Development and Recovering From Disaster

International Symposium on Disaster Economics
3-5 April 2013, Istanbul

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Content

* Disaster damages in Turkey
* Disaster Risks and Development Plan Activities
* Disaster Management in Turkey
* Preparing Recovery Plan From Natural disaster
* Istanbul Recover Plan as a Sample
Natural Disaster in Turkey

Distribution of Disaster Types Based on Case Number Between 1950-2008

- Earthquake: 13,494 cases (45%)
- Landslide: 5,365 cases (18%)
- Rockfall: 1,942 cases (7%)
- Flood: 1,490 cases (8%)
- Avalanche: 223 cases (2%)
- Other disasters: 1,207 cases (4%)
- Multiple disasters at the same location: 2,027 cases (7%)

Total Case: 29,807

Distribution of Disaster Types Based on Victim Number Between 1950-2008

- Earthquake: 188,067 victims (55%)
- Landslide: 59,849 victims (21%)
- Rockfall: 13,494 victims (7%)
- Flood: 12,348 victims (8%)
- Avalanche: 2,222 victims (2%)
- Other disasters: 12,348 victims (3%)
- Multiple disasters at the same location: 7,377 victims (4%)

Total Victim: 284,996
Natural Disaster and Earthquake in Turkey

1999 Marmara Earthquake
7,4 – 7,2

Dead: 18,373
Injured: 48,901
Destroyed house: 311,693
Economical Lost: 16 billion $
Renovation: 5,2 billion $

2011 Van Earthquake
7,2 – 5,6

Dead: 644
Injured: 1,966
Destroyed house: 31,000
Renovation: 1,9 billion $

Population: 74,9 million
Area Size: 814,578 m²
GNP: 868 billion $
GDP Per Capita: 10,673 $
Economic Lost (last 15 y.): 21,5 billion $
Unemployment: %9,8
First a Few Days of Van Earthquake

People are helping and rescuing each other and relatives
Restoration of Van Earthquake Damages

Emergency Response Activities

Recovery Activities
A polarized ‘economic development versus environment’ debate continued through the 1970s into the 1980s.

Finally, first reconciliatory message was given at the Brundtland Report, Our Common Future, published in 1987.

Brundtland saw environment and economic development not as separate challenges but as ‘inexorably linked’ and crystallized the concept of ‘sustainable development’.
* Sustainable Development is a way of development as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’.

* Rio Summits related to sustainable development were held in 1992 and 2012.
The number of disaster have been happened in last century is 13,163.
The number of natural disaster happened after 1980 is 84 percent of total disaster number.
More than one billion people have been killed and 2.3 million people have been directly affected by natural dis.
Disaster and Economical Lost Between 1900-2008

Total Economical Lost is 3,4 trillion $ between 1900 and 2008

Source: A. Erkan, Risks Reduction in Disaster Management; and www.em-dat.net
9 National Development Plans have been prepared from 1961 by now in Turkey

10. National Development Plan preparation has been continuing.

Sectoral Specialized Commission and Working Group are established at the beginning the national development plan preparation period.
Last year, 46 Specialized Commissions and 20 Working Groups were established.

One of the specialized commissions is Affective Disaster Management Commission with the 60 members from different organization.

Affective Disaster Management Commission prepared a report at end of the year 2012.
National Development plans and Disaster Management

* There were a few measures related to natural disaster at first 7 national development plans.

* A natural disaster chapter was included first time at 8th National Development Plan covering years 2001-2005. Because it was prepared after Marmara Earthquake.

* Natural Disaster issues were included to Midterm Programs and Yearly programs during 9th Development Plan period covering years 2007-2013.

* A natural disaster chapter will be also included at 10th National Development Plan.
Disaster Measures in Midterm Programs and Yearly Programs

* Disaster legislative will be revised to achieve a disaster management structure that is effective, sufficient and comprehensive both at central and local levels.

* Disaster insurance system, including sanctions, will be extended to nationwide by covering all disaster types and the necessary legal arrangements will be completed.

* Settlements under natural disaster risk will be prioritized nationwide according to disaster risk Levels.

* National Disaster Management Strategy and Action Plan will be prepared.
1. For Disasters affecting general life to be taken measures and to provide Help Act dated 15 May 1959 with Act No: 7269

2. Disaster and Emergency Management Presidency establishing Law is a Basic Act on disaster management. It is issued on December 2009 with Law No: 5902. Main aim of this law is risk management for all type of disasters. This new approach support pre-disaster studies, preparation-to-disasters and mitigation studies.

National Level Responsibility is belong to Central government - Prime Ministry Disaster and Emergency Management Presidency: Disaster Information collection and nationwide coordination.

