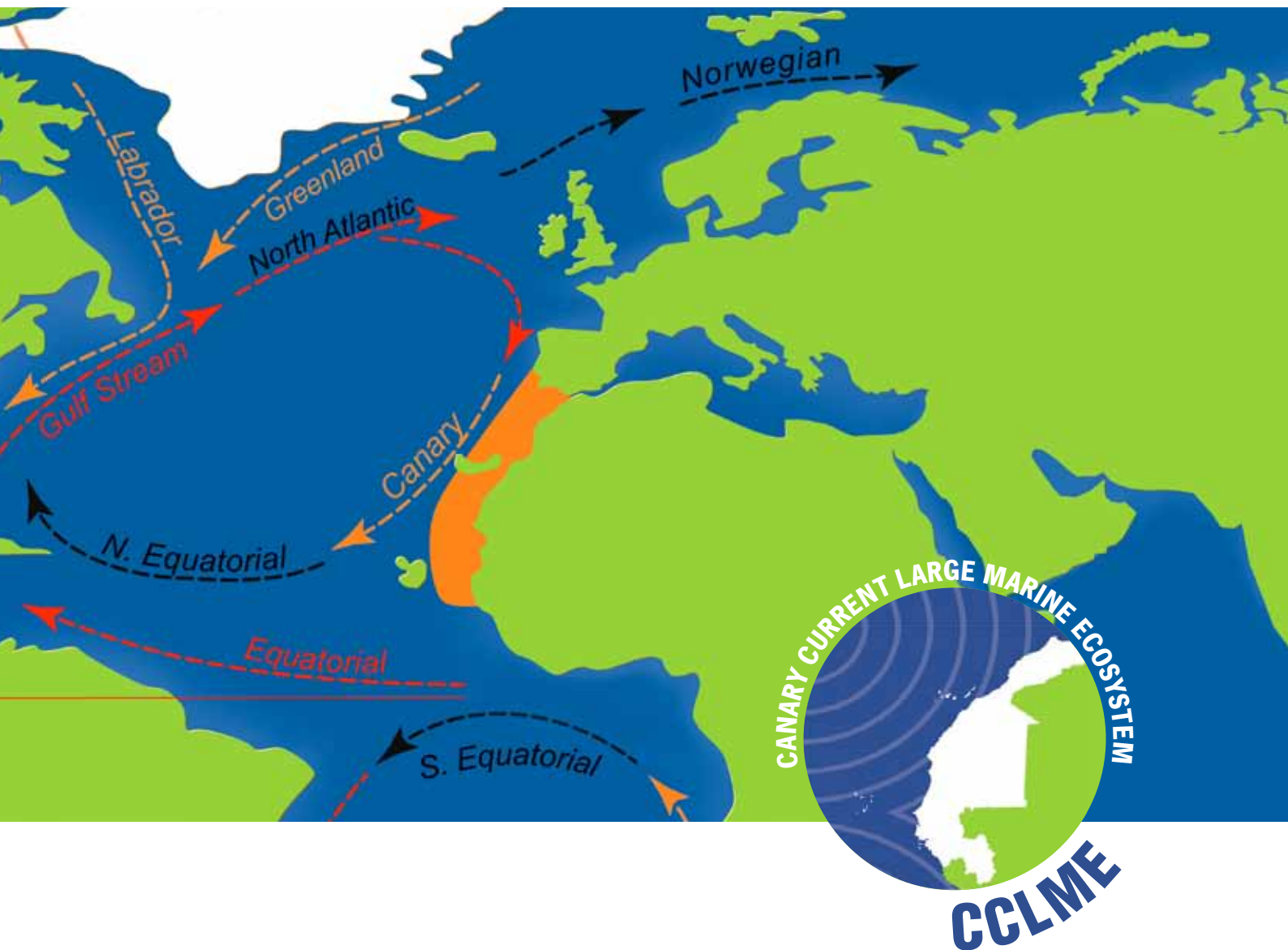


Transboundary Diagnostic Analysis

Executive Summary



Canary Current Large Marine Ecosystem Project



Declining Marine Resources

The major issues of concern

- The decline or vulnerability of small pelagic resources
- The decline of demersal resources – finfish, cephalopods and crustaceans
- Threats to vulnerable species – sharks & rays, marine mammals, turtles
- The vulnerability of tuna resources

The transboundary nature of the major issues

- Small pelagic fishes constitute by far the largest fisheries, both in terms of biomass and catch volumes. Stocks are shared as a result of the migration of small pelagic stocks across the region
- In terms of their importance to regional food supplies and accessibility by artisanal fishers, demersal fishery resources are of exceptional socioeconomic importance but are in an extremely degraded state
- High rates of bycatch and discarding in the multinational longline and purse seine fisheries for tunas is a transboundary issue because tunas are caught in all countries of the region
- Uncertainty about the status of migratory tuna resources and poor participation by CCLME countries in the International Convention for the Conservation of Atlantic Tunas (ICCAT) is also an issue of transboundary concern

The main causes of the issues

- Overcapacity of the fishing fleets – both artisanal and industrial
- Illegal, unreported and unregulated (IUU) fishing
- Fishing in spawning areas
- High levels of bycatch
- Lack of capacity prevents meaningful participation in ICCAT
- Climate variability
- Lack of consultation between the countries around shared resources
- Inadequate environmental and resource management

Fisheries in the CCLME support an estimated one million jobs and at least 150,000 artisanal fishers who migrate widely, fishing and trading across national borders.



