



THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

FOR OFFICIAL USE ONLY

Report No: PADHI00259

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF EUR 559.3 MILLION
(US\$600 MILLION EQUIVALENT)

TO THE

REPUBLIC OF TÜRKİYE

FOR A

TÜRKİYE FLOOD AND DROUGHT MANAGEMENT PROJECT
(P179313)

JUNE 5, 2024

Water Global Practice
Europe and Central Asia

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.



CURRENCY EQUIVALENTS

(Exchange Rate Effective {Apr 30, 2024})

Currency Unit =

EUR 0.93 = US\$1

US\$1.07 = EUR1

FISCAL YEAR

January 1 - December 31

Regional Vice President: Antonella Bassani

Regional Director: Sameh Naguib Wahba Tadros

Country Director: J. Humberto Lopez

Practice Manager: Winston Yu

Task Team Leader(s): Canan Yildiz Uz, Salih Bugra Erdurmus, Ahmed Shawky Mohamed
Abdelghany



ABBREVIATIONS AND ACRONYMS

AFAD	Disaster and Emergency Management Presidency	LMP	Labor Management Procedures
AI	Artificial Intelligence	MoAF	Ministry of Agriculture and Forestry
AIP	Annual Investment Program	MoEUCC	Ministry of Environment, Urbanization and Climate Change
BCR	Benefit/Cost Ratio	MoTF	Ministry of Treasury and Finance
CCDR	Country Climate and Development Report	NBS	Nature-Based Solutions
CPF	Country Partnership Framework	NDC	Nationally Determined Contributions
DGAR	Directorate General of Agricultural Reform	NDP	National Development Plan
DGF	Directorate General of Forestry	NWP	Numerical Weather Prediction
DGWM	Directorate General of Water Management	OECD	Organization for Economic Co-operation and Development
DMP	Drought Management Plan	O&M	Operation and Maintenance
DSI	<i>Devlet Su İşleri</i> (Directorate General of State Hydraulic Works)	PDO	Project Development Objective
EFA	Economic and Financial Analysis	PFS	Project Financial Statement
ESCP	Environmental and Social Commitment Plan	PIU	Project Implementation Unit
ESF	Environmental and Social Framework	POM	Project Operations Manual
ESIA	Environmental and Social Impact Assessment	PPSD	Project Procurement Strategy for Development
ESMF	Environmental and Social Management Framework	PSB	Presidency of Strategy and Budget
ESMP	Environmental and Social Management Plan	RBMP	River Basin Management Plan
EU	European Union	SDGs	Sustainable Development Goals
EWS	Early Warning Systems	SEA/SH	Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH)
FM	Financial Management	SEP	Stakeholder Engagement Plan
FRMP	Flood Risk Management Plan	SMS	Turkish State Meteorological Service
GDP	Gross Domestic Product	STEP	Systematic Tracking of Exchanges in Procurement
GHG	Greenhouse Gas	TATUM	Flood Forecasting and Early Warning Centre
GoT	Government of Türkiye	TATUS	Flood Forecasting and Early Warning System
GRM	Grievance Redress Mechanism	TCA	Turkish Court of Accounts
GRS	Grievance Redress Service	TEUS	Flood Early Warning System
HAY	Multi-hazard communication tool of AFAD	TIMP	Türkiye Irrigation Modernization Project (P158418)



IA	Implementing Agency	TULIP	Türkiye Resilient Landscape Integration Project (P172562)
IFR	Interim Financial Report	WCEIP	Water Circularity and Efficiency Improvement Project (P174915)
IPF	Investment Project Financing	WBG	World Bank Group
IRR	Internal Rate of Return	WUA	Water User Association
KBS	Public Expenditure and Accounting Information System		



TABLE OF CONTENTS

DATASHEET	v
I. STRATEGIC CONTEXT	1
A. Country Context	1
B. Sectoral and Institutional Context.....	2
C. Relevance to Higher Level Objectives.....	5
II. PROJECT DESCRIPTION	6
A. Project Development Objective	6
B. Project Components	7
C. Project Beneficiaries	13
D. Results Chain	14
E. Rationale for Bank Involvement and Role of Partners	14
F. Lessons Learned and Reflected in the Project Design	15
III. IMPLEMENTATION ARRANGEMENTS	15
A. Institutional and Implementation Arrangements	15
B. Results Monitoring and Evaluation Arrangements	16
C. Sustainability	16
IV. PROJECT APPRAISAL SUMMARY	17
A. Technical, Economic and Financial Analysis (if applicable)	17
Economic and Financial	18
B. Fiduciary	20
C. Legal Operational Policies.....	21
D. Environmental and Social.....	21
V. GRIEVANCE REDRESS SERVICES	24
VI. KEY RISKS	24
VII. RESULTS FRAMEWORK AND MONITORING	26
ANNEX 1: Implementation Arrangements and Support Plan	39
ANNEX 2: Map of Indicative Potential Project Areas	46



DATASHEET

BASIC INFORMATION

Project Beneficiary(ies) Türkiye	Operation Name Türkiye Flood and Drought Management Project		
Operation ID P179313	Financing Instrument Investment Project Financing (IPF)	Environmental and Social Risk Classification Substantial	

Financing & Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Contingent Emergency Response Component (CERC)
<input type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Performance-Based Conditions (PBCs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Alternative Procurement Arrangements (APA)	<input type="checkbox"/> Hands-on Expanded Implementation Support (HEIS)

Expected Approval Date 27-Jun-2024	Expected Closing Date 31-Dec-2031
Bank/IFC Collaboration No	

Proposed Development Objective(s)

The project development objectives are to increase flood control for people living in selected areas of Türkiye and to strengthen the country's institutional capacity for flood and drought risk management.

Components

Component Name	Cost (US\$)
----------------	-------------



Component 1: Flood Management	540.00
Component 2: Drought Management	50.00
Component 3. Capacity Development and Institutional Strengthening	6.00
Component 4. Project Management	4.00

Organizations

Borrower:	Ministry of Treasury and Finance
Implementing Agency:	Directorate General of State Hydraulic Works, Directorate General of Water Management

PROJECT FINANCING DATA (US\$, Millions)**Maximizing Finance for Development**

Is this an MFD-Enabling Project (MFD-EP)? No

Is this project Private Capital Enabling (PCE)? No

SUMMARY

Total Operation Cost	600.00
Total Financing	600.00
of which IBRD/IDA	600.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	600.00
--	--------

Expected Disbursements (US\$, Millions)

WB Fiscal Year	2024	2025	2026	2027	2028	2029	2030	2031	2032



Annual	0.00	5.00	10.00	100.00	115.00	120.00	120.00	100.00	30.00
Cumulative	0.00	5.00	15.00	115.00	230.00	350.00	470.00	570.00	600.00

PRACTICE AREA(S)

Practice Area (Lead)

Water

Contributing Practice Areas

Urban, Resilience and Land

CLIMATE

Climate Change and Disaster Screening

Yes, it has been screened and the results are discussed in the Operation Document

SYSTEMATIC OPERATIONS RISK- RATING TOOL (SORT)

Risk Category

Rating

1. Political and Governance	● Low
2. Macroeconomic	● Substantial
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Moderate
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Substantial
7. Environment and Social	● Substantial
8. Stakeholders	● Moderate
9. Overall	● Substantial

POLICY COMPLIANCE

Policy



Does the project depart from the CPF in content or in other significant respects?

Yes No

Does the project require any waivers of Bank policies?

Yes No

ENVIRONMENTAL AND SOCIAL

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10: Stakeholder Engagement and Information Disclosure	Relevant
ESS 2: Labor and Working Conditions	Relevant
ESS 3: Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4: Community Health and Safety	Relevant
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
ESS 8: Cultural Heritage	Relevant
ESS 9: Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank’s due diligence assessment of the Project’s potential environmental and social risks and impacts, please refer to the Project’s Appraisal Environmental and Social Review Summary (ESRS).

LEGAL

Legal Covenants

Sections and Description

Loan Agreement (LA), Schedule 2, Section I.A.1. The Borrower, through DSI and DGWM as specified in Section 3.01 of the Loan Agreement, shall, throughout Project implementation and to the satisfaction of the Bank, be responsible for the management and implementation of the Project.



LA, Schedule 2, Section I.A.2. The Borrower, through DSI and DGWM, respectively, shall maintain throughout Project implementation: (a) a DSI Project Implementation Unit, and a DGWM Project Implementation Unit; and (b) a Project Steering Committee.

LA, Schedule 2, Section I.B.1. The Borrower, through DSI and DGWM, shall each maintain throughout Project implementation, respectively, a DSI POM (for Parts 1.A, 1.B(i), 1.B(iii), 2, 3.A, and 4.A of the Project), and a DGWM POM (for Parts 1.B(ii), 1.B(iii), 3.B, and 4.B of the Project), in substance and form acceptable to the Bank.

LA, Schedule 2, Section I.C.1. In carrying out Part 1.A of the Project, the Borrower, through DSI, shall ensure that, unless otherwise agreed to by the Bank in writing and thereafter incorporated into the DSI POM, each proposed Subproject is appraised, selected and prioritized in accordance with standards, criteria and procedures acceptable to the Bank, as specified in the Loan Agreement and detailed in the DSI POM.

LA, Schedule 2, Section I.D.1. and I.D.2. The Borrower shall, through DSI and DGWM, ensure that the Project is carried out in accordance with the Environmental and Social Standards, and the Environmental and Social Commitment Plan, in a manner acceptable to the Bank.

LA, Schedule 2, Section I.E.1. The Borrower, through DSI and DGWM, shall each prepare and furnish to the Bank not later than October 31st of each year during the implementation of the Project, a proposed Annual Work Plan and Budget.

Conditions

Type	Citation	Description	Financing Source
Disbursement	LA, Schedule 2, Section III.B.1(b)	No withdrawal shall be made for expenditures under Category 1, unless and until the Borrower, through DSI, has assigned or hired the following staff for the DSI PIU, with qualifications and terms of reference satisfactory to the Bank: (i) one environmental specialist (ii) one social specialist; (iii) one occupational, health and safety specialist; and (iv) one qualified engineer to supervise the design and implementation of dam safety measures.	IBRD/IDA
Effectiveness	LA, Section 4.01 (a)	The Borrower, through DSI, shall have prepared and adopted the DSI Project Operations Manual, in form and substance consistent	IBRD/IDA



		with Section I.B of Schedule 2 to the Loan Agreement.	
Effectiveness	LA, Section 4.01 (b)	The Borrower, through DGWM, shall have prepared and adopted the DGWM Project Operations Manual, in form and substance consistent with Section I.B of Schedule 2 to the Loan Agreement.	IBRD/IDA



I. STRATEGIC CONTEXT

A. Country Context

- 1. Türkiye’s development achievements over the past two decades have been remarkable.** Real gross domestic product (GDP) growth averaged 5.4 percent between 2002 and 2022, resulting in income per capita (in real terms) that was more than doubled over the same period. Moreover, growth was accompanied by rapid poverty reduction, with the poverty rate (US\$6.85 2017 PPP¹ poverty line) halving from above 20 percent in 2007 to less than 10 percent in 2021. As in other countries, the COVID-19 pandemic had a negative impact on growth in 2020, but the country was one of the few that did not register a GDP contraction that year, instead growing 1.9 percent. This performance was due, to a large extent, to the government’s economic policy response to the pandemic, which focused on loosening monetary policy and rapid credit expansion. Moreover, supported by domestic and external demand, Türkiye achieved double-digit GDP growth in 2021 (11.4 percent) and maintained significant momentum in 2022 (5.5 percent) and 2023 (4.5 percent).
- 2. However, the policy framework that ensured a strong economic performance during and after the pandemic also heightened macroeconomic risks.** As a result of the loose monetary policy, the country has been suffering from high inflation (with annual inflation reaching 65.8 percent in March 2024 after having peaked at 85.5 percent in October 2022), currency depreciation (77 percent against the US\$ between January 2020 and January 2024), corporate and banking sector vulnerabilities, and declines in reserve buffers.
- 3. Following the May 2023 elections, the Government has taken steps towards normalizing the economy in a gradual way in order to manage risks associated with the adjustment process.** This includes monetary policy tightening, with interest rates increasing from 8.5 percent in May 2023 to 50 percent in March 2024, the unwinding of distortive financial regulations, and fiscal revenue measures to curtail the fiscal deficit. Markets are reacting positively with 5-year Credit Default Swaps declining from above 500 basis points (bps) in May 2023 to around 300bps in March 2024, two of the major rating agencies upgrading their outlook to positive recently, and one of them (Fitch) upgrading the credit rating (to B+) on March 8, 2024. The authorities are also contemplating how to complement these actions with structural reforms that may help with growth prospects going forward. These efforts will need to be sustained and supported in the coming months because the monetary, fiscal, and macro-prudential challenges and associated economic vulnerabilities were of such magnitude that despite the significant progress, there is some road ahead. Türkiye development path is also threatened by significant climate and disaster risks. As highlighted in the Türkiye Country Climate and Development Report (CCDR²), the intensification of climate-related events in recent years—including floods, droughts and forest fires—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.
- 4. The CCDR highlighted that the country is experiencing food security issues, increasing water stress, and unprecedented disaster events, such as the 2021 forest fire season.** This vulnerability is due to a combination of climate factors, population exposure (for example, a high share of the population

¹ Purchasing power parity (PPP) conversion factor is a spatial price deflator and currency converter that controls for price level differences between countries, thereby allowing volume comparisons of gross domestic product (GDP) and its expenditure components. PPP-based cross-country comparisons of GDP at its expenditure components thereby only reflect differences in economic outputs (volume), as PPPs control for price level differences between the countries.

² <https://documents1.worldbank.org/curated/en/099006106072214169/pdf/P1774790a4024b0400b9340c1a5836a23df.pdf>



exposed to floods and forest fires), and socioeconomic factors (such as a high share of agriculture in the economy). A recent World Bank study³ on water also estimates that in the event of a 100-year flood, more than 3 percent of GDP (or US\$20 billion) and 3 million people could be affected. The CCDR recommends complementing the water management plans and regulations with modernized irrigation and drainage and diversified freshwater sources as part of economy-wide approach allowing for the country's economic growth to be more climate resilient and sustainable. The Country has identified very high and high priority flood and drought management measures in its updated Nationally Determined Contributions (NDC) along with achieving net zero emissions by 2053. Türkiye is also highly exposed to non-climate disasters: excluding the events in February 2023, the 39 earthquakes with a magnitude of 5 and above since 1990 have resulted in approximately 20,000 fatalities, impacting a total population of 4.4 million, and causing direct damages exceeding US\$43 billion. On February 6, 2023, two significant earthquakes, measuring 7.8 and 7.5 in magnitude, struck southeast Türkiye and Syria. The combined impact of these events resulted in thousands of casualties and affected more than millions of people.