Local Level Responsibility is belong to Governorate - Provincial Disaster and Emergency Management Center: set up a disaster management headquarters.
Disaster Management Cycle

Pre disaster (Risk Management)

Disaster Management

Preparation

Risk reduction

Prevention

Development

Emergency Response

Recovery

After Disaster (Crisis Management)

Disaster Affect
## Disaster Management

### Before Disaster

#### Risk Reduction
- The existing legislation will be revised
- Affective housing law
- Land using planning
- Ground analyses/ Secure side selection
- Reforestation
- Flood prevention / Stream improvement
- Disaster insurance program

#### Being Prepared
- Education / Public awareness
- Planning
- forecasting / Modeling
- Search and rescue / Monitoring equipment

### After

#### Emergency Response
- Social Trauma Program
- Vocational education
- SMS’s Loans
- Livestock
- Machinery and equipment support

#### Recovery and Rebuilding
- Housing
- Infrastructure
- Business - Enterprises
- Social infrastructure
National Level Disaster Management in Turkey

1. Disaster and Emergency High Commission (ministry level)
2. Disaster and Emergency Coordination Commission (undersecretary level)
3. Prime Ministry Disaster and Emergency Coordination Presidency

- Advisory Board
- Audit/Controller

- Disaster and Emergency Management Center for Ministries
- Disaster and Emergency Management Center for Provinces

Press Advisory, Legal Consultancy, Contact Point Resp., Security Official

- Operation Department
- Logistic and Maintenance Department
- Information And Planning Department
- Financial And Administrative Department
Local Level Disaster Management in Turkey

Prime Ministry Disaster and Emergency Coordination Presidency

Province Disaster and Emergency Coordination Commission

Province Disaster and Emergency Management Center

Press Advisory, Legal Consultancy, Communication Official, Security Official

Operation Department
Logistic and Maintenance Department
Information And Planning Department
Financial And Administrative Department
Disaster Recovery Plan is the way of planning for rebuilding and recovering from natural disaster.

- It is different from emergency rescue plan.
- Target of recovery plan should be 10 years or more.
- An headquarter should be established and appointed to achieve recovery plan.
- There should be an article about formulating of recovery plan on Basic Disaster Management Plan.
- There should be a recovery plan guidelines.
- A committee for recovery plan should be formed and appointed.
Various plans related to recovery plan (field specific plans) should be formulated in a parallel manner. (Housing Plan, Urban Reconstruction Plan, Transportation Plan, etc.)

Recovery Plan should cover following components:
- Citizen and stakeholders participation.
- A Clear vision of safe and secure city development.
- Principle for recovery plan,
- Goal and targets,
- Basic themes for recovery
- Clear implementation management
- responsible organization for implementation
- Implementation plan (actions and projects with the time scheduled, budget, outcomes, numerical indexes and responsible organization)
Sample Recovery Plans to be considered:


* **Sendai Recovery Plan**: Planning for Post-Disaster for the Great East Japan Earthquake and Tsunami happened in 2011.
Sample Disaster Recovery Plan for Turkey

Istanbul Recovery Plan from Marmara Earthquake
# Content of Istanbul Recovery Plan

## 1. Introduction

## 2. Background of Istanbul Earthquake
- 2.1 Earthquake risk of Turkey
- 2.2 Earthquake Risk of Istanbul and Marmara Region
- 2.3 Description of Hazard
- 2.4 Vulnerability of Istanbul
  - 2.4.1 Environmental Vulnerability
  - 2.4.2 Infrastructural Vulnerability
  - 2.4.3 Economic Vulnerability

## 3. Damage Results of Istanbul from Marmara Earthquake

## 4. Goal of Istanbul Recovery Plan

## 5. Basic Principles of Istanbul Recovery Plan
- 5.1 Human resources and cooperation between organization
- 5.2 Formulation Process of Istanbul Recovery Plan
- 5.3 PDCA Cycle
- 5.3 Financial Aspect

## 6. Recovery Phases
- 6.1 Infrastructure
- 6.2 Housing Recovery
- 6.3 Urban Planning
- 6.4 Economic Recovery
- 6.5 Life Recovery
  - 6.5.1 Normalizing Daily Life
  - 6.5.2 Empowerment of Community

## 7. Management of Recovery Plan

## 8. Conclusion
## Description of Hazard Affecting Istanbul

<table>
<thead>
<tr>
<th>Event</th>
<th>Earthquake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnitude</td>
<td>7.4</td>
</tr>
<tr>
<td>Epicenter</td>
<td>Yalova which is located on south side of Marmara Sea</td>
</tr>
<tr>
<td>Date</td>
<td>28.02.2013, 9:30</td>
</tr>
<tr>
<td>Period</td>
<td>30 second</td>
</tr>
<tr>
<td>Distance</td>
<td>It was 20 km under the surface</td>
</tr>
</tbody>
</table>

### Most affected Places:

- Pendik,
- Zeytinburnu,
- Bakırköy,
- Küçükçekmece,
- Avcılar.
Vulnerable Areas

- **Infrastructural Vulnerability**
  - Natural Gas
  - Natural Gas Service Box
  - Electricity Distribution Lines
  - Telecommunication
  - Transportation
  - Drinking Water & Waste Water Networks

