

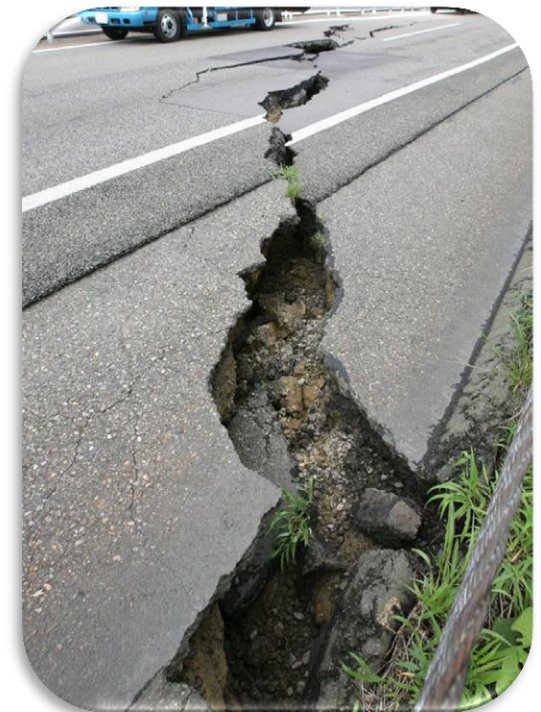
Development and Recovering From Disaster

