



# Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 05-Dec-2022 | Report No: PIDC35037



## BASIC INFORMATION

### A. Basic Project Data

Country Türkiye	Project ID P179313	Parent Project ID (if any)	Project Name Türkiye Flood and Drought Management Project (P179313)
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date Jul 05, 2023	Estimated Board Date Sep 19, 2023	Practice Area (Lead) Water
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Treasury and Finance	Implementing Agency State Hydraulic Works	

### Proposed Development Objective(s)

The project development objective is to increase access to flood protection for people living in selected areas of Türkiye and to strengthen the institutional capacity for effective and integrated flood and drought risk management.

## PROJECT FINANCING DATA (US\$, Millions)

### SUMMARY

<b>Total Project Cost</b>	400.00
<b>Total Financing</b>	400.00
<b>of which IBRD/IDA</b>	400.00
<b>Financing Gap</b>	0.00

### DETAILS

#### World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	400.00
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Environmental and Social Risk Classification  
Substantial

Concept Review Decision  
Track II-The review did authorize the preparation to continue



## B. Introduction and Context

### Country Context

- Türkiye is a large, upper middle-income country with a record of strong growth; however, both internal and external developments have recently put its economic prospects at risk.** Starting in the early 2000s, reforms in the private and public sector caused GDP per capita to triple by 2017, reaching USD 10,500. The share of the population with per capita expenditure below the poverty line declined from 37% in 2002 to 9% in 2017<sup>1</sup>. Over the last half decade, Türkiye suffered significant economic disruption, with the Turkish Lira (TL) dropping significantly in value compared to the US Dollar in 2018-2019, spending falling, and corporate debt increasing. The incipient recovery starting in 2019 was then cut short by the Covid-19 crisis, with significant economic hardship, contraction of GDP, high job losses, and renewed pressure on macro-financial indicators. In 2021, Türkiye experienced an accelerating economic recovery with the economy growing 11.7% year-on-year, external and fiscal balances improving, and unemployment falling to pre-pandemic levels<sup>2</sup>. However, Türkiye has continued to experience rising macro-financial volatility, with the Lira resuming its plunge in value and losing nearly 80% of its value by Q3 2022 when compared to 2017<sup>3,4</sup>. with the consumer price index (CPI) inflation reaching 48.7% year-on-year in January 2022<sup>2</sup>. The war in Ukraine has also added significant geo-political tensions in the region and to the inflationary and destabilizing pressures experienced by the country. The OECD estimates that growth will be moderate throughout 2022, that consumer spending will be limited due to very high inflation (above 70%) and low consumer confidence, and that geopolitical and financial factors will hold back investment<sup>5</sup>.
- The impact of this economic volatility is likely to amplify existing income and labor disparities.** There is evidence that these shocks have made Türkiye's growth less inclusive. The poverty rate has been rising since 2017, reaching 12.2% in 2020<sup>6</sup> (with youth unemployment at 25%<sup>7</sup>) and is estimated to be significantly higher in 2022 due to the worsening macroeconomic situation. During the 2018-2019 economic turmoil, the largest increases in poverty were witnessed by the less developed regions of the country<sup>2</sup>. Furthermore, during the Covid-19 crisis, a similar trend was observed, and female employment and labor force participation tended to decrease more than male employment and labor force participation, widening already existing gender gaps. These economic disparities are expected to continue to grow as the worsening macro-fiscal situation and high inflation take a disproportionate toll on the poorer and more vulnerable populations and worsen overall progress on poverty reduction.
- As highlighted in the Türkiye Country Climate and Development Report (CCDR), the intensification of climate-related events in recent years—including floods, forest fires, and sea pollution—and the potential implications of accessing funds from the European Union (EU) Green Deal for Türkiye's economy have contributed to the urgency of the country's climate change agenda. The CCDR also states that the country is experiencing food security issues, increasing water stress, and unprecedented disaster events, such as

<sup>1</sup> World Bank. 2019. Firm Productivity and Economic Growth in Türkiye. Country Economic Memorandum. Washington, DC: World Bank.

<sup>2</sup> World Bank. 2022. Turkey Economic Monitor February 2022: Sailing against the Tide. Washington, DC: World Bank.

<sup>3</sup> OECD Data. Exchange Rates. <https://data.oecd.org/> (accessed on Oct. 5, 2022).

<sup>4</sup> Google Finance. TRY/USD Exchange Rates. <https://www.google.com/finance/> (accessed on Oct. 5, 2022).

<sup>5</sup> OECD. Türkiye Economic Snapshot (June 2022).

