

**EARLY WARNING AFTER KOBE:
TASKS FOR THE MEDITERRANEAN REGION**

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The Mediterranean suffers from severe institutional and geographic vulnerability to natural disasters, which has been further intensified in the past decade due to the effects of global warming. This means that to the perennial dangers from fires and earthquakes has been added desertification trends, floods and more frequent deterioration of weather.

There is need for harmony between nature and humankind but human intervention on the planet including deforestation has made harmony a rather rare issue. Given the problems caused by natural disaster the precautionary principle has to be put in force.

Early warning system for tsunamis exists only in Hawaii established by UNESCO for the Pacific Ocean ([website://icc.unesco.org/itsu](http://icc.unesco.org/itsu))

The December 2004 devastating tsunami in the Indian Ocean followed this year by Katrina in the United States were not adequately covered by early warning system. Local infrastructure in the coastal and island regions were not based on strong resilience.

During the United Nations Small Island Development States (SIDS) meeting in Mauritius a decision was made on 19 January 2005 for the establishment of an early warning system for tsunamis in the Indian Ocean too. This decision was the result of a meeting organized by the PPEW (see below).

The causes of tsunamis are mainly but not exclusively:

Volcano eruption, which is the easiest case for early warning for possible tsunamis.

The destruction of seabed because of earthquakes.

Erosion of seabed soil, most frequent in Greek seas.

The UNESCO early warning system is the oldest in the international system and the most known from the side of international organizations. In addition, the international early warning program (IEWP) was proposed at the 2nd international conference on early warning (EWC-II) in Bonn, in October 2003. A platform for the promotion of early warning (PPEW) was also established with support from the German Federal Foreign Office.

In the meantime in the Yokohama 1994 Strategy and Plan of Action, which were the outcome of the World Conference on Natural Disaster Reduction as the midterm review of the International Decade of Natural Disaster Reduction (IDNDR) were included inter alia Principles as follows:

1. Early warnings of impending disasters and their effective dissemination using telecommunications, including broadcast services, are key factors to successful disaster prevention and preparedness.
2. Preventive measures are most effective when they involve participation at all levels, from the local community through the national government to the regional and international level.

3. Vulnerability can be reduced by the application of proper design and patterns of development focused on target groups, by appropriate education and training of the whole community.

4. Environmental protection as a component of sustainable development consistent with poverty alleviation is imperative in the prevention and mitigation of natural disasters.

5. Each country bears the primary responsibility for protecting its people, infrastructure, and other national assets from the impact of natural disasters.

An accelerating growth in disaster losses was noticed by White, Kates, and Burton in 2001: According to them five possible explanations in the form of questions were proposed by them. They are equally valid for the Mediterranean region. The role of knowledge, and consequently of education and public awareness and training is of cardinal importance:

1. To what extent is it that knowledge is lacking and that the management, of natural hazards continues to be flawed by significant areas of ignorance?
2. To what extent is it the case that knowledge is available but not used?
3. To what extent is it that knowledge is used, but in an ineffective manner and even with results contrary to those planned or expected?
4. To what extent is it that knowledge is available, is used effectively, but that it simply takes time for knowledge to be applied and take effect?
5. To what extent is it that knowledge is available, is used effectively, and produces positive results, but that the best efforts have simply been overwhelmed by the scale and speed of the processes that lead to the increase in vulnerability for some people and places?

Answers to the above questions can be facilitated by the information and communication technologies (ICT). The objectives of ICT are:

To improve risk planning and forecasting by the development of harmonized geo-spatial information to maintain vulnerability information and allow for managing interrelated risks (domino effects)

To improve crisis management by addressing the interoperability of civil protection equipment, allowing for joint intervention in case of major disasters.

To develop new approaches for the deployment of *in situ* sensor networks and bridge the gap between *in situ* and remote sensing observations.

All the above are valid for the Mediterranean region. An early warning system for the Mediterranean has to take into consideration the above and also to proceed to risk planning and forecasting.

Until recently risk management components were developed independently by numerous institutions and organizations. Exchange of relevant information needed in dealing with risk is too often hindered by administrative and legal boundaries (e.g. bureaucracy or overlapping competence) as well as lack of interoperability on the technical side. Recently, The EU Commission proposed a new regulation which aims at harmonizing geo-spatial information

across the EU called INSPIRE (www.ec-gis.org/e-esdi/). This offers a unique opportunity for a major overhaul in disaster preparedness.

Therefore risk management is of cardinal importance. Risk assessment includes: Identification of risks, Analysis of risks, Evaluation of risks and then introduce appropriate policy. According to Panos Varangis* (www.worldbank.org/dmf) risk management includes also insurance. This is quite understood particularly in disasters like those caused by Katrina in the United States.

Another challenge arises when the weather insurance is limited to catastrophic events. If a natural catastrophe does occur, all those covered by the policies have to be compensated at the same time. This poses an intolerable level of risk exposure for the insurance providers. Mechanisms to spread these financial risks internationally are therefore required. The new international early warning programme will be built on four elements:

Risk Knowledge
Warning Service
Dissemination
Response Capability

The last of the four mentioned elements refers also to education and public awareness, the level of the right priorities and good planning. A better coordination and synergies are necessary at local, regional, global levels. In this connection a number of organizations and agencies of the United Nations system are most involved, together with other institutions in the Inter-Agency Task Force on Disaster Reduction.

The Mediterranean case of tsunamis is a very old one. There are views that the Santorini volcano eruptions in the Aegean Sea were followed by tsunamis. However, given the size of the sea the disasters were not and in future are expected not to be so vast as in the recent Indian Ocean tsunami. A regional center for the Mediterranean has to be established probably within the framework of UNASCO and/or the European Union. Within the activities of the latter exists the Euro-Mediterranean partnership (Barcelona process) which in November 2005 celebrates a decade in force. The civil society, universities and business have all substantial interest in supporting such an initiative within the goals of the UN decade 2005-2015.

In the Mediterranean there is a need to take into consideration:

Geographical conditions.

Existing and future needs for infrastructure. The Dutch successful example is a case in point.

Enhance research and cooperation of public and private partnerships (PPP), particularly with insurance companies.

There is further need for:

Monitoring

Finance, particularly for research, and

Governance, which includes institutional strength and building of disaster resilience communities.

There is also the need for considering particularities of the region, like:

Earthquakes. In this respect there is the risk assessment tools for diagnosis of urban areas prone to seismic disasters (RADIUS) (www.unisdr.org)

Fires

Floods, and finally
Emergency/Preventive measures

All the above constitute a constant threat to society and views about estimating economic damages differ.

In June 2005 at Crete, Greece, The International Union of Geodesy and Geophysics(WGG) held its Conference and considered inter alia the European Programmes Gitec I(1992-1995) and Gitec II (1996-1998): Genesis and impact of tsunamis in the European continent.

The conclusions were useful but the measure have to be taken at global and regional level Inthis connection the WCDR 2005 in Japan, according to the Director of ISDR Salvano Briceno, consists of the possibility to “ develop elements for an articulated programme for disaster reduction addressing the objectives of the Johannesburg plan of implementation , essential to achieving Millenium Development Goals”.(Know Risk, United Nations, 2005)