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

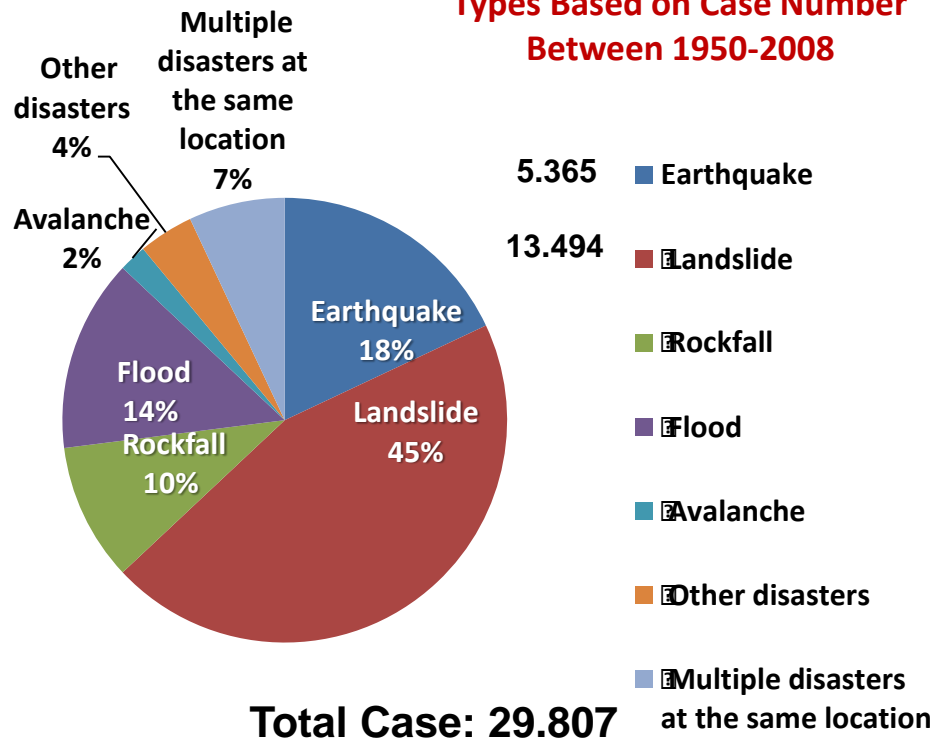
Content

- * **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**

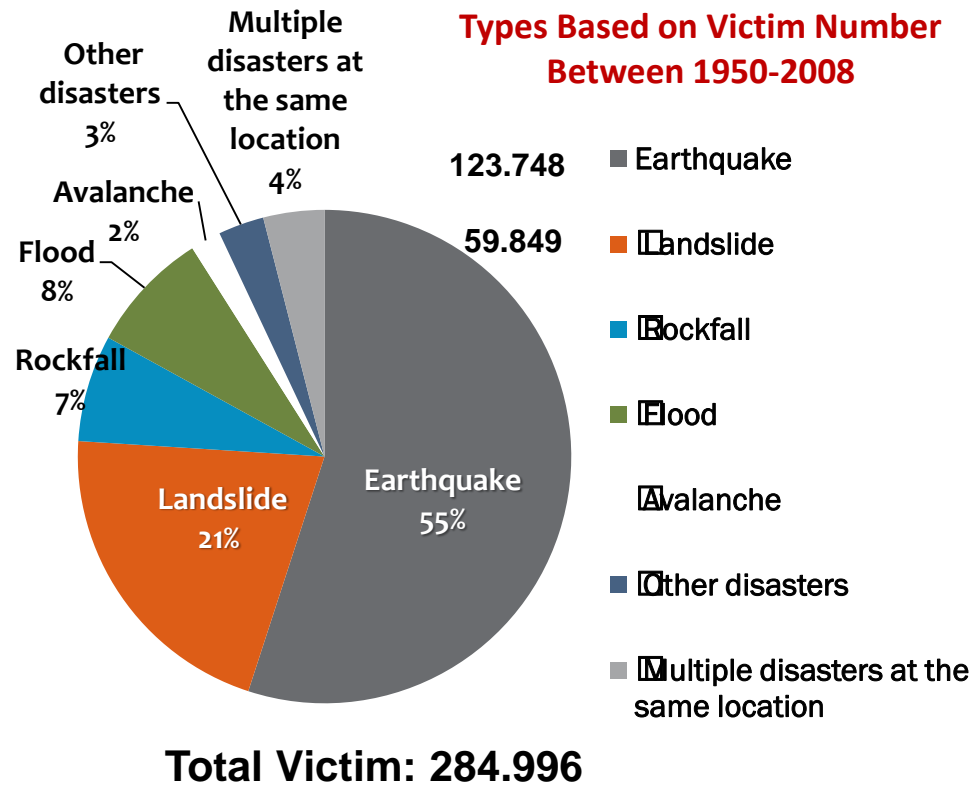


Natural Disaster in Turkey

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



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



Natural Disaster and Earthquake in Turkey

TÜRKİYE DİRİ FAY HARİTASI/ACTIVE FAULT MAP OF TURKEY

1999 Marmara Earthquake
7,4 – 7,2

Istanbul

Dead: 18.373
Injured: 48.901
Destroyed house : 311.693
Economical Lost : 16 billion \$
Renovation: 5,2 billion \$

Ankara

2011 Van Earthquake
7,2 – 5,6

van

Dead : 644
Injured : 1.966
Destroyed house : 31.000
Renovation: 1,9 billion \$

Population: 74,9 million Area Size : 814.578 m2 Economic Lost (last 15 y.): 21,5 billion \$
GNP : 868 billion \$ GDP Per Capita: 10.673 \$ 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