5. **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 climate risk exposure and vulnerability of the poor).** 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 in the Türkiye CCDR (including extreme heat and agricultural yield losses), compared with the Organization of Economic Cooperation and Development (OECD) median of 2 out of 10, in the Türkiye CCDR.

B. Sectoral and Institutional Context

6. **Floods are considered as the second most impactful 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 Türkiye. In the event of a 100-year flood, more than 3 percent of GDP (or US\$20 billion) and 3 million people (or 3 percent of the population) are predicted to be affected. Devastating floods in Türkiye in 2006 and 2009, totaled almost US\$1 billion in damage. Between 1975 and 2017, 720 people died in 1,209 flood events, while around 1 million hectares were exposed to flood and runoff cover damages⁴. Floods from 2021 to 2023 caused extensive damages in different regions of the country from Marmara, Black Sea to Eastern and Southern Türkiye with an impact to multiple provinces covering metropolitan municipalities. The floods even caused damages to temporary accommodation areas established for earthquake survivors. Most recently, flash floods struck northern districts of Istanbul on September 5, 2023 with an impact to more than 1,700 houses and workplaces, and 31 injuries and 2 casualties were reported by Türkiye Ministry of Interior's Disaster and Emergency

³ Taheripour, F, Tyner, W E, Sajedinia, E, Aguiar, A, Chepeliev, M, Corong, E, de Lima, C Z and Haqiqi, I. 2020. *Water in the Balance: The Economic Impacts of Climate Change and Water Scarcity in the Middle East*. Washington DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/34498>.

⁴ https://www.tarimorman.gov.tr/SYGM/Belgeler/Ta%C5%9Fk%C4%B1n%20Dairesi%20Sunum/Ta%C5%9Fk%C4%B1n_kitap.pdf



Management Presidency (AFAD)⁵ ⁶. In relation to future climate perspectives, multiple studies on climate projections for Türkiye highlight shifts in the seasonal variability of precipitation across the country. These changes are anticipated to result in heightened precipitation during winter and spring, particularly in the eastern Black Sea region and northeastern Anatolia⁷. This upward trend in precipitation is expected to amplify flood risks in these areas, which highlights the imperative need of proactive approaches in addressing and mitigating the potential impact of increased rainfall.

7. **Drought is another key challenge for Türkiye especially as a large part of the country already has a semi-arid climate.** Since Türkiye 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, a challenge that has been notably exacerbated in the past decade due to the influence of climate change. Consequently, meteorological droughts have emerged as a prominent factor contributing to heightened water stress across various regions in Türkiye. Semi-arid environments prevail over much of central, southern, and south-eastern parts of the country, where agriculture is the main economic sector. 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.⁸ In the context of future climate perspectives, existing literature highlights a substantial decline in precipitation across nearly all regions of the country, as indicated by the outputs of various regional models. This decline is anticipated to manifest as an escalation in the intensity and frequency of drought conditions⁹. Additionally, studies suggest that the near future will bring about more arid conditions in the across the country.
8. **Agriculture is the first and most vulnerable sector to meteorological drought, particularly under rainfed conditions.** All the country's water-stressed and water-scarce regions have growing populations and expanding industrial sectors, underscoring the crucial importance of water-resource management. Across the country, drought poses a greater threat to agriculture than to industrial water users or urban consumers. Most of the agricultural production areas, such as Central Anatolia (an important wheat production area for Türkiye), Mediterranean (mainly corn and citrus products), Southeast Anatolia (cotton and cereals), and the Aegean (fruit trees, cotton, corn) are predicted to suffer from more frequent and intense drought in the future.¹⁰
9. **Responsibilities for flood and drought risk management in Türkiye 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) Directorate General of State Hydraulic Works (*Devlet Su İşleri*, DSI) under the Ministry of Agriculture and Forestry (MoAF) is responsible for design, construction and operation

⁵ <https://www.reuters.com/world/middle-east/floods-hit-Turkiyes-northwest-five-killed-2023-09-06/>

⁶ Source: <https://floodlist.com>

⁷ Bağçacı, Ş. S.Ç., Yucel, I., Duzenli, E., Yilmaz, M. T., 2021. Intercomparison of the expected change in the temperature and the precipitation retrieved from CMIP6 and CMIP5 climate projections: a Mediterranean hot spot case, Turkey. Atmos. Res. 256, 105576 <https://doi.org/10.1016/j.atmosres.2021.105576>.

⁸ <https://documents1.worldbank.org/curated/en/099006106072214169/pdf/P1774790a4024b0400b9340c1a5836a23df.pdf>

⁹ Turkes, M., Turp, M. T., An, N., Ozturk, T., & Kurnaz, M. L. (2020). Impacts of climate change on precipitation climatology and variability in Turkey, Chapter 14. In N. B. Harmancioglu, & D. Altinbilek (Eds.), Water resources of Turkey. World Water Resources (Vol. 2) (pp. 467–491).

¹⁰ Impact of Climate Change on Agricultural Production and Yield in Turkey, Tural O., Marmara University, 2022



and maintenance (O&M) of investments related to flood and drought risk mitigation, and establishment and O&M of flood and drought forecasting and warning systems, (ii) Directorate General of Water Management (DGWM) under the MoAF is responsible for the planning of measures, ultimately for preparation of management plans, establishment of flood forecasting and early warning systems (EWS); (iii) 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 (SMS) under the Ministry of Environment, Urbanization and Climate Change (MoEUCC) is responsible for meteorological EWS, nowcasting systems, ground observations and ground-based radar systems. Directorate General of Desertification and Erosion Combat under the MoEUCC and Directorate General of Forestry (DGF) under the MoAF have also roles in implementation of structural measures for flood management. Directorate General of Agricultural Reform (DGAR) under the MoAF is responsible for agricultural drought management.

10. **As per the Integrated Water Resource Management Policy that Türkiye adopted in 2003, management plans, including Flood Risk Management Plans (FRMPs) and Drought Management Plans (DMPs) are currently prepared by DGWM in line with EU Directives related to water.** The plans were prepared based on the data sets developed by DSI and SMS who have detailed understanding of site-specific characteristics through the planning, design reports and associated construction activities through their Regional Directorates. The DGWM is responsible for preparation of river basin-scale plans for flood and drought management and DGWM, in consultation with other stakeholders, is preparing a new Law for Flood Management which is expected to be enacted by the end of 2024.
11. **Structural and non-structural measures for flood and drought management are implemented by DSI:** DSI's flood and sediment control works are carried out in three stages: (i) Pre-flood risk prevention activities and management – structural and non-structural activities; (ii) Response during flood; and (iii) post disaster rehabilitation activities. DSI's responsibilities for flood management also include ground observation studies, flood monitoring, forecasting and warning, flood hazard and risk mapping, and capacity building and training in the context of disaster cycle management. 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. In addition, the Metropolitan Municipality Law No. 5216 describes responsibilities for metropolitan municipalities for creek rehabilitation within their jurisdictions.
12. **Flood monitoring, forecasting and early warning efforts are at early phases of development in terms of infrastructure and capacity.** Efforts are currently underway to enhance the quality and quantity of data with an emphasis on expanding coverage to more areas of the country for better preparedness and response. DSI has outdated observation stations that require modernization and not all risky areas are covered with the station network. DGWM is piloting the flood modelling with a limited coverage area to be expanded across the country by 2028. Information and communication technologies (ICT) infrastructure and staffing needs to run and operate the systems are also mixed. Flood forecasting and early warning mechanisms include Flood Early Warning System (TEUS), a threshold based alerting system developed and maintained by DSI, and Flood Forecasting and Early Warning System (TATUS), flood forecasting system being trialed and developed by DGWM. These systems generate flood alerts and warnings at different lead times to support flood preparedness



and response, yet with a need on enhancement of the quality and quantity of the forecasting data. AFAD has recently introduced the multi-hazard communication tool (HAY) that for the flow of warning data from other institutions to AFAD. Although it has not been fully effective, its integration with TATUS has been completed by 90 percent.

13. **Coordination efforts are ongoing between the institutions for the purpose of establishing flood early warning mechanisms in Türkiye.** With respect to gathering, processing, and sharing of the flood and early warning data, (i) DSI has the observation stations located at the river basin areas that help provide flow and level data with threshold-based alerts, (ii) SMS has stations that can generate and share meteorological data on flood warning, (iii) DGWM creates flood modelling and uses the maps produced by the FRMPs and data from other institutions for flood forecasting and early warning purposes, (iv) AFAD, upon receipt of warning decisions, communicates with public and relevant institutions and takes role in the pre-flood measures and post-flood response actions at potential flood risk areas. Alignment between the roles and responsibilities of agencies on data collection and generating warning messages is in development phase in terms of relatively new legislations and long-standing practices.
14. **There is need to improve the existing implementation framework for flood management activities conducted by different agencies.** The Turkish Court of Accounts (*Sayıştay*, TCA) Report on Flood Risk Management, which was published in January 2022, lists the findings regarding the flood risk management system in Türkiye. The report stated that: (i) DSI needs to undertake its activities by addressing risks in a holistic manner, based on hazard and risk maps, when planning for flood control; (ii) Due to the lack of an efficient resource planning for undisputed site handover in creek rehabilitation projects, projects cannot be planned in an integrated manner at the basin level, resulting in delays in implementation; (iii) There is a need to develop the existing organizational structure and operating system in order to effectively manage flood risks at the basin scale; (iv) There is a need to systematize the work of the boards and committees set up within the framework of the basin management model, and that it is important to follow up the issues discussed on the agenda more effectively; and (v) Zoning plans are sometimes prepared without obtaining the opinion of DSI on flood risk or prepared contrary to the opinions provided.

C. Relevance to Higher Level Objectives

15. **The proposed Project is aligned with the World Bank Group (WBG) Country Partnership Framework (CPF) for Türkiye for FY24-FY28** (Report No. CPF0000004, discussed by the Board of Directors on April 9, 2024). The overarching CPF goal is to support Türkiye to accelerate progress towards the Sustainable Development Goals (SDGs), address global challenges leveraging the strategic role Türkiye can plan regionally and globally, and continue recovery and reconstruction from recent shocks, in line with the Government of Türkiye's 12th National Development Plan (NDP) for 2024-2028. The proposed Project is particularly well-aligned with the CPF Objective 7: Support disaster resilience and preparedness and CPF Objective 8: Strengthen natural resources management. The related indicator is Indicator 8.2: Area benefitting from reduced risks of floods and Flood monitoring and forecasting systems (Ha). The Project is also aligned with the Resilient and Net Zero Pathway outlined in the Türkiye CCDR. Among the six climate-specific priorities described in the Pathway, the Project will contribute to Priority 5: Make growth more resilient and sustainable.
16. **The Project will contribute to achievement of the goals of the NDP for 2024-2028 and the Annual Investment Program (AIP) for 2024.** In the NDP, it is aimed to (i) increase the number of the flood control structures (the cumulative number is aimed to be increased from 10,413 (year 2022) to



11,600 (year 2028)), (ii) relevant legislation will be developed to avoid interventions in riverbeds and to ensure that flood risks are considered in all investments, (iii) to establish flood and drought forecast and EWS in all the basins, (iv) Nature-Based Solutions (NBS) and green infrastructure will be implemented, and (v) guidelines will be developed on the disaster risks and measures against the impact of climate change. The Presidency of Strategy and Budget (PSB) confirmed that flood and drought management is a priority area for Türkiye and the proposed Project can contribute to achievement of the priorities of the AIP for 2024. In addition, on the international context, the Project reinforces the international commitments assumed by Türkiye in terms of sustainability, such as the Paris Agreement as explained in paragraph 18 of this document. Additionally, floods and droughts are considered as natural hazards that can have a significant impact on the achievement of SDG 6, which is to ensure the availability and sustainable management of water and sanitation for all.

17. **The Project is also aligned with the Strategy and Action Plan for Agricultural Drought (2023 – 2027)** prepared by the MoAF in 2022 aiming to increase public awareness about agricultural drought, plan sustainable agricultural water use, take necessary measures during periods of drought and take effective measures in times of crisis.¹¹ The drought monitoring activities proposed under Component 2 of the Project is aligned with the measures suggested under Pillar 1: Drought Risk Forecast and Crisis Management. The Project will also support the Government for compliance with the Regulation on Planning of Agricultural Production published on September 14, 2023, which requires preparation of crop maps and agricultural production plans taking into account the water, climate and soil, among many other elements. Component 2: Drought Management is expected to provide data to the maps and plans to be produced as required by the Regulation.
18. **Türkiye is increasingly recognizing the importance of taking action on climate change. The country has committed to become carbon neutral by 2053** and has made climate change (both mitigation and adaptation) a central pillar of the 12th NDP. Türkiye recently released a climate adaptation strategy (2024-2030) which outlines its ambitions to build resilience to the worst impacts of climate change. Importantly, the NDC, submitted to the UNFCCC following the signing of the Paris Agreement in 2021, contains several key flood and drought management priorities that are addressed by the Project's activities, including: (i) the establishment of flood and drought forecasting and EWS for all river basins; (ii) development and implementation of flood and drought management at river basin level; and (iii) the implementation of high-priority measures (both structural and non-structural) outlined in FRMPs by 2030.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

19. The Project Development Objectives (PDO) are to increase flood control for people living in selected areas of Türkiye and to strengthen the country's institutional capacity for flood and drought risk management.

¹¹ The Strategy and Action Plan for Agricultural Drought (2023 – 2027) identifies a list of measures under five pillars: (i) Drought Risk Forecast and Crisis Management, (ii) Sustainable Irrigation Water Supply, (iii) Effective Management of Agricultural Water Demand, (iv) Improvement of Supportive R&D Activities and Publications and Trainings, (v) Strengthening of Institutional Capacity.



PDO Level Indicators

20. The PDO indicators include: (i) population benefiting from enhanced flood control (number, gender disaggregated), (ii) population benefiting from flood monitoring and forecasting systems, (Number, gender disaggregated), (iii) Farmers benefitted from drought monitoring data (Number, gender disaggregated), (iv) establishment of a DSI-DGWM coordination mechanism (with a shared information system or Data Sharing System) for flood forecasting and warning (Yes/No), and (v) Millions of people with enhanced resilience to climate risks (Number, gender and youth disaggregated). The list of all indicators, including both PDO and intermediate results indicators are provided in Section VII (Results Framework).