A total catch of 2.98 million tons was recorded in the CCLME in 2009.

Habitat Degradation

The major issues of concern

- Destruction and disappearance of mangroves
- Degradation and modification of benthic habitats
- Degradation and modification of wetlands, coral reefs and estuaries

The transboundary nature of the major issues

- Mangroves grow at the interface between land and sea and provide valuable goods and services, including functioning as nurseries for fish species, sources of food and wood and as a coastal defense. Mangroves occur in most countries of the region
- The degradation of seabed habitats by application of destructive fishing methods is common to all countries. It has been recognized as one of the causes of declining fisheries
- The major estuaries of the CCLME region serve as breeding and feeding areas for many fish species, some of which migrate across the region

The main causes of the issues

- Unsustainable logging of mangroves
- Increased salinity as a result of changes in river courses (caused by major dams)
- Destructive fishing methods
- Illegal fishing
- Inadequate coastal zone management
- Pollution
- Oil and gas exploration and production
- Aquaculture and agricultural activities

Mangrove coverage across the CCLME region has declined by 19 per cent since 1980.



Agriculture accounts for more than 80 per cent of water use in the CCLME region, with Morocco having the highest withdrawal of fresh water.



Declining Water Quality

The major issues of concern

- Modified transport of sands and sediments
- Exotic invasive species
- Salinity changes upstream of river mouths
- Increased levels of metals, especially cadmium, in fishery products
- Pollution

The transboundary nature of the major issues

- Desertification, overgrazing of fragile ecosystems, cultivation of crops on steep slopes and soil erosion are characteristic of the CCLME region. As a result, the turbidity of the major rivers and lakes is high and this impacts coastal and marine habitats, including mangroves and fish spawning grounds
- Marine exotic invasive species are a growing problem in the coastal waters, estuaries and lagoons of the region. For example, a red algae, *Hypneamusiformis*, originally from Italy, is now found in the coastal waters of Morocco, Guinea-Bissau, Gambia, northern Senegal, the Cape Verde islands and Mauritania
- Modification of river systems through damming, water extraction and agricultural development has resulted in chronic salinization of the rivers systems of the CCLME, which threatens coastal habitats such as mangroves
- Rapid population growth, urbanization, the expansion of industry and agriculture and a lack of environmental regulations have resulted in an increase in metal contaminants in all countries of the region
- Pollution along and in the waters of the Atlantic Ocean affects all the countries of the region
- Eutrophication has been identified as a problem in the southern part of the CCLME
- Chemical pollution, as a result of the use of pesticides and fertilizers, affects all countries of the region. There is no regular monitoring of chemical pollutants across the region.

The main causes of the issues

- Dam construction causing reduced water flow downstream of the dam
- Illegal sand mining and dredging
- Modification of rivers, estuaries and deltas
- Discharge of ballast water
- Escape of aquaculture species
- Large-scale changes in oceanographic systems
- Mining
- Treatment and recovery of phosphates
- Discharge of solid waste (litter).

The Canary Current Large Marine Ecosystem

The Canary Current is a wind-driven ocean current that flows southwards along the coast of northwestern Africa, linking Morocco, Mauritania, Senegal, Gambia, Guinea-Bissau, Guinea and Cape Verde which defines the boundary of the Canary Current Large Marine Ecosystem (CCLME).

This is one of the most productive and biologically diverse Large Marine Ecosystems in the world; it straddles the temperate north and the tropical south and features a wide range of coastal and marine habitats including wetlands, estuaries, seagrass beds, mangroves and corals.

All the countries of the region have large and vibrant artisanal fishing fleets. In addition, industrial fleets from around the world fish the waters of the CCLME, an area that generates between 20 per cent and 30 per cent of global fisheries production.

Catches range between two and three million ton per year and are dominated by the small pelagics. Other important marine resources are migratory tunas, octopus, hake and shrimp.

Fisheries and marine resources are of immense economic value to all the countries of the CCLME, but recent assessments show that several fisheries are overexploited and some stocks are close to collapse. Moreover, coastal areas are under increasing pressure from expanding populations, leading to the degradation of critical habitats such as estuaries, wetlands and mangroves and posing a threat to biodiversity and key species that include whales, dolphins and manatees, seals, turtles, sharks and sawfishes.

The Transboundary Diagnostic Analysis (TDA)

Working through the GEF-funded CCLME project, the seven countries of the CCLME region have taken a first important step towards resolving some of the water-related transboundary problems that threaten the sustainability of fisheries and the biological diversity of the region.