<sup>6</sup> Reuters. 2021. Turkey's poverty rate rose above 12% last year – World Bank. <https://www.reuters.com/> (accessed on Oct. 5, 2022)

<sup>7</sup> Statista. Turkey: Youth unemployment rate from 1999 to 2021. <https://www.statista.com/> (accessed on Oct. 5, 2022).



the 2021 forest fire season. This vulnerability is due to a combination of climate factors, population exposure (for example, the share of the population exposed to floods and forest fires), and socioeconomic factors (such as the share of agriculture in the economy). The Report also refers to a recent World Bank study on water which estimates that in the event of a 100-year flood, more than 3 percent of GDP (or \$20 billion) and 3 million people could be affected. The Türkiye Country Climate and Development Report explores how climate action, in line with the country's mitigation goal of achieving net zero emissions by 2053 as well as its adaptation and resilience needs, interact with the country's Intended NDC and its intention to reduce GHG emissions up to 21% from the Business-as-usual level by 2030.

- 4. Building resilience to climate-related risks is key for sustainable growth, macroeconomic stability, and poverty reduction** – to safeguard public finances, reduce financial sector vulnerabilities, protect productive assets and livelihoods, and improve momentum in poverty reduction (considering the disproportionate exposure and vulnerability of the poor) in the face of large and growing shocks and risks including climate change. Climate-related disasters have already been striking with greater frequency and intensity in the past two decades, and climate models predict this intensification will continue, with more frequent extreme weather and flooding, more protracted droughts and wildfires, sea level rise, and extreme heat. Türkiye's geographic and socioeconomic conditions make it particularly vulnerable to climate change – assessed as highly vulnerable in 9 out of 10 climate dimensions, compared with the OECD median of 2 out of 10, in the latest Türkiye Country Climate and Development Report (CCDR) (2022). Dimensions with high risks include extreme heat, agricultural (maize) yield losses, risks to assets, risks to well-being, forced displacement, exposure of the poor to climate risks, and transport network exposure – with considerable implications for productivity, macroeconomic stability, and poverty reduction.

#### Sectoral and Institutional Context

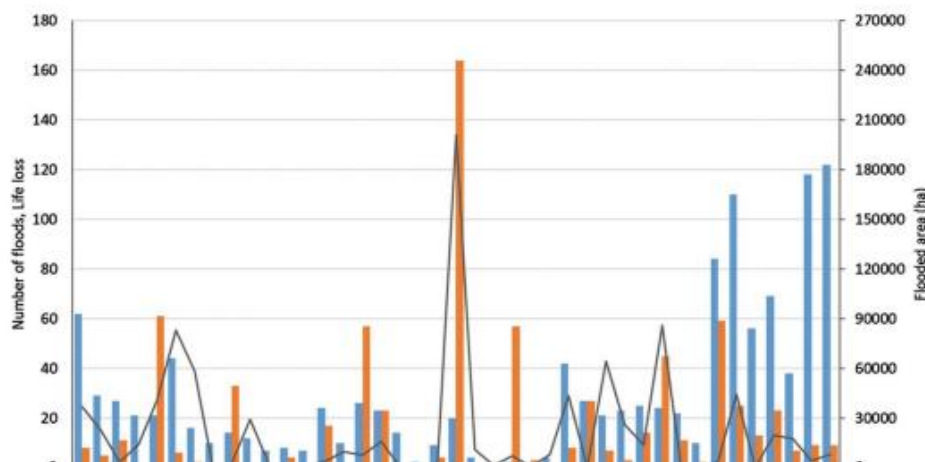
- 5. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report noted that climate change has intensified the global hydrological cycle, causing several societal impacts, which are felt disproportionately by vulnerable people.** Human-induced climate change has affected physical aspects of water security through increasing water scarcity and exposing more people to water-related extreme events like floods and droughts, thereby exacerbating existing water-related vulnerabilities caused by other socioeconomic factors. Many of these changes in water availability and water-related hazards can be directly attributed to anthropogenic climate change. The Report also highlights that Climate-related extremes have affected the productivity of agricultural, forestry and fishery sectors. Droughts, floods, wildfires and marine heatwaves contribute to reduced food availability and increased food prices, threatening food security, nutrition and livelihoods of millions of people across regions. Impacts of droughts and floods have intensified due to extreme events and underlying societal vulnerabilities. Anthropogenic climate change has led to increased likelihood, severity and societal impacts of droughts (primarily agricultural and hydrological droughts) in many regions.
- 6. Floods are the most frequent of all natural hazards and responsible for causing more damages than any other disasters.** Globally, floods are estimated to have affected more than 2 billion people between 1998 and 2018, accounting for 45 percent of all people affected by disasters during that period with an estimated 142,088 fatalities. The immediate impacts of flooding include the loss of human life, livelihoods, damage to property, destruction of crops, loss of livestock, disruption of services, and deterioration of health conditions owing to waterborne diseases, among others. The direct economic losses caused by flooding over the last decade are estimated at US\$ 656 billion, although these are systematically under-



reported and actual values are likely much higher. When accounting for intangible impacts on human well-being, natural disasters are thought to cost the global economy in excess of US\$ 520 billion a year.

