

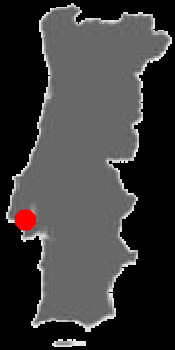
# Energy and Environmental introduction to Almada

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Division of Studies and Environmental Management





Lisboa

Almada

Almada

Lisbon Metropolitan Area

Area 72 km<sup>2</sup>





## History and heritage

... phoenicians, romans and muslims were the first communities to settle in the area

... arab people chose the name 'Al-Madan' for the settlement ('The Mine')



# Biodiversity and Protected Landscape

**Biogeographic transition zone:** Almada has a rich biodiversity due to its location in a mediterranean climate with atlantic influence





- **On the calcareous soils on the north of the municipality**
  - vegetation communities associated with *Quercus faginea* (Portuguese oak)
  - agricultural use molded the landscape
  - better preserved vegetation on protected slopes to the Tagus river



- On the sedimentary soils in interior of the municipality

- vegetation communities associated with *Quercus suber* (Cork oak)
- urban sprawl
- important vegetation areas in remaining farms



## ■ On the Atlantic front

- Marine influence and climatic mild
- Sand dune communities, scrublands and woodlands with *Pinus pinea* (Mediterranean stone pine) and *Juniperus turbinata* (Phoenician juniper)
- Natural protected area – PPAFCC which includes pine forest, woods and agricultural lands - 16% of the municipality





# White sandy beachfront



# Fisherie community – traditional trawl fisheries



## Almada: Demographic data

- South bank of Tagus river across Lisbon  $\Rightarrow$  urban pressure
  - 160 825 inhabitants in 72 km<sup>2</sup>  $\Rightarrow$  (high density pop. > 2000 people/sq.km)
  - Fluctuating population of 70 000 inhabitants
  - Almost 8 000 000 visitors per year !
- ▼
- 13 km of Atlantic beachfront attracts great part of the annual visitors during the summer





13 km of beachfront



Popular summertime  
destination





- The bridge crossing serves to funnel nearly 160,000 vehicles a day to and from Lisbon
- Lack of a good Public Transport network
- 73% of the population have a car ( 0.443 cars/inhab) vs. 36% have a bicycle
- 77% travels to school by car
- Modal split: private car 23% (1991) and 46% (2006)





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- Lack of a good Public Transport network
- 73% of the population have a car ( 0.443 cars/inhab) vs. 36% have a bicycle

... mobility is a key issue in local policies

travels to school

Modal split: private car  
23% (2001) and 46%  
(2006)



## Framing Almada's mobility...

### ■ Size

- 160 825 in Almada
- 2 661 850 in Lisbon's Metropolitan Area

### ■ Transport System

- Mobility and Land Transports Institute (Central Government): concession
- Very few local competences (e.g.: Traffic management)
- Almada PT modes: Bus (private), Tram (private), Train (private), Boat (public) + elevator and beach train



