

*Reconstruction des captures  
de petits pélagiques  
dans la ZEE Mauritanienne, de 1950 à 2005*

---

**Didier Gascuel, Mahfoud O. Taleb Sidi, et Pierre Labrosse**

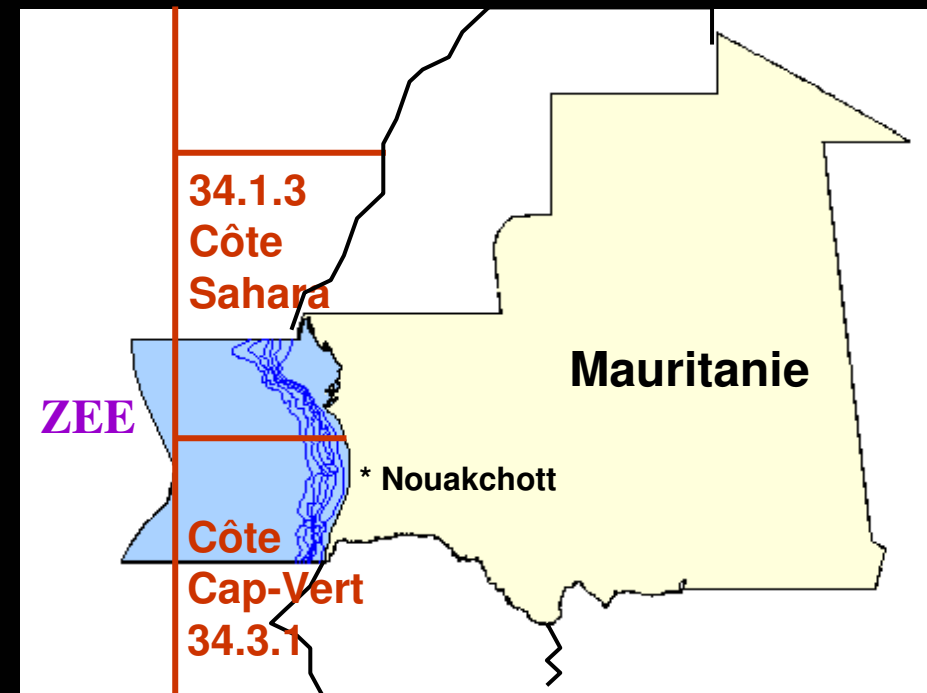
1 – UMR Ecologie et Santé des Ecosystèmes, Pôle halieutique Agrocampus Rennes (France)

2 – Institut Mauritanien de Recherches Océanographique et des Pêches (IMROP, Mauritanie)

Symposium Petits Pélagiques, Casablanca 2008

## Introduction

- From a more general work : Gascuel et al., 2007 - Reconstructed catches in the Mauritanian EEZ (1950-2005)
- Objective: to estimate long term time series of total catches by fisheries :
  - a first step for Ecosystem Approach to Fisheries ;
  - a step for national fisheries management ?
- Difficulties :
  - IMROP database from 1991 only
  - Long term statistics are usually reported by country and FAO subdivision
  - By-catches and unreported catches ?