- **Environmental Vulnerability**
  - Housing
  - Historical Structures

- **Economic Vulnerability**
  - Industrial Facilities

- **Social Vulnerability**
  - Over Population
  - Social Inequality

- **Cultural Vulnerability**
  - Traditional Culture
  - Cultural Idiosyncrasy

- **Political Vulnerability**
  - Corruption
  - Lack of the Law Enforcement
  - Lack of Coordination Between Government Institutions

- **Geographical Vulnerability**
  - Geographical Location

- **Land Use Vulnerability**
  - Housing in Risky Areas
  - Not Land Use Plan
Damage Results of Istanbul

Housing
The number of very heavy damaged building - 2,500 - 10,000
The number of heavy damaged building - 13,000 - 34,000
The number of medium damaged building - 85,000 - 150,000
The number of slight damaged building: - 250,000 - 350,000

People Fatality
Death people - 10,000 - 30,000
Hospitalized people - 20,000 - 60,000
Slightly injured people-50,000-140,000

Infrastructure
Water supply line damage - 50 points
Waste water line damage - 1,500 points
Natural gas network - 650 points
Natural gas box - 17,000 points
GSM base station - 200 points
Fire burnt area - 42 points

The building containing flammable and burnable material - 400 building

Economical Lost
Infrastructure and housing - 26 billion TL, Economical lost -54 - 74 billion TL
Total lost - 80 - 100 billion TL
Emergent temporary housing- 530,000
Main Goal of Recovery Plan

* **Main goal** of recovery plan is that Istanbul to be a city as protecting its cultural, historical and natural heritage, having high value added economic activities and improving the quality of life.

* Depending on this main goal it is created a community where people can live and work with security.

* There are five sub goals, 22 target and 22 actions or projects.

* To realize this recovery plan, 100 billion TL financial source is necessary.

* 70 billion TL will be provided by house owner for reconstruction.

* Other necessary source will be provided from general budget, local administration budget (Municipal budget and provincial special administration), Small and Medium Size Enterprises (SMS’s) Support Organization, investment incentives, international finance institution, private sector investment and some grand coming special funds.
PDCA Management Principle

Occurrence of Marmara Earthquake – 28 February 2013

Recovery Plan for Istanbul was started June 2013 - Target year 2022

Implementation of Recovery plan (act plan)

The five years comprehensive assessment

Revised Recovery Plan for Istanbul – Target year 2022

Implementation of new recovery program (act plan)

The ten years comprehensive assessment

New Vision of Istanbul

Progress of the implementation of Istanbul Recovery Plan

* Plan it
* Do it
* Control it
* Act upon result
<table>
<thead>
<tr>
<th>Action / Projects</th>
<th>Outcomes</th>
<th>Measurements</th>
<th>Time Line (Year)</th>
<th>Required Finance (million TL)</th>
<th>Implementing Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 current hospital will be retrofitted</td>
<td>Securing hospital disaster resilient</td>
<td>Every year %25 of total hospital will be retrofitted</td>
<td>4</td>
<td>2.000</td>
<td>Project Implementation Unit in Istanbul</td>
</tr>
<tr>
<td>20 new hospital will be constructed</td>
<td>Improving health services</td>
<td>Every year 2 hospital will be established.</td>
<td>10</td>
<td>1.000</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>Very heavy damaged and heavy damaged 90 school will be reconstructed</td>
<td>Improving education quality</td>
<td>Every year 10 schools will be established.</td>
<td>9</td>
<td>2.000</td>
<td>Ministry of education</td>
</tr>
<tr>
<td>Lightly damaged and slightly damaged schools 90 will be retrofitted</td>
<td>Improving education quality</td>
<td>Every year 30 schools will be retrofitted.</td>
<td>3</td>
<td>500</td>
<td>Ministry of education</td>
</tr>
<tr>
<td>15 Damaged University building will be retrofitted</td>
<td>Improving education quality</td>
<td>Every year 3 University will be retrofitted</td>
<td>5</td>
<td>500</td>
<td>The Council of Higher Education</td>
</tr>
</tbody>
</table>
Istanbul Recovery Plan Management Chart

Prime Minister
Disaster and Emergency High Commission (meet once a year)

Ministry of Development
(get report twice a year)

Istanbul Development Agency
(Coordinating Agency)

Istanbul Development Agency Development Commission
Consist of 97 civil society representative (NGO, NPO, foundations, Associations, Public institutions, Universities, Chambers, Municipalities, etc)

Board of Istanbul Development Agency
- Governor of Istanbul,
- Mayor of Istanbul
- Provincial Special Administration
- Chamber of Commerce
- Chamber of Industry
- Businessmen and Industry enterprise confederation
- Independent Industry Enterpriser Association
- Exporter Association

Implementing Agencies

Public organizations
Municipalities
Civil Society organizations
Private Sector enterprises
1. Providing enough budget for implementation of Plan
2. Empowerment of the civil society
3. Collaborating with stakeholder for management of plan
We are living in the same World

We can cooperate to cope with natural disaster