RADIUS PROJECT IN ASIA – COMMENTS FROM THE INTERNATIONAL ADVISORY MEMBERS

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SUMMARY

The United Nations IDNDR RADIUS initiative has achieved its aim of reducing seismic disasters in urban areas, particularly in developing countries. One of the three international regions was in Asia where the three cities of Zigong (China), Bandung (Indonesia) and Tashkent (Uzbekistan) were selected. By definition, earthquake mitigation in an urban area involves measures to be taken to minimise the impact and so reduce potential losses of an earthquake impacting upon the community. Earthquake preparedness, in the form of an Action Plan, has been fully integrated and materialised through the collaboration of all relevant agencies that need to be concerned. This was achieved through a multidisciplinary approach. The methodology involved five phases: (i) hazard assessment and scenario earthquake development (ii) vulnerability assessment of buildings and infrastructure (iii) risk assessment (iv) development of action plan (disaster plan) (v) reporting to IDNDR. The Action Plan encompasses all the scientific and engineering information and takes account of the economic and humanitarian aspects. The RADIUS program in all three cities has clearly been successful. This is attributed to a high level of awareness within each city and the human and societal relationships within the community. These relationships are products of the specific historical, political and economic situations experienced by each city (noting each is different in its own regard) which were integral elements in the project. The mitigation measures enunciated as the Action Plan represent very positive applications of the necessary information and the outcomes of the rigorous analyses. This has provided an implementation strategy involving many sectors of the community including scientists, engineers, administrators, planners, government, private industry etc. and, most importantly, participation of the general public themselves.

INTRODUCTION

The Secretariat of the United Nations International Decade for Natural Disaster Reduction (IDNDR 1990 – 2000), launched the RADIUS initiative in 1996. The aim was to reduce seismic disasters in urban areas, particularly in developing countries. The RADIUS initiative has four specific objectives:

(a) To develop seismic damage scenarios and risk management plans for the nine case study cities selected worldwide
(b) To develop a practical manual for the seismic damage assessment, which could be applied to any earthquake prone city in the world
(c) To conduct a comparative study to understand urban seismic risk around the world
(d) To promote information exchange for the seismic risk mitigation at city level

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The nine cities selected for the RADIUS case studies were Addis Ababa (Ethiopia), Antofagasta (Chile), Bandung (Indonesia), Guayaquil (Equador), Izmir (Turkey), Skopje (TFYR Macedonia), Tashkent (Uzbekistan), Tijuana (Mexico) and Zigong (China).
This paper presents the views of the three International Advisory members assigned to Asia for the implementation of RADIUS case studies.

RADIUS ASIA

The United Nations IDNDR RADIUS initiative has achieved its aim of reducing seismic disasters in urban areas, particularly in developing countries. One of the three international regions was in Asia where the three cities of Zigong (China), Bandung (Indonesia) and Tashkent (Uzbekistan) were selected. By definition, earthquake mitigation in an urban area involves measures to be taken to minimise the impact and so reduce potential losses of an earthquake impacting upon the community.

Earthquake preparedness, in the form of an Action Plan (or Disaster Plan), has been fully integrated and materialised through the collaboration of all relevant agencies that need to be concerned. This was achieved through a multidisciplinary approach. The methodology involved five phases :

1. Hazard assessment and scenario earthquake development
2. Vulnerability assessment of buildings and infrastructure
3. Risk assessment
4. Development of action plan (disaster plan)
5. Reporting to IDNDR

Phases 1,2 and 3 were termed the Earthquake Scenario and considered all aspects of the scientific information as the hazard assessment, the built environment (buildings, infrastructure etc.) for the vulnerability assessment, and the integration of these aspects for the risk assessment. Phase 4 was the major element in terms of the Action Plan which encompassed all the scientific and engineering information and took account of the economic and humanitarian aspects. For this, cognisance was taken of the recently completed Katmandu Valley (Nepal) Earthquake Risk Management Plan. Phase 5 was conducted through the final RADIUS meeting held in Tijuana, Mexico in October 1999.

The RADIUS program in all three cities has clearly been successful. This is attributed to a high level of awareness within each city and the human and societal relationships within the community. The vast extent of “information resources” made available to the vulnerable communities included awareness, preparedness, vulnerable elements (both technical and social), local government responsibilities, emergency management, reduction of potential losses, saving of human life and the reduction of personal injury, community trauma and distress. These relationships are products of the specific historical, political and economic situations experienced by each city (noting each is different in its own regard) which were integral elements in the project.

The mitigation measures enunciated as the Action Plan represent very positive applications of the necessary information and the outcomes of the rigorous analyses. This has provided an implementation strategy involving many sectors of the community including scientists, engineers, administrators, planners, government, private industry etc and, most importantly, participation of the general public themselves. The outcomes of the RADIUS initiative in each of the three Asian cities are considered to be excellent. Within each country, consideration is now being given to implement the RADIUS approach in other cities.