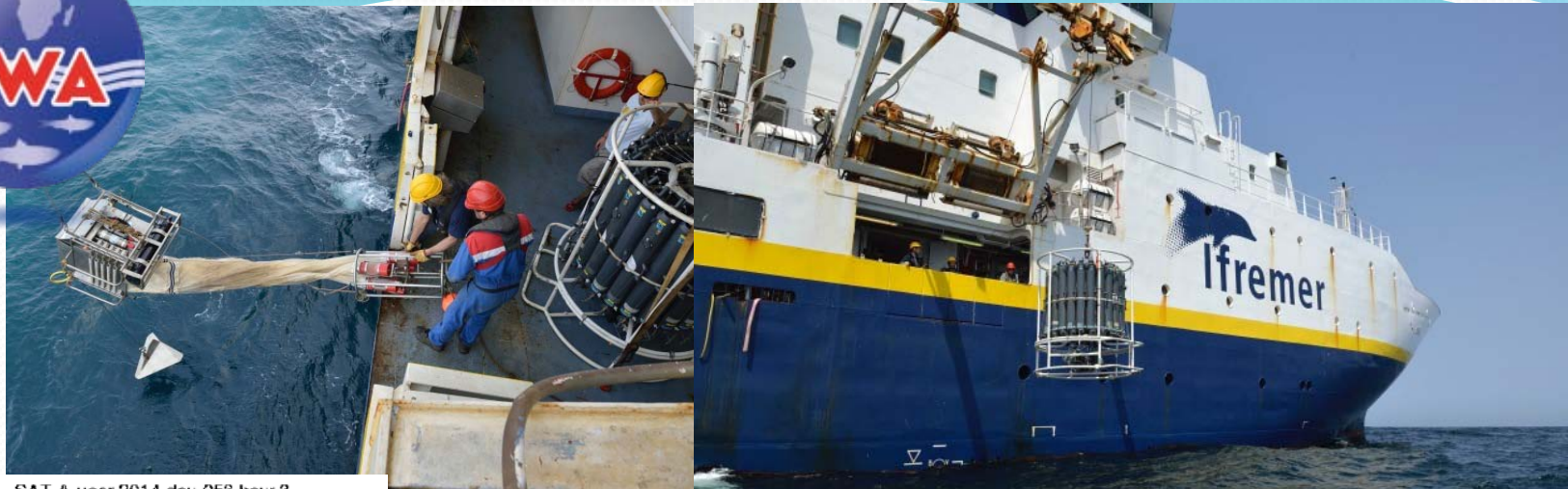
Egg



Fish



Population





AWA : a forum of exchange between

- Africa with French and German
- French and German
- Modelers and 'field observers'
- Discipline
- Researcher, and practitioner

**to enhance recommendation to manager
and stakeholders**

AWA presented at Berlin 2012, Paris 2013, at
African Union in 2014, COP21 in 2015

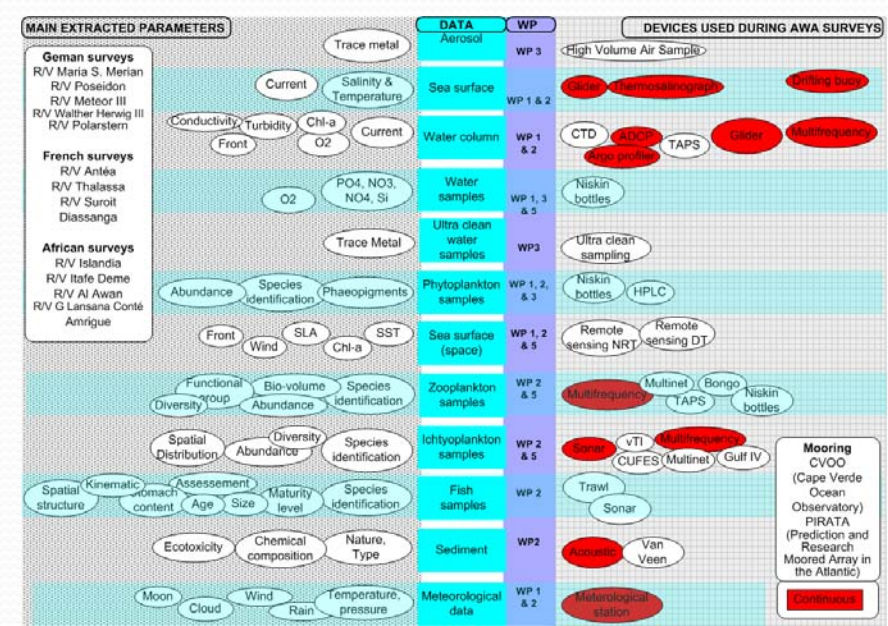


The AWA consortium at mid term

the time of reflexion

Scientific Approach well established
 Survey at sea and in the field done or in course
 Model developed and data collected
 Training: researchers, students, institutions

