Prepare Better, Build Back Better: Towards a More Resilient Algeria

Virtual study tour

May 18 - 27, 2021

Organized by the Government of Algeria, in collaboration with the World Bank
İSTANBUL SEISMIC RISK MITIGATION and EMERGENCY PREPAREDNESS PROJECT (İSMEP)

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DIRECTOR
FOREST FIRES
Effect of Natural Disasters on Sustainable Development

- DISASTER
- UNDER-DEVELOPED COUNTRIES
- DEVELOPED COUNTRIES

Effect of disasters
Effect of Natural Disasters on Sustainable Development

- 18,000 Lives lost
- 113,000 completely destroyed, 264,000 damaged houses and work places
- 675,000 homeless people after earthquake
- 10-15 billion US$ direct economic loss
LESSONS LEARNED FROM MARMARA EARTHQUAKES

Communication
Communication failed
Telephone lines were out of order in first 48 hours
Mobiles did not function

Losses / Problems
Public buildings and infrastructure seriously damaged
Sub-standard buildings and infrastructure
Hazard ignorant development
Lack of code enforcement
Corrupted permitting and licensing

First Aid & Rescue
Lack of organization and coordination in search & rescue activities
Bureaucracy inhibiting efficiency and effectiveness
Insufficient logistical support
Voluntary efforts were not trained and organised

Economic Impact
10-15 billion $ as direct cost
%5-7 of Turkey’s GNP
In the Past

- Fate
- Reactive
- Recovery
- Wait and see
- Ex-post
- Crisis management
- Ad-hoc efforts
- Development at risk

New Strategic Approach

- Choice
- Proactive
- Mitigation
- Anticipate and prevent
- Ex-ante
- Risk management
- Comprehensive approach
- Sustainable development
Prevent – Reduce Risk
First Step İSTANBUL

- The biggest city of Turkey with the population of 15 million,
- The most crowded city of Turkey 2.764 per./km²,
- The center of Turkey for Tourism, Trade and Industry,
- The leading city of Turkey with a 31% share to GDP
- One of the most earthquake-prone city in the World,
- Economic loss between 90 – 120 Billion US$ in case of a probable big earthquake 7.5Mw in İstanbul
<table>
<thead>
<tr>
<th><strong>Country / Region</strong></th>
<th>Turkey / Istanbul</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Duration</strong></td>
<td>2006 - 2025</td>
</tr>
</tbody>
</table>
| **Implementation** | Istanbul Governorship  
Istanbul Project Coordination Unit (IPCU) |
| **Finance** | World Bank  
European Investment Bank  
Council of Europe Development Bank  
Islamic Development Bank  
German Development Bank (KfW)  
Asian Infrastructure Investment Bank  
Ecobank |
| **Loan Amount** | EURO 2.32 Billion |
IPCU is an expertise unit that established under İstanbul Governorship, out of general budget, funded by International Funding Institutions, implements earthquake preparedness activities in coordination with related agencies.
Enhancing the Emergency Preparedness Capacity

Seismic Risk Mitigation for Priority Public Buildings

Enforcement of Building Codes

INSTITUTIONS

AFAD
Turk Kızılayı

Kandilli Araştırma Merkezi

IPCU
Implemented Projects
INNOVATIVE IMPLEMENTATIONS HIGHER STANDARDS

Enhancing the Emergency Preparedness Capacity

COMMAND CONTROL and COORDINATION CENTERS

EMERGENCY RESPONSE VEHICLES & EQUIPMENT

SEARCH & RESCUE CERTIFICATION (INSARAG)

EMERGENCY COMMUNICATION NETWORK

INNOVATIVE IMPLEMENTATIONS HIGHER STANDARDS
Component A
Enhancing Emergency Preparedness

- Emergency communication network extended
- Institutional capacity of Istanbul AFAD enhanced
- Emergency response capacity of the first responding agencies upgraded
Emergency Communication Network

Before

After
Improving Institutional Capacity of Istanbul AFAD

Hasdal Command Control and Coordination Center (European Side)

Afkirat Command Control and Coordination Center (Anatolian Side)

Emergency Rescue Vehicles
Improving Institutional Capacity of Istanbul AFAD
Retrofitting / Reconstruction of Public Buildings

Environmentally Friendly, Energy Efficient, Special Design Buildings

Service Continuity Solutions

Good Planning, Fast Implementation, Effective Stakeholder Communication

Innovative Implementations Higher Standards

Seismic Risk Mitigation for Priority Public Buildings

IPCU
Feasibility study of 2468 building has been completed in 1539 campuses. 46 buildings in 46 campuses are being studied.

