



Project Information Document/ Identification/Concept Stage (PID)

Concept Stage | Date Prepared/Updated: 02-Aug-2018 | Report No: PIDC165651

**BASIC INFORMATION****A. Basic Project Data**

Project ID	Parent Project ID (if any)	Environmental Assessment Category	Project Name
P168167		C - Not Required (C)	Supporting Critical Infrastructure Resilience and Disaster-Risk Awareness in Turkey
Region	Country	Date PID Prepared	Estimated Date of Approval
EUROPE AND CENTRAL ASIA	Turkey	02-Aug-2018	
Financing Instrument	Borrower(s)	Implementing Agency	Initiation Note Review Decision
Investment Project Financing	Ministry of Treasury and Finance	Disaster and Emergency Management Authority (AFAD)	The review did authorize the preparation to continue

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PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	1.00
Total Financing	1.00
Financing Gap	0.00

DETAILS**Non-World Bank Group Financing**

Trust Funds	1.00
Global Facility for Disaster Reduction and Recovery	1.00

B. Introduction and Context

Country Context

Turkey's economic performance since 2000 has been impressive, both before and after the 2008/2009 global fiscal crisis. Macroeconomic and fiscal stability were at the heart of its economic performance, enabling increased employment and labor incomes, making Turkey an upper-middle-income country as well as the world's 17th largest economy. Poverty incidence more than halved during the 2002–2012 period, from 44



percent to 21 percent of the population, and this decrease was shared across both urban and rural areas. During this time, Turkey witnessed dramatic urbanization, opened up to foreign trade and finance, harmonized many of its laws and regulations with European Union standards, and greatly expanded access to public services, including education.

During 2012–2016, economic growth slowed, per capita income stagnated around US\$10,000 per year, and unemployment began to inch upwards. These developments raise concerns about Turkey's progress toward reaching high income and reducing income inequality. In addition, slow growth in Europe and a deteriorating geopolitical environment in parts of Eastern Europe, Central Asia, and the Middle East have negatively affected exports, investment, and growth in Turkey.

Turkey's main share of GDP comes from services (64%) and industries (27%), both of which depend on critical infrastructure and lifeline utilities to preserve their competitiveness and productivity. Investment plans to reach the 2023 Development Agenda and the 2030 Vision rely heavily on strengthening these 2 sectors of activity. Two different streams of investments are of interest: upgrade and expand lifeline utility networks (electricity, gas, water, waste, sewage, telecommunication, transport) and large-scale assets (ports, railways, logistic centers, power plants, etc.).

Sectoral and Institutional Context

Since the late 1990s, there has been increasing recognition by both governments and donors of the need to mainstream disaster risk reduction into urban planning and address risks emanating from natural and man-made hazards in medium-term strategic development frameworks, in legislation and institutional structures, in sectorial strategies and policies, in budgetary processes and the design and implementation of upcoming projects.

Natural disaster and climate change are having devastating effects on cities which are home to 4 billion people globally. By 2030, without significant investment into making cities more resilient, natural disasters may cost cities worldwide \$314 billion each year, up from around \$250 billion². With ever increasing urbanization, rising numbers of natural disasters, as well as a growing number of economic, social, and environmental shocks and stresses, pose the greatest risk to rapidly-growing cities in Turkey. The risk is even greater for industrialized cities, often located along the coastlines, in flood plains, or along seismic rifts, with their concentration of assets and residents are vulnerable to disasters.

Turkey is vulnerable to a wide variety of natural hazards, including earthquakes, landslides, and floods. Among these, earthquakes claimed the highest number of lives and economic loss with approximately 90,000 fatalities in 76 earthquakes since 1900, total affected population of 7 million, and direct losses of US\$ 25 billion¹. Besides earthquakes, climatic events are on the rise with increasing frequency and intensity of urban floods, hail, drought and temperature extremes. Recent risk assessments conducted on critical infrastructure and lifeline utilities show that climatic events induce more service disruption and economic loss than earthquakes.