- Increasing exposure to floods and changing climate conditions are expected to result in increasing damages.** This increase in exposure is being driven by continued population growth and urbanization, sustained economic growth and growing prosperity, compounded by the effects of a changing climate. Changes in climate are expected to alter water regimes, both in terms of availability and variability, as well as many of the factors that affect the frequency and severity of flood events, such as precipitation and run-off, and sea levels. It is estimated that approximately 1.3 billion people (or 15 percent of the global population) will live in flood-prone areas by 2050. Given the substantial uncertainties embodied in climate change projections there is increasing recognition of the need for more robust approaches, reflected in the increasing use of scenario planning and more holistic resilient approaches to flood management compared to more traditional control and reduction approaches.

Figure 1 – Number of floods and life losses, and flooded area between 1975 and 2015



- The Water Sector Engagement Note** assessed that Turkey is not water secure, and the current levels of water stress and the risk of hydrological extremes and scarcity are likely to increase in the future, exacerbated by the effects of climate change, urbanization, and growth in economic activities such as tourism and agriculture. This makes managing scarce water resources and floods among different users and sectors a priority. Improving water-related services that meet the economic and social needs of different users supports important economic and job-related agendas, in particular rural development and agriculture revitalization as well as industry and services, including tourism is crucial. Conservation of not only the quantity but also the quality of water resources, while managing water-related risks such as floods and droughts, and ensuring resilience to shocks, such as the impact of extreme natural disasters and pandemics such as Covid-19, is essential for Turkey’s long-term growth and sustainability.
- Over two-thirds of the country’s 25 river basins face severe water scarcity, including those hosting the largest cities and economic hubs such as Istanbul, Ankara, Izmir, and Antalya, as well as important agricultural areas,**



such as the Konya plains. By 2023, Türkiye's total water consumption will be 112 billion cubic meters, comprising 72 billion for irrigation, 18 billion for domestic use, and 22 billion for industry. Between 1990 and 2019, water demand for irrigation increased from 72 to 76.7 percent of total consumption.

10. **Floods are considered as the second most disastrous natural hazard after earthquakes in Türkiye, with almost 30 percent of all natural disasters in the country consisting of flood events.** Floods and landslides frequently occur and cause significant localized losses across all parts of Turkey. In the event of a 100-year flood, more than 3 percent of GDP (or 20 billion USD) and 3 million people (or 3 percent of the population) is predicted to be affected. Devastating floods in Turkey in 2006 and 2009, totaled almost 1 trillion USD in damage. Since 2014, severe flooding has occurred in Ankara, Artvin, Izmir and Mersin. In 2016, the Cukurova region suffered the third heavy rainfall in 50 years. This led to urban flooding, blocked access roads to the port, and shut down port operations. Most recently, floods in 2021 caused extensive damages in the Black Sea region, specifically Kastamonu province that led to loss of lives and evacuation of thousands of residents. Other natural disasters such as landslides and rockfalls present a localized challenge, creating damage to transport networks and property – with periods of extensive or intense rainfall, changes in land use or earthquakes typically precursors to landslide activity.
11. **Drought is another key challenge for Turkey especially as a large part of the country already has a semi-arid climate.** Since Turkey is located in the Mediterranean macroclimate region in the sub-tropical zone, rainfall variations occur from year to year. This causes regional and widespread drought impacts in various intensities. Semi-arid environments prevail over much of central, southern, and south-eastern parts of the country, where agriculture is the main economic sector. These areas are most at risk from drought and desertification. In some parts of the Central Anatolia Region, the annual average rainfall is 300mm and recurrence period of drought conditions is expected to be more than once in 4 years. The main cities of Ankara, Istanbul, and Izmir are all dependent on fresh water storage in reservoirs (FAO, 2017). Increasing drought severity has exacerbated groundwater depletion, with water levels dropping by more than two meters in river basins such as Konya, threatening the long-term sustainability of agriculture and contributing to the occurrence of massive sinkholes. The 2020/21 drought left several reservoirs around major cities with their lowest water storage levels in 15 years.
12. **Agriculture is the first and most vulnerable sector to meteorological drought, particularly under rainfed conditions.** Most of the agricultural production areas, such as Central Anatolia (an important wheat production area for Turkey), Mediterranean (mainly corn and citrus products), Southeast Anatolia (cotton and cereals), and the Aegean (fruits trees, cotton, corn) are predicted to suffer from more frequent and intense drought in the future.
13. **Türkiye adopted an Integrated Water Resource Management Policy in 2003. As per the policy, River Basin Management Plans, Flood Management Plans, Drought Management Plans and Sectoral Water Allocation Plans are currently prepared by DG Water Management in line with European Union Directives related to water.** The plans were prepared based on the data sets developed by DSI and State Meteorological Services. The River Basin Management Plans have been completed in 8 basins: Büyük Menderes, Susurluk, Konya, Meriç-Ergene, Gediz, Burdur, Kuzey Ege and K. Menderes. The studies are about to being completed in 3 basins: Batı Akdeniz, Akarçay and Yeşilirmak. The River Basin Management Plans will be completed for all 25 river basins by 2024.
14. **Flood Risk Management Plans (FRMPs) are prepared in line with EU Flood Directive (2007/60/EC).** EU Directive aims to reduce the impacts of the floods on human health, environment, cultural heritage and economic activities. For this purpose, it requires preliminary flood risk assessment, preparation of flood hazard maps, flood risk maps