## New tram in Almada

3 lines | 13,5 km | 19 stops

Fully operational since 28/11/2008

CYBER Display Almada, Portugal | November 2009





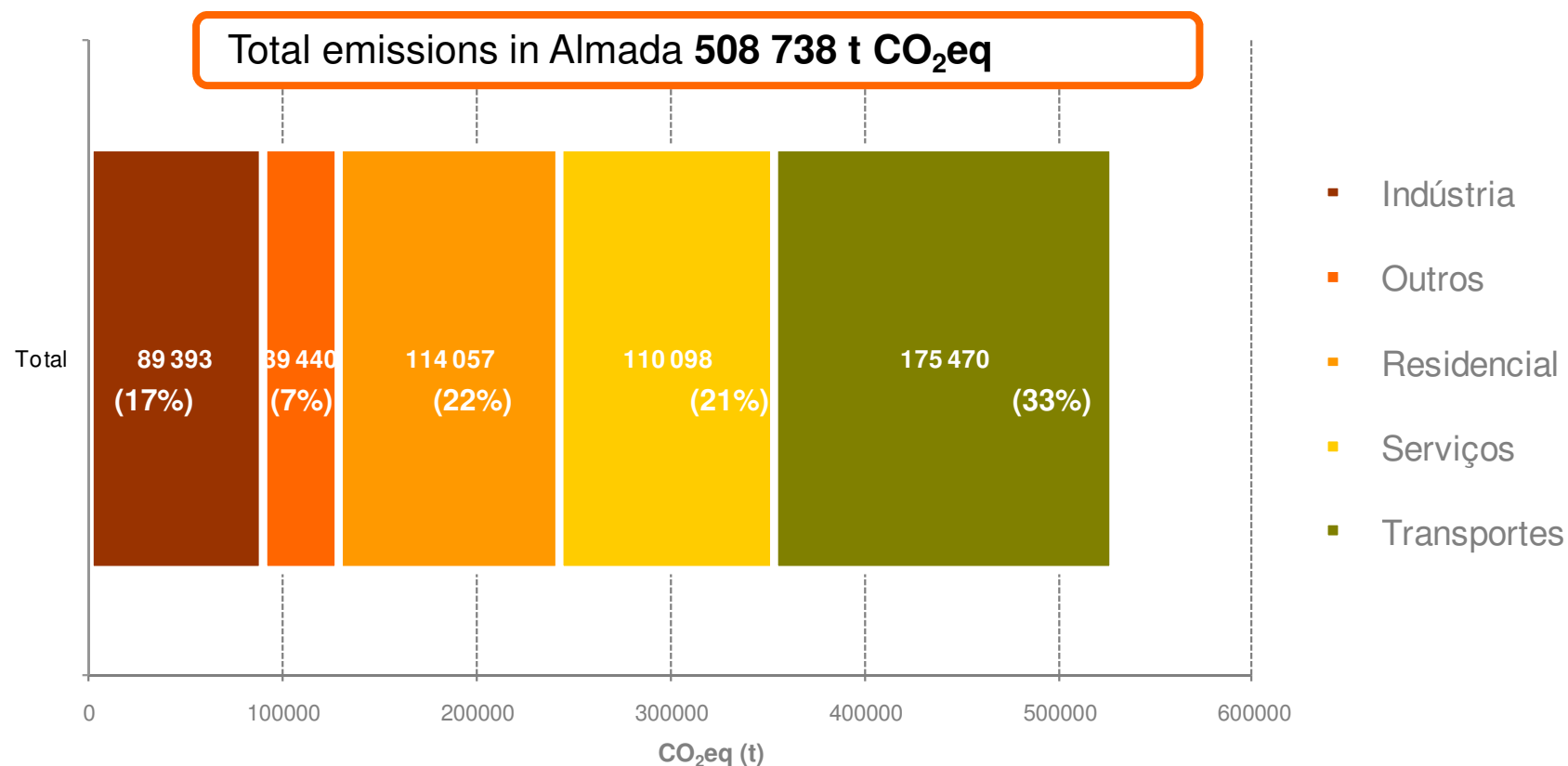


- 32.000 buildings (2005)
- 96.700 dwellings (2005)
- New 318 buildings/year (2005)
- Annual building permits (new 1%/Year)