B. Project Components

21. The Project has four components to be implemented by DSI and DGWM.
22. **Component 1. Flood Management (indicative cost: US\$540 million):** This Component will be implemented by DSI and DGWM to mitigate the climate change exacerbated flood risk in selected basins through improvement and expansion of the existing flood control infrastructure and flood monitoring, forecasting and warning systems in selected parts of Türkiye focusing on Areas of Potential Significant Flood Risk, incorporating future risk due to climate change, as per the implementation of the existing FRMPs. DSI will undertake implementation of flood control structures (Subcomponent 1.1.) and DSI and DGWM will improve and expand their existing flood monitoring, forecasting and warning systems and seek options for optimizing their activities to avoid any overlaps and/or conflicts (Subcomponent 1.2).
23. **Subcomponent 1.1: Flood Control (indicative cost: US\$490 million):** This Subcomponent will finance consultancy services, goods, and works related to construction and O&M of flood control structures by DSI to mitigate flood risks that are projected to increase due to climate change in selected river basins and improve flood risk management through an optimal combination of structures (e.g., check dams, levees, retaining walls, embankments, reservoirs, polders, etc.). The investments will focus on development of new infrastructure but also include rehabilitation efforts, with a primary focus on directing resources toward the development of new infrastructure. Rehabilitation works will focus on key flood control infrastructures to increase their capacity and provide effective protection against the higher intensity of floods predicted to become more frequent in some regions due to climate change. By increasing the infrastructure's level of flood control in the selected areas, these investments will directly address the risks associated with increasing flood events projected due to climate change. The provisional list of 29 flood control works proposed for financing under this Subcomponent are located in 7 basins: North Aegean, East Black Sea, Kizilirmak, Buyuk Menderes, West Mediterranean, East Mediterranean and West Black Sea.
24. **Subproject Eligibility:** Investments to be financed under this Component will be located in flood-prone areas of Türkiye¹² (integrating future climate change risk scenarios) and included in DSI's pipeline of flood control works, including the list of 29 flood control works proposed by DSI. DSI, in close consultation with and based on demand from the Regional Directorates, identified a list of 29 possible subprojects based on the agreed criteria: (i) impact, (ii) simplicity, (iii) readiness for

¹² A "Flood prone area" refers to a geographic area susceptible to flooding as established in the Flood Risk Management Plans prepared by DG Water Management, based on flood information from various sources, in line with European Union Directives related to water. Flood risk of each basin is assessed in the FRMPs based on the preliminary flood risk assessments, flood history in the basin, flood hazard and risk maps. The impact criterion is used to confirm that the proposed Project locations are flood prone.



implementation, and (iv) economic viability. Annex 2 shows the map of the provinces where the 29 possible subprojects are located. The list of subprojects might be revised and updated by DSI during Project implementation, in agreement with the Bank, and PSB to be able to respond to the urgencies and needs of the climate change exacerbated flood-prone areas in Türkiye, provided that they meet the sub-project eligibility criteria as described above. The final investments to be financed under the Project will be confirmed based on the detailed technical and economic analysis of each subproject.

Table 1. Subproject Eligibility Criteria

Criteria	Description
Impact	<ul style="list-style-type: none"> Subprojects included in FRMPs, prepared by DGWM, and identified in the respective FRMPs as being in an area assessed as having very high, high, or moderate flood risk; and Subprojects that are not included in the FRMPs but for which DSI has provided technical justifications that meet a minimum standards on the impact for investments, in respect to considerations that shall include, inter alia: (a) the percentage of the population in the respective Flood Prone Area to be protected from floods (b) the proposed Subproject will support the protection of infrastructure and superstructure (e.g. bridges, etc.), etc. The minimum standards to be met for eligibility for such Subprojects shall be acceptable to the Bank, will be detailed in the Project Operational Manual (POM) for DSI.
Simplicity	<ul style="list-style-type: none"> Subproject area must only involve national waterways, which would not involve the potential use of, or discharge into, any waterways as defined and applicable under the Bank’s Operational Policy 7.50; Subprojects involving dams must only involve check dams; and Large dams and risky small dams are not eligible. ¹³
Readiness for implementation	<ul style="list-style-type: none"> Subprojects must be included in the AIP and they have available planning reports.
Economic Viability	<ul style="list-style-type: none"> Subprojects have Benefit/Cost Ratio (BCR) higher than 1.

25. All the subprojects should be in line with the PDO, as well as the Bank’s requirements including ESF and Fiduciary. Priority will be given to the subprojects that: (i) do not require land acquisition, (ii) have prepared engineering design, and (iii) design includes combination of grey and green (NBSs) measures for flood control. Based on the preliminary assessment, eight subprojects among the list of 29 fulfill the first three eligibility criteria given above as well as the prioritization criteria, and therefore, they are considered as priority investments for implementation. The assessment and determination of the economic viability of the priority subprojects is intended to be completed by the effectiveness of the loan. The Table 2 below includes the main characteristics of these eight subprojects.

¹³ The exclusion applies to dams categorized as (a) “large dams,” or (b) “small dams” that either could cause safety risks or are expected to become large dams during their operating life, as these categories are defined in the Bank’s ESS 4 – Annex 1, para. 2. For “small dams,” i.e., check dams (whether new, existing, or under construction) to be considered eligible under the Project, DSI must confirm, through an environmental and social assessment, that there will be no, or negligible, risk of significant adverse impacts due to potential failure of the dam structure to local populations and assets, including assets to be financed as part of the proposed Project.

**Table 2.** Main characteristics of the priority investments for implementation

Subproject	River Basin/City/District	Cost (million USD)	Population/Area/Settlements to be protected from floods
Rehabilitation of Streams in Çorum Sungurlu	Kizilirmak/ Corum/ Sungurlu	42	4,800 people/ 447 ha/ 1 district
Flood and Sediment Control in Çamlı, Sugören and Esenkıyı Streams	Eastern Black Sea/ Artvin/ Hopa	18	750 people/ 15 ha/ 1 district, 3 villages
Flood and Sediment Control Sundura Stream	Eastern Black Sea/ Artvin/ Hopa	22	7,100 people/ 130 ha/ 1 district, 11 villages, 4 neighborhoods
Flood and Sediment Control in Kabisre, Orci and Sidere Streams	Eastern Black Sea/ Artvin/ Arhavi	21	9,900 people/ 120 ha/ 1 district
Flood Control Structures for Streams discharged to the Black Sea	Eastern Black Sea/ Artvin/ Arhavi	31	15,000 people/ 300 ha/ 2 districts
Construction of Check Dams	Eastern Black Sea/ Trabzon	3	6,300 people/ 47 ha/ 2 villages
Construction of Check Dams	Eastern Black Sea/ Rize	2	4,800 people/ 25 ha/ 4 villages
Construction of Check Dams	Eastern Black Sea/ Giresun	3	500 people/ 93 ha/ 6 villages

26. The works to be implemented under these eight subprojects include construction of bridges, check dams, permeable check dams, levees, culverts, flood control channels, reinforced concrete channels, open channels with trapezoidal cross-section, open channels with retaining walls and railings. All the investments will be new construction.
27. During the first year of project implementation, DSI will complete the missing designs and fulfill the land acquisition related requirements for the remaining high/moderate risk subprojects identified during project preparation. The list of 29- subprojects proposed by DSI includes subprojects for which no risk classification have been defined in the respective FRMPs. If DSI provides technical justification to confirm their impact then they can also be considered for financing under the Project subject to confirmation of technical and financial viability.
28. Under this Subcomponent, NBS¹⁴ will be piloted and innovative techniques for management of floods that are projected to increase due to climate change are aimed to be implemented at river basin scale. DSI has applied some NBS under their own aesthetic rehabilitation projects as part of flood risk reduction effort. These activities include enrockments for channel protection rather than building concrete walls, greener embankments and parks for community's better riverfront

¹⁴ Nature-based solutions (NBS): Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience (EU). Actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits (the International Union for Conservation of Nature). Approach the uses natural systems to provide critical services, such as wetlands for flood mitigation or mangroves to reduce the impact of waves, storm surge, and coastal erosion. These solutions can also synergize with grey infrastructure, forming so-called "hybrid" solutions (WB).



environment. Under the Project, in addition to applying these existing good practices, different types of NBS measures can be implemented under the Project including the following: (i) flood plains and bypasses, (ii) inland wetlands, (iii) stream banks and beds, and (iv) upland forest. The Project will also consider hybrid solutions incorporating NBS into conventional grey solutions for cost-effective and greener flood risk management.

29. For demonstration of comprehensive flood and drought risk optimization using the EPIC approach¹⁵, one Subproject has been selected in Konya basin, where the design will ensure complementarity between grey infrastructure, NBS, Flood Monitoring and Forecasting (Subcomponent 1.2) and drought monitoring system to be established under Component 2.
30. **Subcomponent 1.2: Flood Monitoring, Forecasting and Warning Systems (indicative cost: US\$50 million):** This Sub-component is designed to strengthen flood monitoring and forecasting systems which includes climate change data on floods for past, current and projected trends to support warning decisions as a part of EWS within Türkiye to better protect people's lives and livelihood. DSI and DGWM will conduct the following activities under this Subcomponent.
31. DSI will expand and strengthen TEUS by modernizing existing 800 flow observation stations and increasing observational (remote sensing and ground truth) data input to TEUS through installation of 360 water level observation stations, expanding the current flow rate, river level gauge, and upgrading ICT software and equipment. The overall implementation plan will consider international standards (e.g., World Meteorological Organization) and international best practices for density of monitoring equipment and consider the requirement for strategically placed gauges to provide the most effective early warnings.
32. DGWM will upgrade TATUM, Flood Forecasting and Early Warning Centre and expand the areas covered by TATUS. TATUM will provide operational oversight and co-ordinate the optimization and synchronisation of flood forecasting to provide consistent and accurate advice to communities and responders via a range of communication methods, including those for people with hearing and vision disabilities. For country wide use of TATUS until 2028, DGWM will undertake flood modelling studies for 19 river basins with 2D flood modelling to delineate high flood risk zones integrating climate model projections where timely and accurate early warning needs to be provided. This modelling study will include flood forecasting of more than 800 settlements within the target river basins. The flood modelling study will also include preparation of designs, and technical documents for implementation of integrated flood risk management at river basin scale with consideration of projected precipitation and flooding trends caused by climate change. To date, 15 pilot sub-basins located in 4 basins (Eastern Black Sea, Western Black Sea, Eastern Mediterranean and Antalya) have been tendered to be covered by TATUS. The Project will support a further number of 19 river basins for the expansion. The Project will further support capacity building of DGWM in engaging the public and local populations in flood risk assessments. Under this component, capacity of the TATUM will be supported through procurement of equipment, hardware and software.

¹⁵ "EPIC Response Framework: An Innovative Governance for Flood and Drought Risk Management" A new perspective, referred to as an "EPIC Response," is offered to better manage hydro-climatic risks: This perspective looks at floods and droughts not as independent events but rather as different ends of the same hydro-climatic spectrum that are inextricably linked. It provides a comprehensive framework to help national governments lead a whole-of-society effort to manage these risks. The term EPIC Response is a mnemonic for remembering the key elements of this perspective, as shown in the accompanying graphic—it also connotes the level of effort that is required. <https://www.worldbank.org/en/topic/water/publication/an-epic-response-innovative-governance-for-flood-and-drought-risk-management>



33. Turkish Catastrophic Insurance Pool is working to integrate a Flood Hazard Model to the existing insurance scheme using the flood hazard maps, flood risk maps, and flood depth maps in the FRMPs which are publicly available. The Project's support on improving the quality and quantity of the observation data and the flood modelling studies would contribute to further accuracy of these maps and connected models at selected basins.
34. DSI, in collaboration with DGWM, will undertake an assessment and review of the existing flood forecasting and early warning mechanisms with a view to optimization of the TEUS, TATUS, and other relevant early warning mechanisms to develop a strategy for effective functioning, expansion, and improvement. The current alerting systems, TEUS and TATUS, provide warnings at different timescales and based on inputs from complimentary data sets. TEUS is a short period (30 minute) alerting system using remote real-time observational data input primarily aimed at avoiding loss of life. TATUS is a longer period warning system relying on Numerical Weather Prediction (NWP) and hydrological/hydraulic modelling inputs which help manage inherent probability and uncertainty in providing guidance for preparedness, response, and mitigation of flood risk. Additionally, there is manual output provided from a 'nowcasting' system, Flash Flood Guidance System, which incorporates NWP, remote sensing data, radar, and meteorological stations to provide a more accurate warning of potential flash floods at early and intermediate timescales (1 hour, 3 hours and 6 hours).
35. The activities under this Subcomponent will be implemented jointly and collaboratively by DSI and DGWM with support from SMS within the TATUM located within DGWM. As the primary responder organization, AFAD is expected to provide input on their requirements in connection to their HAY tool (e.g., formats, lead times, decision making process, and feedback mechanisms) as the systems are put in place and user-led outputs agreed.

Component 2. Drought Management (indicative cost: US\$50 million)

36. This Component will support DSI in drought monitoring and help reduce the vulnerability of population to climate change exacerbated drought in selected basins through implementation of non-structural measures under the following activities:
37. **Technical Study on Drought Monitoring in Türkiye:** DSI will engage a consultancy firm to: (i) assess the existing state of drought monitoring in Türkiye; (ii) identify gaps and overlaps in the drought monitoring efforts carried out by various institutions (e.g. DGWM and DGAR); and (iii) develop a framework and an action plan for a pilot activity in Ceyhan Basin with the intention to scale up and expanding it to encompass other basins in the future.
38. **Pilot for Real-Time Drought Monitoring and Forecast in Ceyhan Basin:** Under Component 2, various indices were identified to monitor and analyse meteorological, agricultural and hydrological droughts, assessing their severity, spread and duration detecting sudden agricultural droughts. The pilot will include: (i) Installation of Stations: meteorological stations, soil moisture monitoring stations, current observation stations, lake observation stations, and other off-farm near-real-time data sources in Ceyhan Basin to optimize irrigation water usage and enhance drought resilience, and (ii) Development of Tools: Creating drought monitoring map and an information platform to assist farmers in improving water use efficiencies, crop diversification, and irrigation efficiency. This will support optimizing reservoir operations in coordination with DGAR and DGWM. This pilot builds on previous drought monitoring activities by DSI and related institutions, aligning with the



Regulation on Agricultural Production Planning to ensure sustainable agriculture under water constraints.¹⁶

39. **Scaling-up the Real-Time Monitoring and Drought Forecast System:** Following completion of the pilot, an Action Plan will be developed for scaling up the activities to the other basins. Building upon the results of the Pilot project in the Ceyhan Basin and based on the Action Plan, DSI will expand and implement the system nationwide, taking into account basin-specific drought conditions and requirements.
40. **Technical Studies for designing larger-scale future investments for drought management:** This Component will also finance consultancy services for preparation of feasibility studies, technical reports and designs to identify future investments for integration of flood and drought management in at least one basin such as: (i) irrigation modernization in Ceyhan Basin, (ii) construction of recharge basins for underground storage, and (iii) Integrating Supervisory Control and Data Acquisition (SCADA) systems to automatically close all well connections to the canals during heavy rainfalls, as well as shutting down canal headings, and remotely activating all spillways to prevent stormwater from entering irrigation canals, thereby mitigating potential damage and sediment buildup. The flood control measures under the Component 1 will be integrated with the drought monitoring systems developed under this Component in at least one basin (e.g. Konya Basin). The technical studies will also include climate change data on drought patterns and how this can be used to direct flash flows to groundwater systems during anticipating 'drier/drought' seasons.