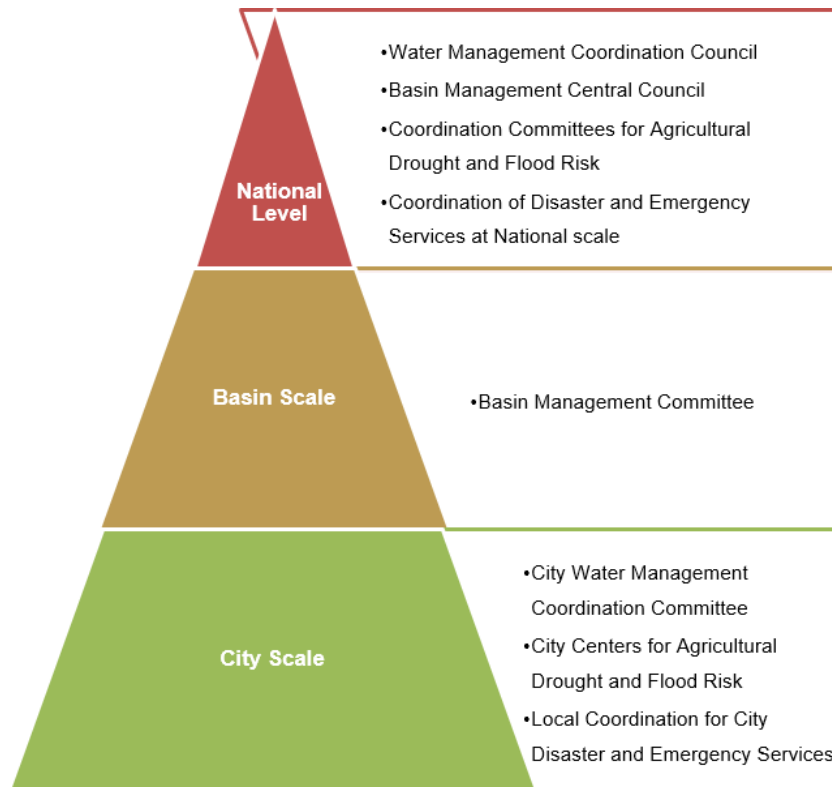


and flood risk management plans. Accordingly, Regulation on Preparation, Implementation and Monitoring of Management Plans has been put into effect in 2016. Since then, flood management plans are completed for 23 river basins: Yeşilirmak, Antalya, Sakarya, Susurluk, Ceyhan, Kuzey Ege, Gediz, Küçük Menderes, Batı Karadeniz, Burdur, Batı Akdeniz, Büyük Menderes, Akarçay, Kızılırmak, Aras, Doğu Akdeniz, Van Lake, Konya Closed, Asi, Seyhan Fırat-Dicle, Doğu Karadeniz and Çoruh, The preparation of Marmara FMP and Meriç-Ergene FMP are ongoing. The FMPs, for all river basins, are planned to be completed by the end of 2023. Additionally, as stated in the EU Flood Directive, studies have been started for reviewing and updating in Yeşilirmak, Antalya, Sakarya, Susurluk, and Ceyhan Basins Flood Management Plans which were completed in 2016. DSI, in consultation with other stakeholders, is preparing a new Regulation for Flood Management which is expected to be enacted in 2023.