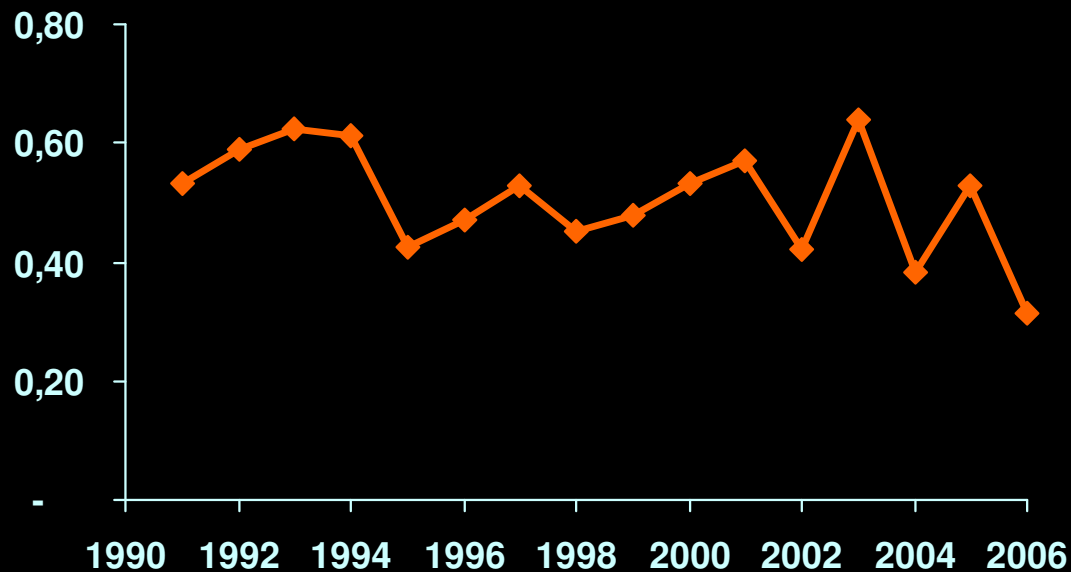
## Method : catches of the industrial pelagic fishery

- **Reported landings** : selecting for each period the “best” information in the available literacy and “post” expert validation
- **By-catches** : based on IMROP observers’ data ( 1996/2001)

<b>Reported landings</b>	<b>1992-05</b>	From IMROP database (2006 working group; Gascuel et al. in press).
	<b>1979-91</b>	From CNROP database (1993 working group in FAO-CNROP, 1995).
	<b>1969-78</b>	From Josse and Garcia (1986), based on FAO data.
	<b>1950-68</b>	SAUP values corrected (multiplied by $F=1.388$ according to 1979-2003 results).
<b>Unreported catches</b>	<b>1991-05</b>	From IMROP database, assuming that unreported days constitute 70% of days without reported catches
	<b>1950-90</b>	Declared landing of the pelagic industrial fishery multiplied by 0.363, according to the mean 1991-05 estimates
<b>By-catches</b>	<b>1991-05</b>	From mean profiles of catches by specie based on observers' data (recalculated from Failler et al., 2006)
	<b>1950-90</b>	Declared landing of the pelagic industrial fishery multiplied by 0.013, according to the mean 1992-05 estimate

- **Unreported catches (of targeted species) : around 50 % of the permitted fishing days reported no catch (...to IMROP)**
  - **Hypothesis 70 % of these unreported days where actually fishing days -> a very rough estimate**

**Proportion of the permitted days reporting no catch in the industrial pelagic fishery**



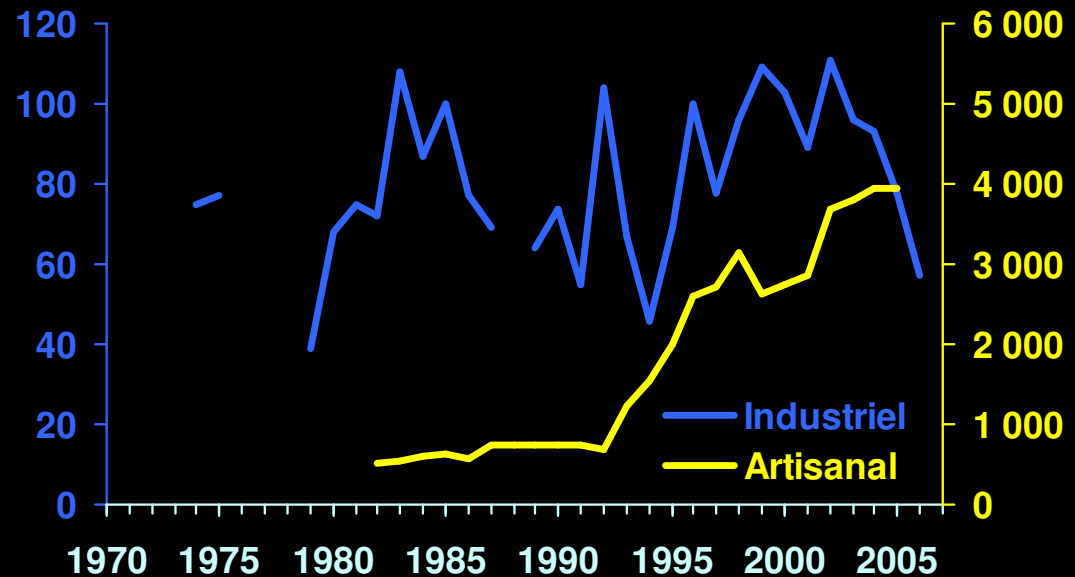
## Method : catches of the artisanal fishery

