About 11,000 people, turnover of 1.1 billion euro, 109 Institutes, 7 Departments

Earth System Science (TA)
- Bio-agro food sciences
- Engineering, ICT, Energy and Transport
- Social Science and Cultural Heritage
- Biomedicine
- Chemistry and Material Technologies
- Physics and Matter Technologies
ISMAR was evaluated as the excellence institute of the Earth System Science Department of CNR.
Consiglio Nazionale delle Ricerche

Istituto di Scienze Marine

Sede di Venezia

Riva dei 7 Martiri

Biblioteca dell’Istituto di Studi Adriatici
### ISMAR activities

<table>
<thead>
<tr>
<th>Category</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical and Chemical Oceanography</td>
<td>Venezia, Ancona, Bologna, Trieste, La Spezia</td>
</tr>
<tr>
<td>Geology e Geophysics</td>
<td>Bologna, Venezia</td>
</tr>
<tr>
<td>Coastal Systems And Human Impacts</td>
<td>All locations</td>
</tr>
<tr>
<td>Climate and Paleoclimate</td>
<td>Bologna, Venezia, Trieste, La Spezia</td>
</tr>
<tr>
<td>Ecosystems and Biogeochemistry</td>
<td>Ancona, Venezia, Lesina</td>
</tr>
<tr>
<td>Fisheries and Aquaculture</td>
<td>Ancona, Lesina</td>
</tr>
<tr>
<td>Technology</td>
<td>Genova, Ancona, Bologna, La Spezia</td>
</tr>
</tbody>
</table>
ISMAR's mission is to increase the knowledge of natural processes and help to solve society's problems:

- **Natural processes** (geological, oceanographic, biological), dispersion of sediments and pollutants, ecosystems, productivity of the seas, natural hazards.

- **Mechanisms / effects of global change**
  heating and ocean circulation, acidification, sea level change and coastal erosion, hydrodynamic processes (including polar regions)

- **Human impacts**
  current and pre-industrial pollution, impacts on the coasts and in the deep sea, alien species
Figure 1. Known sites of hydrothermal venting along mid-ocean ridges, in back-arc basins, rifted arcs, and at submerged island arc volcanoes (red), and areas of activity as indicated by mid-water chemical anomalies (yellow). EPR - East Pacific Rise. TAG - Trans Atlantic Geotraverse, MEF - Mid-Endeavour Field, and CR-14 - Sea Cliff hydrothermal field on the northern Galapagos Ridge. Figure after Baker et al., 1995; German and Von Damm, 2004; Harrington et al., 2005; Koschenk et al., 2006.
OBSERVATIONAL NETWORK

- Buoys, platforms, moorings and other fixed sites
- Repeated hydrological transects
- Fishery Observing System
- LTER stations (North Adriatic, Antarctica, Venice Lagoon)
Some challenges of the coming years ... 

Geological mapping and historical evolution of the coastal area (and human impacts)

Study of the oceanographic processes and the impact on the seabed (coast, continental shelf and deep sea)

Oceanographic forecasting models (waves, tides, currents)

Observing sites, long time physical and ecological series

Human impacts on seafloor and water column (from the lagoons to the ocean)

Definition of the geological hazards: identification of structures (3D Seismic Geomorphology), fluids emissions
RAPID ENVIRONMENTAL ASSESSMENTS