

Status report

Topic-1: Earthquake Risk Management System -Contrivance for Seismic Risk Recognition by Communities –

Participatory Seismic Vulnerability / Disaster Risk Estimation
and GIS Mapping

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Direct cause of human loss at the earthquake disaster is highly vulnerable dwelling



If dwellings is enough resistant, earthquake can be an event as joyful as a jet coaster.

Overall Goal : Development of the Tools for Participatory Mapping of Vulnerability & Risk of Dwellings (to be disseminated all over the world as well as RADIUS tools).

for awareness of dwellers,

for earthquake disaster mitigation

for overtaken the problem of necessary man power

Target: Development of Costless GIS + Data Base system for Participatory Mapping of Vulnerability & Risk of Dwellings

Problems to be solved:

- + High cost of GIS (and Database) software.
(What can we do without budget ?)
- + Map sufficiently high resolution to identify each dwelling does not exist.
(What can we do without Base Map ?)
- + Information and/or data of dwellings in compiled form do not exist.
(How can we compile information or data without any equipment?)
- + Information and/or data of dwellings do not exist.
(How can we create information or data ?)

Evaluation of the free GIS Software

Required Functions Software	QGIS	GRASS	uDig	Open Jump	Open EV
Various Geodetic System	OK	OK	OK	Limited	OK
Graphic Files	OK	OK	OK	Limited	OK
Field Data	OK	OK	NO	Limited	OK
Geo-referencing	OK	OK	NO	NO	NO
Connection to Database	OK	OK	OK	Limited	Limited
Operability on Windows	OK	Limited	OK	OK	OK

Evaluation of Free Database Software

Required Functions Software	PostGIS+ PostgreSQL	MySQL
Connection to GIS engine	OK	Limited
Operability on Windows	OK	OK
Data exchange with Excel	Limited	Limited

Simple & Costless GIS

It is better to make everything costless for better dissemination.

+ Freeware GIS engine (**GRASS**(Windows),

+**QGIS** (Windows)) and

+ Freeware Database engine that can be connected with GIS

(**PostgreSQL+PostGIS** (Windows))

has been selected.

Utilization of the space technology for regions that do not have high resolution maps (or any map).

+ Free High Resolution Satellite Images used in place of Base Maps.

Google Earth

Problems solved:

+ System Design

- Selection and Setting up the selected Free GIS engines and Free Database engine and their connection.

+ Making Base Map

- Combining high resolution partial satellite images downloaded from Google Earth.
- Geo-referencing & rectifying.

+ Data Creation

- Participatory Mapping ← Check sheet developed in each country
(If not, EMS98, GESI etc.)

+ Data Compile

- Digitizing point, line & polygon data (Vector Layer) on QGIS.
- Store the digitized data (Vector Layer) to PostgreSQL through PostGIS.
- Import the existing digital information
(Hazard Map by Kathmandu_Valley Project)

Current Status

Nepal:

Selection of case study site ← Nepal Engineering Collage (2006)

Case study site: Duwakot, Kathmandu Valley (2007)

Method of Estimation ← Nepal Engineering Collage (2007)

Participatory Mapping ← Nepal Engineering Collage (2007)

Case study & customizing system(2007-2008)

Pakistan:

Selection of case study site ← Preston University (2007)

Case study site: ???

Method of estimation ← Preston University ? FEMA? GESI?

Case study & customizing system(200?)

For 2008:

+ Combination with RADIUS tools.

+ Improvement and Customization of GIS + Database system.