1996	2001	2005
484	438	318

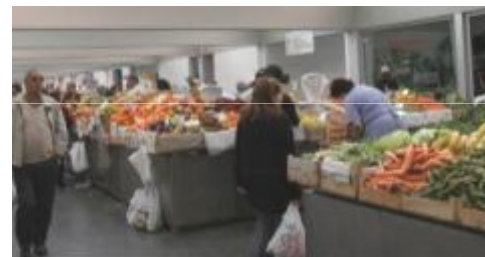
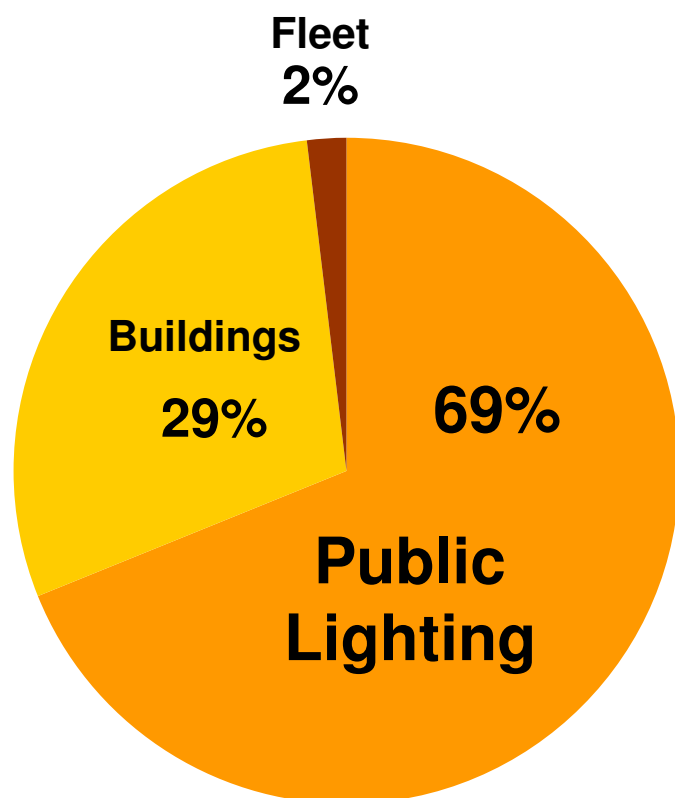
- Higher energy consumption for cooling and use appliances
- Low penetration of solar solutions and passive housing





Almada has a **Carbon Intensity of 3,1 t CO<sub>2</sub>eq/hab** (PT: 6,7 t CO<sub>2</sub>/hab)

