

# Armenia

Alvaro Antonyan  
Armenian National Survey for Seismic  
Protection

HFA in Armenia  
Recent Developments

Asian Conference on Disaster Reduction 2008

## I. Make disaster risk reduction [DRR] a priority

### Activities and results

- The Ministry of Emergency Situations (MES-Armenia) is established - May 2008.
- The structural parts of the Ministry:
  - Search & Rescue Service
  - National Survey for Seismic Protection
  - Hydro-meteorological Service
  - Technical Safety Agency
  - State Reserves Agency

### Gaps and challenge identified

#### Gaps

- Absence of the country-wide hot-line emergency service 1-12 (similar to American 911)
- Low level of population Education and Training, Preparedness of Government Officials and Local Authorities, Absence of Early Warning System

#### Challenge

- Existence Disaster Reduction State Complex Program
- Ensuring best practice for protection of population in emergency
- Government Development Program for 2008-2012, Prevention of Emergency Situations

### Plan

- Development of Regional Disaster Reduction Center (MES)
- Forecasting and prevention natural and man-made disasters and catastrophes
- Elimination of disaster consequences and implementation of primary recovery works

I. Make disaster risk reduction [DRR] a priority

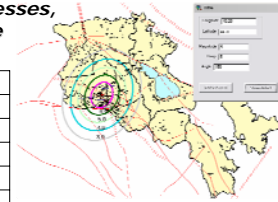
Armenian National Observation Network



40 parameters  
150 stations

Collapsed buildings: addresses, damage level, people

Fuchik 20	4	189
Sisakyan 22	4	168
Shinaranneri 15	4	142
Shinaranneri 14	3-4	305
Shinaranneri 23	3-4	323
Shinaranneri 35	3-4	308
Shinaranneri 24	3-4	342
Shinaranneri 28	3-4	285
Arzumanyan 8a	3-4	280
Estonakan 13	3-4	142



Model of Safety from building with "upper flexible floor"

Lead Rubber Bearing



II. Improve risk information and early warning

Activities and results

- Seismic Monitoring
- Seismic and Secondary Hazard Assessment
- Current Seismic Hazard Assessment and Earthquake Prediction
- Seismic Risk Evaluation and Reduction, Early Warning

Gaps and challenge identified

Gaps

- A limit appropriate capacity in all levels of municipalities

Challenge

- Risk and Hazard maps development using GIS technologies
- Development the Educational and Training E-resources for Disaster Risk Reduction, On-line education and training

Plan

- Development of Earthquakes Early Warning System for Yerevan city
- Forecasting and prevention natural and man-made disasters and catastrophes
- Ensuring best practice for protection of population in emergency, Early Warning
- Implementation of the Seismic Risk Reduction Complex Program for the territory of Armenia and Yerevan city

## II. Improve risk information and early warning

### ONLINE TEACHING



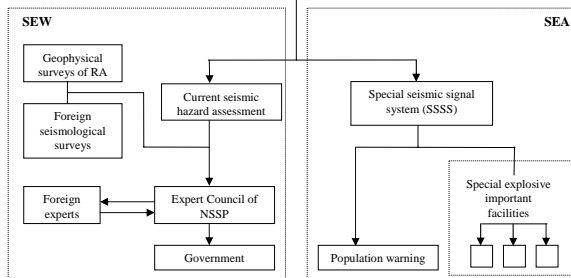
### Seismic Risk Assessment for Yerevan City

#### DATABASE for Yerevan city buildings

- Building address
- Number of people
- Seismic resistance
- Year built
- Area built
- Type of building
- Number of floors
- Number of doorways
- Damage rate

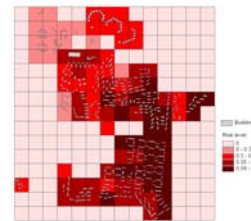


#### National observation network of NSSP RA



Structural scheme of EEWs for Yerevan city

#### Fragment of Risk assessment in Yerevan city (Municipal districts) with risk level and people losses in each building separately