Sustainable Development



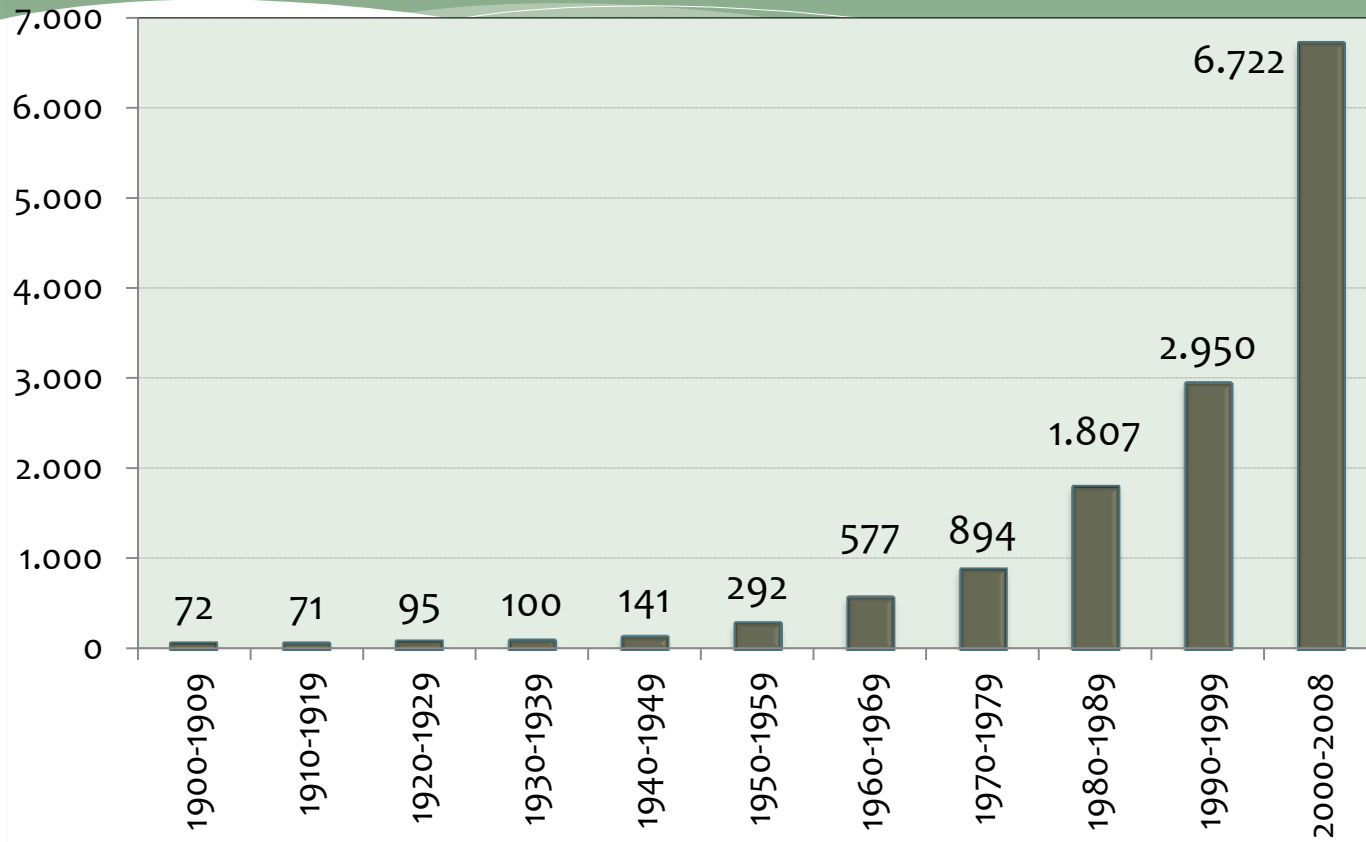
- * A polarized ‘economic development versus environment’ debate continued through the 1970s into the 1980s.
- * Finally, first reconciliatory message was given at the Brundtland Report, Our Common Future, published in 1987.
- * Brundtland saw environment and economic development not as separate challenges but as ‘inexorably linked’ and crystallized the concept of ‘sustainable development’.

Sustainable Development



- * 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.