- Very few published data before 1980 ...
- ... but a very limited production

<b>Artisanal</b>	<b>1997-05</b>	<b>IMROP database and the 2006 working group (in Gascuel et al., in press, values smoothed)</b>
	<b>1988-96</b>	<b>Number of pirogues (from CNROP surveys) multiplied by the mean yearly production per pirogue</b>
	<b>1985-87</b>	<b>CNROP database and the 1988 working group (Josse, 1989).</b>
	<b>1980-84</b>	<b>CNROP database and the 1985 working group (Josse and Garcia, 1986).</b>
	<b>1962-79</b>	<b>Linear interpolation between the two adjacent 5-year averages.</b>
	<b>1952-61</b>	<b>Salted and dried production extracted from StatBase (Thibaut et al., 2004), adjusted by conversion factor</b>
	<b>1950-51</b>	<b>Fixed at 3,000 t, based on subsequent years</b>

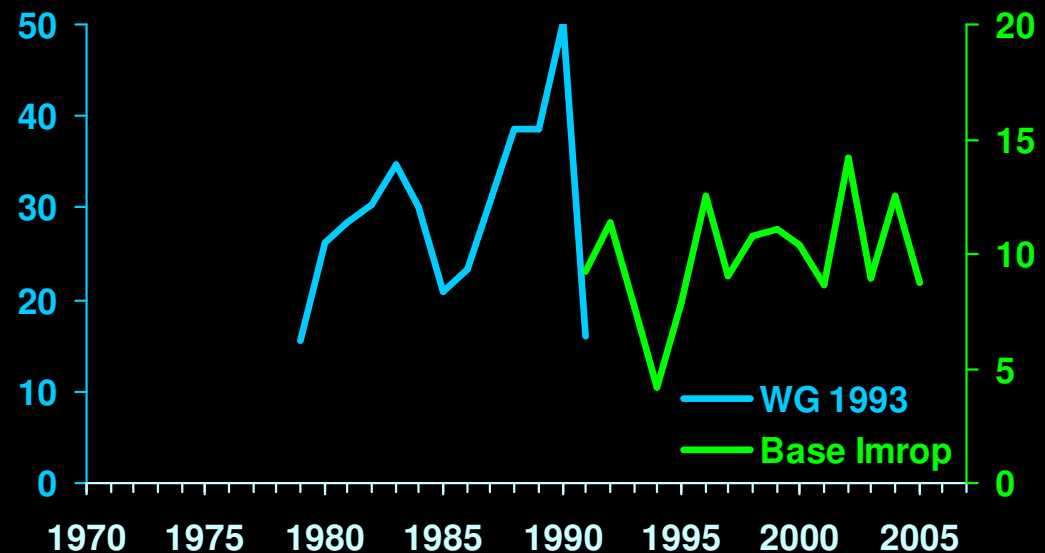
## Results (1/6) : fishing effort

- Number of industrial vessels (seiners in the 60s and 70s, pelagic trawlers latter) : 60 – 100
- Number of pirogues : a strong and recent increase

