90 Case Study Of International Seismic Zonation

BACKGROUND

The professional practice of seismic zonation has evolved dramatically since 1990 as a result of cooperative international collaboration between scientists, engineers, insurers, and policy makers during the decade of the 1990's Seismic zonation is now considered as being much more than the former restricted meaning of a map. It is a public policy tool to link earthquake risk assessment and earthquake risk management. As such, it goes beyond earthquake hazard assessment, which is the identification, delineation, and highlighting of geographic areas in a community susceptible to the earthquake hazards of ground shaking, surface faulting, soil failure, and tsunami wave run up Seismic zonation has the sense of conveying knowledge needed for action by policy makers on community, national, and regional scales. This new definition of seismic zonation represents a paradigm shift as a result of twelve international forums on seismic zonation involving over 150 scientists, engineers, urban planners, and emergency managers and representing over 50 countries. The forums were convened in conjunction with other planned international conferences during the decade of the 1990's as an activity of the International Decade on Natural Disaster Reduction Leadership for the ten-year, multilateral, international program was provided by UNESCO, the United States Geological Survey (USGS), the French Association of Earthquake Engineering (AFPS), Earthquake Engineering Research Institute (EERI), and California Division of Mines and Geology, in cooperation with local organizations and professionals societies in the cities where the forums were convened.

OBJECTIVES

The ten-year, multilateral, international program was created to build a global framework for linking earthquake risk assessment and earthquake risk management. The goal was to facilitate interactive sharing of scientific, technical, and public policy information as a foundation for building a global framework of common understanding on the professional practice of seismic zonation. Innovative usage of formal and informal educational processes, such as forums, conferences, workshops, training, and publications, were the catalysts for change. The objective was to facilitate a paradigm shift from reactive earthquake risk management toward earthquake disaster resilience on community, national, and regional scales

ACTIVITIES

Twelve international forums on seismic zonation were convened at locations in the United States, France, Austria, Spain, Costa Rica, Cyprus, Algeria, Tunisia, Egypt, the Philippines, and Mexico. They provided opportunities for over 150 scientists, engineers, urban planners, and emergency managers and representing over 50 countries to come together for a common purpose. A monograph on seismic zonation was developed at the end of the program by thirty authors having experience with earthquakes in different countries.

ACHIEVEMENTS

The new concept of seismic zonation as a policy tool linking earthquake risk assessment and earthquake risk management emerged as a result of the twelve international forums on seismic zonation. Each one was convened in conjunction with other planned international conferences and as an activity of the International Decade on Natural Disaster Reduction in order to take advantage of the presence of professionals already planning to attend and to conserve scarce resources for travel and meetings... Over 150 scientists, engineers, urban planners, and emergency managers representing 50 countries contributed to the forums. Leadership and support was provided by Dr Badaoui Rouhban and Dr Soren Malling, UNESCO, Dr Bagher Mohannadioun, France, and Dr. James Davis USA

A monograph, "Seismic Zonation, A Framework for Linking Earthquake Risk Assessment and Earthquake Risk Management," was published and disseminated in December 1999 to provide a permanent record of the program and to facilitate educational of professionals

throughout the world
The State of California passed the Earthquake Hazards Mapping Act in 1990, following the Loma Prieta, California earthquake. This legislation is an example of a legal mandate to implement the concepts of seismic zonation as a policy tool to link earthquake risk assessment and earthquake risk management. Legislation calling for seismic zonation has also been enacted in Algeria, Tunisia, and France.

LESSONS

This program showed that professionals in geographically, technically, and culturally diverse communities, nations, and regions can collaborate successfully on complicated subjects such as seismic zonation. The challenge is reaching policy makers at the community level.

FUTURE

The Decade on Education for Sustainable Development (2005-2014, and beyond), provides an unprecedented opportunity to realize the full potential of the concept of seismic zonation as a framework for linking earthquake risk assessment and earthquake risk management on community, national, and regional scales The monograph provides an educational tool for building technical and political capacity for disaster resilience, a challenge that young and emerging professionals can undertake in cooperation with mature professionals. This can be done, not only in earthquake prone countries, but also by extension to other natural hazards such as floods, landslides, volcanic eruptions, and tsunamis. Such an extension appears to be feasible and is needed to help move every community towards effective disaster reduction and enhanced human security.

