




# Transversal Workshop on Spatial Based Approach to Fishery Management

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**GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN**


Overview on Moroccan experiences on SBAFM

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The space management is a key component in the fisheries management.

It includes as well the classic technical measures which consist to establish a geographic restrictions in the more holistic approaches that are the marine protected areas.



Although their interest is certain, the application in Morocco of this kind of measures has not always given the expected results for various reasons:

- (1) The objectives are sometimes difficult to reconcile towards the biological, environmental and socioeconomic factors which interact.
- (2) The expected impacts can be complex to predict and to quantify.
- (3) The implementation can also constitute a major hindrance as the actors and the technical constraints can be numerous.

The objective of this presentation is to give an overview on the Moroccan experience relating to the case of marine protected areas and zoning systems :

Two applications :

- Marine protected areas :

National Park of Al Hoceima,  
MCA project : three MPAs in the Mediterranean and Atlantic in 2013

- Zoning :

For céphalopodes in Atlantic  
For trawlers, especially for shrimp fishing

## BRIEF REMINDER OF THE HISTORY OF AL HOCEIMA'S NATIONAL PARK

The main steps performed in the process of creating and managing the Park can be summarized as follows:

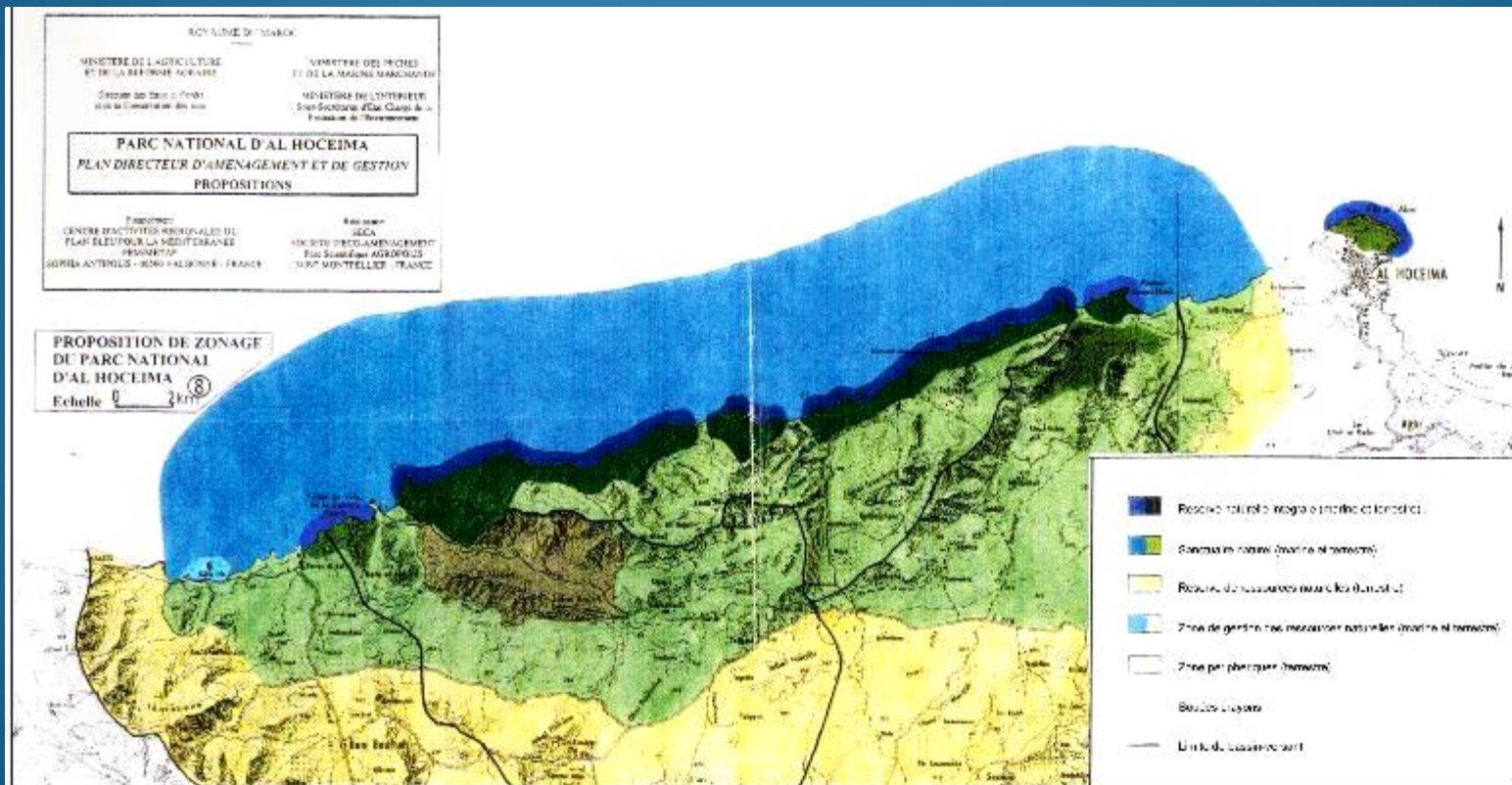
- 1983, 1984 et 1985 : the first missions of exploration along the Mediterranean coast of Morocco showed an area of coast between Cala Iris and Al-Hoceima whose ecological and biological interest nationally and International justifies the establishment of a specially protected area.
- 1990 : first proposals for the Management Master Plan of National Park of Al Hoceima (Blue Plan)
- 1992 : public inquiry, which examined a series of observations made by the Councils of the Municipality, representatives of the population concerned by the Project of the creation of the Park