**Municipality total emissions**  
**30 000 t CO<sub>2</sub>eq**



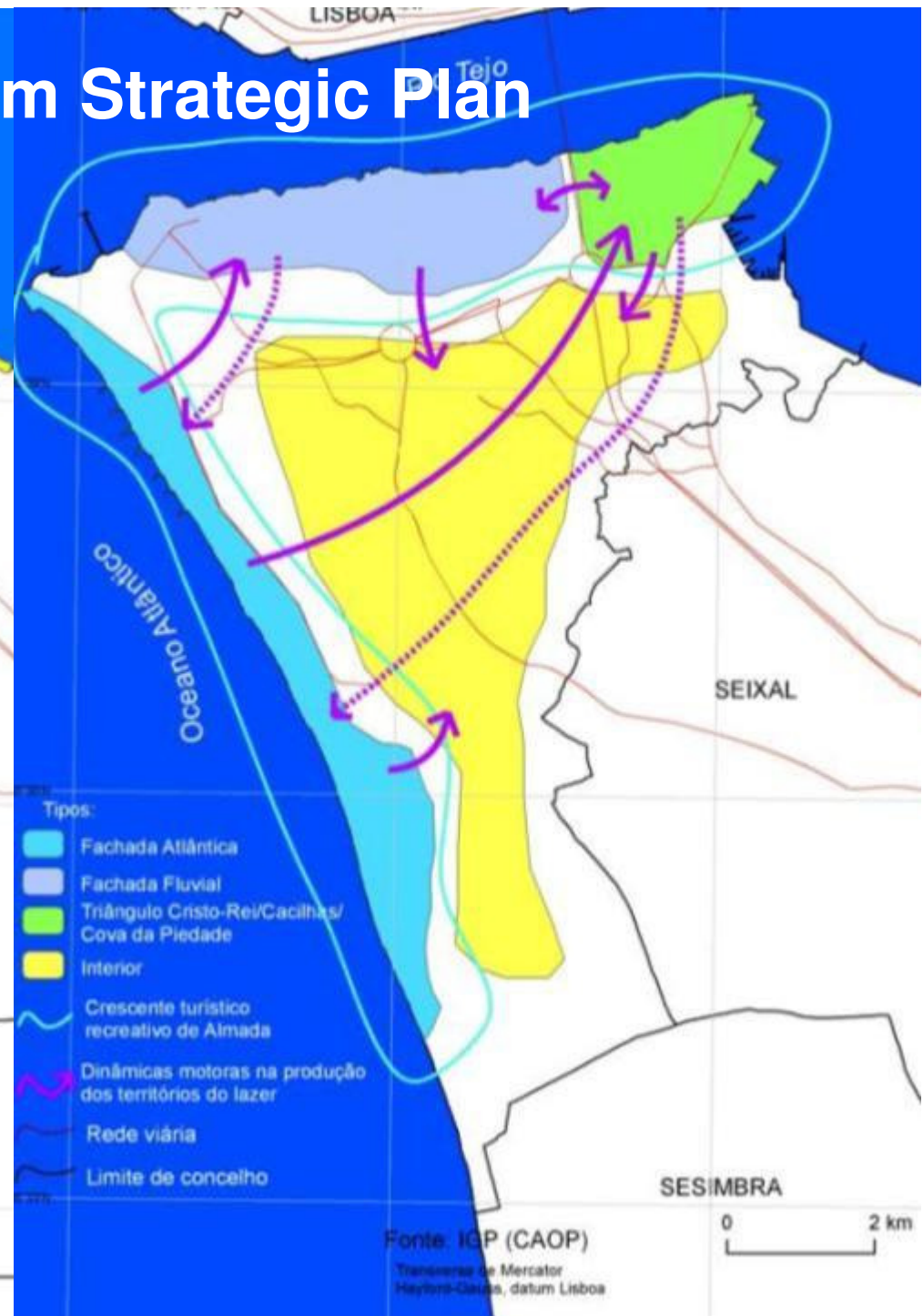