15. **Drought Management Plans (DMPs) aim to reduce the negative effects of drought risks.** DG Water Management prepares these plans based on drought analysis and drought maps, hydrological studies, sectoral vulnerability analysis. These are used to determine critical intervention measures that will be taken before, during and after the drought event. Drought Management Plans have been completed in 15 basins (Kuzey Ege, K. Menderes, Batı Akdeniz, Burdur, Akarçay, Antalya, Konya, Doğu Akdeniz, Van Lake, Büyük Menderes, Gediz, Seyhan, Ceyhan, Asi and Fırat-Dicle). By the end of 2023, Drought Management Plans will be completed for all river basins in Turkey.
16. **Responsibilities for flood and drought risk management are scattered among different institutions requiring close institutional coordination.** In Türkiye, various institutions take part in different stages of flood and drought risk management process such as planning, design and implementation of structural and non-structural measures on risk reduction, preparedness, response, and recovery: (i) DSI under the Ministry of Agriculture and Forestry is responsible for design, construction and operation and maintenance of investments related to flood and drought risk mitigation, response and recovery including flood and drought forecasting and early warning systems, (ii) DG Water Management under the Ministry of Agriculture and Forestry is responsible for the planning of measures, ultimately the for preparation of Flood Risk Management Plans, Drought Management Plans, River Basin Management Plans and Sectoral Water Allocation Plans; (iii) Disaster and Emergency Management Presidency (AFAD) under the Ministry of Interior is responsible for coordination of institutions and organizations taking role in risk reduction, preparedness, post-disaster response and recovery for disasters and emergency conditions and preparation of Türkiye Disaster Response Plan, Türkiye Disaster Risk Reduction Plan and Provincial Disaster Risk Reduction Plans considering disaster risks; (iv) Turkish State Meteorological Service under the Ministry of Environment, Urbanization and Climate Change is responsible for meteorological Early Warning Systems, nowcasting systems, ground observations and ground-based radar systems, (v) Ministry of Agriculture and Forestry is responsible for agricultural drought management. The organizational structure at national-, river basin-, and city-scale stakeholders is given Figure 2.



Figure 2. Drought and Flood Risk Management Organization

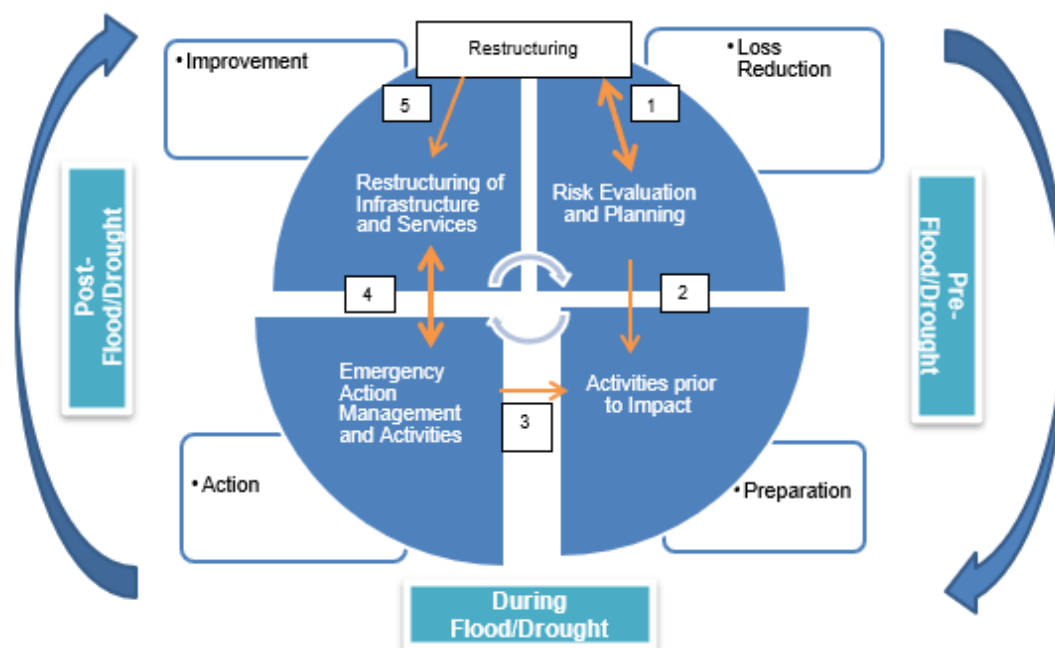


17. DSI is the main agency for implementation of structural and non-structural measures for flood and drought management: The Flood Risk Management and Drought Management plans are currently prepared by DG Water Management by using data sets of DSI and State Meteorological Service, who have detailed understanding of site-specific characteristics through the planning, design reports and associated Construction activities through the Regional Directorates. DSI is the main institution for irrigation systems management and groundwater management as well as construction of dams which have strong linkages to drought management. DSI's flood and sediment control works are carried out in three stages: (i) Pre-flood risk prevention activities and management - structural & non-structural activities; (ii) Disaster response during flood and (iii) post disaster recovery activities. DSI's responsibilities for flood management also include ground observation studies, flood forecasting and early warning systems, flood hazard and risk mapping, and capacity building and training in the context of disaster cycle management depicted below:





Figure 2. Disaster Management Cycle(Drought and Flood Risk)  
Source: Adapted from ADB



18. **The Government continues to update and improve its strong regulatory framework for disaster risk management and resilience. In particular, it is observed that seismic resilient design and construction of buildings and infrastructure are two visible achievements with improved supervision and enforcement of regulations.** The proposed Project will further support the efforts for the disaster and climate resilience principles to be systematically integrated into policies, regulations, and investments for flood and drought risk management. In addition, the Project would be a one step forward on allocating budget for investments in disaster risk reduction and preparedness efforts that are in alignment with the targets of the Eleventh National Development Plan.

#### Relationship to CPF

19. **The proposed Flood and Drought Management Project is aligned with the World Bank Group (WBG) Country Partnership Framework (CPF) for Türkiye for FY18–FY21<sup>8</sup>, which was extended to cover the FY22–23 period through the Performance and Learning Review<sup>9</sup>.** In the CPF, the Bank’s support for Türkiye is built on three focus areas: growth, inclusion, and sustainability. The proposed project is particularly well-aligned with the focus area of sustainability, and more specifically the CPF Objective 8 which is defined as “increased sustainability of infrastructure assets and natural capital” and “increased sustainability and resilience of cities”. The indicator of “Increased resilience of cities through increased number of disaster resilient public buildings and improved disaster preparedness.” is used to monitor this Objective. The project is also aligned with the Resilient and Net Zero Pathway outlined in the Türkiye

<sup>8</sup> Report No. 110906-TR, August 29, 2017

<sup>9</sup> Report No. 142353-TR, March 13, 2020



CDDR. Among the six climate-specific priorities described in the Pathway, the project will contribute to Priority 5: Make growth more resilient and sustainable.

20. **The Project will contribute to achievement of the goals of the National Development Plan (NDP) for 2019-2023 and the Annual Investment Program (AIP) for 2022.** In the NDP, it is mentioned that Türkiye is among the countries that will be affected most from climate change and is already facing with an increased incidence of sudden rains and periods of rain irregularity and scarcity, flood and drought. Disaster risk reduction and preparedness activities proposed by the Project are again in alignment with the targets of the NDP related to disaster management. The Presidency of Strategy and Budget confirmed that flood management is a priority area for Türkiye and the proposed Project can contribute to achievement of the priorities of the AIP. The AIP for 2022 includes flood management subprojects with a total cost of 34 billion TL (USD 1.8 billion).

### C. Proposed Development Objective(s)

**Note to Task Teams:** The PDO has been pre-populated from the datasheet for the first time for your convenience. Please keep it up to date whenever it is changed in the datasheet. *Please delete this note when finalizing the document.*

The project development objective is to increase access to flood protection for people living in selected areas of Türkiye and to strengthen the institutional capacity for effective and integrated flood and drought risk management.

#### Key Results (From PCN)

21. The PDO indicators include the following:

- Population benefiting from flood protection and Early Warning systems (number) *(measures of flood protection and preparedness that reduce the impacts of flood and drought events)*
- Area benefiting from reduced risks of floods and Early Warning systems (ha) *(measures of flood protection and preparedness that reduce the impacts of flood and drought events)*
- Improved Early Warning Systems Components Operational *(measures strengthened preparedness and response capacities with information)*
- Integrated flood and drought risk management guidelines prepared under the Project *(tools to increase DSI's capacity in integrated flood and drought risk management)*

### D. Concept Description

22. **The proposed project will support the GoT in addressing the multitude of flood and drought management related challenges facing the selected locations of Türkiye, while enhancing the livelihood security and resilience of local communities and institutional strength of the related institutions against the risks and impacts of climate-induced flooding and drought.** The Project would adopt an integrated basin approach to achieve these targets. Based on the existing capacity of DSI and other stakeholders which will be enhanced through the Bank's previous experience in flood and drought management, this



project will aim to increase integration of structural and non-structural measures taking into account inputs from different stakeholder groups. The project will also deploy integrated green and gray infrastructure solutions as both short-term and long-term responses to mitigate the risks of floods and drought.

