Implementation of RADIUS

The local conditions for the implementation of the RADIUS initiative were very different for the three cities. In Addis Ababa there are few specialists and limited practice in seismology and earthquake engineering, low awareness of earthquake disaster risk at the political level, and limited financial resources. There is a higher level of development, risk awareness, risk mitigation in urban activities, and level of scientists in charge of project implementation in the other two cities. As a result, Addis Ababa was selected for a full case study, while Izmir and Skopje were chosen for auxiliary case studies.

Taking into account the absence of previous seismic risk assessment in Addis Ababa, a full case study was made using basic RADIUS methodology. It was necessary to be more precise in the scenarios for the two other cities selected for auxiliary case studies and to adapt the action plans to local initiatives in prevention and urban planning. The Bureau de Recherches Géologiques et Minières (BRGM) judged that the previous environmental programmes in Izmir (UNEP project) and the revision of the master plan in Skopje were potential and important opportunities for the integration of a seismic risk reduction programme into the sustainable development of these cities. For that reason, it was decided to apply the French GEMITIS methodology for characterization of the urban areas, classification of its main components, and an assessment of their vulnerability. The basis of this methodology is to consider not only lives and physical elements at risk but also non-material and social aspects (economic and functional activities, city government, identity, local culture, town planning, and development) that can be important issues in the event of a seismic disaster. In this case, risk reduction is integrated into development planning.

Finally, during implementation of the RADIUS project local steering committees suffered the indirect effects of war in Ethiopia and Macedonia, and political changes in Turkey and Macedonia. Because of these special circumstances, there were delays in implementation of the case studies. In spite of these difficult conditions, the results have been very positive.

Results

Addis Ababa

Under the direction of the municipal Department for Urban Planning and the Geophysical Institute, five working groups were formed:

- Regional seismic hazard assessment and definition of reference earthquake and groundmotion
- Local seismic hazard assessment: influence of soils on ground motion, slope instability
- Building damage assessment
- Water system damage assessment
- Roads and bridges damage assessment

The risk management plan focused on the following eight objectives of short- and long-term goals to integrate earthquake disaster in Addis Ababa:

- Improvement of emergency response
- Improvement of awareness of issues related to earthquake risk
- Improvement of the seismic performance of existing buildings
- Improvement of the seismic performance of lifelines infrastructure and services
- Integration of seismic resistance into land-use
- Organization of a system of regulation of construction
- Increase in knowledge of earthquake phenomena, consequences and mitigation techniques
- Assessment of local and international financial resources to continue the programme

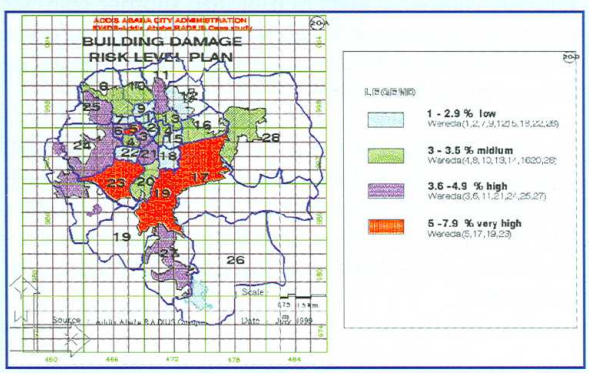

Figure 3: Building damage map of Addis Ababa.