 Summer School: spatial oceanography
 Summer School: Marine Protected Areas
 Management Challenges
 International Workshop at SRFC





The AWA consortium at mid term

Dead zone in North Atlantic, importance of OMZ studies

Coupled physical, biogeochemical and ecological models

Mesopelagic resources evaluated

Link between nursery area and fish stock dynamics

Introduction of Fisheries Economics for management

Ecosystem indicator: IndiAWA

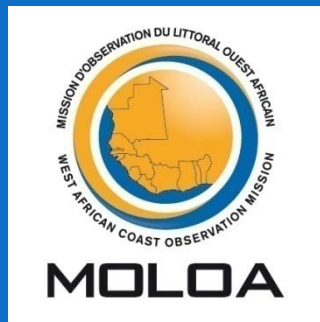
Law of environment

Integration of local knowledge

Topic groups around AWA WP

Coastal vulnerability / Marine protected area / Seabird / Aquaculture

West African fleet / IUU / Doctoral school / Annual Science Conference



Synergie with others initiatives

- PPR SREC
- PPR CUTE
- LMI Eclairs
- LMI Pateo
- LMI ICEMASA
- LMI DISCOH
- AIMS
- ...

Sponsors

- GIZ
- PRCM
- SCOR
- IRD DIC & DSF
- UPMC
- PP



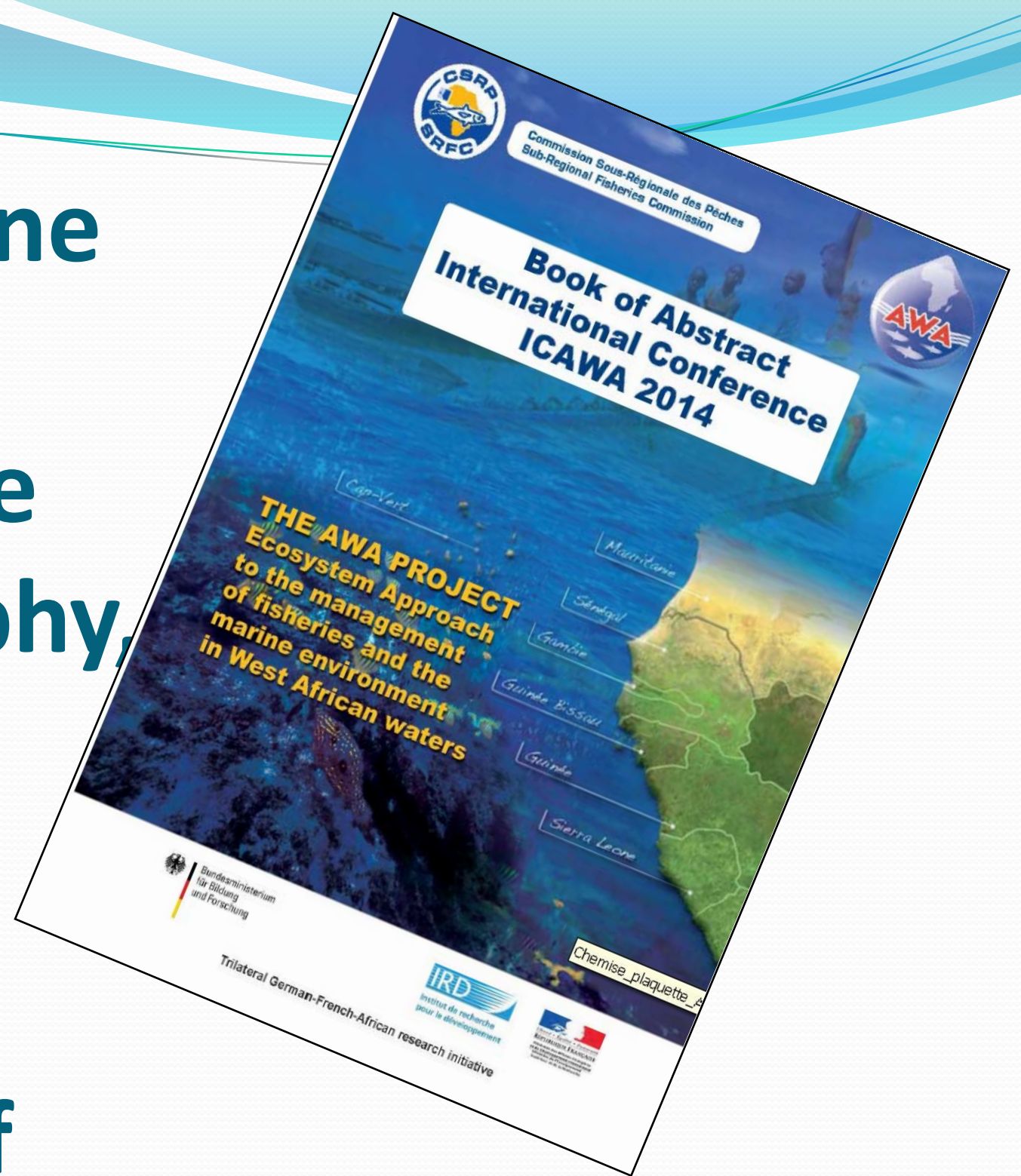
Additional initiatives

- Geomar /CAU SFB754 & CVOO
- SRFC/EFS IUU action
- Projects CNRS Life
- FUSE
- proCOCA
- Labex Mer
- CoccoMed
- Trace Aerosol
- PPR CUTE
- West African reserach Fleet
- ...

The consortium at mid term
Synergies and associations; fund raising



West African marine ecosystems **facing challenges**: climate change, demography, overfishing, pollution, IUU, erosion, gender issues and need of economical development





Je vous remercie de votre attention
Vielen Dank für Ihre Aufmerksamkeit



**Obrigado pela
sua atenção**

**Thank you for
your attention**



PREFACE: Enhancing PREdiction of Tropical Atlantic ClimateE & its impact

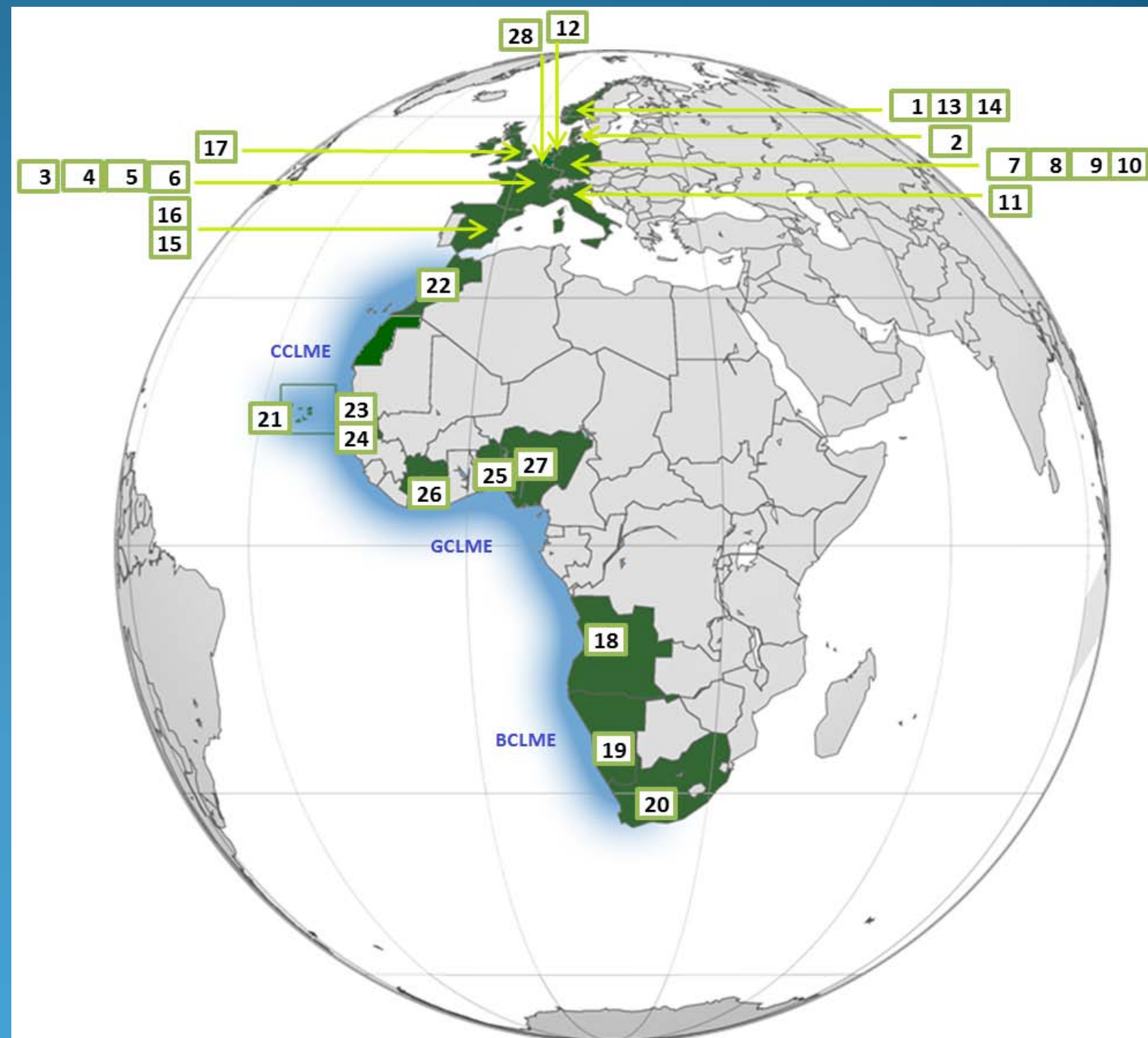
Noel Keenlyside,
University of Bergen (UiB)
(50% of PI from AWA)

