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Mainstreaming DRR in National development planning-housing sector

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Outlines

- ❖ Why Iran is a natural disaster prone country?
- ❖ Mainstreaming DRR in Development Planning
- ❖ Mainstreaming DRR in Development Planning in Iran
- ❖ Mainstream DRR in housing sector
- ❖ Mainstream DRR in housing sector in Japan
- ❖ Finding & recommendations



Why Iran is a natural disaster prone country?

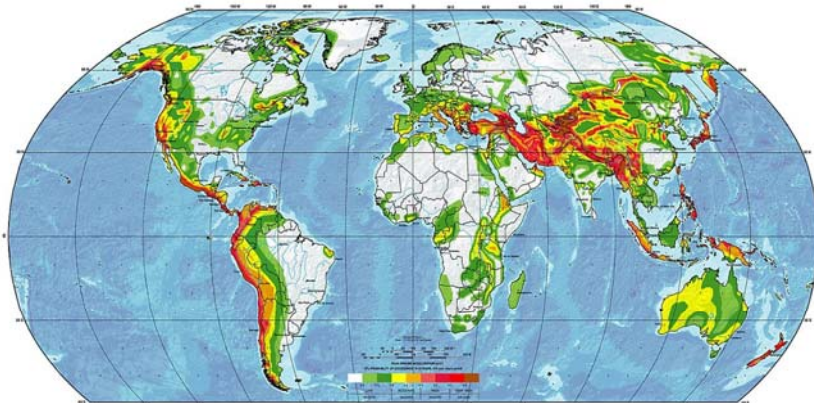
- ❖ Located in south-west Asia, one of the most arid regions of the world
- ❖ Located in the high seismic hazard zone of the Himalayan belt
- ❖ Due to its location, Iran is a disaster prone country.
- ◆ Iran is highly exposure to:
 - earthquakes
 - droughts
 - floods
 - forest fires
 - sand and dust storms



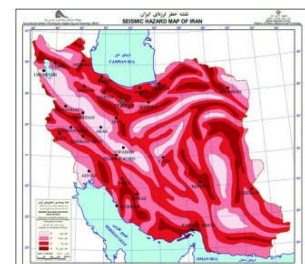
Seismic Hazard Map

GLOBAL SEISMIC HAZARD MAP

Produced by the Global Seismic Hazard Assessment Program (GSHAP),
a demonstration project of the UN/International Decade of Natural Disaster Reduction, conducted by the International Lithosphere Program.
Global map assembled by D. Giardini, G. D'Invernizzi, A. Steinberg, and P. Zhang
1998



Iran Seismic Hazard Map



Specific aims of this research

- ❖ To Identify and setting indicators and standards for Mainstreaming DRR in planning with good practices and examples at international level.
- ❖ To learned lessons from Japan.
- ❖ To prepare recommendations for improvement of the National planning in Iran



Research Activities

- ❖ Literature Review.
- ❖ Critical review of the current development planning on DRR in Iran
- ❖ Understanding the mainstreaming DRR in Housing sector in Japan.
- ❖ Study of the case studies of great earthquakes in Japan to understand how well Mainstream DRR in housing sector .
- ❖ Visits to DRR agencies such as Cabinet Office, JMA, and Disaster Management Authority etc. in Japan to understand their legal system & frameworks, organizational network



Background

- ❖ The concept was initiated after (WCDR) in January 2005, in Hyogo, Japan.
- ❖ high economic growth in some countries with unplanned development has created new risks and precipitates existing vulnerabilities.
- ❖ unplanned urbanization and increasing marginality in large cities has makes a large number of people highly vulnerable to natural and human induced disasters.



Relation between disasters and development

- ❖ Disasters and development are co-related in terms of negative and positive impacts.
- ❖ disasters can set back developments. so the achievements of long-term development efforts may disappear in an instant.
- ❖ Diverting resources from development to relief and rehabilitation because of Scarce resources, which create further set back to development
- ❖ At the same time Disasters can be makes a Unique opportunity to reduce vulnerabilities.
- ❖ However, Natural disasters stand one of the main challenges to achieve Millennium Development Goals (MDGs).



Mainstreaming DRR in Development Planning

- ❖ to consider and address risks emanating from natural hazards in medium-term strategic frameworks and institutional structures, in country and sectoral strategies and policies and in the design of individual projects in hazard-prone countries .