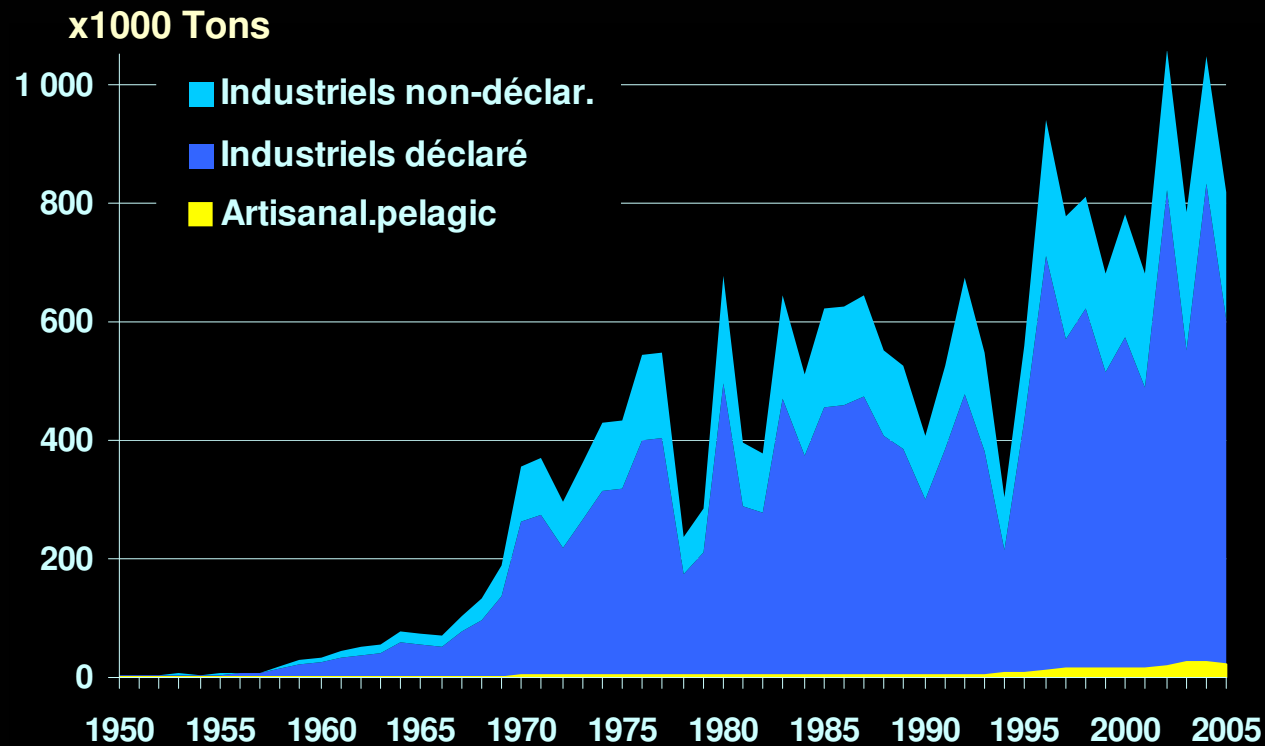


- Number of fishing hours of industrial fleet (x1000)