Component 3. Capacity Development and Institutional Strengthening (indicative cost: US\$6 million)

41. **Institutional Strengthening of related DSI Departments:** This Component will further support institutional strengthening of the DSI Flood Control Department established in December 2022 for implementation of Component 1, and the O&M Department for implementation of Component 2 of the Project. The Survey, Planning and Allocations Department will also benefit from this Component due to their significant role in implementation of both components. The activities will include: (i) improvement of the technical capacity of department responsible for flood control through procurement of hardware and software related to flood management, and (ii) Development of Technical Guidelines such as (a) O&M and rehabilitation of flood control infrastructure, (b) hydraulic modelling including climate change projections, (c) NBS for flood control, and (d) O&M of Drought Monitoring Centers to be established under the Project.
42. **Development of policies and procedures for establishment of an Environmental and Social Management System (ESMS) for DSI:** Currently, DSI implements three Bank operations¹⁷. There is need for a clearly defined institutional setup with human resources, policies, and standard operating procedure to supervise and manage the environmental and social risks and impacts of projects following the Bank and other international financing institutions' (IFI) environmental and social

¹⁶ The specific activities under this Pilot will include (i) Regional drought monitoring, analysis and preparation of early warning outputs; (ii) Assessment of regional vulnerabilities; (iii) Trainings and seminars for stakeholders to improve drought preparedness and management; (iv) Producing drought indicators based on meteorological, hydrological and agricultural data and remote sensing products; and monitoring drought at the basin scale; (v) Establishment of Drought Monitoring and Forecast Center to generate and disseminate open access drought information and reports; (vi) Contributing to policy making related to drought preparedness and management, developing national drought strategies and raising awareness among decision makers and stakeholders; (vii) Investigating the impact of different datasets and forecast models on drought monitoring and raising public awareness about effective drought management strategies. This will also involve planning irrigation timing using adjusted water needs implementing water distribution programs with decision support systems and developing AI simulations for optimal irrigation in arid conditions.

¹⁷ Bank operations implemented by DSI: Türkiye Irrigation Modernization Project (TIMP, P158418), Water Circularity and Efficiency Improvement Project (WCEIP, P174915) and Türkiye Resilient Landscape Integration Project (TULIP, P172562).



policies. Therefore, policies and procedures will be developed by DSI in line with the Bank's Environmental and Social Framework (ESF) that would be necessary for the establishment of an ESMS at DSI. Description of the process for developing the ESMS will be provided in the Project Operation Manual. The ESMS, once functional, will facilitate using "Borrowers' (DSI's) Framework" for the Bank and other IFI funded projects and enhance DSI's capacity to assess and manage E&S impacts and risks in all projects.

43. **Trainings and Study Visits.** This activity will support institutional capacity-building activities including knowledge exchange workshops, study tours, training, awareness raising, and other activities aimed at promoting innovation and learning and sharing of best practices for sector institutions at central and regional levels, aspects relating to the promotion of efficient climate change exacerbated flood and drought management. Additionally, given the essential link between flood risk mitigation and communities understanding and taking actions to avoid exacerbating these risks, this activity will support better socialization of information on flood risk, flood mitigation and warning systems to generate local level awareness of flood risk.
44. **Technical Study on Impact of Climate Change on Water Resources (US\$2M):** The DGWM, through consultancy services, will conduct a technical study for a deep assessment of the impact of climate change on water resources. The Study will integrate global climate models, downscaling approaches and hydrological models based on earlier studies conducted by DGWM. Country-wide climate projections will be conducted by using up to five global climate model data sets and one regional climate model. In light of these projections, future water potential changes will be determined by converting them into flow values on the basis of basins, subbasins and provinces with the hydrological modelling approach. Possible changes in water budgets will also be estimated by analysing the current and expected total water consumption of different sectors. Under this component, awareness raising activities and trainings will be carried out by DGWM. These activities will be women oriented.

Component 4. Project Management (indicative cost: US\$4 million):

45. This Component will include consulting, non-consulting services and operating costs for DSI and DGWM for implementation of the Project according to the Bank policies and guidelines. This support will also include: (i) preparation of site-specific ESF instruments, (ii) hiring individual consultants by DSI and DGWM for various aspects of project implementation including procurement and financial management (FM) aspects, technical and contract management, Environmental and Social Management and Monitoring and Evaluation system. DGWM, under their own budget, will also increase number of staff assigned for O&M of TATUS and TATUM to be upgraded under the Project and will benefit from this Component for translation of project documents.

C. Project Beneficiaries

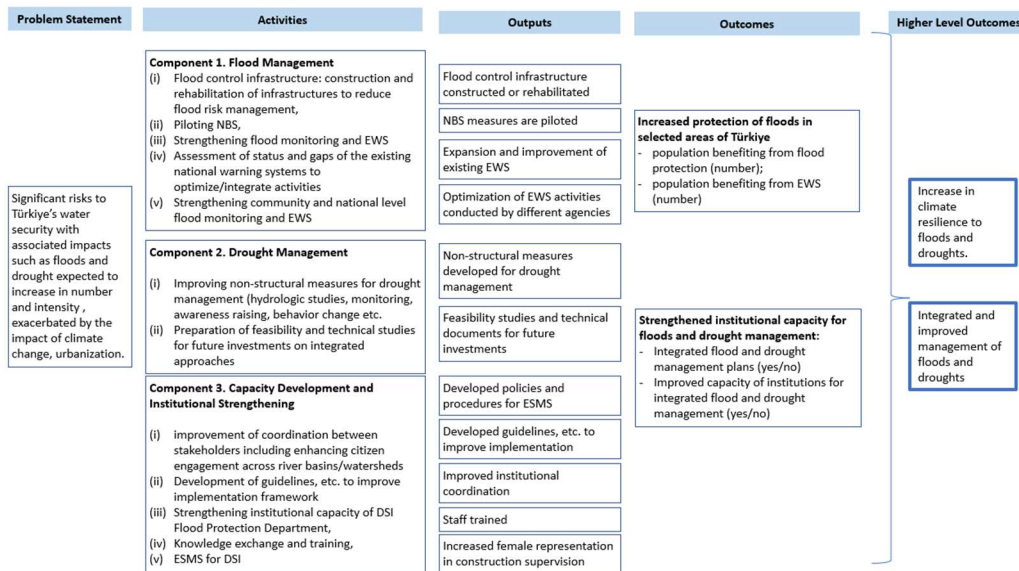
46. Beneficiaries of the Project are (i) people whose lives, livelihoods, and assets will be newly protected by the flood infrastructure financed, (ii) people benefiting from improved flood monitoring and forecasting systems, (iii) farmers benefitted from improved drought forecasting and warning, and (iv) government professionals trained for flood and drought management. The Project is aimed to provide 150 settlements and around 150,000 people with direct protection against floods. Over 10,000 farmers are expected to benefit from the improved drought monitoring data to be produced. More than 2 million people are expected to indirectly benefit from the project interventions.



D. Results Chain

47. The Project will support the Government of Türkiye in reducing the impact of climate change events especially flood and droughts on populations and assets. The Project will contribute to addressing these challenges by supporting the following actions: (i) construction and rehabilitation of flood control infrastructure, expansion of flood warning systems and piloting NBS; (ii) agricultural drought monitoring; (iii) capacity development, institutional strengthening, and improved coordination of DSI, DGWM and other relevant stakeholders. In the long run, these outcomes will increase climate resilience to floods and droughts by integration and effective management to these climate events.

Figure 1. Theory of Change



E. Rationale for Bank Involvement and Role of Partners

48. **The Bank boasts a proven track record of aiding nations in comprehensive flood and drought risk management through strategic investments and the expansion of national programs.** This involves not only financial support but also extensive work towards promoting and strengthening institutional coordination and participation, as well as the delivery of technical assistance to enhance comprehension of flood and drought risks. The Bank's unique advantage lies in its ability to leverage global knowledge and experiences, contributing invaluable insights and technical support to ensure efficient flood and drought risk management by drawing on lessons learned from previous successful projects worldwide.
49. **The Bank stands as a trusted and enduring partner in Türkiye's water sector agenda.** This commitment extends to water resources management and the fortification of resilience against climate and non-climate-related risks. The Bank engagement in Türkiye's water sector has involved overcoming technical and institutional challenges, through the financing of infrastructural projects that are critical for the advancement of the sector. This financial support is complemented by ongoing involvement in policy dialogue and the provision of technical assistance on water-related and disaster risk management topics. This positions the Bank as a pivotal partner, well-placed to assist Türkiye in realizing its water agenda and development goals.
50. **Since the mid-1990s, the Bank has actively supported investments in national flood risk management and early warning services.** With the Emergency Flood and Earthquake Recovery



Project in Türkiye, the involvement of the Bank brought to the response and recovery program an organizational framework and a clear process for identifying, selecting and implementing priority investments for municipal/rural infrastructure and flood management. The success of such project implementations extended to countries like Poland and those in Central Asia, setting the stage for the expansion of this valuable experience and methodologies on flood risk assessment to developing nations across all the Bank regions. Presently, the Bank portfolio in hydrological and meteorological (Hydromet) services and connected early-warning operations comprises over 60 projects, totaling approximately US\$1 billion. The Bank has recently supported Poland in increasing flood control through infrastructural investments and expanding its National EW telemetric monitoring system for enhanced flash flood forecasting capabilities. This wealth of experience uniquely positions the Bank to extend support to Türkiye in their endeavors to enhance the components of EWS.

F. Lessons Learned and Reflected in the Project Design

51. **To effectively prepare for recurring floods and droughts events in the face of climate change, there is a need to transition from conventional reactive methods to more proactive, adaptive, and innovative mitigation solutions that engage the whole of society.** Various challenges including lack of infrastructure, weak institutional frameworks and cross-sector coordination must be overcome to help prepare, recover, and build long-term resilience to floods and droughts. Based on worldwide analytical work and project experience, the Project will support Türkiye in increasing resilience, addressing these crucial development issues in a holistic way: (a) investments for improved water resource management during extreme events; (b) capacity building of key institutions; and (c) new water infrastructure to protect people from water-related risks, making use of innovative approaches that strategically integrates NBS and conventional gray infrastructure.
52. **It is universally accepted that there is a need to move from an exclusive infrastructure approach to a comprehensive and holistic approach to flood and drought management combining infrastructural investments with management and policy measures.** Integrated flood/drought risk management should be integrated into comprehensive water resource management plans taking into account the socioeconomic realities, water uses, and vulnerabilities and risks at the river basin level. Thus, successful flood management should combine both structural and nonstructural measures. This lesson is embedded in the Project design through an approach that promotes the combination of green and gray infrastructure and the improvement of forecasting/monitoring and management capacity and overall institutional capacity to respond to floods and droughts events.
53. **Using existing implementing agencies (IAs) with a proven track record, combined with hands-on implementation support by the Bank, is an effective approach for implementing flood and drought risk management programs.** Given the need for the timely and effective implementation for risk mitigation and preparedness activities, to the extent possible, flood and drought risk management projects can capitalize on the comparative advantage of using counterpart institutions such as DSI and DGWM that have proven implementation capacities and the ability to coordinate with other institutions. In addition, intensive implementation support to IAs by Bank teams with a strong local presence has proven effective in similar multi-dimensional projects.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements



54. **The Project will have one Loan Agreement with the Borrower and be implemented by two agencies.** A Loan Agreement for the Project will be signed between the Bank and the Republic of Türkiye. The Law on Public Finance and Debt Management No. 4749 (the Debt Law) describes the procedures for international borrowing in the Republic of Türkiye. The Debt Law classifies the international borrowing under three categories: allocation, on-lending, and guarantee. The Debt Law authorizes the MoTF to allocate foreign-financed loans to DSI (which is a special budget institution) and MoAF, DGWM.
55. **The Project will be implemented by DSI and DGWM under the MoAF.** In DSI, the Subcomponent 1.1 will be implemented by the Flood Control Department established in December 2022. For the Subcomponent 1.2, DSI's Survey, Planning and Allocations Department will be responsible for implementation jointly with DGWM. The O&M Department will implement the Component 2: Drought Management. The Land Acquisition Department will be responsible for preparation of Land Acquisition Plans and Resettlement Action Plans for related schemes and will guide the respective regional directorates of DSI for land acquisition applications. Department of Foreign Relations will be responsible for overall coordination of the project activities within DSI. DSI's Strategy Development Department will be responsible for coordination with the PSB and MoTF. PIU at DGWM will be under the Department of Flood and Drought Management. DSI and DGWM will be responsible for implementation of their related activities under Components 3 and 4.
56. **The Project will establish two Project Implementation Units (PIUs) – one in DSI and the other in DGWM.** Given the importance of close coordination between DSI and DGWM, as well as with other stakeholders, a Project Steering Committee will be formed onset of the Project by DSI and DGWM and the key stakeholder agencies including SMS, DGAR, and AFAD. The Committee will provide advice to the Project and will convene on a regular basis to support the IAs for capacity building, data sharing, and inter-agency coordination. Project funds will be allocated separately to DSI and DGWM and procurements will be conducted by each PIU.

B. Results Monitoring and Evaluation Arrangements

57. **DSI's and DGWM's PIUs will be responsible for project monitoring, evaluating, and reporting performance for all Components, working in close collaboration with other relevant stakeholders.** The PDO level and intermediate indicators, including annual targets, are presented in Section VII. The PIUs will provide relevant data for each component required to track the PDO level and intermediate indicators. The PIUs will be required to submit biannual progress reports to the Bank for review. In addition to professional staff from relevant DSI and DGWM departments and regional offices, each PIU will include a full time M&E officer.
58. **A mid-term review of the Project** will be carried out by the Bank around three years after commencement of the Project to assess overall implementation progress and identify and resolve any key issues affecting implementation and make any revisions to the Project design or schedule. An evaluation will also be carried out at the end of the Project to provide input to the Implementation Completion and Results Report which evaluates the final results, assesses overall performance, and captures key lessons.

C. Sustainability

59. **Institutional sustainability.** The Project includes technical assistance activities aimed at addressing some of the binding institutional constraints and improving capacity and coordination across institutions for efficiency improvements in flood control investments, drought monitoring systems



and EWS to improve flood and drought management in Türkiye. The capacity of the newly established Flood Control Department will be a core activity under Component 3 of the Project. Additionally, the scope of the E&S capacity strengthening of DSI, through establishment of an ESMS, will go beyond the Project and will build in-house long term and sustainable E&S risks and impacts management system (irrespective of funding sources) in DSI.