Advantages of mainstreaming DRR in development planning

1. It prepares land use plan, so can guide private sectors, government to undertake large scale projects, on the proper location of their projects and the implementation of the necessary mitigation works.
2. It helps in decision making of allocation and prioritization of available resources in development planning at local level.
3. It attracts and keeps track of all the stakeholders in one basket thus reducing duplication in projects.



Advantages of mainstreaming DRR in development planning (contd.)

1. Advance planning and the implementation of appropriate development strategies can significantly reduce the labour and cost of rescue, relief, resettlement and reconstruction.
2. It helps to fulfil the national and international goals and objective like MGDs to reduce poverty, promote environmental sustainability and etc.
3. It promotes Risk sensitive land use planning, Land pooling & land development; Implementation of building code; Capacity building of municipal officers, engineers, contractors, masons; Strong and sound field monitoring system; Awareness raising for individuals in DRR through social mobilization.



What does it mean to mainstream DRR in housing sector?

- ❖ long term process
- ❖ all housing related interventions have considered the effect of natural hazards and of the impact of those interventions in turn, on vulnerability to natural hazards and accordingly have adopted risk reduction measures.



Mainstreaming DRR in Development Planning in Iran

- ❖ The 5th National Development Plan of the Islamic Republic of Iran (2011-2015) addresses the issue of disaster risk reduction and management in several areas, including enhancement of disaster preparedness and response, upgrading building and construction codes and standards and earthquake prevention measures, improving safety in rural settlements, and importantly, allocation of 2% of annual national budget to disaster risk reduction and management
- ❖ One challenge is to overcome the lack of recognition of DRR as a development concern.



Gaps

- ❖ Awareness-building is required to secure a solid appreciation and understanding of the link between DRR and sustainable development and of the fundamental importance of DRR to core development goals
- ❖ Enhanced capacities are required to mainstream DRR concerns into sectoral programmes as well as use mainstreaming tools in the daily work of individual Ministries;
- ❖ Increased understanding and operational skills should be developed among participants on establishing inter-ministerial partnerships for integrating DRR into development work, including private sector;
- ❖ Capacity is needed to undertake advocacy, promote awareness, and conduct training for mainstreaming DRR into development.



Question

Why housing sector?



Answer

- ❖ Housing is considered as one among the three basic human needs next to food and clothing.
- ❖ Housing is often the sector severely impacted by both hydro-meteorological and geophysical disasters.
- ❖ There is an often-repeated saying, "earthquakes don't kill people, and buildings do".



Approaches for mainstreaming DRR in housing sector

1. Frameworks

- ❖ Institutional Framework
- ❖ Policy & Legal Framework
- ❖ Regulatory Framework

2. Housing Components

- ❖ Land
- ❖ Housing finance
- ❖ Labour
- ❖ Building Materials
- ❖ Infrastructure



Type of construction in Japan

reinforced concrete structures



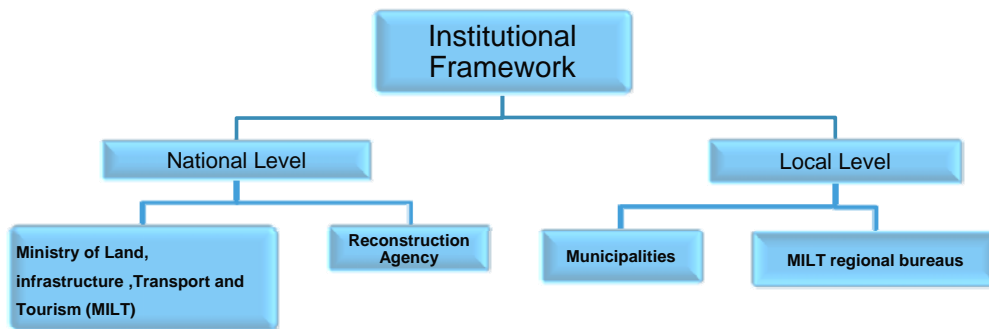
Wooden structure (low-raises buildings)



steel structures



Institutional Framework



Policy Framework

1. Disaster Relief Act(1947)
2. Flood Control Act(1949)
3. Building Standard Law (1950)
4. Act on Temporary Measures for Disaster Prevention and Development of Special Land Areas (1952)
5. Meteorological Services Act (1952)
6. Act on Temporary Treatment of Rental Land and Housing in Cities (1946)
7. Act on National Treasury Share of Expenses for Recovery of Public School Facilities Damaged Due to Disasters (1953)
8. Airport Act (1956)
9. Small-scale Business Equipment Installation Financial Support Act (1956)
10. Seashore Act (1956)
11. Landslide Prevention Act (1958)
12. Act on Special Measures for Disaster Prevention in Typhoon-prone Areas (1958)
13. Disaster Countermeasures Basic Act(1961)
14. Act on Special Financial Support to Deal with Extremely Severe Disasters (1962)
15. Act on Special Measures for Heavy Snowfall Areas (1962)
16. River Act (1964)
17. Act on Earthquake Insurance (1966)



Policy Framework (contd.)