-> no clear trend in the nominal fishing effort

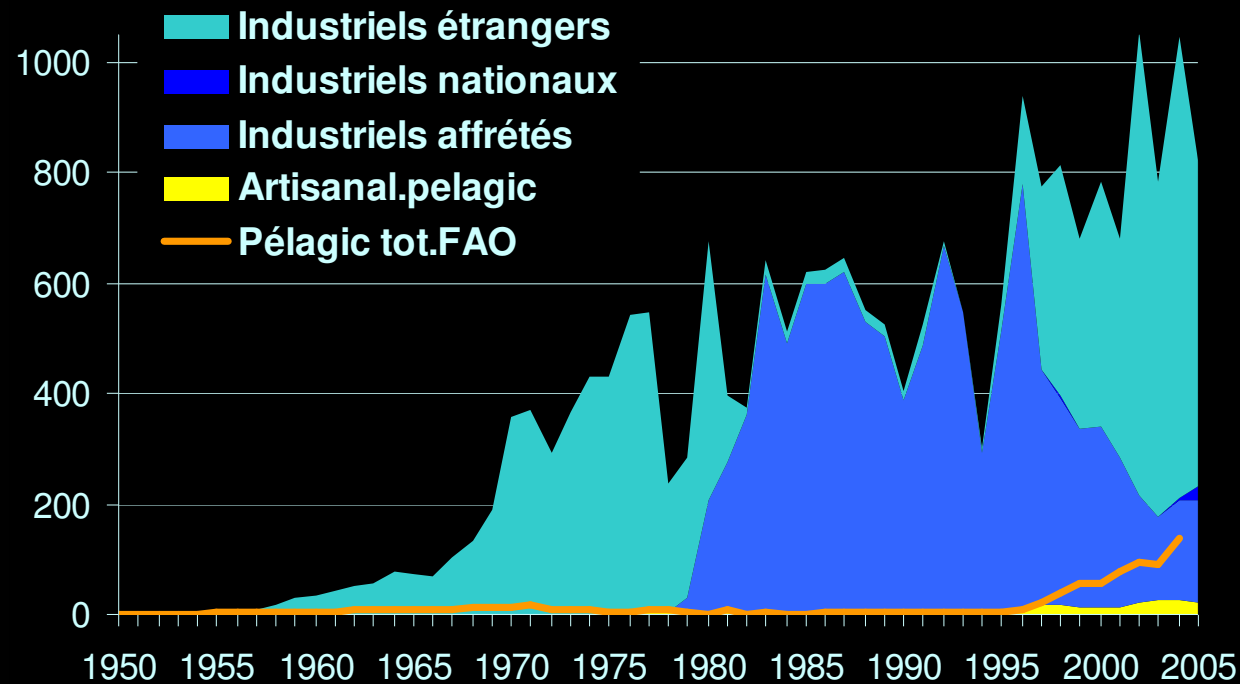


## Results (2/6) : total pelagic landings



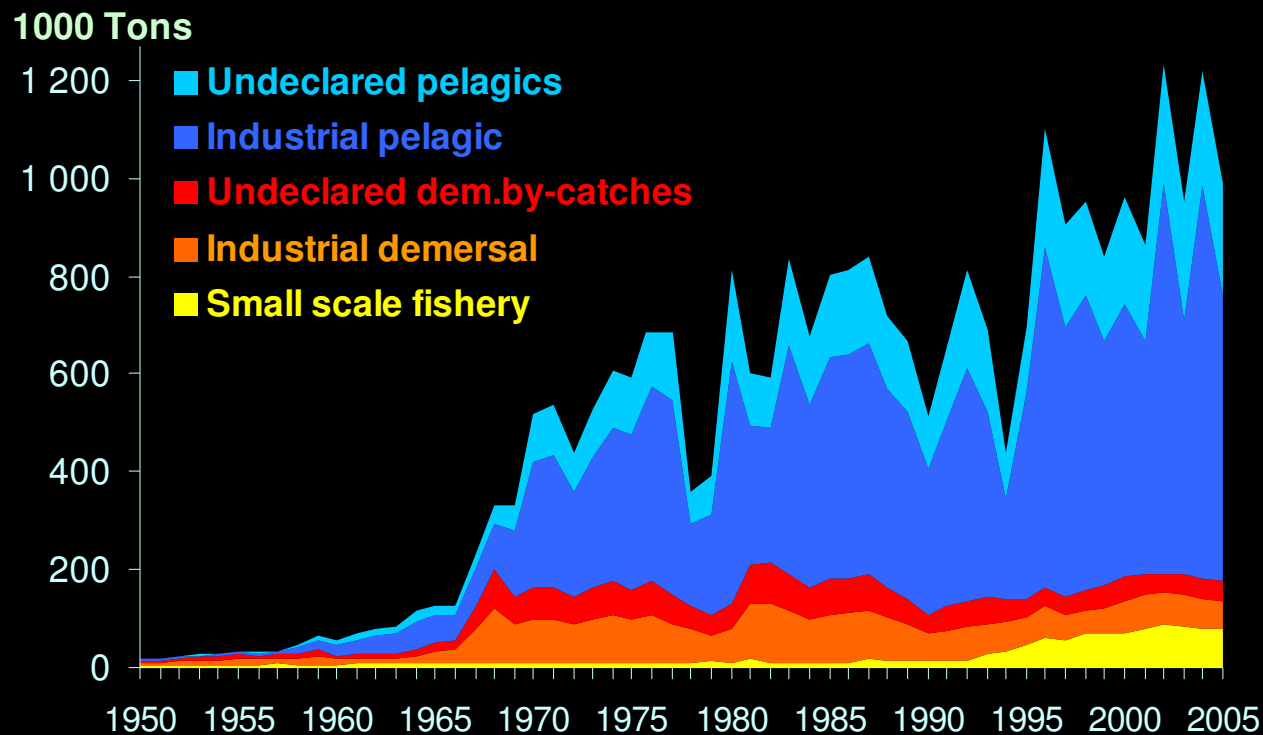
- An increasing trend over the past 50 years – Probably more than 1 million tons in the latest years
- Unreported landings: around 35% of the reported landing (for registered vessels only)
- The still limited but increasing place of the artisanal sector ( $\approx 25\ 000\ T$ )