60. **Water Resources and Environmental Sustainability.** Sustainable management of water resources not only encapsulates ensuring sufficient water for humans and ecosystems but must also focus on resilient and appropriate flood risk management. While not directly belonging to any specific one of the 17 SDGs from the United Nations' 2030 Agenda for Sustainable Development the topic of flood risk management spans several of the SDGs related to water management, resilient infrastructure, climate change, sustainable cities and communities, and sustainable use of terrestrial ecosystems. The effects of a changing climate, urbanization, and other land-use changes are predominant concerns for those working to predict floods and protect society from the adverse economic, social, and environmental effects of flooding.¹⁸ The Project will contribute to improve the existing approaches to address flooding and other extreme weather disasters in response to many recent climate and flooding-related disasters.
61. **Technical, financial and economic sustainability of investments.** Sustainability planning is a critical part of this Project because O&M demand for the newly built infrastructure and systems will be high. The DSI Flood Control Department will be responsible to maintain the new flood infrastructure and DSI Survey, Planning and Allocations Department will operate and maintain the new monitoring equipment and TEUS after the upgrade. DGWMM will be responsible for O&M of the Forecasting and Early Warning Center, TATUM, and Flood Forecasting and Early Warning, TATUS. The O&M plans for each major subcomponent will be prepared by implementation agencies.
62. **Government commitment and ownership.** The need to strengthen the resilience of Türkiye against the impacts of extreme weather events is recognized in the targets for Disaster Risk Reduction established in the NDP. This aligns with the confirmation received from the PSB regarding the prioritized significance of flood management for Türkiye and their positive views on the Project's alignment and potential contribution to the achievement of the priorities of the AIP. These factors constitute robust foundations that underscore the government's commitment to the Project.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis (if applicable)

63. The investments under Component 1.1 will be selected from eligible subprojects from the subprojects in the Government's AIP. Confirmation of the final investments to be financed through the Project is expected by project effectiveness. The Bank reviewed and conducted preliminary technical due diligence on potential sub-projects to be financed based on the respective FRMPs and pre/-feasibility studies from DSI. The eight subprojects prioritized for implementation meet the three agreed selection criteria and will contribute to increase the protection level of the flood management systems concerned in the respective basins significantly (for instance, Hopa District Çamlı and Sugören Creeks Sub-project will help protect more than 7,000 persons from a 100-year recurrence flood).

¹⁸ Binns, A. D., Sustainable Development and Flood Risk Management, Journal of Flood Risk Management, 2022



64. In the FRMPs, which forms the basis for verification of the “impact” of each subproject, flood risk scores are determined by separately analyzing the probabilities of occurrence and the severity of impact for Q50, Q100, and Q500 flood occurrence flows. (Risk Score = Probability of flood occurrence x Severity of flood impact). The flood risk scores are categorized into a total of five classes ranging from “very high” to “very low”, using the flood risk assessment decision matrix. Accordingly, flood-prone areas are categorized into risk levels based on the severity of impact and recurrence interval, taking into account health, environment, cultural heritage, and economic risk scores. The DGWM prepares DMPs 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.
65. **The operation is aligned with the goals of the Paris Agreement on both mitigation and adaptation.** Assessment and reduction of mitigation risks: infrastructure investments in the Project are part of disaster risk management investments following Universal Alignment and will not involve (i) significant land-use change, disturbance in high biodiversity areas, or interference in high carbon stock areas resulting from the activity’s implementation, as no reservoir expansion will be financed by the Project ; and (ii) increase in energy consumption by the newly constructed rehabilitated infrastructure under the Project, as the planned flood infrastructure will not be energy intensive. Consequently, the infrastructural investments in this Project are deemed to have no adverse impact on the country's low-GHG-emissions development pathways, aligning with its mitigation goals. Additionally, some activities could contribute to emissions reductions or removals through upland forest and wetland protection or expansion, as outlined in the GHG accounting discussion below.
66. **Assessment and reduction of adaptation risks:** In Component 1, all infrastructure investments are designed to help communities manage floods, including construction and rehabilitation of check dams, levees, retaining walls, embankments and reservoirs. Future climate risk will be included as a factor in determining where to prioritize investment and all structures will be sized and reinforced appropriately for flood levels that consider future climate projects and using principles discussed in the Bank’s Resilient Water Infrastructure Design Brief. Furthermore, flood and drought monitoring and management activities in Components 1 and 2 and capacity building efforts in Component 3 will further improve preparedness for climate-exacerbated drought and wildfire events. Considering these measures and that the explicit goal of these activities is to build climate resilience, the inherent climate risks to the Project are reduced and only a low level of residual risk remains.

Economic and Financial

67. The proposed FDMP will significantly enhance DSI's capacity in its efforts to mitigate flood risks in the selected basins by: (1) adding an incremental area of about 15,000 ha in areas protected, (2) Contributing around 400 units of distinct new flood control facilities in the selected basins, and (3) providing safety for around 150,000 people in climate change exacerbated flood-prone areas.
68. For Economic and Financial Analysis (EFA) of the Project, the team applied a modified version of Dr. Hallegatte’s Model as described in his paper “A Cost-Effective Solution to Reduce Disaster Losses”, which would yield aggregate BCRs for the US\$600 million package. The Hallegatte model is compatible with the Bank’s Triple Dividend of Resilience framework where the first, second and third dividends respectively are: (1) saving lives and avoiding assets/livelihood losses, (2) unlocking economic potential, and (3) generating cross-sector development co-benefits.



69. The EFA shows that the Project is economically viable. The BCRs, using a 6-percent discount rate, range between 2.62 and 21.28, with an average of about 10 and standard deviation of 2, where the passing criterion of feasibility is BCR>1. The internal rate of return (IRR) for 30 years is at least 35 percent. The final investments to be financed through the available resources will be confirmed by project effectiveness, based on the economic analysis of each subproject. If BCR for a subproject is estimated below 1 then DSI and the Bank will revisit the subproject design and can replace the subproject with an economically viable one.
70. **Designs of engineering structures for flood control are based on the Regulation on Flood and Sediment Control No. 30763 and dated May 3, 2019.** According to this Regulation, for levees and check dams to be constructed outside the settlements are determined according to the fifty-year recurring flood flow. The dimensions of the spillways of levees and check dams to be constructed in settlements, in rivers where loss of life may occur in case of collapse and where there is continuous and high consumption are determined according to the one-hundred-year or five-hundred-year recurring flood flow. Spillways of reclamation benches and check dams, which are in the nature of downstream facility inlet structures, are sized to be compatible with the capacity of the downstream flood control facility. For levees, flood control channels and culverts in residential areas, the height calculated by adding the air allowance (Hp) to the water height (h) corresponding to the one-hundred-year recurring flood flow rate is compared with the water height corresponding to the five-hundred-year recurring flood flow rate and the higher value is taken. For levees, flood control channels and culverts outside residential areas, the height calculated by adding the air allowance (Hp) to the water height (h) corresponding to the ten-year recurring flood flow rate is compared with the water height corresponding to the fifty-year recurring flood flow rate and the higher value is taken.
71. Table 3 below summarizes results from the ongoing version of the EFA, focusing solely on three selected subprojects (Flood and Sediment Control Sundura Stream, Rehabilitation of Streams in Çorum Sungurlu and Flood and Sediment Control in Kabisre, Orci and Sidere Streams) among the list of eight subprojects in Table 2 which are assessed as ready for implementation:

Table 3. BCRs for the selected three subprojects

Benefit Cost Ratios					Sample	Extrapolated to Project
Revised BCR Calculations	Units	Sundura	Sungurlu	Sidere & Orci		
Annualized Partial Benefits as Reported (Asset Loss)	US\$ M	11.19	0.99	7.78	19.96	
Annualized Partial Benefits Downward Adjusted by	percent	90%	0%	90%		
Adjusted Annualized Partial Benefits (Asset Loss Only)	US\$ M	1.12	0.99	0.78	2.89	19.60
Application of Multiplier Factor of 6.17						
Annualized Overall TDR-Type Benefits	US\$ M	6.90	6.13	4.80	17.83	120.89
Annualized Investment and O&M Cost	US\$ M	2.22	3.08	2.05	7.35	47.02
Estimated BCR		3.10	1.99	2.34	2.43	2.57

72. Sensitivity Analysis: COSTAB32 is being used to organize project costs, and both sensitivity and scenario analyses will be performed to test the Project efficiency parameters. This is being planned around parametric variations on the discount rate (now 6 percent), facility O&M rate (now 8 percent), service life of facility (now 50 years), percent of potential benefits applicable (attributable) to the project investments (now 50 percent), and overall flood control construction costs (now US\$490 million).
73. The Project’s net GHG emissions over its economic lifetime are estimated to be -95,937 tCO2eq. This is contributed by using integrated grey and green/NBS infrastructure, compared to an



alternative scenario where traditional grey flood control infrastructures, such as concrete groins, are used to provide the same level of protection.

B. Fiduciary

Financial Management (FM)

74. The residual FM risk of the Project is assessed as Substantial. The IAs are expected to complete mitigation measures. Overall FM arrangements related to budgeting, financial reporting, internal control and internal auditing, flow of funds, and audits are deemed adequate to provide reasonable assurance on the proper use of project funds for achievement of the PDO once the financial management action plan is completed. The main FM risk factors are staffing and delayed establishment of the FM systems at both IAs. To mitigate these risks the respective implementing PIUs will either dedicate or hire qualified FM staff for the Project. PSB has included the Project in the 2024 AIP.
75. Each implementing agency (IA) will prepare a financial management manual that will define the roles and responsibilities of FM staff, planning and budgeting, accounting and reporting and internal controls procedures for the Project. The PIUs will maintain detailed accounts of the Project in foreign currency in an accounting software. There will be two designated accounts for the Project one for each IA, both at the Central Bank of Türkiye. All payments to the contractors, suppliers and consultants will either be made directly from the loan account or from the Designated Accounts with the authorization of the personnel responsible. Traditional disbursement methods will be utilized. Interim Unaudited Financial Reports (IFRs) will be submitted separately by each implementing entity on a quarterly basis. As part of the Bank's auditing requirements, the financial statements of the Project again prepared separately by each implementing entity will be subject to external and independent auditing. The financial statements will be audited by Treasury Controllers. They will be made publicly available by the implementing entities in line with the Bank's access to information policy.

Procurement

76. **Applicable Regulations.** DSI and DGWM are public entities and will be responsible for procurement implementation under their respective subcomponents of the Project. Thus, the Bank's Procurement Regulations for IPF Borrowers, dated September 2023 (Procurement Regulations), will apply to the proposed Project. A General Procurement Notice will be published on the Bank's external website and United Nations Development Business online. The Bank's 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants,' (revised as of July 01, 2016) ('Anticorruption Guidelines') will apply to the proposed Project. The proposed Project will use the Systematic Tracking of Exchanges in Procurement (STEP) to plan, record and track procurement transactions.
77. **Project Procurement Strategy for Development (PPSD) and Procurement Plan.** DSI and DGWM have prepared their PPSDs to cover the respective procurements to be undertaken by the agencies and mentioned the detailed procurement arrangements and contract management plan, including the related risks and mitigation measures. As an output of the PPSDs, both IAs have also prepared their initial procurement plans for the initial 18-month period of the Project to specify each contract to be financed under the Project, estimated cost, procurement method, market approach, the designated procuring agency responsible for the procurement process and contract management, established time standards for completion of the key milestones in the procurement process



including bid evaluation and contract signing, and the Bank’s review requirements. The procurement plan will be uploaded and maintained in STEP and updated at least annually or as and when necessary.

- 78. **Procurement under the Project is expected to include a variety of goods, works, and consultant services.** The expected type of procurement, procurement methods and market approaches are provided in Annex 1. The applicable procurement methods are described in the preliminary procurement plan along with the estimated budgets. DSI has experience in the implementation of the Bank-financed projects. However, DGWM has not implemented a project recently and is not familiar with the Bank’s Procurement Regulations which needs mitigation measures focusing on the capacity and knowledge of the DGWM. Noting that the procurement risks and related mitigation measures of the Project are elaborated in the PPSD, it is foreseen that DGWM may have difficulties in the application of the Bank’s procurement rules and regulations which may result in delays in the implementation at the initial stages of the Project. In order to manage and mitigate the risks related with the procurement interventions, both IAs, particularly DGWM, need to clearly define the implementation structure, staffing, roles and responsibilities and operation procedures. Both IAs may consider hiring individual experts including but not limited to qualified procurement individual consultant(s). In order to streamline the procurement transactions and achieve and sustain value for money, economy, integrity, efficiency the procurement activities need to be performed at relevant DGs with centralized approach by obtaining the technical and administrative support of the regional directorate(s) when and if needed.

C. Legal Operational Policies

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Area OP 7.60	No

D. Environmental and Social

- 79. Both the environmental and social (E&S) risks have been rated as Substantial for the Project. The key environmental risks include (i) the impact on aquatic habitats due to river training works such as levees and retaining walls and consequent release of sediment plumes; (ii) floodplain habitats due to flood embankments construction affecting riparian vegetation, fertile agricultural lands through land clearance; (iii) Potential resource inefficiency due to poor management of borrow and aggregate material; (iv) water pollution; and (v) standard construction-related impacts (air and noise emissions, waste management, soil management, occupational health and safety risks, traffic safety, structural safety of the flood control structures depending on the size, and habitat disturbance due to construction). Key social risks include (i) land-based livelihood impacts due to temporary or permanent loss of land; (ii) community health and safety risks associated with construction and operation phases of sub-projects (noise, air emissions, odor; traffic and temporary road closures, management of construction waste etc); (iii) risk of increased SEA/SH incidents due to labor influx (the Project’s SEA/SH risks have been rated as “Moderate”); and (iv) increased transmission risks of infectious and water-borne diseases due to poor management of construction wastes and debris. To mitigate these E&S risks, DSI has prepared a Stakeholder Engagement Plan



(SEP), Environmental and Social Management Framework (ESMF), Labor Management Procedure (LMP) and a Resettlement Framework (RF). These documents outline how these E&S risks will be avoided, minimized, and mitigated. During the implementation phase, site specific assessment and management plans will be prepared and implemented following the ESMF. A project level Grievance Mechanism will be established and made functional prior to Project effectiveness. Within the scope of the Project, DSI will establish a PIU consisting of a qualified environmental specialist, a social specialist and an occupational health and safety (OHS) specialist to ensure effective environmental and social (E&S) risk management in line with the national regulatory and ESF requirement throughout the lifetime of the Project as per the Project's Environmental and Social Commitment Plan (ESCP).

80. DSI has some experience to manage E&S risks following the Bank's E&S policies as it is currently implementing several projects. However, the E&S capacity of DSI is limited and restricted to project-specific application. There is room for DSI to improve institutional setup with human resources, policies and standard operating procedure to supervise and manage the environmental and social risks and impacts of projects following the Bank's and other IFIs' environmental and social policies. Therefore, policies and procedures will be developed by DSI in line with the Bank's ESF that would be necessary for the establishment of an ESMS as a sub-component of component 4 of this Project. Description of the process for developing the ESMS will be detailed in the Project Operation Manual. The ESMS, once functional, will facilitate using "Borrowers' (DSI) Framework" for the Bank and other IFI funded projects and enhance DSI's capacity to assess and manage E&S impacts and risks in all projects.