- 1993 : Proposals for the Management Master Plan of National Park of Al Hoceima (New Edition) (Blue Plan). Zoning Plan and the alternatives that have reshaped with regard to the previous edition
- 2002 : launch of the process of elaboration the management plan for the marine part of the Park
- 2002 - .... : Several attempts and the outcome is still awaited

## The physical frame

The park is located on the Mediterranean coast of Morocco, about 150 km east of the Strait of Gibraltar, near the city of Al-Hoceima. This coastal park of 48,000 ha includes a marine part of 19,600 ha.

It is a rugged mountainous area with a coastline made up of cliffs and caves and several islets and rocks





# Marine biodiversity

## Algae



*Eunicella verrucosa*



*Dendropyllia sp.*



## Fish

The waters of the Al Hoceima National Park are rich in number of fish species and are characterized by the presence of several endemic species, due to the influence of the nearness around the Strait of Gibraltar.

Overall, 72 species are listed

The Sparidae, Serranidae and Labridae are the most representative families

## Socio-economic frame

The fishing activity at the Park and its neighboring areas, is the main economic activity for local people, its features are :

- This activity is carried out at 2 ports and 7 sites of artisanal fisheries;
- 4 types of fleet: trawlers, seiners, long liners and boats:

36 seiners, 30 long liners, 22 trawlers.

Artisanal fishing is practiced by about 350 boats.

- The annual average production is about 12 000 t, with approximately 80% of small pelagic ; the value of this production is about 80 million Dhs.

- Fishing activity provides about 3,000 direct jobs ;
  - It's a profitable activity, with a total invested capital about 300 MDHS :
    - 50 % seiners
    - 10% artisanal fisheries
- The total turnover recorded by the whole fleet is about 120 million MAD.
- Marketing channels vary depending on the commercial value of cash and demand :

Small pelagic and demersal species are generally sold at the local and national market, while swordfish is for export.

- The total fishing effort by coastal fleet : approximately 14 000 trips per year, while that FE by the artisanal fleet is around 60 000 trips ;
- **Some frequent fishing practices in the Park waters are harmful to marine ecosystems and the vulnerable species including trawling in areas very close to the coast, the use of dynamite, the fishing octopus by the harpoon.**

## TOURISM

Tourism activity can be considered in precarious situation, despite the potentialities of the area: magnificent beaches and a natural and cultural heritage of the area, etc..

**The maritime population of the region supports any action of a temporary conversion of the use of their boats in ecotourism activities such as tours.**

## The objectives of the Park are :

- Conservation of the natural heritage ;
- Maintaining the natural balance and the vital ecological processes;
- Preservation of biological diversity and the natural habitats across the park;
- Information, education and awareness of various public ;
- Protection of the characteristic landscapes of the Park
- Implementation of particular conditions for a local development and an improvement of the living conditions, by carrying out of integrated and participative programs of development.