28 partners from 18 countries

- 18 from 9 European countries
- 10 from 9 African countries

November, 2013 – October, 2017

www.preface-project.eu



Core Theme 5: Impacts of climate change on pelagic functional diversity in the Tropical Atlantic with effects on western African fisheries economies
Patrice Brehmer (IRD), Joern Schmidt (CAU)

WP12: Environmental and anthropogenic pressures on pelagic ecosystems and fisheries

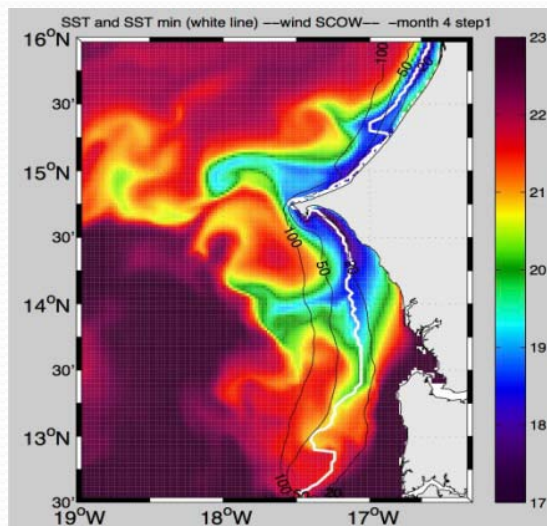
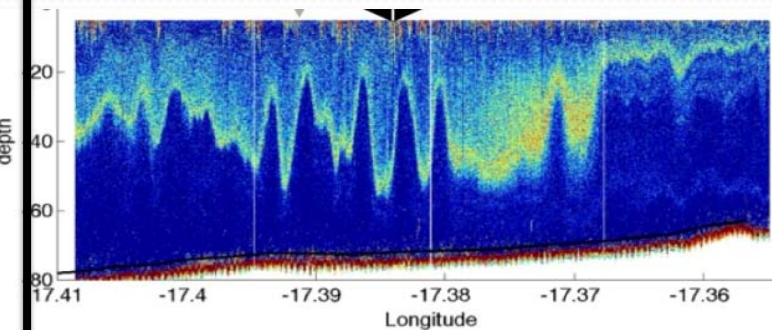
Marek Ortowski (IMR), Heino Fock (TI)

WP13: Evaluating environmental and socio-economic effects of climate change on small scale fisheries