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91 Case Study On Building A Culture Of Earthquake Disaster Resilience In The Mediterranean Region

BACKGROUND

Earthquakes in the Mediterranean region have provided a rallying point for professionals and policy makers throughout the region and windows of opportunity since 1988 for multinational collaboration through programs and projects across a geographically, culturally, and technically diverse region

Four recent programs have served as catalysts for collaboration in the larger Mediterranean region, including Turkey, Lebanon, Cyprus, Syria, Israel, Jordan, Palestinian Authority, Egypt, Saudi Arabia, Kuwait, Libya Algeria, Morocco, Tunisia, Portugal, Spain, Greece, Italy, France, Albania, and the former Yugoslavia, along with participating observers from Iran and Russia They are

- "Reduction of Earthquake Losses in the Mediterranean Region," administered by UNESCO and the USGS, on behalf of the US Department of State, with support from Council of Europe and the European-Mediterranean Seismological Center (EMSC, during the period 1992 to the present,
- "Seismic Risk Reduction in the Mediterranean Region," administered by the former UNDRO, UNDP, and the Government of Italy, with support of UNESCO and USGS, during the period 1988-1990,
- Earthquake Megacities Initiative, initiated in Seeheim, Germany in 1997 and continuing to the present, with sponsorship by UNESCO and leadership by Risk Management Solutions Corp .
- "Middle East Regional Cooperation," administered by Jordan and Israel as co-leaders, with sponsorship by US AID and support of USGS during the period 1999 to the present.

OBJECTIVES

The goal and objective was to foster cooperation between professionals and policy makers within each country and to promote multinational collaboration on programs and projects within the region to build a culture of earthquake resilience on community, national, and regional scales

ACTIVITIES

The activities included: 1) capacity building through training workshops, conferences and other activities convened by host countries, both within and without the region, 2) enhanced use of in-country resources, focusing especially on integration of seismicity and strong motion monitoring networks, 3) integration of geologic geophysical, seismological, and geotechnical data to construct probabilistic hazard maps, 4) integration of geologic seismological, engineering, and urban planning knowledge to improve national building codes and to develop a model regional building code 5) improve risk assessments, especially for megacities in the region such as Cairo, and Istanbul, and 6) improve implementation of loss reduction measures All of the activities listed above were undertaken during the period 1998 to the present

Each country has provided past and present leadership for the program Administrative leadership was provided by Dr. Badaoui Rouhban, Dr. Soren Malling and Dr Fred Simon, UNESCO Dr. Michael Foose, USGS' Ludovic van Essche and Franco Maranzana, SEISMED and Dr. Fouad Bendimerad, RMS

ACHIEVEMENTS

The seismicity networks in each country in the Middle East have been integrated as a "Middle East Network" and data are being shared, analyzed, and used on an ongoing basis More than 30 training workshops and conferences have been planned and convened at locations both within the region (e.g., Cairo, Nicosia, Amman, Istanbul) and outside the region (e.g., Seeheim, Santa Susanna, Thessalonica, Paris) and have significantly increased technical capacity, enlightening and empowering professionals and policy makers in each country Three multinational task groups formed during the various meetings have produced plans to be implemented continuously for, 1) compilation

of geologic, geophysical, and seismology data, 2) analysis of regional seismicity catalogs and sesimicity parameters, and 3) analysis of strong motion data for integration with geologic, geophysical, and seismology data, 2) analysis of regional seismicity catalogs and sesimicity parameters, and 3) analysis of strong motion data for integration with geologic, geophysical, and seismicity data for use in preparing probabilistic ground shaking hazard maps for application in a regional model building code and in seismic zonation applications.

LESSONS

In spite of the significant geographic, cultural, and technical differences, professionals and policy makers in the Mediterranean region are shown that they are very willing to collaborate on a common agenda that includes activities to build earthquake disaster resilience. Recent damaging earthquakes in the region (e.g., in Turkey, Cyprus, Gulf of Aqaba, Egypt, Algeria, Morocco) and outside the region have served to enhance collaboration and public awareness. Many of the professionals in the region are now contributing in a global context to the program administered by the Global Alliance for Disaster Reduction.

FUTURE

The Decade on Education for Sustainable Development (2005-2014, and beyond) provides an unprecedented opportunity to realize the full potential of continuing collaboration in the greater Mediterranean region. Monographs on various aspects of the experience need to be written and adopted as curricula for building technical and political capacity for disaster resilience. The experiences provide a model for extension to other natural hazards such as floods, landslides, volcanic eruptions, and tsunamis. Such an extension will help move every country in the Mediterranean region towards effective disaster reduction and enhanced human security.

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