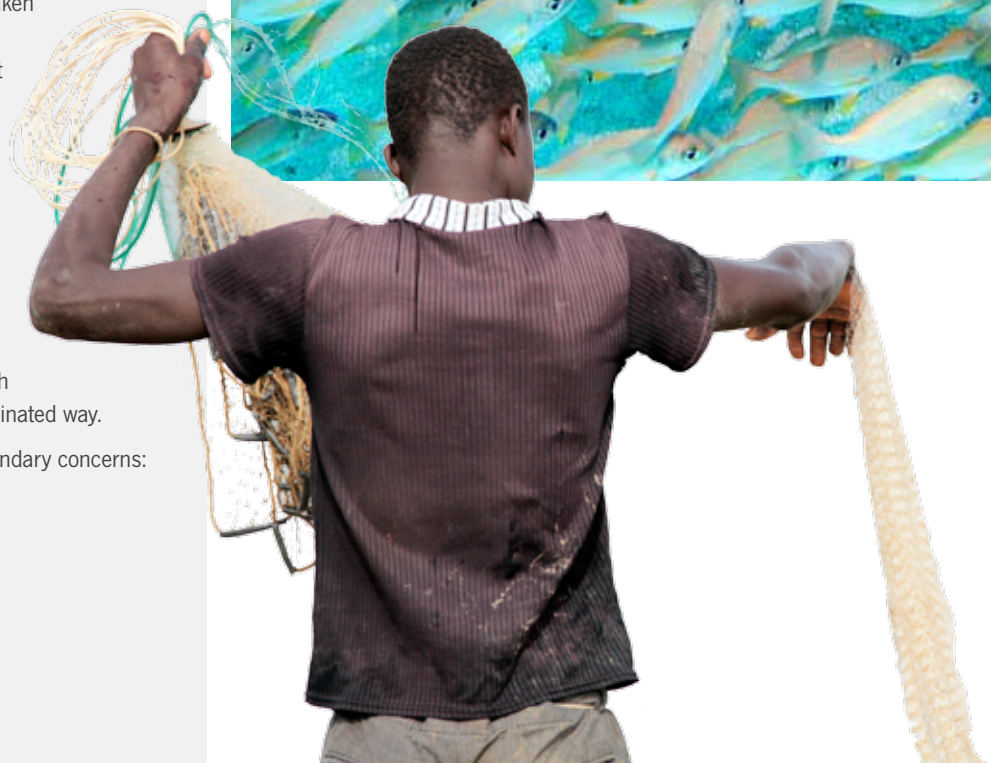
They have drafted a TDA that identifies and prioritizes transboundary issues of concern. The TDA is the culmination of 10 years of study and consultation with hundreds of stakeholders. It provides a scientific basis for developing a Strategic Action Programme – a comprehensive strategy that will enable the countries to deal with the issues of concern in a cooperative and coordinated way.

The TDA identifies the following priority transboundary concerns:

- Declining marine living resources
- Habitat degradation
- Declining water quality

Countries of the CCLME region have unanimously identified the decline of living marine resources (fish, fisheries resources and marine species of conservation concern) as the most important transboundary worry. This is in view of the exceptional socioeconomic importance of fisheries to the region, and as a source of food for West Africa and beyond.

The TDA analyses each transboundary concern, identifies its cause, impact on the LME and its socioeconomic consequences. A number of solutions are proposed for each concern. These solutions lay the groundwork for the Strategic Action Programme.





The CCLME project

Seven countries in northwest Africa are working together through the CCLME project to reverse the degradation of the Canary Current Large Marine Ecosystem (CCLME) and introduce an ecosystem approach to ocean governance. The countries are Cape Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Morocco and Senegal. Their objective is to introduce governance reforms and management interventions to address priority transboundary

concerns, including declining fisheries resources, the degradation of biodiversity and deteriorating water quality.

The effective management of shared fish stocks is one of the greatest challenges countries of the CCLME region face. Thus, the project is promoting multi-country cooperation and co-management of shared stocks, with a view to achieving long-term, sustainable fisheries management.

The CCLME Regional Coordinating Unit is based in Dakar, Senegal.

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The five-year CCLME project is funded by the Global Environment Facility (GEF) and implemented by the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Environment Program (UNEP). The participating countries and a number of development partners are also making substantial contributions towards meeting the aims and objectives of the project. Project partners include *Agence Française de Développement (AFD)*; the EAF-Nansen project; the Norwegian Institute of Marine Research; the Spanish Institute of Oceanography; the *Programme Régional de Conservation de la Zone Côtière et Marine en Afrique de l'Ouest (PRCM)*; the Subregional Fisheries Commission (SRFC); the Swedish International Development Cooperation Agency (SIDA); Wageningen UR (University and Research Centre); and the National Oceanic and Atmospheric Administration (NOAA) of the United States.