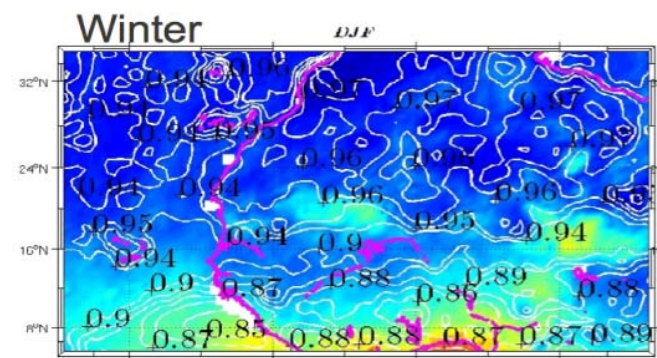
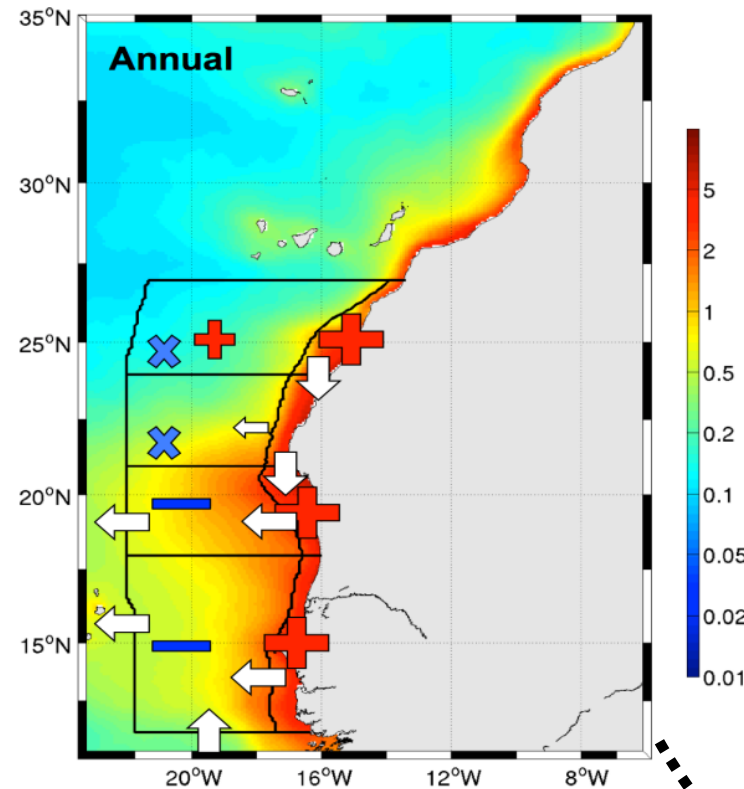
Jörn Schmidt (CAU)



Progressive incorporations of fine-scale dynamics into regional models

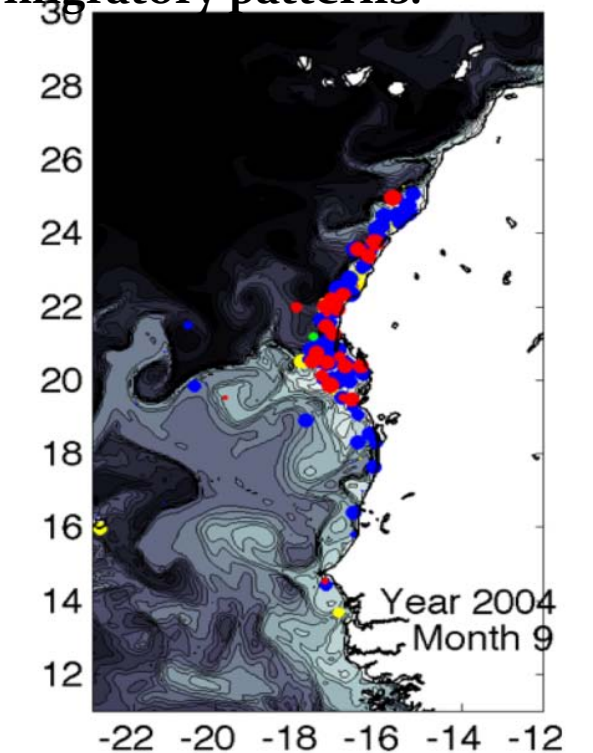


Improvements and understanding of regional scale BGC (production, cycle)



Including some aspects related to dust deposition

Biophysical modeling of pelagic fish: the model qualitatively reproduce the distribution of sardinella and its migratory patterns.



Link WP13: WA fishery communities knowledge for model evaluation and cross-comparison



Distribution of AWA results to local/national stakeholders

- At the national level

SRFC/CSRP: inter-governmental sub-regional
commission for fisheries

UA, CE, FAO Project, World bank, PRCM, JICA, ComFish

- At the local level

Director of research centers
Responsible of laboratories

**Web platform for dissemination of AWA results and invitation
of stakeholders to AWA final meeting**

Stakeholders was informed of the AWA project proposal MPA and
co-management (SRFC) Meeting, 14-16 December 2011, Dakar,
Senegal