Management plan : some propositions

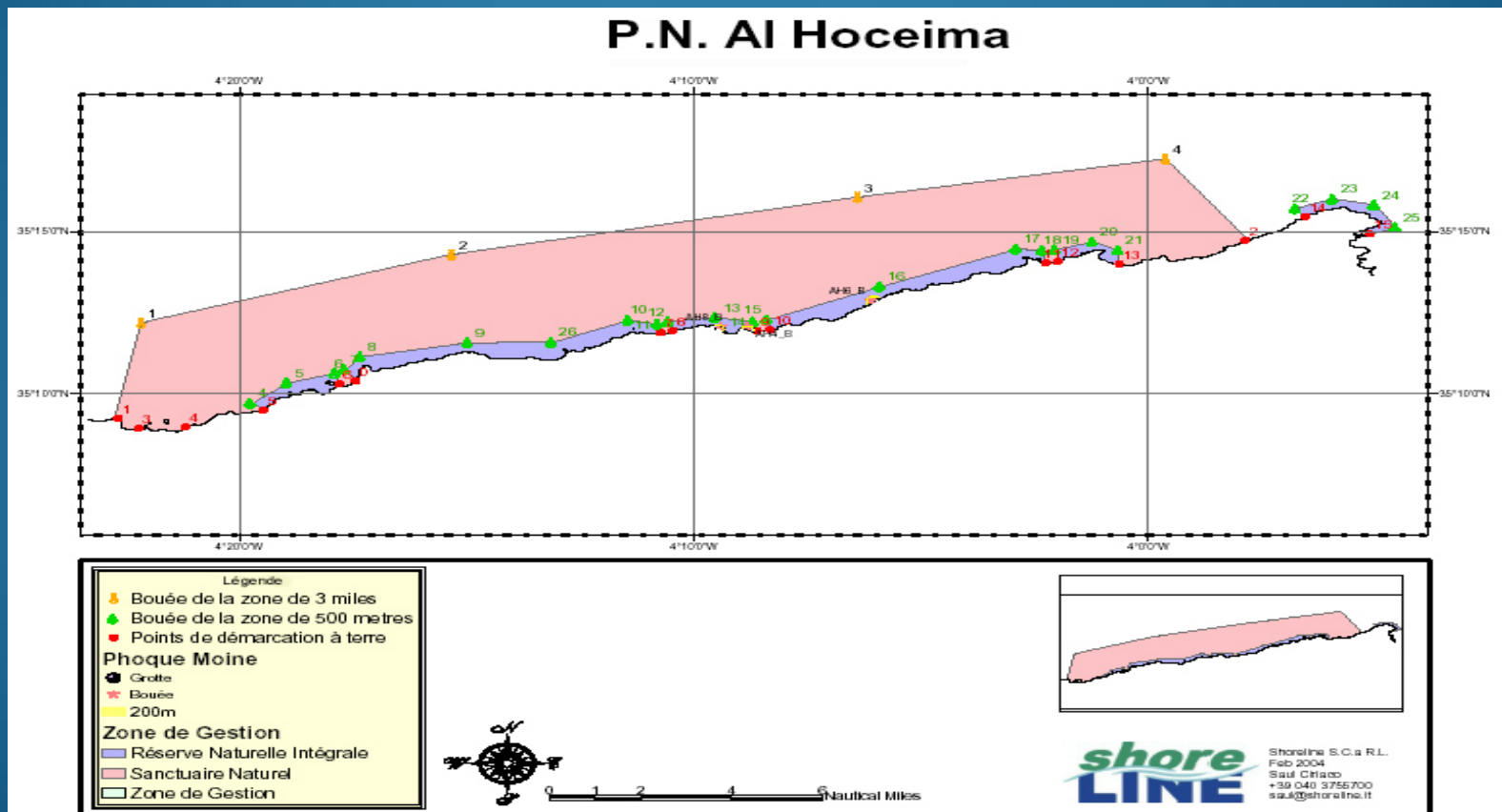


# Zoning Plan and Regulation of human activities (especially fishing)

Regulating the activities of trawling, fishing with purse seines and prohibiting the use of illegal fishing techniques

## Zoning Plan :

- Nature reserves
- natural sanctuaries
- Marine areas of natural resource management



- Elaboration and adoption of a management plan which specifies the legal and institutional framework as well as the applicable management and protection measures ;
- monitoring of ecological processes, habitats, population dynamics and human activities ;
- The active participation of local communities and populations, on the management of protected specially area ; including assistance to people who may be affected by the creation of the MPA ;
- The adoption of mechanisms for financing and the promotion ;
- The compatible regulations of activities with the objectives ;
- Training of managers and technical personnel, as well as the establishment of appropriate infrastructure.