## III. Build a culture of safety and resistance

### Activities and results

- Education and training as key tools for Risk Reduction
- Incorporation of risk reduction into the implementation of emergency preparedness, response and recovery programs
- Development of the educational and training programs for all levels of population
- Risk awareness in municipalities

### Gaps and challenge identified

#### Gaps

- Development of Risk Reduction Programs for all for all levels of population

#### Challenge

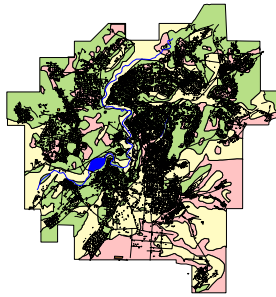
- Development of Buildings National Codes
- Earthquake safety measures teaching introduction in all levels of education.

### Plan

- National Observation Network modernization
- Early Warning instruction issuance
- Seismic vulnerability assessment of the Critical and Important Facilities in Armenia
- Basic tenets development for landslips prevention in the territory of Armenia

### III. Build a culture of safety and resistance

YEREVAN CITY



Training program held in Yerevan schools



SEISMIC RISK MAP FOR GORIS CITY



SEISMIC RISK MAP FOR KAPAN CITY



Theatrical performance "Terra non Firma" as a mean to provide the necessary awareness to reduce the seismic risk



Kids Enjoy Themselves

### IV. Reduce the underlying risk factors

#### Activities and results

- Earthquakes
- Landslides
- Floods
- Downpours
- Fires
- Droughts

#### Gaps and challenge identified

##### Gaps

- Official involvement of population (trained volunteers) from affected communities in recovery and rehabilitation works

##### Challenge

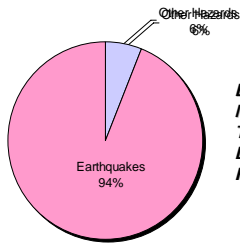
- Special rescue, fire, fire-rescue and water rescue task forces are been re-equipping with most advanced special machinery and outfit through international cooperation – Japan and Sweden
- Formation of public recovery works system aimed at infrastructure damaged by disasters

#### Plan

- Prompt response and introduction of relevant insurance systems
- Expansion of state reserves of primary items and modernization of the system
- Establishment of the clearing house and education regional center for carrying out research on aftermath and creating relevant disaster related data bases and providing expertise.

#### IV. Reduce the underlying risk factors

The damage caused by different types of disasters



Earthquakes - 94%  
 Mudslides - 3,15%  
 Transport accidents - 1,5%  
 Landslides and rockfalls – 1,2%  
 Floods – 0,15%



**25,000 people losses**  
**250,000 injured**  
**500,000 homeless ...**

#### Landslides



#### V. Strengthen preparedness to respond in an emergency at all levels in order to effectively and speedily assist those who are adversely affected

##### Activities and results

- Rescue Services of the Ministry of Emergency Situations are founded in all regions and cities of Armenian.
- National Survey for Seismic Protection Departments are founded in all regions of Armenian.
- Education and training are carried out including all appropriate services of local authorities.

##### Gaps and challenge identified

###### Challenge

- Activities plans of Municipal Services are developed in all Local Authorities.

##### Plan

- Implementation of local officials education and training of activities plans during Disasters.
- Municipal recourses estimation (equipment, food, medicines and etc.).

**V. Strengthen preparedness to respond in an emergency at all levels in order to effectively and speedily assist those who are adversely affected**

***Model activities plan of municipal services***



1. Police Service
2. Road Police Service
3. Facility Security Service
4. Medical Service
5. Antiepidemic Service
6. Fire Fighting Service
7. Water-supply and Collecting Service
8. Heat-supply Service
9. Power-supply Service
10. Electrical Communication Service
11. Gas Utilities Service
12. Funeral Service

**Conclusion**