## Results (3/6) : total pelagic landings



- **Three periods :**
  - **60-70s'**: foreign fleets (Soviet Union and Eastern Europe, Holland, Norway,...)
  - **from 1980 the "New fishery policy"** : chartered boats of Eastern Europe
  - **from 1996 UE agreements** (Dutch vessels) ; licenced boats from Russia, Ukraine, (...); flag of convenience
- **During the 80-90s' several hundred thousands tons not reported to FAO**

## Results (4/6) : total catches of the three main fisheries



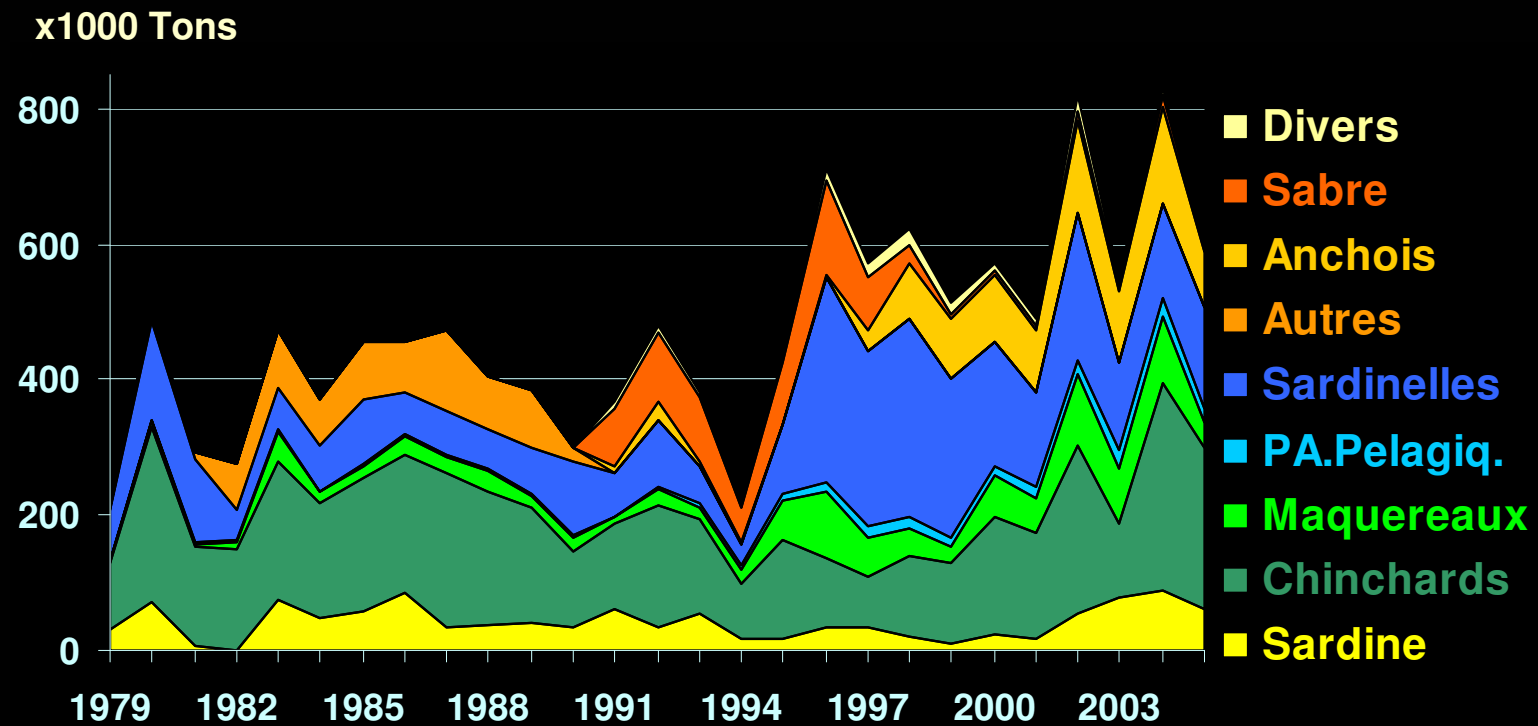
- **Demersal fisheries :**
  - a “new estimate” around 160 000 T per year since the mid 60s’
  - A strong over-exploitation of resources
- **The increasing part of pelagics for the artisanal sector**