Turkey has witnessed dramatic and uncontrolled urbanization since 1950s where urban population has grown from 25 to 75 percent. While cities are engines of growth, they are also increasingly complex systems in need of innovative resilience solutions. Resilience solutions to minimize both loss of function and loss of performance that can occur due to adverse extreme events and also changes in the mean climate patterns. Most recently, Turkey experienced a harsh winter in 2016, with disruptions along the transport network affecting delivery of food to cities such as Istanbul (an estimated 50% decrease in incoming fruits and vegetables over 2 weeks). In the southern shores, the port of Mersin, the 2nd largest port was flooded, disrupting imports and exports to Turkish cities within a 600km radius and international trade with Iraq and Syria.

During the summer of 2017, two important rainfall/hail episodes disrupted the largest port, Istanbul, and caused widespread disruption both physical damage and loss of service in the transport and power systems. These events are strong reminders of the need to build resilience systems for cities and to preserve their competitive edge for businesses and their contribution to the national economy.

Relationship to CPF

The Bank has a long collaboration history of technical and financial support for resilient cities and infrastructure in Turkey. This collaboration led to several resilient reconstruction projects starting in 1992 and evolving to risk reduction activities over time. The largest operation being Istanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP), implemented between 2005-2015 and recognized today as an international best practice for large-scale urban risk reduction and rehabilitation of public infrastructure. While the Bank and the Government continue their collaboration through the Safer Schools agenda, there is also a joint interest in building resilience for infrastructures and disaster risk awareness raising. Hence, critical infrastructure is a strategic entry point to build resilience and it is a concept that can be applied in multiple sectors at different scales. The previous GFDRR grant (TF018854) was a major step in this direction having facilitated conduct of the below key studies that are both pioneering work in their respective fields and gathered strong interest among various stakeholders.

Building on this framework, the Project is fully anchored in the ongoing World Bank Country Partnership Framework (CPF) for Turkey (FY18-FY21) (R2017-0194 [IFC/R2017-0239, MIGA/R2017-0060]) which builds on three pillars; (i) growth, (ii) inclusion, and (iii) sustainability. The proposed program supports the sustainability pillar of improving sustainability and resilience of cities, as articulated by Objective 8, which supports increased resilience on cities through an increased number of disaster resilient public buildings and improved disaster awareness and preparedness.

C. Project Development Objective(s)

Proposed Development Objective(s)

The Project Development Objective is to inform building resilience into critical infrastructures and support disaster risk



awareness at the community level.

Key Results

Key results entail i) enhancing disaster risk awareness within the overall community via establishing designated DRM/DRR exhibition zones within Scientific and Technological Research Council of Turkey (TUBITAK) Science Centers at provincial level, and ii) deepening engagements via conducting analytical work on critical infrastructure resilience and business continuity planning in Turkey.

D. Preliminary Description

Activities/Components

Component 1. Supporting Disaster Risk Awareness Raising

TUBITAK, The Scientific and Technological Research Council of Turkey, is the leading agency responsible for the management, funding, and conducting of research in Turkey. TUBITAK holds thirteen Science Centers across the country with 5 of them currently open to visitors and 8 of them under construction. Science centers assume a critical role in Turkey in terms of rendering scientific culture more widespread, TUBITAK aims to increase state-of-the-art science centers in the country and display local (municipalities, governorships, universities) and national authorities' scientific and information dissemination projects which go beyond conventional methods.