### **Component 1. Flood Management Structures (indicative cost: USD 350M)**

23. This component aims to mitigate the flood risk in selected sub basins of selected river basin districts, which have been recently and historically affected by extreme flood events by supporting the implementation of planned flood protection infrastructure. This includes pre-identified no regret measures at river basin district as well as studies to evaluate the adequacy and greening of key flood protection investments and its potential use for drought management (e.g. multi-purpose solutions to act as flood storage in wet periods and water supply and irrigation in dry periods. This component will include the following activities: (i) Preparation of feasibility studies, designs and review of existing technical documents to ensure integrated flood management at the river basin scale considering the impacts of climate change, (ii) physical investments to reduce flood risks and improve flood risk management (e.g. small dams, check dams, levees, retaining walls, embankments, reservoirs, dry and wet polders, etc.), (iii) rehabilitation of supplementary structures (e.g., bridges, culverts, etc.), (iv) piloting applications of Nature Based Solutions and (v) implementation of innovative techniques for flood and drought risk management by considering national applications and international best practices.
24. Selection of the subprojects under this Component will be based on three criteria: (i) urgency – in conformity with Flood Management Plans prepared by DG Water Management and province-based Risk Reductions Plans prepared by AFAD; (ii) simplicity – minimum need for land acquisition; (iii) readiness for implementation – availability of planning/feasibility reports and engineering designs.

### **Component 2. Improvement of Early Warning Systems (indicative cost: USD 40M)**

25. The main objective of this component is to improve the existing Early Warning System in selected basins to be provided by DSI to further enhance flood and drought preparedness and response to reduce risks in vulnerable communities. This will support the reduction and management of flood and drought risk with the potential of scaling up at the national level. The enhancement will focus on the following strategic four elements according to World Meteorological Organization (WMO) multi-hazard EWS check list: (i) Disaster risk knowledge of the current and future flood and drought hazard and risk and coordination of relevant stakeholders on disaster risk management; (ii) Detection, monitoring, analysis and forecasting of flood and drought hazard and its impact under an adequate institutional mechanisms; (iii) Warning and dissemination of the flood and drought hazard and risk based on Standard Operational Procedures to communicate messages effectively using resilient communications channels; (iv) Preparedness and response capabilities for flood and drought based on public awareness and education campaigns to better action planned measures and Provincial Risk Reduction Plans by considering national applications and international best practices.
26. This component will include: (i) review of existing early warning systems to identify gaps and needs for improvement; (ii) improvement and expansion of the current systems; (iii) institutional and operational structuring of the newly established Floods Department of DSI and its planned Flood and Drought Management Centre its operation framework; (iv) improvement of Operation and Maintenance of the



system through capacity building activities; (v) improvement of data and information decision support systems (e.g. nowcasting, remote sensing, rapid flood mapping, historical databases and risk assessment, monitoring, etc.); (vi) scaling-up existing early warning systems for flood and drought; and (vii) feasibility study for further expansion at national level. by considering national applications and international best practices. A recent example of national application is the one initiated by DSI in the Black Sea Region, which is expected to be completed by the end of 2022. Under this initiative, 125 water level radar sensor are expected to be installed along the river courses in the vicinity of communities exposed to flood risk in the cities of Trabzon, Giresun, Rize, Gümüşhane and Bayburt. The water level will be monitored in real time allowing communities to be warned one hour prior to the flood event to prevent loss of life and property. The system is then expected to be established in the Black Sea provinces of Artvin, Samsun, Sinop, Ordu, Amasya, Tokat, Karabük, Zonguldak, Bartın and Kastamonu, as well.

### Component 3. Capacity Development and Institutional Strengthening (indicative cost: USD 8M)

27. The Component will support the and will raise capacities around drought management. Activities under this component will include: (i) improvement of implementation framework and procedures (e.g. preparation of Guidelines, manuals etc.) for the new department and centre; (ii) (iii) study tours to countries with advanced systems for flood and drought management; (iii) trainings and capacity building for DSI including flood and drought management; (iv) stocktaking studies and planning of drought interventions considering the existing infrastructure; (v) public awareness raising; (v) improvement of institutional coordination between stakeholders in floods and drought management (i.e. DSI, DG Water Management, AFAD and State Meteorological Services);

### Component 4. Project Management (indicative cost: USD 2M)

28. This component will finance consultant and non-consulting services, goods, training, and operating costs required by DSI to implement the project according to World Bank policies and guidelines. These will include (i) consultancy services required to support implementation of procurement and financial management (FM) aspects, social and environmental risk management and climate change-related aspects, technical and contract management(vi) improvement of Monitoring and Evaluation System; (vii) improvement of E&S aspects, including Grievance Redress Mechanism and Communications.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No
Summary of Screening of Environmental and Social Risks and Impacts	