## Results (5/6) : By-catches (2000/05 means)

	Type de licence						% du total industriel	Reported By-catch déclarés
	Cephal.	Poisson	Merlu	Crevette	Pelagiq.	Total		
<b>Poulpe</b>	0	1 461	6 291	1 169	<b>3</b>	8 924	30,0	10
<b>Autre mollusq.</b>	0	1 209	1 162	846	<b>57</b>	3 274	29,0	50
<b>Pois.démersaux</b>	550	0	9 782	4 985	<b>6 056</b>	21 373	48,0	<b>8 180</b>
<b>Merlu</b>	101	0	0	2 959	<b>581</b>	4 520	29,0	1 200
<b>Crustacés</b>	167	30	253	0	<b>77</b>	527	11,0	67
<b>Pélagiques</b>	<b>618</b>	<b>589</b>	<b>2 665</b>	<b>1 699</b>	<b>0</b>	<b>11 132</b>	2,1	
<b>TOTAL</b>	7 907	3 257	20 152	11 658	<b>6 774</b>	49 750		<b>9 507</b>
<b>% des captures</b>	17,0	49,0	66,0	72,0	<b>1,2</b>			

- **By-catches = 2,7 % of the reported landings of pelagics**
- **Around 14 000 T of demersal fishes (≈ 20 % of the total catches)**

## Results (6/6) : Catches by species



- Increasing catches for Sardinella and Mackerel
- A shift from “sabre” to anchovy

## Conclusion : some key points for fisheries management

---

- **The challenge of statistics :**
  - **FAO subdivision / ZEE (Mauritania as the “worse” case study)**
  - **Unreported catches (of pelagics) and by-catches (of demersal fishes)**
- **The search of a national exploitation and value-added for pelagics ?**
- **Interaction with the demersal fisheries :**
  - **By-catches**
  - **Pelagics as major resources for artisanal fisheries in a context of demersals over-fishing**
- **Stocks assessment and ecosystem impact of pelagic fisheries**

---

**Thank you**

See : Gascuel et al., 2007 – *in* Fisheries Centre Research Report 15(2)  
**[www.fisheries.ubc.ca](http://www.fisheries.ubc.ca)**