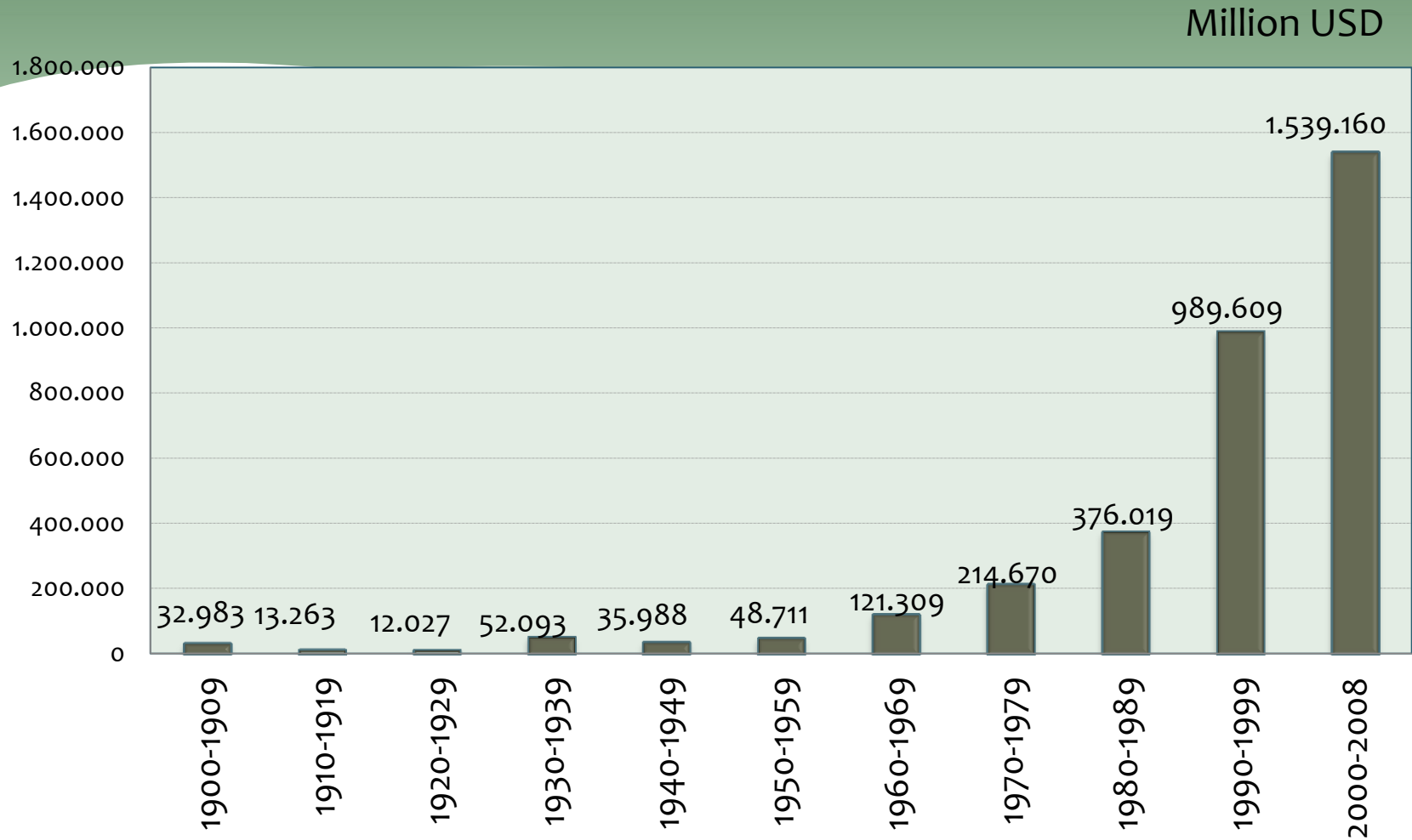
Distribution of Disaster Number Between 1900-2008



Source: A. Erkan, Risks Reduction in Disaster Management; and www.em-dat.net

- 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



Source: A. Erkan, Risks Reduction in Disaster Management; and www.em-dat.net

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

National Development Plan



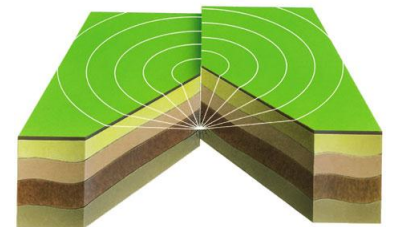
- * 9 National Development Plans have been prepared from 1961 by now in Turkey
- * 10. National Development Plan preparation has been continuing.
- * Sectoral Specialized Commission and Working Group are established at the beginning the national development plan preparation period.



National Development Plan



- * 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.

Legal Structure and Responsibility for Disaster Management in Turkey



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.
3. Natural Disaster Insurance Act dated on 09 May 2012 with Act No: 6305.