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Environmental and social risk rating is considered as Substantial at the concept stage. Component 1 includes no regret flood risk measures, and other investments reducing and improving flood risk management in the selected basins and enhancing well-being of population living in risk prone areas. The scale of the proposed flood management structures under Component 1 (e.g. small dams, check dams, levees, retaining walls, embankments, reservoirs, dry and wet polders, etc.) is expected to be medium to large scale. Activities planned under Component 2 are composed of reviewing of existing early warning systems for gap identification, improvement of the systems and relevant capacity building activities, establishment of a flood management center and feasibility study for expansion of the early warning system in the country. Those are soft components that do not include civil works and thus, do not pose any adverse environmental and social impacts. Thus, the potential environmental and social risks and impacts will be mostly relevant to Component 1 and be comprised of impacts on aquatic and terrestrial habitats due to construction of flood management structures, river bed alteration, water pollution, land clearance and impacts on floodplain habitats and vegetation, use of borrow and aggregate material as well as typical construction risks and impacts such as air and noise emissions, waste management, soil management, labor and working conditions, occupational health and safety risks, community health and safety (including traffic safety), risk of increased SEA/SH incidents due to labor influx; increased transmission risks of COVID-19 from incoming workers; structural safety of the flood protection structures depending on the size, habitat disturbance due to construction and economic displacement due to the required land acquisition for construction activities. Physical displacement is not expected. The project will consider and assess the distance and location of the sub-projects to the residential areas in order to keep the impact on the livelihoods of the communities limited and to avoid potential physical displacement and minimize land acquisition. The potential risks and impacts listed are expected to be temporary and predictable, medium to large in magnitude, which are expected to be mitigated through good management practices. There is no geographical limitation for the project and the sub-project details may not be known until appraisal stage. In this respect, the potential environmental and social risks and impacts will be addressed and managed within the scope of the project scale Environmental and Social Management Framework (ESMF), Resettlement Framework (RF) and Labor Management Procedures (LMP) which will be prepared prior to project appraisal, as well as by strengthening DSI's capacity to address these risks and impacts. In addition, a Stakeholder Engagement Plan (SEP), citizen engagement strategy and grievance mechanism (GM) will be developed to guide project design and implementation, particularly with regards to the ensure involvement of community members and stakeholders to project design and receiving regular feedback from project beneficiaries. It would be ensured that the GM to be established for the Project will have necessary and applicable channels to receive SEA/SH grievances through a survivor centric approach. To be able to ensure this capacity of the GM, DSI will be supported by the Bank through trainings and guidance to be provided and the SEP will include measures for DSI to develop project-specific procedures to manage SEA/SH grievances. In the ESMF, procedures for sub-project level environmental and social risk screening, relevant mitigation and monitoring measures, development of environmental and social assessments, as well as roles and responsibilities will be well-explained. The sub-projects that will adversely affect the critical and sensitive habitats, as well as cultural heritage and may lead to any type of exclusion of any group amongst the communities will not be eligible for financing; the exclusion list in the ESMF will screen those out. The project will also support preparation of feasibility studies, designs and review of existing technical documents to ensure integrated flood management at the river basin scale considering the impacts of climate change. In the Terms of Reference (ToR) of such studies, the ESF provisions will be included. These instruments, of quality acceptable to the World Bank, will be disclosed in English and Turkish languages before project appraisal and publicly discussed and consulted upon with stakeholders. DSI has previous experience with implementing WB projects, however the PIU will be trained on the Environmental and Social Framework (ESF) and will be strengthened by hiring dedicated social and environmental specialists.



## CONTACT POINT

### World Bank

Canan Yildiz Uz, Salih Bugra Erdurmus  
Senior Water Resources Management Specialist

### Borrower/Client/Recipient

Ministry of Treasury and Finance  
Kerem Donmez  
Acting Director General  
kerem.donmez@hmb.gov.tr

### Implementing Agencies

State Hydraulic Works  
Mehmet Akif Balta  
Director General  
mabalta@dsi.gov.tr

## FOR MORE INFORMATION CONTACT

The World Bank  
1818 H Street, NW  
Washington, D.C. 20433  
Telephone: (202) 473-1000  
Web: <http://www.worldbank.org/projects>

## APPROVAL

Task Team Leader(s):	Canan Yildiz Uz, Salih Bugra Erdurmus
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### Approved By

Country Director:	Eavan O'Halloran	20-Mar-2023
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Türkiye Flood and Drought Management Project (P179313)

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