Gender

81. In rural Türkiye, females are highly involved in farming¹⁹ but are not equally reached with reliable drought forecasting or mitigation information to understand when and how to utilize proper mitigation techniques or drought-resistant farming practices. This is in part because extension services are directed to men (who only pass on this information 40 percent of the time and yet remain the primary source of information on similar issues on agriculture for 65 percent of women)²⁰ and women are less likely to directly absorb such information from media or other digital sources because of the digital and education gaps in the project area²¹. This contributes to female farmers experiencing higher losses due to lack of advance warning and knowledge in behavior to minimize drought damage to crops and livestock. The Project will focus on narrowing the gap in women's understanding and use of drought information and establish a baseline of female and male farmers' utilization of drought information by administering a survey in the first year, which will be administered again after implementation of project activities to reassess the gap. The approach will

¹⁹ The 2022 TurkStat labor force data show that on average 40 percent of agricultural workforce in the regions of the Project are women. Moreover, the share of women in unpaid family workers in agriculture is 76 percent (ILO).

²⁰ Women report the following sources of agricultural information: husbands (64.6%), other women (53.8%), mass media (30%), and extension agents (23%).

²¹ Rural women have lower education and higher illiteracy (25% rural women vs. 7% rural men) and this contributes to unequal access to information. Further, overall in 2023 workers who are "skilled agricultural, forestry and fishery workers" are the lowest users of the internet in Türkiye 76.1% compared to all the other types of occupation groups (rate of 92.1 to 99.8%). Female farmers would face a further disadvantage given both the digital gender gap in the overall population and the rural-urban digital gap (which is similar to findings that rural women are also reporting lower internet use 18.4% than rural men 40%, 2016 FAO). In addition, fewer women (41.8%) than men (54.6%) obtain information from public institution websites; if forecasting information and drought maps are only disseminated on public government institution websites then women are less likely to access it and more outreach is required to reach female farmers even if they do have internet access.



be fine-tuned based on a study of what has or has not worked reaching female farmers with drought and other information in the cultural context of the Ceyhan Basin²². DSI in collaboration with DGAR will conduct awareness raising and training for both men and women, especially community leaders, about the specific role women (can) play in drought mitigation management and why it is important to build female farmers' skills and knowledge and support community leaders in organizing wider informational events/community meetings for female farmers. This will include training on how to use the drought information to plan for drought mitigation as well as on how to collect relevant data/info to contribute to/inform the drought monitoring system/maps. For female farmers it will be important to have female-only training with women trainers as well as varying educational modes (videos, game scenarios, etc.) to cater to those with lower levels of education/literacy. The project targets increasing the percentage of female farmers who understand and use drought forecasting data and mitigation techniques from 10% in 2026 to 50% by 2031, ultimately reducing their vulnerability and improving resilience to drought conditions.

82. The proposed Project will also ensure that women staff in DSI and DGWM staff actively participate in the planning and decision-making process for disaster prevention and response to ensure the needs of women are addressed. Additionally, trainings and awareness raising activities will be conducted by DG Water Management about flood mitigation and how to understand the flood warning/forecasting information with targeted messaging/outreach for women.

Citizen Engagement

83. Improved flood and drought management requires citizens and local populations to be empowered to engage in co-creation of risk assessments and EWS, to develop consensus on shifting behavior around common water resources (particularly in drought), and to strengthen the linkages among citizens across jurisdictions (i.e. in river basins, watersheds or aquifers) for more coherent cross-community water resource management. This requires as a first step demystifying data on drought and flood management and risks, in a manner that is locally relevant, dynamic, and understandable. For example, citizen science and/or co-creating of community risk profiles can play a significant role in strengthening the design and implementation of EWS. To ensure that EW data reaches all segments of society, disadvantaged groups such as disabled people will be targeted in the design and implementation. For instance: citizens can be involved in data collection efforts and can contribute to hazard mapping efforts by reporting on local vulnerabilities, changes in landscapes, and emerging risks, and this data can inform hazard assessments. The warning systems to be improved under the Project will share data with AFAD which is responsible for dissemination.
84. Under Component 1, it is envisaged that local populations will be engaged in the development of flood management structures through (existing or expanded) social groups, supporting a series of linked engagements: (i) a stage of participatory flood risk assessment (contributing local knowledge); followed by (ii) participatory planning of physical investments (ensuring relevance and ownership of proposed interventions); and subsequently, (iii) participatory monitoring of the impacts of flood management structure investments. Social groups will also be strengthened to support the improvement of EWS with capacity building and (i) an independent/, review of the existing EWS to identify gaps and propose how local populations can help strengthen systems; (ii) participate in an open day/forum/assembly conducted by DSI at the river basin level to develop joint ownership and commitment to proposed grey improvements and NBS pilots; and (iii)

²² In the project region Türkiye, social norms and patriarchal systems, also influence women's access to technical information.



contribute structured feedback during a piloting of the EWS; and (iv) In order to mitigate the damages of potential flooding, women-focused awareness raising activities will be carried out on the EWS activities under the Project. Under Subcomponent 1.2, DGWM will organize activities (meetings, trainings, etc.) to share project design and outputs and raise awareness on flood risk and mitigation activities in the project locations. Through these activities, DGWM will ensure that EWS is upgraded in a participatory manner, publicly disclosed and adjusted based on citizen engagement. Priority will be given to women participants in the events to be organized, and DGWM will collaborate with relevant institutions and non-governmental organizations to enhance participation of women beneficiaries.

85. Under Component 2, citizen engagement in drought management will follow best practice in water-stressed environments. The Project will provide opportunities for women and men farmers to inform/contribute to drought monitoring by reporting impact of droughts, collecting data on precipitation, reporting when forecasting is incorrect, etc. These will be complemented by the trainings for women and men under Component 3. Water User Associations (WUAs), particularly women members, will be included in design and implementation of the Drought Forecasting Center technical explanations to ensure that early warnings/forecasting on droughts can be understood by female farmers. As for Component 2, data/information and awareness building will play a critical role to ensure citizens are empowered, and a series of participatory assessment–planning–monitoring activities driven by citizen scientists and social committees will supplement and optimize the installation of sensors/local equipment, and the drought monitor map platform for farmers’ use to reduce water usage and coordinate farmer crop diversification across river basins. DSI in collaboration with DGAR will assign a dedicated team for capacity building about the benefits and approaches to CE in flood and drought management agencies. Additionally, DSI and DGAR, with support from NGOs, will organize training/awareness raising program on drought management.

V. GRIEVANCE REDRESS SERVICES

86. **Grievance Redress.** Communities and individuals who believe that they are adversely affected by a project supported by the Bank may submit complaints to existing project-level grievance mechanisms or the Bank’s Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project-affected communities and individuals may submit their complaint to the Bank’s independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of the Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of the Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank’s Grievance Redress Service (GRS), visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the Bank’s Accountability Mechanism, visit <https://accountability.worldbank.org>.

VI. KEY RISKS

87. **The overall residual risk of the Project is rated Substantial.** Political and governance risk is low as floods and drought management is a priority for Government, as highlighted in the NDP (with regards to climate change). The risk for sector strategies and policies is moderate particularly due to complex regulatory and institutional framework for the flood EWS in Türkiye. These risks are



being mitigated by aligning the project activities with the strategic priorities of the Government, ensuring effective coordination and engagement with various stakeholders, and implementing the Project through existing IAs and mechanisms. The risk for technical design is moderate given the complexity of the flood and drought modelling systems, the number of stakeholders with key roles, and the proposed lengthy implementation period. The residual risk for institutional capacity for implementation and sustainability is substantial as the majority of the Project activities will be implemented by the Flood Control Department of DSI established in December 2022 and the overall capacity of DSI departments is exhausted due to the ongoing three Bank operations implemented by DSI. Additionally, DGWM has no previous experience with the Bank. The risk for institutional capacity will be mitigated through Component 3 and Component 4 of the Project. Component 3 is designed to improve the existing capacity of DSI and DGWM through development of implementation guidelines, organization of knowledge exchange events including trainings and study visits and procurement of hardware and software to enhance technical capacity of both IAs. Under Component 4, the Project will support both institutions for hiring individual consultants for project implementation.

88. **Residual Macroeconomic risks are substantial.** Key macroeconomic risks to the Project include: (i) high inflation and exchange rate volatility, which may lead to supply-side constraints due to price increases and uncertainties; (ii) ability of entrepreneurs to expand production and employment in the face of macroeconomic instability risk; and (iii) ability of local development stakeholders to operate and maintain investments. These risks are beyond the scope of the Project; and, as such, residual Macroeconomic risks are rated as Substantial; however, the Project will monitor the macroeconomic developments closely and adjust implementation as needed.
89. **Residual Fiduciary risk is rated Substantial.** The residual procurement risk is Substantial, and the residual financial management risk is Moderate. The residual procurement risk is rated as Substantial since (i) the procurement implementation is planned to be carried out by a newly established Department that has no experience in the Bank Procurement, (ii) the involvement of different sectors in terms of procurement; and (iii) uncertainty about exactly where, when and how the Project will be implemented (procurement packages), etc. DSI has experience in implementing the Bank - funded Projects and have satisfactory financial management arrangements in place. The PIU to be established for the Project under DSI will be supported by the functional PIUs under the ongoing three Projects implemented by DSI until the loan becomes effective. The DGWM does not have experience in the Bank - financed projects. To manage and mitigate the procurement risks and to ensure effective coordination for the procurements to be implemented jointly with the support of other stakeholders (i.e., AFAD, SMS) both IAs will assign staff to work at the preparation stage, and clearly define the procurement implementation structure including staffing (internal and externally hired), roles and responsibilities and operation procedures in their respective POMs. The PPSD set forth the procurement risks and related mitigation measures of the Project. Accordingly, the residual Procurement risk of the Project may be upgraded based on the achievement of the mitigation measures elaborated in the PPSDs by the IAs during the implementation.
90. **Environment and Social risks are considered Substantial.** These risks are discussed in the section on environmental and social risks above.



VII. RESULTS FRAMEWORK AND MONITORING

PDO Indicators by PDO Outcomes

Baseline	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Closing Period
Increased flood control for people							
Population benefiting from enhanced flood control (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	10000	20000	30000	50000	100000	150000
➤ Population benefiting from flood control (female) (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	5000	10000	15000	25000	50000	75000
Population benefiting from flood monitoring and forecasting systems (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	5000	10000	20000	30000	40000	50000
➤ Population benefiting from flood monitoring and forecasting systems under the Project (female) (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	2500	5000	10000	15000	20000	25000
Millions of people with enhanced resilience to climate risks (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	0.13	0.27	0.40	0.67	1.33	2
➤ Millions of people with enhanced resilience to climate risks (female) (Number of people)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	0.07	0.13	0.20	0.33	0.67	1.00
➤ Millions of people with enhanced resilience to climate risks (youth) (Number of people)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	0.02	0.04	0.06	0.10	0.20	0.30
Strengthened institutional capacity for flood and drought risk management							



Farmers benefitted from drought monitoring data (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	1000	5000	6000	7000	8000	10000
➤ Farmers benefitted from drought monitoring data (Female) (Number) (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	500	2500	3000	3500	4000	5000
Establishment of a DSI-DGWM coordination mechanism (with a shared information system or Data Sharing System (DSS)) for flood forecasting and warning (Yes/No)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
No	No	No	No	Yes	Yes	Yes	Yes

Intermediate Indicators by Components

Baseline	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Closing Period
Component 1: Flood Management							
Number of flood control infrastructure (bridges, culverts, check dams) constructed or rehabilitated (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	10	50	100	200	300	400
Subprojects which pilot innovative technologies or NBS (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	0	2	4	5	6	6
Establishment of new stations and improvement of existing stations (TEUS by DSI) (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	50	250	500	750	900	1160	1160
Number of river basins with improved Flood Forecast Systems (TATUS by DGWM) (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	1	3	5	6	10	19
Length of flood control infrastructure (embankment, levees, etc) constructed or rehabilitated (Kilometers)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	10	50	70	80	90	100
Number of settlements where flood control infrastructure is constructed (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	5	25	55	101	119	150
Component 2: Drought Management							
Technical studies and non-structural measures for drought management (Number)							



Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	1	1	2	3	3	3
Successful implementation of the real-time drought monitoring and forecast center established in Ceyhan Basin (Yes/No)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
no	no	yes	yes	yes	yes	yes	yes
Drought Monitoring Systems Established (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	1	2	3	4	5	5
Nationwide plan for real-time drought monitoring and forecast (Yes/No)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
no	no	no	yes	yes	yes	yes	yes
Feasibilities and technical studies for future investments for drought management (Yes/No)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
no	no	no	yes	yes	yes	yes	yes
Component 3. Capacity Development and Institutional Strengthening							
Developed guidelines to improve implementation framework (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	1	1	2	3	3	3
Improved institutional coordination (Yes/No)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
no	no	no	no	yes	yes	yes	yes
Staff benefitted from capacity building activities for all relevant agencies (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	20	50	70	80	90	100
➤>>> Female beneficiaries (Number)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	10	25	35	40	45	50
Policies and procedures developed for establishment of ESMS for DSI (Yes/No)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
no	no	no	yes	yes	yes	yes	yes
Women's share in the teams assigned for construction supervision at the regional directorates of DSI for investments under the Project. (Percentage)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
	5	10	20	30	40	45	50
Percentage of communities where EWS was upgraded in a participatory manner, publicly disclosed and adjusted based on citizen engagement. (Percentage)							



Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	10	20	40	50	60	70
Percentage share of female farmers reporting improved understanding and utilization of drought forecasting data and specific drought mitigation techniques or practices (Percentage) (Percentage)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	0	10	15	20	30	40	50
Component 4. Project Management							
Grievances addressed by DSI in accordance with the stipulated service standards (%) (Percentage) (Percentage)							
Mar/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029	Jun/2030	Dec/2031
0	50	60	70	80	80	90	90