Legal Structure and Responsibility for Disaster Management in Turkey



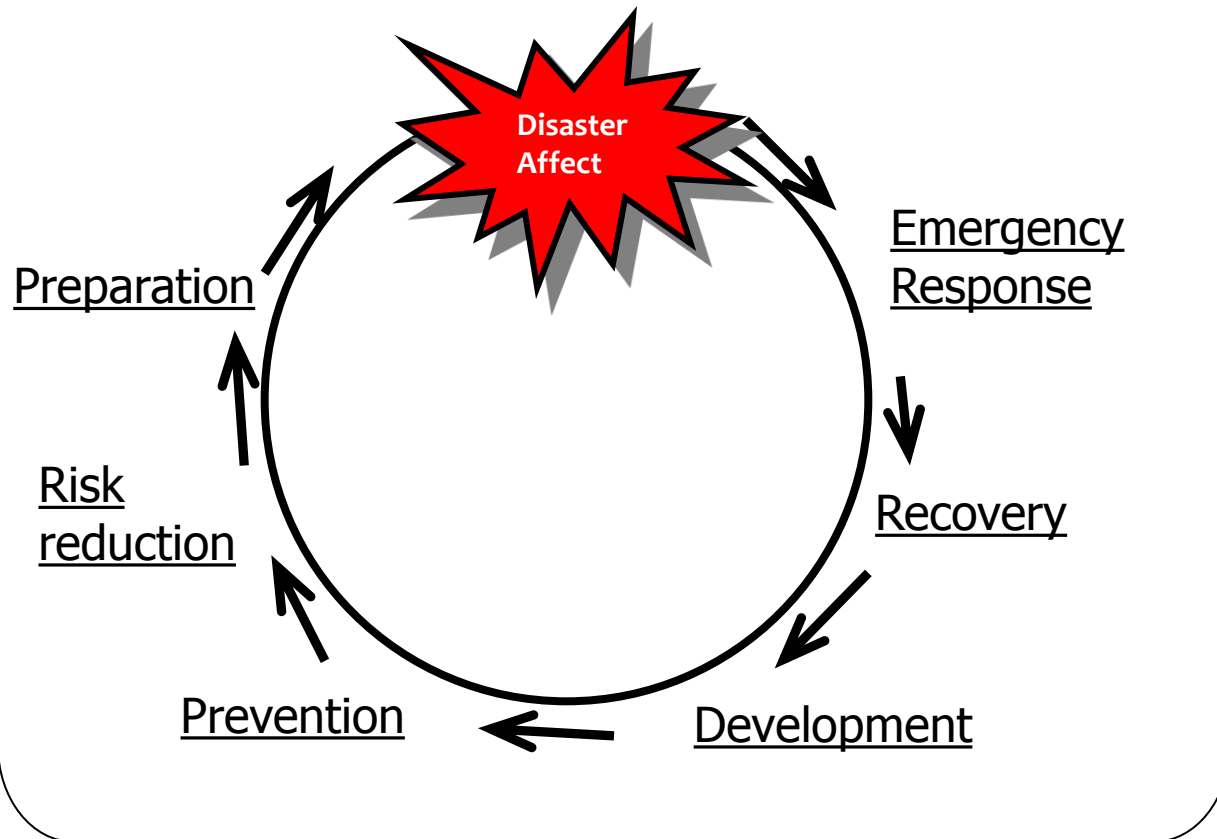
National Level Responsibility is belong to Central government - Prime Ministry Disaster and Emergency Management Presidency: Disaster Information collection and nationwide coordination.

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

Disaster Management Cycle

Disaster Management

After Disaster
(Crisis Management)



Pre disaster
(Risk Management)