### Natural factors :

The weather impact is significant on coastal geomorphology which can affect the marine and coastal population dynamics of the park such as benthic communities, bird populations, etc..

### Anthropological factors :

#### fishing:

Significant number of fishing practices in Park waters have a negative impact on the marine environment (trawl net near the coast; Dynamite; harpoon fishing, etc..

#### Tourism:

Navigation of vessels; Pollution; big planned infrastructures provided

#### Urbanization:

A muddled urban development. It must absolutely be controlled in particular with respect to constructions on beaches in border the coast.

MCA project in collaboration with the Fisheries Department will propose in 2013, three MPAs in the Mediterranean sea and Atlantic Ocean, with the feasibility studies and also a management plan, with the necessity to integrate the fishing community

# Cases of area restriction measures in Moroccan Atlantic fisheries

## Fishery

## Objectives

### Coastal trawler atlantic fisheries

- Trawling activity : > 3 Nm



- Protecting habitat from trawling activities (1)
- Limiting harvest of recruitment and spawning stages of demersal species (2)

### Shrimp fishery (North area of Atlantic)

- Coastal Trawling activity : > 3Nm
- Industrial trawling : > 10 Nm
- Protection of Nursery areas



- (1) + (2) +
- Limiting economic interaction between fleet by spatial separation

### Octopus fishery (South area)

- Trawling activity : > 12 / 10 Nm
- Artisanal activity : [3 - 8] Nm



- (1) + (2) +
- Limiting economic interaction between fleet by spatial separation

# The Shrimp fishery

## Industrial fleet



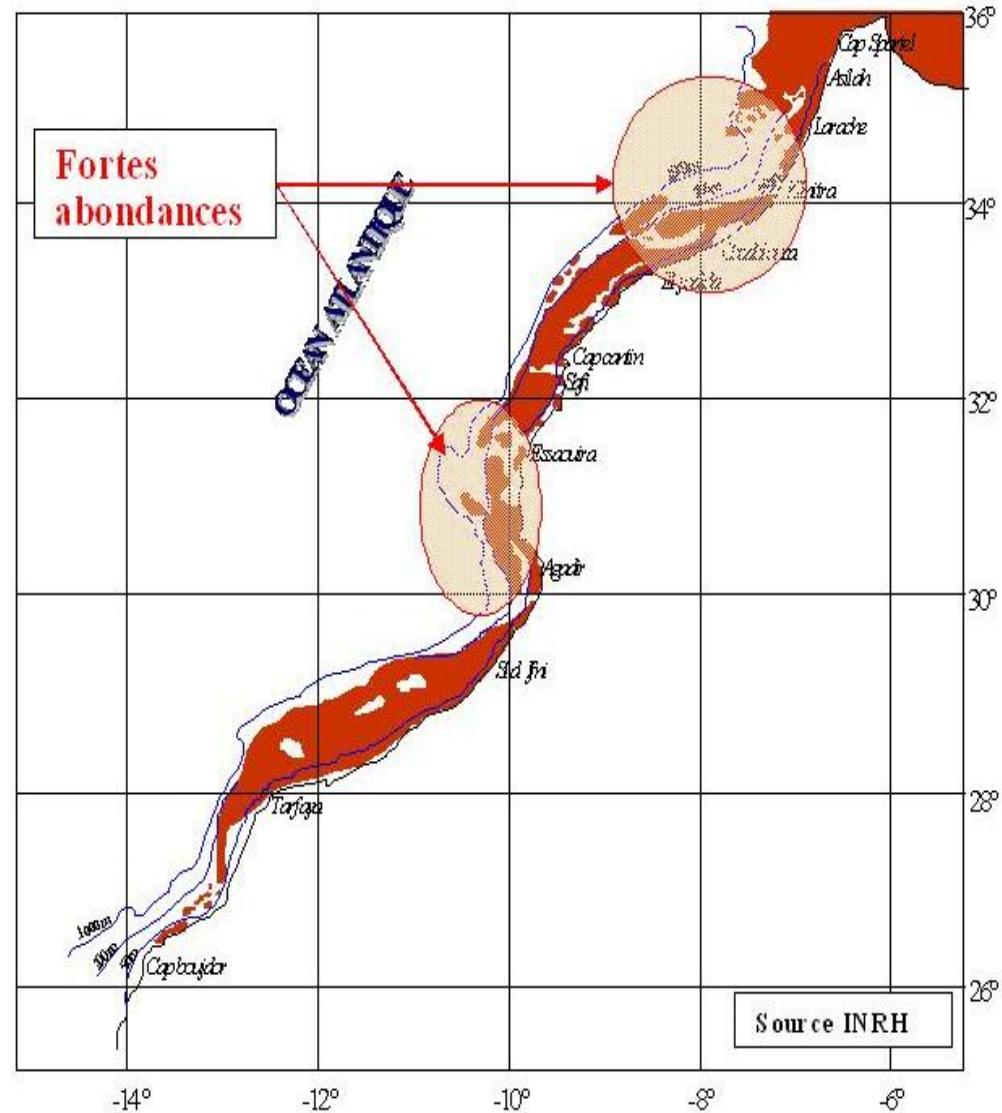
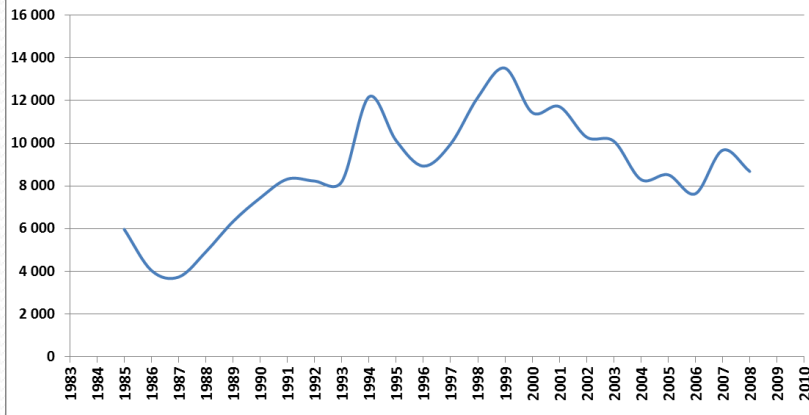
- Target specie : shrimp
- 62 congelation units
- 100 to 418 TJB
- 400 à 1455 CV