Monitoring & Evaluation Plan: PDO Indicators by PDO Outcomes

Increased flood control for people	
Population benefiting from enhanced flood control (Number)	
Description	This indicator measures the number people to benefit directly from flood control through construction of flood protection structures to be implemented under Sub-component 1.1.
Frequency	Biannual
Data source	DSI Project Progress reports
Methodology for Data Collection	The indicator will be calculated by summing up the number of beneficiaries of improved protection to floods as a result of project interventions, obtained from DSI surveys
Responsibility for Data Collection	DSI
Population benefiting from flood control (female) (Number)	
Description	Total number of female beneficiaries from enhanced flood control as a result of project interventions.
Frequency	Biannual
Data source	DSI Project Progress reports
Methodology for Data Collection	The indicator will be calculated by summing up the number of female beneficiaries of reduced exposure to floods as a result of project interventions, obtained based on information reported by DSI project progress reports.
Responsibility for Data Collection	DSI
Population benefiting from flood monitoring and forecasting systems (Number)	
Description	This indicator measures the number people who will directly benefit from improved flood monitoring and forecasting systems financed under Subcomponent 1.2
Frequency	Biannual
Data source	DSI and DGWM Project Progress reports
Methodology for Data Collection	The indicator will be calculated as the percentage of population benefited from improved flood monitoring and forecasting systems, obtained based on information reported by DSI/DGWM progress reports.
Responsibility for Data Collection	DSI/DGWM
Population benefiting from flood monitoring and forecasting systems under the Project (female) (Number)	
Description	This indicator measures the total number of female beneficiaries benefiting from improved flood monitoring and forecasting systems as a result of project interventions



Frequency	Biannual
Data source	DSI and DGWM Project Progress reports
Methodology for Data Collection	The indicator will be calculated as the percentage of female population benefited from improved flood monitoring and forecasting systems, obtained based on information reported by DSI/DGWM progress reports.
Responsibility for Data Collection	DSI/DGWM
Millions of people with enhanced resilience to climate risks (Number)	
Description	This indicator measures the number of people benefiting directly and indirectly from improved climate risk management and increased climate resilience due to investments and activities during the intervention period.
Frequency	Biannual
Data source	DSI Project Progress reports
Methodology for Data Collection	The indicator will be calculated by summing up the direct and indirect beneficiaries of the flood control investments to be financed under the Project.
Responsibility for Data Collection	DSI
Millions of people with enhanced resilience to climate risks (Female) (Number)	
Description	This indicator measures the number of female benefiting directly and indirectly from improved climate risk management and increased climate resilience due to investments and activities during the intervention period.
Frequency	Biannual
Data source	DSI Project Progress reports
Methodology for Data Collection	The indicator will be calculated as the respective percentage of women as part of the total number of the people with enhanced resilience to climate risks. Official statistics (TurkStat) will be used for percentage of women.
Responsibility for Data Collection	DSI
Millions of people with enhanced resilience to climate risks (Youth) (Number)	
Description	This indicator measures the number of youth benefiting directly and indirectly from improved climate risk management and increased climate resilience due to investments and activities during the intervention period.
Frequency	Biannual
Data source	DSI Project Progress reports
Methodology for Data Collection	The indicator will be calculated as the respective percentage of youth as part of the total number of the people with enhanced resilience to climate risks. Official statistics (TurkStat) will be used for percentage of youth.
Responsibility for Data Collection	DSI
Strengthened institutional capacity for flood and drought risk management	
Farmers benefitted from drought monitoring data (Number)	



Description	Total number of farmers benefiting from up-to-date information on current drought conditions in their respective regions as a result of project interventions, enabling them to make informed decisions.
Frequency	Biannual
Data source	DSI and DGWM Project Progress reports
Methodology for Data Collection	The indicator will be calculated by summing up the number of farmers benefiting from up-to-date drought information.
Responsibility for Data Collection	DSI
Establishment of a DSI-DGWM coordination mechanism (with a shared information system or DSS) for flood forecasting and warning (Yes/No)	
Description	This indicator will measure if a DSI-DGWM coordination mechanism (with a shared information system or DSS) for flood forecasting and warning is established under Subcomponent 1.2 of the Project
Frequency	Biannual
Data source	DSI and DGWM Project Progress reports
Methodology for Data Collection	This indicator will be monitored by checking with DSI and DGWM if a DSI-DGWM coordination mechanism is established.
Responsibility for Data Collection	DSI and DGWM

Monitoring & Evaluation Plan: Intermediate Results Indicators by Components

Component 1: Flood Management	
Number of flood control infrastructure (bridges, culverts, check dams) constructed or rehabilitated (Number)	
Description	This indicators measures the number of flood control structures (bridges, culverts, check dams) constructed under Subcomponent 1.1 of the Project.
Frequency	Annual
Data source	Supervision reports
Methodology for Data Collection	The indicator will be calculated by summing up the count of infrastructures for which implementation rehabilitationworks have been completed.
Responsibility for Data Collection	DSI
Subprojects which pilot innovative technologies or NBS (Number)	
Description	This indicator measures the number of subprojects which include innovative technologies and NBS.
Frequency	Annual
Data source	DSI Project Progress reports
Methodology for Data	The indicator will be calculated as the number of subprojects where the implementation of NBS intervention(s) have



Collection	been completed
Responsibility for Data Collection	DSI
Establishment of new stations and improvement of existing stations (TEUS by DSI) (Number)	
Description	Subcomponent 1.2 of the Project covers both establishment of new stations and improvement of existing stations by DSI. This indicators measures the number of stations (TEUS) established and improved under Subcomponent 1.2 of the Project.
Frequency	Biannual
Data source	DSI Project Progress reports
Methodology for Data Collection	The indicator will be calculated by summing up the number of stations that have been established and improved
Responsibility for Data Collection	DSI
Number of river basins with improved Flood Forecast Systems (TATUS by DGWM) (Number)	
Description	This indicators measures the number of basins in which Flood Forecast Systems of DGWM (TATUS) installed under Subcomponent 1.2 of the Project.
Frequency	Biannual
Data source	DGWM Project Progress reports
Methodology for Data Collection	The indicator will be calculated by summing up the number of river basins where the TATUS system has improved its services
Responsibility for Data Collection	DGWM
Length of flood control infrastructure (embarkment, levees, etc) constructed or rehabilitated (Kilometers)	
Description	This indicator measures length of flood control infrastructure (embarkment, levees, etc) constructed under sub-component 1.1 of the Project.
Frequency	Annual
Data source	DSI Project Progress Reports
Methodology for Data Collection	The indicator will be calculated by summing up the kilometers of infrastructure for which implementation or rehabilitation works have been completed.
Responsibility for Data Collection	DSI
Number of settlements where flood control infrastructure is constructed (Number)	
Description	This indicator will measure the number of settlements where flood control infrastructure has been completed under Subcomponent 1.1.
Frequency	Annual
Data source	DSI Project Progress Reports



Methodology for Data Collection	The indicator will be calculated by summing up the settlements where flood control infrastructure has been completed.
Responsibility for Data Collection	DSI
Component 2: Drought Management	
Technical studies and non-structural measures for drought management (Number)	
Description	This indicator measures the number of technical studies conducted and non-structural measures implemented for drought management under Component 2.
Frequency	Biannual
Data source	DSI Project Progress Reports
Methodology for Data Collection	The indicator will be calculated as the number of technical studies and non-structural measures
Responsibility for Data Collection	DSI
Successful implementation of the real-time drought monitoring and forecast center established in Ceyhan Basin (Yes/No)	
Description	This indicator measures whether a drought monitoring and forecast center established in Ceyhan Basin under Component 2.
Frequency	Annual
Data source	DSI Project Progress Reports
Methodology for Data Collection	The indicator will be determined based on the successful implementation of the pilot drought monitoring and forecasting center in Ceyhan basin
Responsibility for Data Collection	DSI
Drought Monitoring Systems Established (Number)	
Description	This indicator measures the number of Drought Monitoring Systems Established under Component 2.
Frequency	Annual
Data source	DSI Project Progress Reports
Methodology for Data Collection	The indicator will be calculated based on the number of drought monitoring systems successfully implemented and operating
Responsibility for Data Collection	DSI
Nationwide plan for real-time drought monitoring and forecast (Yes/No)	
Description	This indicator measures whether a Nationwide plan for real-time drought monitoring and forecast is developed under Component 2.
Frequency	Annual



Data source	Supervision Reports
Methodology for Data Collection	The indicator will be determined based on the finalized plan for implementing real-time drought monitoring and forecasting, replicating the experience in Ceyhan basin. This plan will have to be presented to the the Bank.
Responsibility for Data Collection	DSI
Feasibilities and technical studies for future investments for drought management (Yes/No)	
Description	Development of diverse feasibility and technical studes for designing larger-scale future investments for drought management.
Frequency	Annual
Data source	DSI Project Progress Reports
Methodology for Data Collection	The indicator will be determined based on the finalized of the studies presented to the Bank.
Responsibility for Data Collection	DSI
Component 3. Capacity Development and Institutional Strengthening	
Developed guidelines to improve implementation framework (Number)	
Description	Pre-identified guidelines include O&M and rehabilitation of flood control infrastructure, (ii) hydraulic modelling, (iii) NBS for flood protection, and (iv) O&M of Drought Monitoring Center.
Frequency	Biannual
Data source	DSI/DGWM reports
Methodology for Data Collection	The indicator will be determined based on finalized guidelines endorsed by DSI and/or DGWM
Responsibility for Data Collection	DSI/DGWM
Improved institutional coordination (Yes/No)	
Description	This indicator measures whether institutional coordination is improved through activities of the Steering Committee.
Frequency	Biannual
Data source	DSI/DGWM Project Progress Reports
Methodology for Data Collection	The indicator will be determined by monitoring the activities of the Project Steering Committee.
Responsibility for Data Collection	DSI/DGWM
Staff benefitted from capacity building activities for all relevant agencies (Number)	
Description	Number of technical officials and decision makers who have undergone a training/capacity building/seminar successfully provided in the project's context



Frequency	Biannual
Data source	DSI and DGWM Project Progress Reports
Methodology for Data Collection	The number of officials that participate in each training will be recorded and number of trained personnel will be updated biannually
Responsibility for Data Collection	DSI/DGWM
>>> Female beneficiaries (Number)	
Description	Number of female technical officials and decision makers who have undergone a training/capacity building/seminar successfully provided in the project's context
Frequency	Biannual
Data source	DSI and DGWM Project Progress Reports
Methodology for Data Collection	The number of female officials that participate in each training will be recorded and number of trained female personnel will be updated biannually
Responsibility for Data Collection	DSI/DGWM
Percentage of communities where EWS was upgraded in a participatory manner, publicly disclosed and adjusted based on citizen engagement	
Description	This indicator will measure in which percentage of communities DGWM upgraded their EWS in a participatory manner, publicly disclosed and adjusted based on citizen engagement
Frequency	Biannual
Data source	DGWM Project Progress Reports
Methodology for Data Collection	Under Subcomponent 1.2, DGWM will organize activities (meetings, trainings, etc.) to share project design and outputs and raise awareness on flood risk and mitigation activities in the project locations. Through these activities, DGWM will ensure that EWS is upgraded in a participatory manner, publicly disclosed and adjusted based on citizen engagement. Priority will be given to women participants in the events to be organized, and DGWM will collaborate with relevant institutions and non-governmental organizations to enhance participation of women beneficiaries.. Final reports of the activities will be included in the DGWM Project Progress Reports and will provide data for monitoring this indicator.
Responsibility for Data Collection	DGWM
Policies and procedures developed for establishment of ESMS for DSI (Yes/No)	
Description	This indicator will measure if DSI developed policies and procedures in line with the Bank's ESF that would be necessary for the establishment of an ESMS within DSI.
Frequency	Biannual
Data source	Supervision report
Methodology for Data Collection	The indicator will be determined based on the successful development of policies and procedures by DSI in line with the Bank's ESF.



Responsibility for Data Collection	DSI
Women’s share in the teams assigned for construction supervision at the regional directorates of DSI for investments under the Project (Number)	
Description	This indicator will measure the share of female team members among the construction supervision teams at the regional directorates of DSI
Frequency	Biannual
Data source	DSI and DGWM Project Progress Reports
Methodology for Data Collection	The number of female officials that participate in construction supervision teams will be recorded and number of female construction supervision team members will be updated biannually
Responsibility for Data Collection	DSI
Percentage share of female farmers reporting improved understanding and utilization of drought forecasting data, and specific drought mitigation techniques or practices (Percentage)	
Description	This indicator will measure female farmers’ vs. male farmers’ knowledge and utilization of drought forecasting data and specific drought mitigation techniques or practices to reduce vulnerability to drought instances.
Frequency	The baseline will be implemented within the first year to establish the baseline and again after Project activities have been implemented to monitor and assess the improvements for female farmers. The frequency of data collection post-baseline will be determined partially by the results of the review/study to be conducted by DSI, in collaboration with DGAR, specific to Ceyhan Basin of what has or has not worked in terms of reaching female farmers which will inform the final approach.
Data source	Surveys to be conducted
Methodology for Data Collection	To monitor this indicator, a survey will be administered to verify female farmers’ vs. male farmers’ knowledge and utilization of drought forecasting data and mitigation techniques (before/after informational activities and training). The survey will use a set of non-perception questions that aggregate to a composite index on how to interpret and use drought forecasting data to reduce impacts, and of drought preparedness. Drought experts will help to come up with questions on respondents understanding and use of the drought forecasting and mitigation information. For example, questions would ask about the sources and utilization of drought information, the correct interpretation of drought forecasting data/map, as well as ask farmers to select the mitigation practices or actions they currently employ using images or multiple choice or by verbally describing mitigation actions to the enumerator for a given scenario. All responses are categorized and weighted into the composite index quantifying the farmers’ proper utilization and incorporation of the drought information into their practices.
Responsibility for Data Collection	DSI
Component 4. Project Management	
Grievances addressed by DSI in accordance with the stipulated service standards (%) (Percentage)	
Description	This indicator measures the percentage of grievances addressed and responded by DSI in accordance with stipulated



	service standards.
Frequency	Biannual
Data source	Reports by DSI on grievance redress
Methodology for Data Collection	Data drawn from reports on DSI grievance redress systems
Responsibility for Data Collection	DSI



ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: Republic of Türkiye Türkiye Flood and Drought Management Project

1. The Project will be implemented by DSI and DGWM under the MoAF. DSI will be responsible for implementing Components 1.1, 1.2, 2, 3 and 4 in close coordination with relevant stakeholders. MoTF will allocate the loan proceeds to DSI and DGWM to implement activities as described. DSI has a long history with the Bank and is familiar with Bank's systems and procedures. It is the sole IA for the two ongoing operations (i.e. TIMP and WCEIP) and one of the four IAs under TULIP. In addition, it was also involved in previous Bank - financed lending operations completed in the 1990s. In DSI, the flood-related activities will be implemented by the Flood Control Department which was established on end-2022 and the Survey, Planning and Allocations Department. The O&M Department will implement the drought-related activities. The Department of International Relations will be responsible for overall coordination of the project activities within DSI. DGWM will implement some of the activities under Subcomponent 1.2, Components 3 and 4.
2. The Project will have one Loan Agreement with the Borrower and be implemented by two agencies. A Loan Agreement for the Project will be signed between the Bank and Republic of Türkiye. The Law on Public Finance and Debt Management No. 4749 (the Debt Law) describes the procedures for international borrowing in the Republic of Türkiye. The Debt Law classifies the international borrowing under three categories: allocation, on-lending, and guarantee. The debt law authorizes the MoTF to allocate foreign-financed loans to DSI which is a special budget institution and to DGWM.
3. The Project will establish two Project Implementation Units (PIUs) – one in DSI and the other in DGWM, governed by their Director Generals. The PIUs will manage, among others, finalization of designs, consultations, contracting, construction supervision, operations and maintenance, fiduciary management, citizen engagement, and management of the ESF compliance aspects for this Project. The PIUs will include professional staff from all the DSI and DGWM departments that are relevant to project implementation. For DSI, other relevant departments include (a) Department of Strategy Development; (b) Department of Land Consolidation and On-Farm Development Services; (c) Department of Real Estate and Expropriation; and (d) Department of Investigation, Planning and Allocation. For DGWM, the related departments are Department of Flood and Drought Management and Department of Administrative Affairs and Coordination.
4. A Project Steering Committee will be formed onset of the Project by DSI and DGWM and the key stakeholder agencies including SMS, DGAR, and AFAD will be invited. The Committee will provide advice to the Project and help engage agencies with capacity building, data sharing, and inter-agency coordination. Project funds will be allocated separately to DSI and DGWM and procurements will be conducted by each PIU. The Committee will continue to exist after the Project is completed.
5. DSI has a long history with the Bank, is currently working with the Bank, and is familiar with the Bank systems and procedures. However, it will be important to strengthen DSI's capacity,



particularly for application of the Bank's ESF because this will be the second operation implemented by the agency that would use the ESF. DGWM has no previous experience with the Bank.