### Feasibility Activities

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Campus</th>
<th>Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools</td>
<td>1272</td>
<td>1827</td>
</tr>
<tr>
<td>Hospitals</td>
<td>33</td>
<td>324</td>
</tr>
<tr>
<td>Polyclinics</td>
<td>106</td>
<td>106</td>
</tr>
<tr>
<td>Administrative Buildings</td>
<td>97</td>
<td>131</td>
</tr>
<tr>
<td>Dormitories</td>
<td>16</td>
<td>47</td>
</tr>
<tr>
<td>Social Service Buildings</td>
<td>15</td>
<td>33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1539</strong></td>
<td><strong>2468</strong></td>
</tr>
</tbody>
</table>

1.067 okul

3.8 milyon m² inşaat alanı

1.5 milyon öğrenci ve öğretmen

Eitim alanı x 2,5 artış

Derslik Sayısı x 1.8 artış

Öğrenci Kapasitesi x 1.7 artış
EDUCATION
Safer schools for a better future

- 1,254 school buildings
- 5 million m² construction areas
- 1.7 million students and teachers
- 31,145 total number of classrooms
Gültepe Primary School, Kağıthane
İstanbul Atatürk High School of Science, Kadıköy
Sefaköy 100. Yıl Primary School, Küçükçekmece
Zuhal Primary School, Kağıthane
Mareşal Fevzi Çakmak Primary School, Küçükçekmece
STRENGTHENED HOSPITALS for SERVICE CONTINUITY

18 Hospitals
61 Polyclinics
Ümraniye Pediatric Hospital

(100,000m² / 477 Bed Capacity)
Ümraniye Pediatric Hospital
Prof. Dr. Cemil Taşçıoğlu City Hospital
(Okmeydanı Training and Research Hospital)
(259,000m² / 1,099 Bed Capacity)

• uninterrupted service during an earthquake
• green hospital (Leed Gold)
Prof. Dr. Cemil Taşcıoğlu City Hospital
Prof. Dr. Cemil Taşcioğlu City Hospital
Prof. Dr. Cemil Taşçıoğlu City Hospital
Kartal Dr. Lütfi Kırdar City Hospital
(303,000m² / 1,105 Bed Capacity)

- uninterrupted service during an earthquake
- green hospital (Leed Gold)
Kartal Dr. Lütfi Kırdar City Hospital
Kartal Dr. Lütfi Kırdar City Hospital
Prof. Dr. Süleyman Yalçın City Hospital
(Göztepe Training and Research Hospital)
(259,000m² / 1,188 Bed Capacity)

• uninterrupted service during an earthquake
• green hospital (Leed Gold)
Prof. Dr. Süleyman Yalçın City Hospital
Prof. Dr. Asaf Ataseven Hospital
(Marmara Başbüyük Training and Research Hospital)
(113,000m² / 750 Bed Capacity)

• uninterrupted service during an earthquake
Administrative - Social Service Buildings
Dormitories

54 Administrative Buildings
38 Dormitories
22 Social Service Buildings

Zeytinburnu Government Office
Atatürk Dormitory
(110,500 m² / 3,555 Students)
IMPLEMENTATIONS

- Inventorization and Multi-Hazard and Earthquake Performance of the Cultural Heritage Buildings in İstanbul (26 complexes, 176 building)
- Retrofitting, Restoration and Restitution Projects for Three Historical Buildings
- Earthquake Risk Management Guideline for Historical Buildings

INSTITUTIONS

- Prime Ministry General Directorate of Foundations
- Ministry of Culture and Tourism / Istanbul Directorate of Monuments and Surveying

CULTURAL HERITAGE

- Hagia Irene
- Mecidiye Kiosk
- Archeology Museum
STREAMLINING BUILDING PERMIT ISSUANCE PROCEDURES

INSTITUTIONS

• Bağcılar Municipality
• Pendik Municipality

IMPLEMENTATIONS

• Streamlining and monitoring of building and occupation permit issuance procedures
• Strengthening IT Infrastructure and developing digital archive system
• Trainings
• Building electronic document system
Pilot Project for Effective Implementation of Construction and Building

This project was carried out in Bagcilar and Pendik Municipalities to improve the building license and inspection processes.

- **704**: Number of personnel who had 'Safe City Safe Life' training in Bagcilar and Pendik municipalities.
- **5 Years**: The project lasted 5 years.
- **3.800,000**: Total number of scanned and indexed documents.
- **A digital construction archive was created.**
- **An electronic infrastructure was created for the website that can be used to apply for building permits and follow the processes.**
- **70%**: People’s satisfaction with business processes increased by 50%.
- **The construction license period has dropped from 90 days to 10 days.**

Thanks to the strengthening of the IT infrastructure, they were the first municipalities to receive ISO 27001 certification in Turkey.