1. Act on Prevention of Steep Slope Collapse Disaster (1969)
2. Act on Special Financial Measures for Group Relocation Promotion Projects for Disaster Mitigation (1972)
3. Act on Payment of Solatia for Disasters (1973)
4. Act on Special Measures for Large-scale Earthquakes (1978)
5. Act on Special Measures for Reconstruction of Disaster-stricken Urban Areas (1995)
6. Act on Special Measures for Reconstruction of Jointly Owned Buildings in Disaster-stricken Areas (1995)
7. Act on Special Measures for Earthquake Disaster Countermeasures (1995)
8. Act on Promotion of the Earthquake-proof Retrofit of Buildings (1995)
9. Act on Special Measures for Preservation of Rights and Profits of the Victims of Specified Disasters (1996)
10. Act on Promotion of Disaster Resilience Improvement in Densely Inhabited Areas (1997)
11. Act on Special Financial Measures for Urgent Earthquake Countermeasure Improvement Projects in
12. Areas for Intensified Measures (1980)
13. Amendment of Building Standard Law(1981)
14. Act on Support for Livelihood Recovery of Disaster Victims (1998)
15. Act on Promotion of Sediment Disaster Countermeasures for Sediment Disaster Prone Areas (2000)
16. Specified Urban River Inundation Countermeasures Act (2003)
17. The Japan Finance Corporation Act (2007)



Policy Framework

Great Hanshin Awaji earth quake(1995) Housing recovery policy	Great East Japan Earthquake (2011)
Disaster Public Housing provided for low-income people (priority for elderly, people with disabilities and single parent household etc.)	Disaster Public Housing provided for low-income people: Tohoku area is different from Kobe in terms of potential to restore their population and low-percentage of tenants.
Little government support for homeowners housing reconstruction.	Little government support for homeowners housing reconstruction: same as Kobe
People can reconstruct their house on their land without relocation. It was all about money in Kobe	the deference is the objective of housing reconstruction subsidiary such as “filling the gap between relocation citizens” and to “minimizing population decline”



Regulatory Framework

- ❖ National Building codes and enforcement
- ❖ Building Standard Law , BSL(1950)
- ❖ Amendment of Building Standard Law(1981)
- ❖ guidelines

Building codes items and related fields		Restrictive laws (Requirements are mandatory.)	Promotional laws
Fire safety	Fire extinguishing equipment, etc.	Fire Service Law	
	Fire- resistance, evacuation, etc.	Building Standard Law	
Structural safety			Seismic Retrofitting Law
Hygienic safety			Building Management Law
Accessibility		Barrier-free Law	
Energy saving			Energy Saving Law

Legal Framework

- ❖ Framework of the Law for Special Zone for Reconstruction

Great Hanshin Awaji earth quake(1995)	Great East Japan Earthquake (2011)
Kobe City Restoration and Rejuvenation Promotion Council	Reconstruction Promotion Plan
Housing Restoration Council	Land Restructuring Plan
New City Environmental Standards Plan	Plan for Funding Reconstruction Projects
	Establishment of a New Service for Collaboration with Private Sector

Land

❖ Land use planning

Great Hanshin Awaji earth quake(1995)	Great East Japan Earthquake (2011)
•Land Readjustment project for major damage area: design road and open space to reduce the risk for fire.	•mix of evacuation, land use planning and physical structure
<ul style="list-style-type: none"> • Rebuilding at the previous sites • Moving or rebuilding at the previous sites 	Land use planning to reconstruct housing in high risk zone.
Land readjustment : 5 municipalities , 20 districts	Relocation to mountainside to avoid tsunami risk
	<ul style="list-style-type: none"> • Rebuilding on the higher ground • Rebuilding at the previous sites by raising the ground level • Relocation or rebuilding at the previous sites
	Land readjustment : 58 districts 20 municipalities
	Land Use Restructuring : <ul style="list-style-type: none"> • Special arrangements for land use restructuring beyond existing land use frameworks (urban area, farming area, forests, etc.) • Relaxed requirements for floor area ratio for buildings construction aimed at evacuation from tsunami

Housing Finance

- ❖ The national budget for disaster management is approximately 1.2 trillion yen (Initial budget 2010FY).
- ❖ The percentage for each field is:
 - Scientific Technology Research, 0.6%
 - Disaster Prevention and Preparedness, 17.5%;
 - National Land Conservation, 62.4%; and
 - Disaster Recovery and Rehabilitation, 19.5%.