The Component aims to facilitate establishment of disaster risk awareness raising corners/zones within science centers. Currently certain Science Centers hold designated space to accommodate DRM equipment demonstrating hydraulic shaking, panels that visualize movements of fault lines that cross the country, an interactive section/panel through which audience can direct with their body movements to simulate seismic events and an informatory section on volcanic activities. This component will finance establishment of disaster risk awareness raising zones within these science centers in Turkey that would inform the overall society on why and how disasters happen, how to take prevention measures against disasters, how to behave during and after major disasters, structural and non-structural consequences of and preparatory measures against natural disasters. The equipment to be designed, procured and mantled will be multi-hazard in nature and complement learning abilities of groups that are not necessarily scientists or DRM experts. The science centers staff will also be gathered in a technical workshop tackling with the content, nature, use and maintenance of the newly introduced equipment and the way they complement learning abilities of target groups.

Given the vast outreach capacity of science centers the activity will provide ample opportunity to expose individuals, public institutions and NGOs to disaster risk information, empower community-based disaster awareness raising and set an example for other Science Centers across the country.



Component 2. Critical infrastructure

Critical infrastructure is an asset or system which is essential for the maintenance of vital societal functions. Reducing the vulnerabilities of critical infrastructure and increasing their resilience against natural disasters, terrorism or malicious behavior requires fostering prevention and preparedness by improving the protection of critical infrastructures and addressing crisis management. This notion is also a key agenda item within the European Union and has its reflections on pre-accession countries like Turkey. To this end, the Component will finance development of an advisory note that builds on the 2008 Directive on European Critical Infrastructures and informs protection of critical infrastructures by providing a scientific basis for a better understanding of criticalities and interdependencies at all levels in Turkey while looking into international best practices.

This component will also finance a follow-up multi-hazard risk assessment on energy and logistics sector and develop an adaptation plan at sectorial scale. This work will be an opportunity to conduct impact studies to strengthen the competitiveness within these sectors by minimizing their business/service disruption. The locality of the assessment will be identified via factoring the intensity of assets in a given locality, information availability, replication opportunities, priority for the region, etc. The Component will also facilitate conduct of a technical workshop that would enable dissemination of results and participation of public and private entities, business owners, decision-makers etc. The workshop will serve as a platform to showcase good practices conducted in those settings whose risk and infrastructure profiles are similar to that of Turkey and trigger peer learning and networking opportunities.

The Component will lastly finance establishment of an online platform to be administered by AFAD and accessible to stakeholders of all natures. The platform will embody a critical infrastructure risk assessment matrix that would help stakeholders rank the risk that predominantly threatens their assets, lives and savings. The matrix will be multi-hazard in nature whilst clustering different scenarios, return periods and would factor in proxies to compute the domino effect/cascading impact that critical facilities and their production/service streams would be subject to in given disasters. This would help AFAD develop a critical infrastructure mapping at the national scale and instill prevention/preparedness measures accordingly. The activities identified under Component 2 will seek alignment and coordinating with Japan Program's collaboration with the FCI team on Resilient Industry, to the extent possible.

Component 3. Business Continuity Planning

The component will facilitate conduct of analytical work to assess varying dependencies on lifeline utilities, their capacity to withstand service outage and the impact on their supply-chain. This work will be an opportunity to work at SME-level, opening a whole new field of business for risk assessment and impact studies to strengthen the competitiveness along the supply chain and better understanding their dependency on lifeline utilities. It will develop a business continuity plan for a selected sector that could then be tailored down to product level. The study will also use and adapt the concepts of domino impact (spill-over impact within the same sector) and cascading impact (spill-over impact in other sectors). The activities



identified under Component 3 will seek alignment and coordinating with Japan Program's collaboration with the FCI team on Resilient Industry, to the extent possible.

SAFEGUARDS

E. Safeguard Policies that Might Apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01		X	
Natural Habitats OP/BP 4.04		X	
Forests OP/BP 4.36		X	
Pest Management OP 4.09		X	
Physical Cultural Resources OP/BP 4.11		X	
Indigenous Peoples OP/BP 4.10		X	
Involuntary Resettlement OP/BP 4.12		X	
Safety of Dams OP/BP 4.37		X	
Projects on International Waterways OP/BP 7.50		X	
Projects in Disputed Areas OP/BP 7.60		X	

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