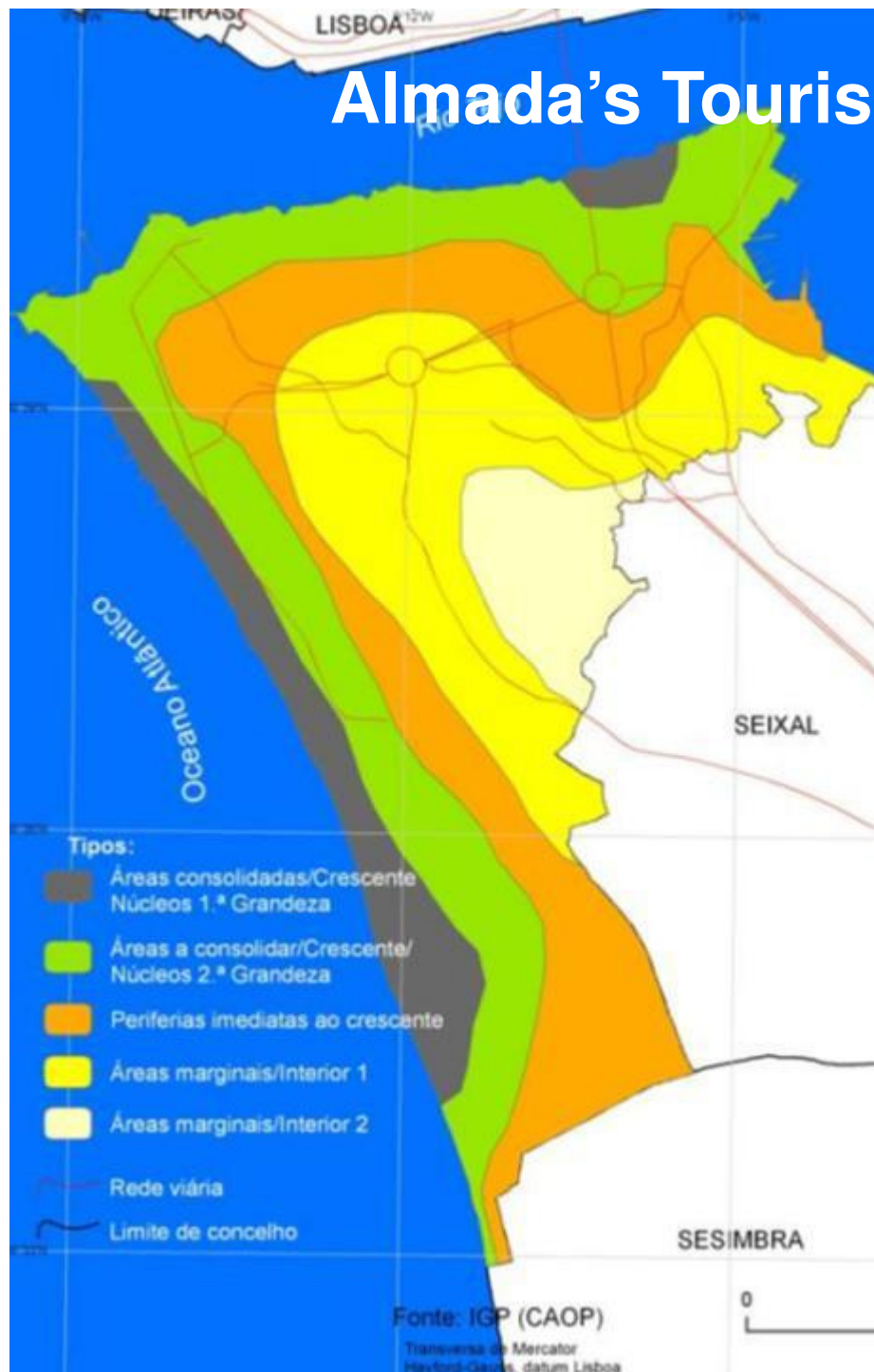
**Municipality 5% GHG emissions**