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

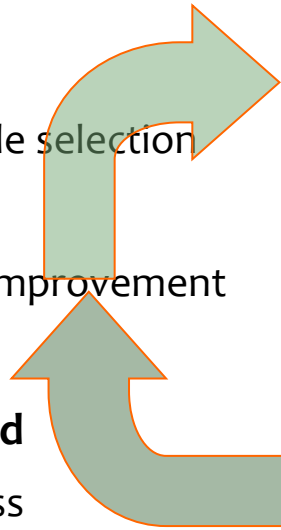
AFTER

Emergency Response

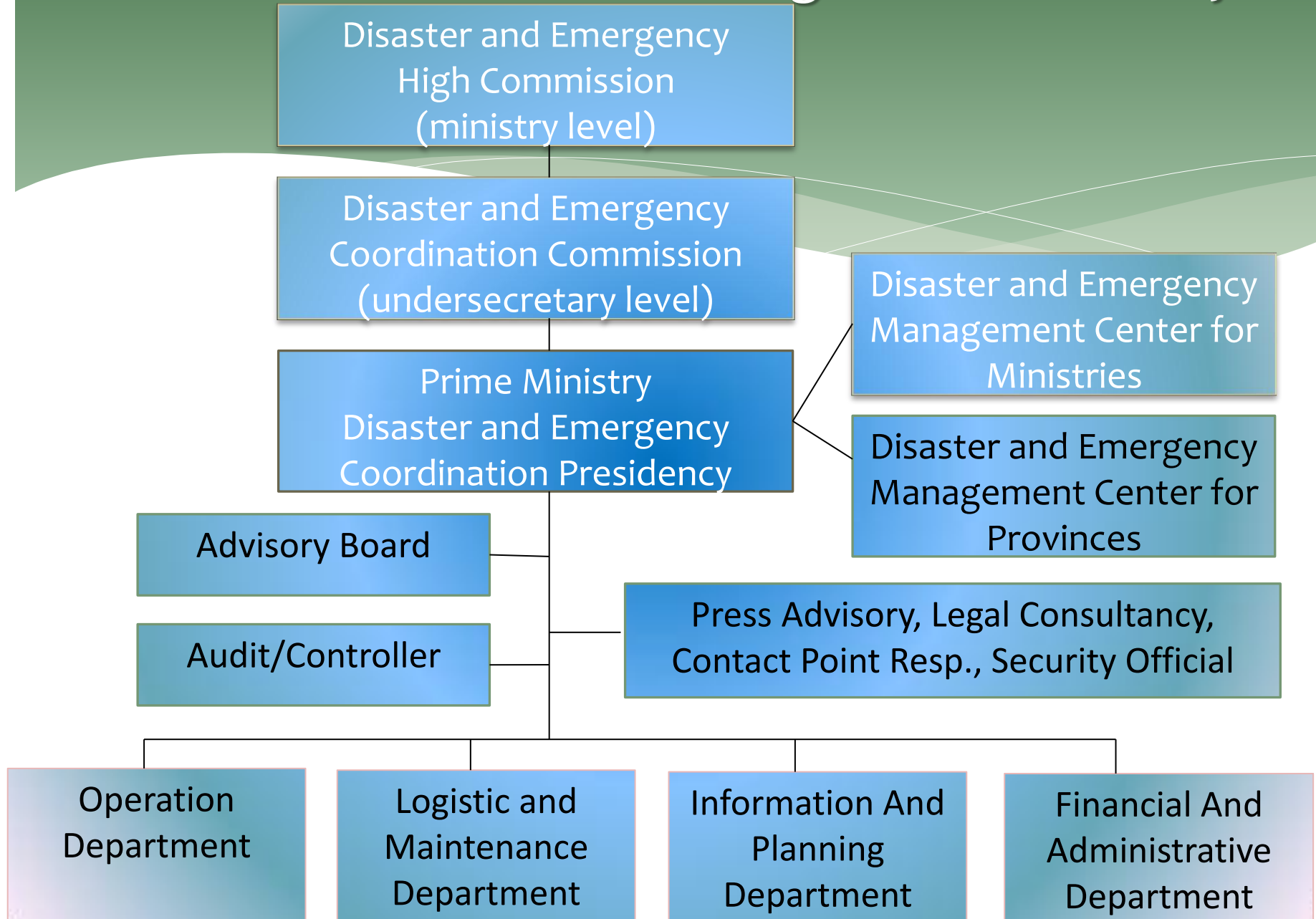
- Social Trauma Program
- Vocational education
- SMS's Loans
- Livestock
- Machinery and equipment support

Recovery and Rebuilding

- Housing
- Infrastructure
- Business - Enterprises
- Social infrastructure



National Level Disaster Management in Turkey



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-1



- * 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.

Disaster Recovery Plan-2

- * 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)

Disaster Recovery Plan-3

Sample Recovery Plans to be considered:

- * Kobe Recovery Plan : Post-disaster rebuilding planning From Great Hanshin- Awaji Earthquake happened in 1995.
- * New Orleans Disaster Recovery Plan : Planning for Post-Disaster Recovery in New Orleans after Hurricane Katrina happened in 2002.
- * Sendai Recovery Plan : Planning for Post-Disaster for 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

Event :	Earthquake
Magnitude:	7.4
Epicenter:	Yalova which is located on south side of Marmara Sea
Date :	28.02.2013, 9:30
Period:	30 second
Distance :	It was 20 km under the surface

Most affected Places:

- Pendik,**
- Zeytinburnu,**
- Bakırköy,**
- Küçükçekmece,**
- Avcılar.**



Vulnerable Areas

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INFRASTRUCTURAL
VULNERABILITY

ELECTRICITY
DISTRION LINES

NATURAL
GAS

TELE
COMMUNICATION

NATURAL GAS
SERVICE BOX

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

2013 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)

