

Development of an Earthquake School Safety Program in the Syrian Arab Republic

Dr. Fadi Hamdan, CTA



Disaster Risk Management Project



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سورية - Syria

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Earthquake school safety important for the following reasons:

1. Location holding some of the most vulnerable
2. The future of any country
3. UN Millennium Development Goal Number 2 - *Achieve Universal Primary Education*
4. Hyogo Fourth Priority *Vulnerability Reduction – Task 15 Structure: Strengthen Mechanisms for Improved Building Safety and Protection of Critical Facilities*
5. Damages to Schools during recent earthquakes worldwide
6. Challenges in strengthening, retrofitting and rehabilitation of schools

All the above requires a coordinated program in order to ensure that school safety will be guaranteed during, and after, future earthquakes

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Damages during some recent earthquakes worldwide

Earthquake	Schools Damaged	Fatalities
NZ – 22-02-2011¹	163	-
NZ – 04-09-2010 ²	1	N/A
CH – 27-02-2010 ³	2.1 of 30 B\$	N/A
HA – 12-01-2010⁴	80%	4000 students; 700 teachers dead
IT – 06-04-2009 ⁵	50%	N/A
IN – 26-01-2001⁶	1007 (66%)	971 students, 30 teachers dead;
Notes: 1. 1:00 PM, 2: 4:35 AM; 3: school vacation; 4: 16:53 PM; 5: 3:23 AM; 6: 08:46 AM.		

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Recent international study (2004) shows that

School buildings do not collapse due to lack of scientific understanding, but poor construction.

*And that is due in part to failure by governments to define and implement effective **school earthquake safety programs**.*

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In order to assess the level of effort required, in terms of monetary value and duration for allocation of resources, a review of some programs cost estimates was carried out

Country	AT	FR	GR	IT	PT	ES
Cost (Million \$)						
Overall Cost	84	250	350	1670	80	130
Total Education Budget	614	6297	751	3513	376	3725
% of Total Annual Budget	14	4	47	48	21	4
% of Total Annual Budget based on a 20yr program	0.7	0.2	2.3	2.4	1.1	0.2

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School Safety Programs - which are described in the OECD Recommendation Concerning Guidelines on Earthquake Safety in Schools - are characterized by means to:

1. Develop and enforce modern building codes;
2. Encourage community awareness and participation;
3. Specify levels of seismic resistance in schools;
4. Train professionals, builders and technicians;
5. Ensure independent oversight and long-term policy commitment by governments.

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Building code is currently undergoing review

Salient features in need of updating have been identified

Modern Building Codes

Mandates are reviewed to build capacity of Institution responsible for reviewing and reinforcing

Forms to assess earthquake school safety have been developed

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Community Awareness for Primary and Secondary school students; and teachers

Program started in 4 governorates

Community Awareness & Participation

Community Awareness Curriculum is being assessed and revised before completing remaining governorates

Incorporating DRR into school curriculum at 5 (3 completed) different class levels

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Engineering Syndicate
authored the code and set
levels of seismic
resistance

Engineering Syndicate and
Earthquake centre is
reviewing levels of seismic
hazards

Level of
Seismic
Resistance

Various professional
bodies are being engaged
to arrive at a decision of
what is the level to be
resisted in schools

A wider review is also
being carried out on what
are the levels of tolerable
risk within various critical
infrastructure elements

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Training courses in the region and worldwide are being reviewed

Public Authorities responsible for the earthquake safety of schools are being identified (review of mandates)

Training of Professionals

Curriculum for training (technicians, engineers, urban designers, local decision makers) is being developed; will be completed by September 2011

Work to proceed in two pilot governorates; to be assessed and then applied throughout governorates

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DRR reflected in 11th 5 year plan

Strategies, policies and institutions responsible for DRR are being reviewed to propose consolidation

Long Term Policy Commitment

Proposal prepared to incorporate DRR into all regional planning for development efforts

Resilient Cities 10 point checklist; 5th point: Assess the safety of all schools and health facilities and upgrade these as necessary

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CHALLENGES

Perception of other priorities for development

Challenges in enforcement due to overlap of mandates

SOLUTIONS

Proposal with RPC on effect of development on disasters

Modern Building Codes

Mandates of ministries and the Syrian Standards Institution are being reviewed

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CHALLENGES

Limited experience in engendering awareness campaigns

Skills needed to develop earthquake response plans

SOLUTIONS

Working with an international gender consultant to ensure campaign is properly engendered

Training on preparing earthquake response plans culminating in an earthquake scenario and a field exercise

Community Awareness & Participation

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CHALLENGES

Very few earthquakes in recent history; however, Syria has historically been subjected to very strong earthquakes

SOLUTIONS

Commissioned a tectonic and seismological study to review available seismic hazard maps

Level of Seismic Resistance

Setting a high level of seismic hazard (and therefore required resistance) may be difficult in view of resources, building materials and workmanship

Raising awareness of decision makers, reviewing rehabilitation and retrofitting building practices (with engineering syndicate) and preparing training courses with stakeholders

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CHALLENGES

Need to improve capacity for training and developing modules

Large amount of professionals need to be trained (teachers, engineers, builders, local decision makers)

SOLUTIONS

M.Sc. Course in DRM and a Training Institution for Preparedness and Response activities

Training of Professionals

Identified partners to participate in TOT in order to assist in training activities

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CHALLENGES

Challenges in linkages and data sharing are existent in various quarters

A Disaster Management program is required

SOLUTIONS

These are being resolved through the creation of single unit responsible for Disaster Risk Reduction in the Country

Long Terms
Policy
Commitment

Development of a disaster management program with an earthquake school safety program as one of its pillars; one of the first tasks of the DRR Unit

مشروع إدارة مخاطر الكوارث



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برنامج الأمم المتحدة الإنمائي

Thank you for Listening