Great Hanshin-Awaji Earthquake	Japan Great East Earthquake
Number of houses was destroyed: 82,000	Building Completely destroyed: 126,631
The costs for restoration and reconstruction :JPY16.3 trillion	from 19 trillion yen up to 25 trillion yen over the five years
Public Reconstruction Fund: Basic Assets (Donations): 100 Management Assets (Work Funds): 2.29 billion yen	Grants for Reconstruction : 2.89 trillion yen on a project basis, with 734 billion yen requested for FY 2013



Labour

- ❖ buildings build by qualified private companies
- ❖ companies benefits the skilled work force.
- ❖ regular inspections makes by authorities in terms of design, administration and infrastructure.
- ❖ Construction Building must meet Building Standard Law
- ❖ Periodic inspection report conducted by experts and checked by the local government, After occupancy



Building Materials

- ❖ JAS (1996) presents standard quality levels for buildings of normal size and form constructed in Japan, basically describes widely used construction methods and technologies, and further clarifies noteworthy items.
- ❖ **Building materials/products/construction methods**
Building materials/products/construction methods must meet technical requirements if the codes have specific mandatory standards that apply. It can be basically confirmed through either method below that they meet technical requirements.
 - (i) To satisfy one of the specifications provided by the prescriptive provisions, including Ministerial Notifications, JIS (Japanese Industrial Standards) or JAS (Japan Agricultural Standards)
 - (ii) To be approved by the Minister (It is needed to be evaluated by one of the Designated Evaluation Bodies prior to approval by the Minister.)
- ❖ Innovative products, which do not satisfy one of the specifications provided by the prescriptive provisions, can be used if they are approved by the Minister through the process of (ii) above



Infrastructure

- ❖ Basic infrastructure and services such as electricity, water and sanitation, roads, waste disposal are key components of housing development and greatly contributes to living standards.



Finding & Suggestions

- ❖ Creating awareness
- ❖ Gaining political commitments and support
- ❖ Promoting public awareness on DRR through media coverage
- ❖ Developing necessary laws, policies and strategies in different aspects of housing
- ❖ Developing policies, regulations, guidelines related to housing sector concerning finance, land, labour, building materials and infrastructure
- ❖ Reassessing policies, regulations and role of agencies associated to housing sector in terms of DRR



Finding & Suggestions(contd.)

- ❖ Promoting the observance of the National Building Code.
- ❖ Carrying out estimation of annual disaster losses (direct and indirect) related to investments and project activities.
- ❖ Systematic inspection from design to occupancy.
- ❖ Allocating additional financial mechanism to mainstream DRR in housing sector.
- ❖ Designing the infrastructure facilities with resilience features.
- ❖ Regular review of building codes to incorporate DRR and other features.
- ❖ Developing regulations related to quality of building materials.
- ❖ Promoting the use of local, environmental friendly and durable building materials.
- ❖ Allocating subsidies for earthquake resistant retrofitting.
- ❖ Designing courses and short term training programs for Engineers, Architects, construction labours to upgrade their skill on DDR.
- ❖ Administering of public housing sector by qualified companies.
- ❖ Developing financial products for encouraging risk transfer through insurance



Finding & Suggestions(contd.)

- ❖ Facilitate training for skill up-gradation of construction workers
- ❖ Administration of special programme for Capacity Building of Engineers in Earthquake Risk Management
- ❖ Risk based land use planning for an effective tool for managing disaster risk and protecting developmental gains.
- ❖ Making Temporary housing just similar to permanent housing declines speed of recovery and reconstruction.
- ❖ Involving local people in the land use planning for reconstruction after disasters.
- ❖ Using the opportunity made by disasters to make a safer city: eg. modification of streets, alleys, etc.
- ❖ Developing reconstruction plan based on geographic situation of affected sites.
- ❖ Regular review and examination of reconstruction after disasters.
- ❖ Considering the lessons learned from the past reconstructions.
- ❖ In reconstruction after disasters, haste is not always beneficial in drafting reconstruction plans.



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