Implementation Arrangements under DSI

6. In addition to DSI's professional staff, the DSI-PIU will include competitively recruited experts in the areas where DSI staff may not be able to designate sufficient staff. These areas include environmental and social aspects, FM, procurement, citizen engagement, and M&E. The implementation of the Project will be aligned with the regular administration procedures of DSI.
7. While most of the DSI - PIU will be located at the DSI headquarters in Ankara, it will include regional staff located in each of the DSI regional directorates corresponding to the Project activities. Each relevant DSI Regional Directorate will have a Coordinator and an Environmental and Social Focal Point, who are members of the DSI - PIU. The procurement for all project-financed schemes will be conducted from the DSI headquarters, but the PIU staff from regional directorates will be responsible for regular supervision of construction, O&M, and the social and environmental aspects of the activities. The operational modalities are described in the POM.

Implementation Arrangements under DGWM

8. Within DGWM, the PIU will be established under the Department of Flood and Drought Management which consists of the following working groups: (i) Flood Management, (ii) Drought Management, (iii) Climate Change Adaptation, (iv) Hydrology and (v) TATUM.
9. The DGWM – PIU under the Department of Flood and Drought Management will be supported by the other departments and working groups including Strategic Management and Budget Working Group and Procurement and Financial Management Working Group under the Department of Administrative Affairs and Coordination. The PIU will also be supported by individual consultants (e.g. procurement and financial management consultants.) and additional civil servants as necessary.

POMs

10. By Project Effectiveness, DSI and DGWM will develop separate POMs for implementation of their respective activities, setting out: (a) policies and procedures relating to implementation of project components, (b) FM and procurement arrangements and procedures, (c) environmental and social risk management obligations and procedures, and (d) coordination arrangements under the Project.

FINANCIAL MANAGEMENT

11. Overall FM arrangements related to staffing, budgeting, financial reporting, internal control and internal auditing, flow of funds, and audits are deemed adequate to provide reasonable assurance on the proper use of project funds for achievement of the PDO with the completion of proposed actions in the financial management action plan. The main FM risk factors are staffing and



delayed establishment of the FM systems. To mitigate these risks the respective implementing PIUs will dedicate or hire a qualified FM staff for the Project.

Country Context

The Public Financial Management and Control Law (PFMC) is the framework law that regulates all aspects of public financial management in Türkiye.

IAs and FM Responsibilities

12. The Project will be implemented by Flood Control Department, Survey Planning and Allocation Department, O&M Departments in DSI and the Department of Flood and Drought Management in DGWM in Ministry of Agriculture and Forestry. Strategic Project Coordination will be provided by the Project Steering Committee that will be chaired by the Deputy Minister or high level managers.. Project funds will be allocated separately to the two IAs and procurements will be conducted by each PIU. Both PIUs will assign and hire consultants with satisfactory experience and qualifications to be responsible for the Project's financial management.
13. Loan agreement will be signed between the Bank and the Republic of Türkiye. The Law on Public Finance and Debt Management No.4749 (the Debt Law) describes the procedures for international borrowing in the Republic of Türkiye. The Debt Law classifies the international borrowing under three categories: Allocation, On-lending and Guarantee. The debt law authorizes the Treasury to allocate foreign financed loans to general budget institutions and the loan will be allocated to MoAF as facilitated by this clause. Although DSI is a special budget institution, the specific reference in the debt Law facilitates allocation of loans to DSI.

Planning and Budgeting

14. The investments proposed to be financed by the IBRD loan must be in the institution's investment program. In this regard, the requirements of Public Law 5018 (Public Financial Management and Control Law) are applicable to the Bank-financed loans. In addition to having the overall investment approved by PSB, DSI and MoAF project their expected investment expenditures annually and have a budget allocation for such expenditures in their annual budgets. The project budget expenditures are considered within the overall budget ceiling of implementing agencies. The Project is included in the 2024 annual investment plan.

Accounting

15. The Project transactions made by the IAs will be processed through the Public Expenditure and Accounting Information System (KBS). Departments responsible for implementation in DSI will send payment orders together with the supporting documents to Accounting Department in DSI and to the Ministry of Finance Accounting Office (MOF-AO) in MoAF. The accountants will enter the transactions into the KBS and will approve the payment order for processing from the designated accounts at the Central Bank of Türkiye. The Central Bank will register the payment from the designated account based on the approval of the accountant. The transactions will be



entered into KBS in TL equivalent and will also be recorded under the account code dedicated to the project.

16. The PIUs will maintain detailed accounts of the Project in foreign currency in an accounting software. Both IAs will evaluate the possibility of using the accounting software utilized by the other departments within their institutions that are implementing the Bank financed projects. The accounting softwares will become functional following project effectiveness. The accounting entries will be based on the information received from the Central Bank payment confirmations (Ek-3). The software will include adequate security levels and facilitates for reporting in foreign currency and the Interim Unaudited Financial Reports as well as the end of the year financial reports would be generated automatically from the system.

Internal Control and Internal Auditing

17. Each IA (IA) will prepare a financial management manual that will define the roles and responsibilities of FM staff, planning and budgeting, accounting and reporting and internal controls procedures for the Project.
18. The related implementing departments at DSI and DGWM at MoAF will be responsible for all stages of procurement. Supervision for the execution of contracts will be undertaken by the related department or regional offices. Final approval of the invoices and progress payments will be done by the implementing department of DSI and DGWM. They will process the invoices/progress approvals for payment and submit the payment orders to the Accounting Office. The payment orders will be signed by the authorized personnel, and the Accounting Office will execute basic controls on the payment order and send it to the Central Bank for processing from the designated accounts. The accounting entry to the Government's accounting system KBS will be made by the Accounting Office based on the approved payment order.
19. The accounting entries to the system in the currency of the loan will be maintained by the PIUs and will be based on the payment confirmations of the Central Bank (the designated accounts will be opened at the Central Bank of Türkiye).
20. Both DSI and DGWM have functioning Internal Audit Departments and the Project transactions will be considered under their regular systems audits.
21. Contract Monitoring: All payments under the Project are subject to the control and approval of the Accounting Officer (at DSI) and Ministry of Treasury and Finance Accountant for MoAF. The centralized accounting system in Türkiye has an integrated commitment control module following the first payment from a contract. Until the first payment is sent for processing, the commitments of the general directorates do not show in the accounting system and this is addressed by the MoTF at a global level. Both PIUs will establish a contract monitoring system integrated into the accounting system used for Project accounting.

Funds Flow and Disbursement Arrangements

22. There will be two designated accounts for the Project, one for each IA, both at the Central Bank of Türkiye. Ministry of Treasury and Finance will endorse the opening of the designated accounts. All payments to the contractors, suppliers and consultants will either be made directly from the



loan account or from the Designated Accounts with the authorization of the responsible personnel. Traditional disbursement methods will be utilized.

- 23. Disbursement Arrangements: The Project will use traditional disbursement methods - designated accounts, reimbursements, direct payments and special commitments. The minimum application size for payments directly from the Loan Account, for issuance of Special Commitments and for reimbursements, as well as the designated accounts ceilings, will be provided in the disbursement and financial information letters (DFILs). Eligible expenditures paid from the designated accounts will be documented to the Bank via SOEs. Full documentation in support of SOEs would be retained by DSI and MoAF for at least two years after the Bank has received the audit reports for the fiscal year in which the last withdrawal from the Loan Account was made. This information will be made available for review during supervision by Bank staff and for annual audits.

Auditing

- 24. As part of the Bank’s auditing requirements, the financial statements of the Project will be subject to external and independent auditing. The first set of audit reports will be submitted to the Bank before June 30th of the year following the calendar year in which the first disbursement from the loan has been made. The Project financial statements will be audited by the Treasury Controllers in accordance with International Auditing Standards. The Treasury Controllers are the external auditors for all projects implemented by the ministries in Türkiye. The Terms of Reference for the Audit will be attached to the minutes of negotiations. The audited financial statements and audit reports will be publicly disclosed in a manner acceptable to the Bank. The following table identifies the audit reports and their due dates:

Type of Audit Report	Due Date
Project Financial Statements (PFS) for DSI.	Within six months of each calendar year's end and at the project's closing.
Project Financial Statements (PFS) for MoAF.	Within six months of each calendar year's end and at the project's closing.

PROCUREMENT

- 25. Applicable Regulations. DSI and DGWM are public entities and will be responsible for procurement implementation under their respective subcomponents of the Project. Thus, the Bank Procurement Regulations for IPF Borrowers, dated September 2023 (Procurement Regulations), will apply to the proposed Project. A General Procurement Notice will be published on the Bank’s external website and United Nations Development Business online. The Bank's ‘Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants,’ (revised as of July 01, 2016) (‘Anticorruption Guidelines’) will apply to the proposed Project.
- 26. The Procurement Regulations require the Borrower through the IA to use the Bank’s Systematic Tracking of Exchanges in Procurement (STEP) online procurement tracking tool to prepare, clear and update its procurement plans, and conduct all procurement transactions. This ensures that comprehensive information on procurement and implementation of all contracts for goods, works, non-consulting services, and consulting services awarded under the whole Project are



automatically available. This tool will be used to manage the exchange of information (e.g., bidding documents, bid evaluation reports, no objections, etc.) between DSI, DGWM and the Bank. DSI and DGWM PIUs will create the procurement plan for the Project through STEP before initiating any procurement activity.

27. The Bank's review thresholds and procurement methods to be applied will be set out in the textual part of the Procurement Plan of the Project. The Bank will review the procurement arrangements performed under Project components, including contract packaging, applicable procedures, and the scheduling of the procurement processes, for their conformity with the Legal Agreement. Those procurements that did not have ex-ante due diligence by the Bank will be subject to ex-post due diligence on a sampling basis in accordance with the procedures set forth in Paragraph 4 of Annex II to the Procurement Regulations. A post review of the procurement documents will normally be undertaken annually during the Bank supervision missions, or the Bank may request to review any particular contract at any time. In such cases, DSI and DGWM PIUs shall provide the Bank the relevant documentation for its review.
28. Procurement under the Project is expected to include a variety of Goods, Works and Consultant Services. Under Component 1, the expected procurement to be undertaken by the IAs includes Works for flood control structures such as check dams, levees, retaining walls, embankments, reservoirs, polders, systems, and Goods for expanding the current flow rate, river level gauge, and water quality monitoring network, and upgrading the ICT software and equipment to provide effective early warning which can be procured through open national and international competitive approach. Within Component 2, procurement to be carried out by the DGWM will contain a variety of Goods such as supply and installation of soil moisture sensors and air humidity sensors, real time data providers, and comprehensive water use monitoring equipment that can be achieved through open national market approach. Component 3 will include consultancy services for capacity building and institutional strengthening of both IAs through technical studies on drought monitoring, hydraulic modelling, awareness raising, preparation of guidelines, manuals, development of framework training and study visits, Project management and E&S for which open national and international market approach will be applicable.
29. Procurement methods and approaches. The appropriate procurement methods and approaches for each procurement activity will be specified in the procurement plan. For Goods and Works this will mostly include open national market approach (subject to the provisions required for ensuring consistency with the Bank's Procurement Regulations); whereas small value simple off-the-shelf procurement may follow the Request for Quotations method. For open national market approach, the Turkish template Request For Bids (RFB) document agreed by the Bank for procurement of small-works and goods will be used for construction works and procurement of goods by the IAs. Consulting services from firms are mostly expected to be selected through the Quality and Cost Based Selection (QCBS), selection based on Consultant's Qualifications (CQS) method, for which the Bank's agreed RFP documents will be used. Individual consultants, particularly for Project management, monitoring and evaluation, will be selected through open competition and the form of contract agreed by the Bank will be used.
30. DSI and DGWM will be responsible for procurements on their respective activities under Components 1 and 2 of the Project. DSI will carry out the procurements centrally with the support of the regional directorates for contract management and oversight of the Project at the site. Procurement of consultant services will be performed by the relevant IAs with the support of the



individual experts within Component 3. Works, Goods and consultancy services shall be procured by DSI and DGWM through Open competitive bidding International or National market approach as appropriate.

31. Advance Contracting and Retroactive Financing. Procurement Regulations Paragraphs 5.1 and 5.2 (Advance Contracting and Retroactive Financing) permit that the Borrower may wish to proceed with the procurement process before signing of the Legal Agreement. In such cases, if the eventual contracts are to be eligible for the Bank financing, the procurement procedures, including advertising, shall be consistent with Sections I, II, and III of the Procurement Regulations which cover the Bank's Core Procurement Principles of economy, efficiency, transparency, fairness, fit-for purpose, value for money, and integrity. In case the IAs cannot proceed with the advance contracting, then both IAs can consider advance procurement actions that include all steps in the selection process proceedings but not including contract award. This will enable IAs to award and sign the contracts immediately after the Project's Effectiveness, advance procurement does not entail any contractual obligation or financial commitment of the IAs to the selected consultant/contractor/supplier.
32. Complaint review. The procurement complaints other than those covered under Annex III of the Procurement Regulations are to be handled by DSI and DGWM in accordance with the procedures agreed by the Bank and stipulated in the POMs. Immediately upon receipt, the complaints will be recorded in the STEP complaint module by DSI and DGWM. IAs will not proceed with the next stage/phase of the procurement process, including with awarding a contract, without satisfactory resolution of the complaint(s). Such complaints will be addressed by DSI and DGWM within a reasonable time but not later than 15 business days of complaint receipt.

