

**Euro-Méditerrananean Symposium, november 20 and 21, 2007**  
**Working Group 2 (20/11/07 15:00-19:00)**  
**Geological hazards : earthquakes, slope unstabilities, tsunamis, coastal erosion**

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**Summary of key points expressed during the discussion**

1. Due to the long recurrence rate of geohazards related catastrophes, there is still too little awareness of the real risk among political authorities in most countries. It is important to increase public awareness, so as to influence public policies on risk mitigation.
2. It is hardly being realized that costal erosion and marine submersion will increase severely with increased human population and global, climatic change. Here also, more efforts are needed to survey, mitigate and increase public awareness.
3. Adressing geohazards in submarine environments require ***an integrated land-sea approach***, with specific methods and observing systems, as well as sea-going facilities : bathymetric and coastal low land mapping, high-resolution seismics and deep seismic soundings, seafloor observatories, etc. These specificities involve a ***high level of funding, compared to land. Hence the necessity to build up partnerships at the international level.***
4. Strong need expressed for more detailed knowledge of seabed and sub-seabed and ***basic research*** on processes at all levels : local, regional, from the deep crust to the surface.
5. ***Various public means exist but are not enough structured.*** The different oral presentations of the workshop clearly show that there are a number of on-going initiatives at the national and international level : in Italy (e.g. Magic Progetto), in Greece, in Europe (ESONET/EMSO, EPOS, EUROFLEET), at the inter-governmental level (CIESM), etc. On land, the Euro-Mediterranean Seismological center (EMSC/ CSEM) appears to be an examplary initiative that federates more than 50 institutions at the Euro-Med level.
6. Urgent need is expressed for a better coordination of projects, tool development and database integration. The participants insist repeatedly on the need for a better structuration and better networking at the Euro-Med level. For instance, the useful role of the CIESM ([www.ciesm.org](http://www.ciesm.org)) is underlined and recognized.

7. Representatives from Insu (Institut National des Sciences de l'Univers) mention their intention to launch a programme for basic research in the Mediterranean focused on earth and environmental sciences. North-South cooperations will be encouraged.
8. The Eurofleets call (opened nov 07) offers the possibility to provide access to marine facilities (vessels L>35 m), submarine or embarked tools to Euro-Mediterranean countries.
9. Strong need to develop or strengthen links with industry (existing in N and S countries) for the access to advanced technology and unique sets of data (eg very deep and good resolution seismics, drill holes, etc)
10. Besides these initiatives, the participants from the southern shores of the Mediterranean (Morocco and Algeria) mention their strong needs :
  - To have access to oceanographic vessels and tools
  - To share experience on scientific concepts,
  - To be fully involved in the project building process, from the beginning
  - **To develop local marine research facilities**
11. Hence, the necessity to move from « cooperation », based on short-term projects to « partnership », based on shared, long-term efforts, **with sustainable facilities on each shore of the Mediterranean.**

## Conclusions

1. A consensus appears on the necessity :
  - to evaluate geological hazards through integrated land-sea projects including detailed swath bathymetric surveys, HR seismics, etc
  - to study the potential slides on slopes and their impacts on coastal zones
  - to complement the seismic networks with marine stations
  - to install permanent systems for monitoring the coastal erosion
  - to estimate the impact of climate change on coastal zones (marine submersion)
  - to install / reinforce Tsunami Alert and mitigation Systems integrated at the Euro-Med level and possible impact on coastal zones
  - to conduct basic researches including seafloor observatories, boreholes, numerical modelling for sediment transport, tsunami impacts, etc...
  - to develop training and mobility of students and researchers from both shores of the Mediterranean.

2. A second Euro-Mediterranean workshop will be held in Italy in September 2008. In the meantime, new steps should be taken to establish a real and full North-South partnership:

- to elaborate a multi-disciplinary research program on geological hazards, integrating land and marine aspects and involving the countries from the northern and southern Mediterranean from the early stages (objective definition) to the scientific valorization of the data
- to structure marine and coastal sciences research at the Euro-Mediterranean level (most particularly with the development of the access to marine and coastal research infrastructures
- to implement a pluri-annual programming of trans-national cruises involving countries from both shores of the Mediterranean (connexion with Eurofleets).
- To create North – South Mediterranean coordination structures at all levels associating : policy makers, funding agencies and scientific organizations ; scientists / project managers and regional authorities in charge of spatial management, socio- economic aspects,
- These steps should help pave the way for the development of sustainable, permanent, marine and coastal research infra-structures in the countries from the southern shores of the Mediterranean.