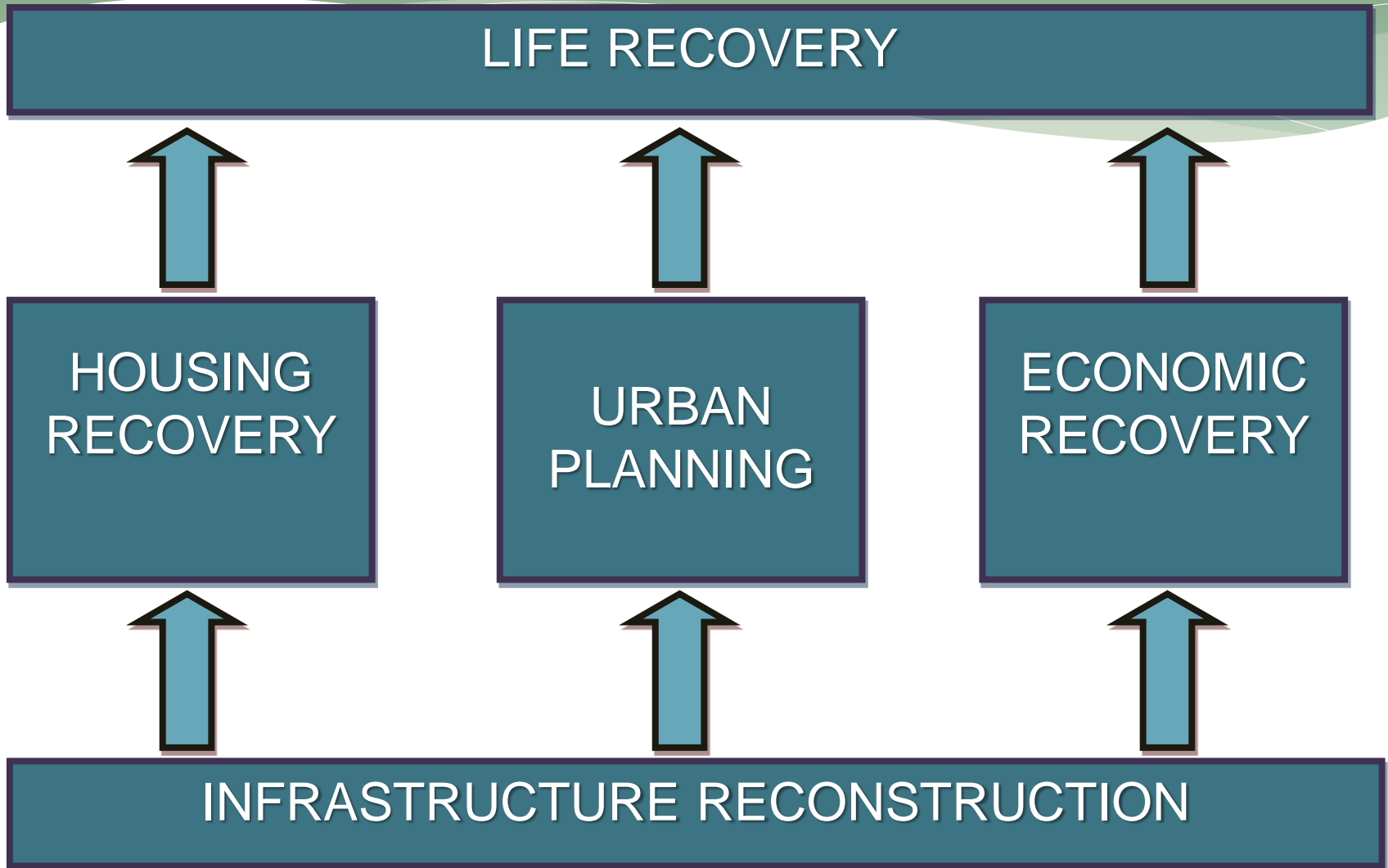
The ten years comprehensive assessment

New Vision of Istanbul

- * Plan it
- * Do it
- * Control it
- * Act upon result

Progress of the implementation of Istanbul Recovery Plan

Recovery Phases of Istanbul



Sample Actions and Projects of Istanbul Recovery Plan

Action / Projects	Outcomes	Measurements - Numerical index	Time Line (Year)	Required Finance (million TL)	Implementing Organization
80 current hospital will be retrofitted	Securing hospital disaster resilient	Every year %25 of total hospital will be retrofitted	4	2.000	Project Implementation Unit in Istanbul
20 new hospital will be constructed	Improving health services	Every year 2 hospital will be established.	10	1.000	Ministry of Health
Very heavy damaged and heavy damaged 90 school will be reconstructed	Improving education quality	Every year 10 schools will be established	9	2.000	Ministry of education
Lightly damaged and slightly damaged schools 90 will be retrofitted	Improving education quality	Every year 30 schools will be retrofitted	3	500	Ministry of education
15 Damaged University building will be retrofitted	Improving education quality	Every year 3 University will be retrofitted	5	500	The Council of Higher Education