All documents used by the municipalities in their daily services were edited and digitized.
IMPLEMENTATIONS

• Training materials have been prepared for implementation of Civil Engineers on Retrofitting Code (dated 06.03.2007 Official Gazette).

• Trainings of trainers have been organized.

• By the end of April 2012, **3631** civil engineers were trained throughout Turkey.

INSTITUTION

• Republic Of Turkey Ministry of Environment and Urbanization
TRAINING MODULES
FOR PUBLIC AWARENESS

First 72 Hours for The Individual and Family in an Earthquake
Structural Mitigation Against Earthquake
Non-structural Risk Mitigation Against Earthquake
Structural Retrofitting Against Earthquake
Disaster Emergency Aid Planning for Industries and Working Places
Disaster Emergency Aid Planning for Healthcare Organizations
Disaster Emergency Aid Planning for Educational Institutions
Survival Under Extraordinary Conditions
Compulsory Earthquake Insurance Awareness
Disaster Preparedness for Local Disaster Volunteers
Psychological First Aid in an Earthquake
Urban Planning and Construction for Disaster Mitigation
First 72 Hours for Disabled People in an Earthquake
Individual and Public Awareness Activities

1.7 million students and teachers

1.5 million directly reach

222,000

• Retrofitting & Reconstruction Works

1.7 million students and teachers

• Safe Life 1

278,000

• Safe Life 1

285,000

• Safe Life 2

325,000

• Safe Life 2

377,000

• Local Disaster Volunteers

1.7 million

• Social Guidance Activities

377,000

• Public Awareness Campaigns

222,000

• E-learning Training

278,000

• Safe Life Kids Training

325,000

• Rocking Chair Theatre

Reached 3,1 million people
ECONOMIC RATIONALE OF EARTHQUAKE PREPAREDNESS
This study is based on 10 years of ISTANBUL SEISMIC RISK MITIGATION AND EMERGENCY PREPAREDNESS PROJECT (ISMEP) experience...
CALCULATED BENEFITS

Component A: Enhanced Institutional and Technical Capacities of DRM Agencies

Component B: Resilient and Efficient Buildings Through Retrofitting / Reconstruction

Component C: Efficiency Gains in Building Permits

ENCRYPTION SAVINGS
- CONTRIBUTION TO GDP
- CONTENTS SAVED
- VALUE OF STATISTICAL LIFE
- INJURIES AVOIDED
- PRODUCTION LOSS AVOIDED

CONTRIBUTION TO GDP

CONTENT SAVED

VALUE OF STATISTICAL LIFE

INJURIES AVOIDED

PRODUCTION LOSS AVOIDED

ECONOMIC IMPACT
UNMEASURED – ADDITIONAL BENEFITS

- Safe Buildings Providing Additional Shelter Areas
- Benefits of Safer, Better, Motivating and More Modern Schools
- Maintenance Cost Savings
- Avoided Production Loss due to Injured
- Psychological Effects
- Resilient Buildings via More Efficient Building Permit Procedures
- Continuation of School Education with Minimum Interruption
1.5 million directly

10,000,000,000
11,000,000,000
12,000,000,000
13,000,000,000
14,000,000,000
15,000,000,000
16,000,000,000
17,000,000,000
18,000,000,000
19,000,000,000
20,000,000,000

Casualties %4 Earthquake Any Time
Casualties %6 Earthquake Any Time
Casualties %8 Earthquake Any Time
Casualties %4 Earthquake Daytime
Casualties %6 Earthquake Daytime
Casualties %8 Earthquake Daytime

Total Economic Impact in Euros

TOTAL PREPAREDNESS IMPACT THROUGH ISMEP (BASE SCENARIO)

<table>
<thead>
<tr>
<th>Component</th>
<th>Preparedness Expenses (Euros)</th>
<th>Economic Impact (Euros)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>1,714,328,620</td>
<td>12,491,038,026</td>
</tr>
</tbody>
</table>

Total Economic Impact in Euros

- Casualties %4 Earthquake Any Time: x 6.6
- Casualties %6 Earthquake Any Time: x 7.3
- Casualties %8 Earthquake Any Time: x 7.8
- Casualties %4 Earthquake Daytime: x 8.2
- Casualties %6 Earthquake Daytime: x 9.6
- Casualties %8 Earthquake Daytime: x 10.9
INTERNATIONAL REPRESENTATIONS

53 COUNTRIES – 111 CONFERENCES
WE ARE STRENGTHENING OUR FUTURE...