## Coastal fleet



- Multispecific
- 521 coastal trawler
- Average of 55 TJB
- Average of 355 CV

Total Catch of shrimp (Morocco) in tonnes



# The Shrimp fishery



Shrimp fishery fleet  
Target species: shrimp  
>10 Nm  
Deep waters  
Spawning areas of  
shrimp



Coastal trawler fleet  
Target species:  
demersal fish  
(including shrimp)  
>3 Nm  
Coastal area  
recruitment areas of  
shrimp



**Biological interaction between the two areas**  
**Impact on the stock during the recruitment and during the spawning**



# The cephalopods fishery

## Industrial fleet



- Target species : cephalopods
- 230 congelation units
- >150 TJB
- 30-40 days fishing

## Coastal fleet



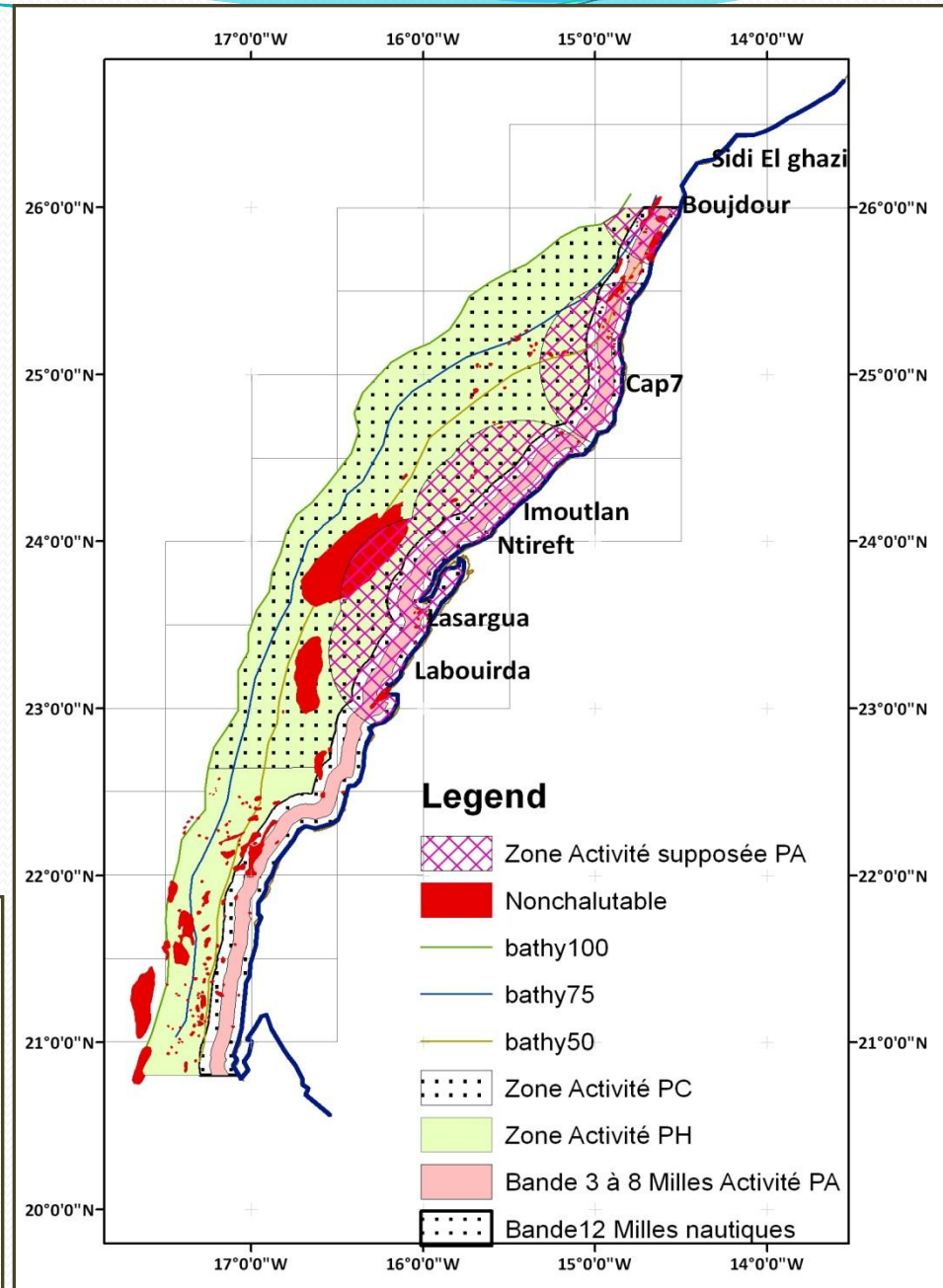
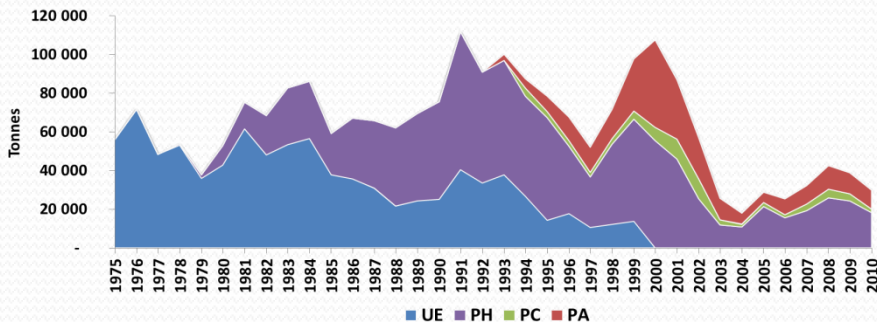
- Multispecific
- 150 coastal trawler
- <150 TJB
- 7 days fishing

## artisanal fleet



- octopus
- 3000 units (pots and jigs)
- <2 TJB
- 1-2 days fishing

PRODUCTION DU POULPE AU MAROC PAR SEGMENT



# The cephalopods fishery

**Biological interaction between the two areas**

**Spatial interaction**

**Gears Interaction**



**Overexploitation of spawners**

**Conflicts between fleet**

In conclusion, Morocco remains convinced of the interest of the spatial component in fisheries management, unfortunately several factors hamper the success of the measures proposed, including :

- conflict between the various segments of vessels, and between different activities
- lack of adequate legal texts,
- a specialized agency,
- not to mention the cultural component that can not be neglected.