

# The Marine Research in Spain

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# Main National Objectives

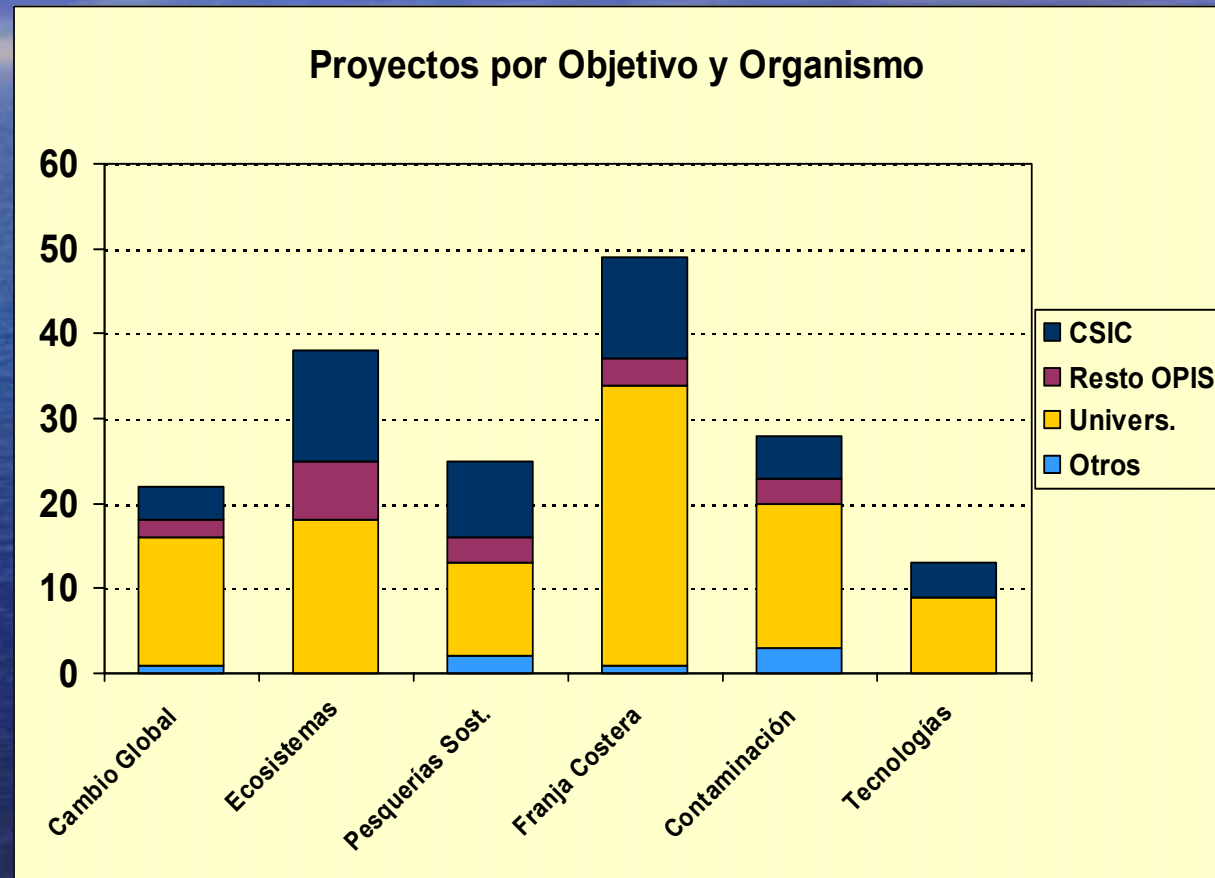
- **Achieve responsible use and protection of the coastal and marine resources**
  - **Increase the knowledge of our ecosystems from a multidisciplinary view**
  - **Contribute to the solution of social, economic and technological problems**
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- **15% GDP is generated by marine-related issues**
  - **Tourism generating 11.8 % GDP is dependent of coastal conditions**

# Instruments to reach these goals

- ✓ **Research and Development National Plan**
  - ✓ **Managed by the Ministry of Education and Science**
  - ✓ **4 year duration**
  - ✓ **Composed by Programmes with specific objectives**
  - ✓ **Annual invitations to tender, competitive and peer reviewed**
  - ✓ **1.03 % GDP investment in 2003**
- **Other sources of funding for the scientific community**
  - **Projects from Regional Governments 37%**
  - **EU projects 22%**
  - **Industry 17 %**

# R & D National Plan 2000-2003 Marine Sciences

- **249 R&D Marine Sciences Proposals funded**
- **15 million €**
- **51% success**
- **49 PhD fellowships**
- **VEM 2003 76 proposals funded: 10 million €**



# R & D National Plan 2004-2007

**National Programmes**

**National Plan**

**Biotechnology**

**Biodiversity,  
Earth Sciences  
and Global change**

**Natural Resources  
and Food Tech.**

**Environmental  
Sciences**

**Biodiversity**

**Global change  
& Atmosphere**

**Marine Sciences  
& Technologies**

**Environmental  
Technologies**

**Earth Sciences**

**Polar Research**



**2003-2005 Strategic action against marine accidental pollution**

# R & D current and future objectives (1)

- ✓ **Ecosystemic approach for sustainable marine exploitation.**
  - ✓ **Fisheries in the context of the ecosystem.**
  - ✓ **Sustainable exploitation from species biology to socio-economic aspects.**
  - ✓ **Marine ecosystem eutrophication and pollution. Impacts.**
- ✓ **Aquaculture.**
- ✓ **Marine biodiversity.**
- ✓ **Marine populations conservation strategies.**

# R & D current and future objectives (2)

- ✓ **Marine geology:**
  - ✓ **Ocean slope processes.**
  - ✓ **Mineral resources.**
  - ✓ **Study and prevention of natural risks.**
- ✓ **Marine accidental pollution:**
  - ✓ **Impacts upon the biota.**
  - ✓ **Fuel evolution in the environment.**
  - ✓ **Bioremediation.**
  - ✓ **Development of prevention plans.**
  - ✓ **Social and economic impacts.**
  - ✓ **Technological developments to prevent and remediate pollution.**

# R & D current and future objectives (3)

- **Oceanographic research in the context of global change.**
  - ✓ **Marine geochemical cycles. Nutrients. Primary productivity.**
  - ✓ **Oceanographic and ecological regulators of the fluxes between the sea and the atmosphere related to global change.**
  - ✓ **Global change impact upon the marine ecosystem. Mitigation strategies.**
  
- **Development of new and competitive technology.**
  - ✓ **Improvement of environmental conditions.**
  - ✓ **New sensors, robots and remote instruments.**
  - ✓ **Telecommunications in real time between permanent instruments and processing units.**
  - ✓ **New materials for sensors to avoid corrosion and biofouling.**
  - ✓ **Sonar and lidar techniques to characterise ecosystems.**
  - ✓ **Reduction of fishing impact .**

# European dimension

- **The National Plans are designed in the context of the European Union Frameworks**
- **Participation of international teams in the Spanish Projects but leader resident in Spain**
- **Active participation of the Spanish scientific community in European projects**
- **Horizontal actions to structure national research at international programmes (IGBP, CLIVAR...)**
  
- **Coordination at trans-European level by means of ERA-NETS**
  - **MARINERA**
  - **AMPERA ( in process)**
  - **EFARO (fishery, in process)**
  - **ERAFISH (in process)**