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 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

Istanbul Development
Agency
(Coordinating Agency)

Implementing Agencies

Public
organizations

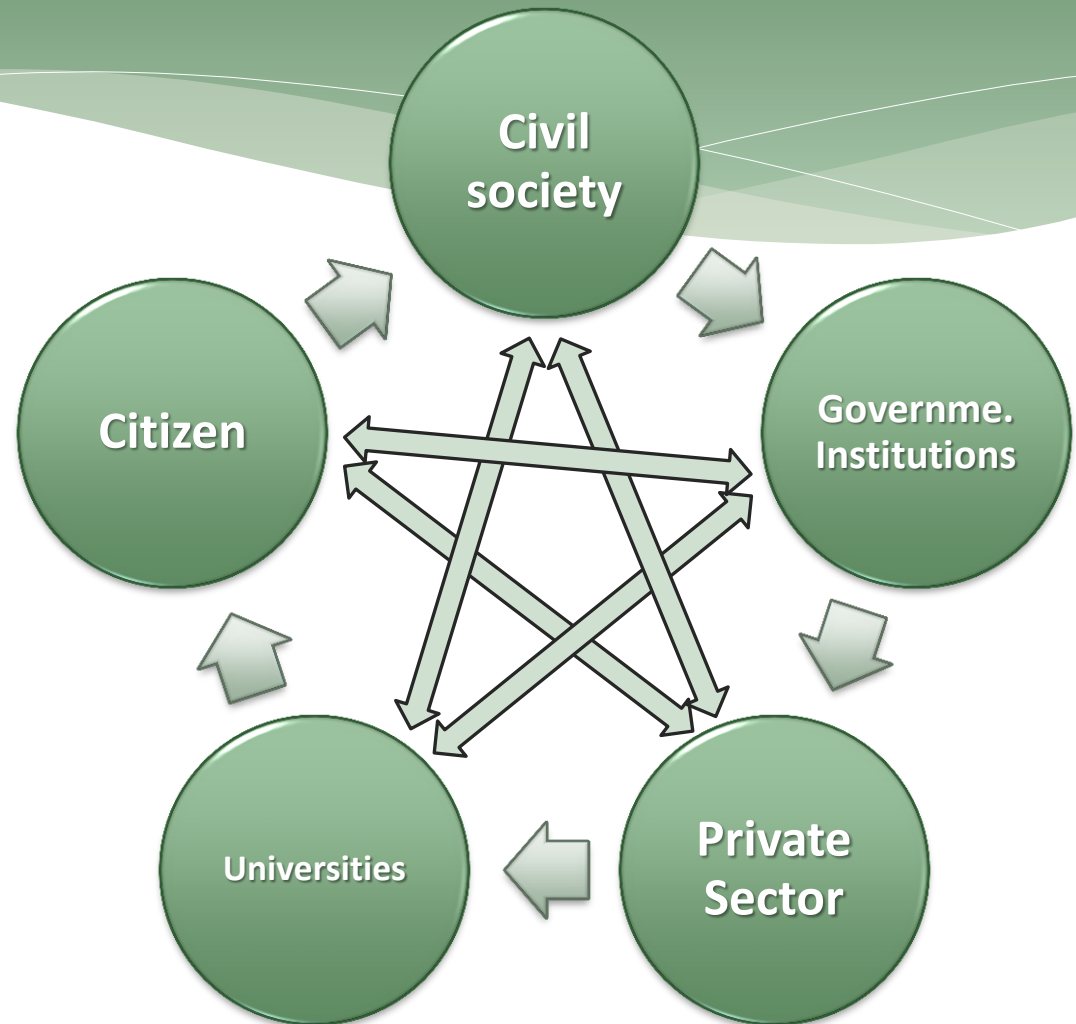
Municipalities

Civil Society
organizations

Private Sector
enterprizes

Unique Aspects of İstanbul Recovery Plan

1. Providing enough Budget for implementation of Plan
2. Empowerment of the civil society
3. Collaborating with stake holder for management of plan



We are living in the same World



Thank You ...

We can cooperate to cope with natural disaster