## Almada's local economy

- Based primarily on Tourism, Services and Public Administration.
  - ... agriculture in pre-1960's era
  - ... until late 1990's, intense industrial port activities, mainly shipbuilding industry
    - example: Lisnave shipyard 10,000 workers and additional 40,000 indirect jobs.
  - ... remaining port activities (north river front)
  - ... tourism sector becoming economically more and more important

# Almada's Tourism Strategic Plan



# Almada's Tourism Strategic Plan





# Assessment of costal vulnerability

## Coastal vulnerability assessment and Vegetation Communities Response

- Tool design for:
  - Diagnosis of the coastal vulnerability
  - Monitor the system evolution in response to climate change
  - Monitor impacts of management decisions



## Assessment of costal vulnerability

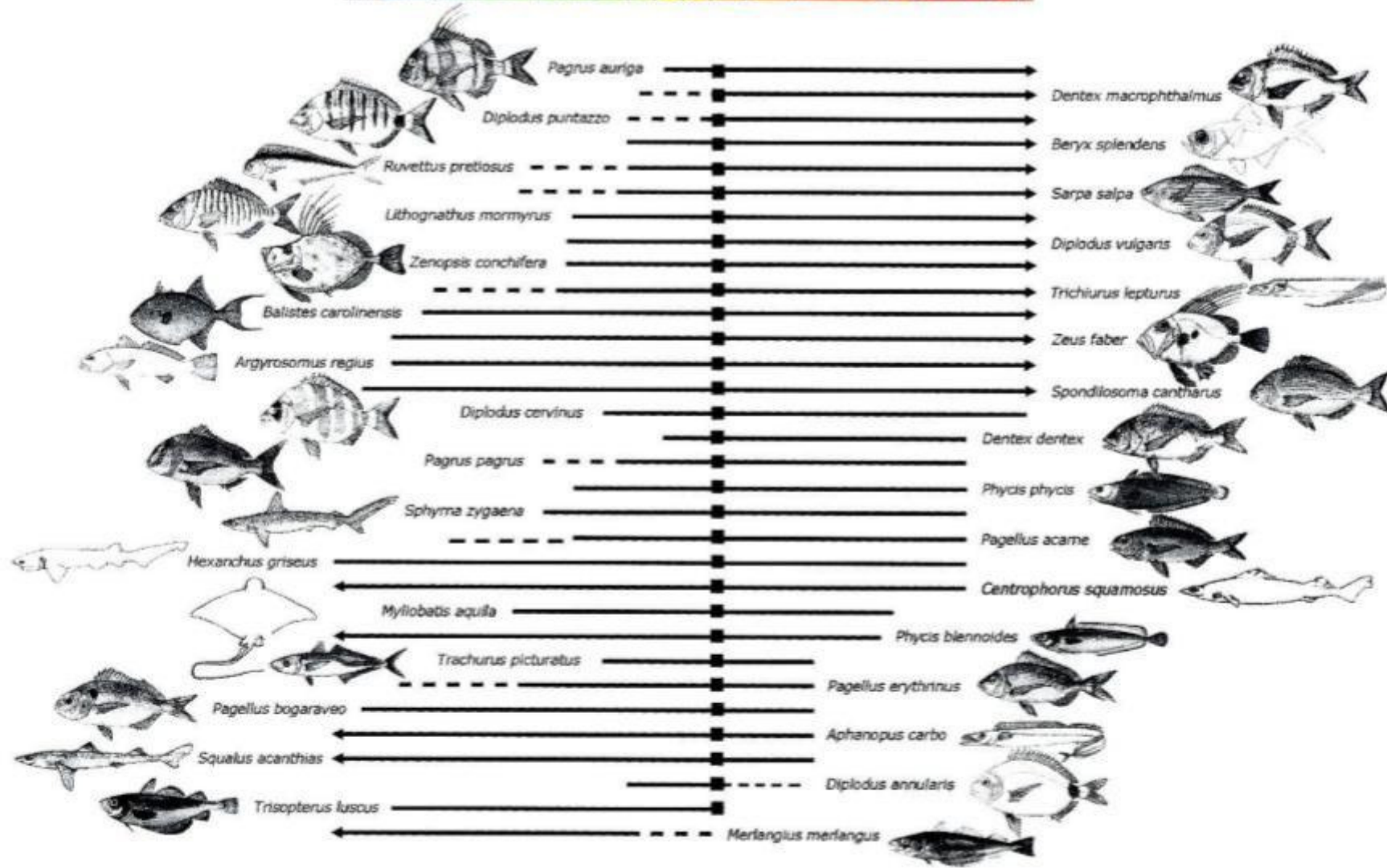
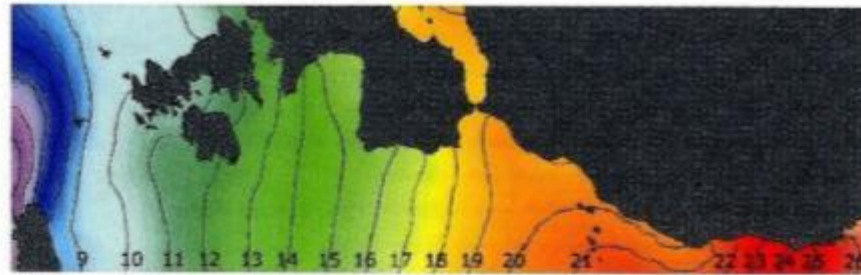
### ■ Strategic Plan for the Trafaria Coast



– This map allows for the definition of adaptation measures, such as:

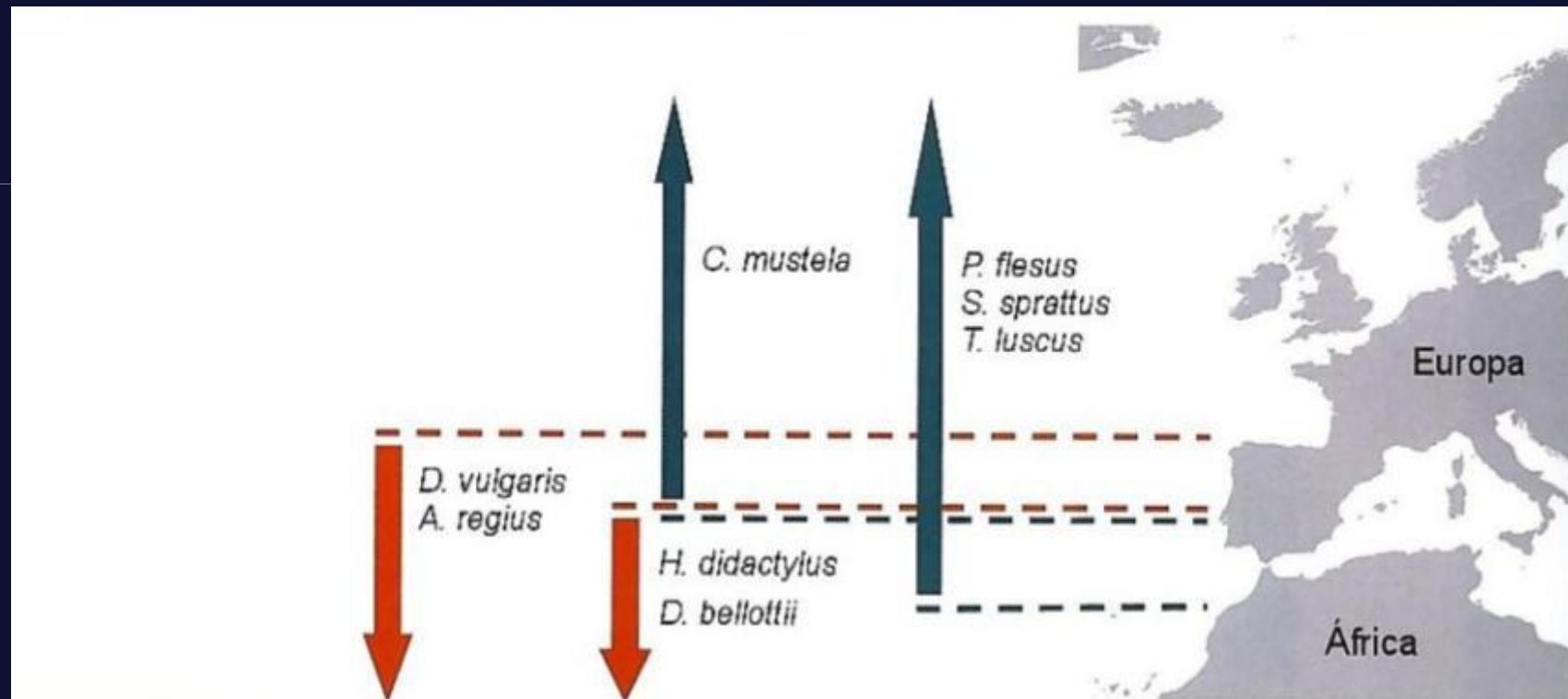
- Dune restoration
- Withdrawal of communities installed in risk areas
- Improvement of drainage systems

# ESPÉCIES BENTOPELÁGICAS





## Beach seine fisheries monitoring...



# Thank you!

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**City Council of Almada**

CYBER Display Almada, Portugal | November 2009

-28-

