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Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 27-Dec-2017 | Report No: PIDISDSC18857

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Turkey	P158418		Turkey Irrigation Modernization Project (P158418)
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
EUROPE AND CENTRAL ASIA	Feb 27, 2018	May 31, 2018	Water
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Undersecretariat of the Treasury	Devlet Su İşleri (DSI)	

Proposed Development Objective(s)

The objective of the project is to improve irrigation service delivery in selected schemes in Turkey, and strengthen institutional capacity in the sector.

Financing (in USD Million)

Financing Source	Amount
Global Environment Facility (GEF)	2.00
International Bank for Reconstruction and Development	398.00
Total Project Cost	**400.00**

Environmental Assessment Category	Concept Review Decision
B-Partial Assessment	Track II-The review did authorize the preparation to continue

Note to Task Teams: End of system generated content, document is editable from here.

Other Decision (as needed)

B. Introduction and Context

Country Context

1. With a GDP of US$800 billion, Turkey is the 17th-largest economy in the world. Between 2001 and 2015, Turkey achieved significant economic and social development results, with per capita income increasing nearly threefold, and poverty incidence decreasing by more than half (from roughly 44 percent to 18 percent). Extreme poverty posted an even higher proportional decline, decreasing from 13 to 3 percent. This period was marked by macroeconomic and fiscal stability, financial sector reform, closer economic ties with the European Union (EU), increased foreign trade, and a large-scale shift of labor from agriculture to manufacturing. Turkey is now a member of the Organization for Economic Co-operation and Development (OECD) and the G20, an increasingly important donor of Official Development Assistance (ODA), and its development success has been lauded as a model for aspiring developing countries.

2. Going forward, Turkey is facing political, security, and economic challenges. In recent years, various commonly-accepted indicators of the quality of a country's institutions (including Doing Business, the Corruption Perceptions Index, and the World Economic Forum's Competitiveness Index) have shown that Turkey remains below the levels obtained in high-income countries. Since early 2015, the country has also experienced a series of political challenges, including a long election cycle (with parliamentary elections in both June and November 2015), a Cabinet reshuffle in May 2016, and a failed coup attempt in July 2016. In April 2017, voters approved a package of constitutional reforms that created an executive presidency altering the relations between the branches of government to improve efficiency. Regional dynamics and impacts from the Syrian conflict are also imposing significant challenges, particularly for the east and south-east of Turkey, with negative impacts on local economies in some regions, depressing tourism and discouraging investment. The Government of Turkey is hosting about three million Syrians which is creating pressures on services and the labor market. At the same time, the geopolitical turmoil in the Middle East region and its implications for the east and south-east of Turkey have affected local economies in some regions, depressing tourism and discouraging investment.

3. Despite this challenging environment, Turkey's development foundations remain sound. With its unique location at the crossroads of Asia and Europe, a dynamic young population, and excellent access to the EU, Turkey has continued to attract global investors. Its ability to address the current political, social, and economic challenges, and its progress on the reform agenda will determine when it will achieve its aspiration to become a high-income country.

Sectoral and Institutional Context

4. Irrigation Development: Turkey has 28 million hectares of arable land, and while the agricultural sector accounts for about two-thirds of the country's water use, its overall contribution to GDP has steadily declined from 18 percent in 1990 to 8 percent in 2014. However, agriculture still employs 21 percent of the population, and accounts for 60 percent of the rural workforce. Poverty is higher in rural areas, affecting one third of the rural population, in contrast with the poverty incidence of 11 percent in urban areas. The relatively high rural population (approx. 27 percent) and its primary dependence on agriculture point to low levels of productivity, stemming mainly from fragmented land, arid and semi-arid agro-climatic conditions,

and sub-optimal irrigation and agricultural practices. Agriculture in Turkey is heavily dependent on irrigation, which triples productivity compared with rain-fed agriculture. Over the past 40 years, successive Governments have tried to mitigate the uneven distribution of resources and rainfall by increasing access to irrigation, as a result of which the gross irrigated area has grown from 2.3 million hectares in the 1970s to 6.2 million hectares today. Expansion and modernization of irrigation, along with other investments for increasing agricultural productivity, remain a priority agenda for Turkey.

5. Irrigation systems have been well developed in Turkey, by Devlet Su İşleri (DSI), which is the state agency responsible for water resources planning, development, and management, including most of the irrigation schemes in the country. Although a majority of the irrigation schemes are based on surface water, about 20-25 percent of the irrigable area is dependent upon groundwater. Currently, water delivery systems in irrigation schemes are comprised of classical open canals (39 percent), canalettes (44 percent) and piped systems (17 percent). Since 1993, the Government has significantly accelerated the program for transferring the operation and maintenance (O&M) of irrigation systems to local Irrigation Associations (IAs), which in most cases are Water User Associations (WUAs) or agriculture cooperatives, but also include village administrations and municipalities in some cases. There are many instances of successful WUAs that are competently operating large and efficient irrigation systems, and Turkey is considered one of the global leaders in Participatory Irrigation Management. IAs are responsible for irrigation O&M in 959 schemes, covering more than 2 million hectares of irrigated land, as shown in Table 1.

Table 1. Distribution of irrigation systems transferred to different IAs, as of April 2016

Organization	No.	Rate (%)	Land (ha)	Rate (%)
WUA	389	40	2.074.510	89
Cooperative	225	23	129.728	6
Municipality	120	13	73.537	3
Village Legal Entity	209	22	36.482	2
Other	16	2	10.097	
Total	959	100	2.324.354	100

6. Growth and Climate Change: Turkey's rapid growth of the last two decades has caused its environmental footprint to increase rapidly. Water is amongst the key resources that could become a binding constraint on growth. While water availability is generally considered sufficient for now, the country is projected to use all its 112[1] billion m3 of exploitable water resource by 2023 (with agriculture, domestic water, and industry as the main users). Due to its large population and already high levels of water resource use, Turkey faces a significant water security threat from climate change, which will manifest through potential drying associated with the rising temperatures, changes in precipitation patterns, and reduced seasonal snow storage. Various model ensembles predict a consistent magnitude of precipitation decrease (5-25 percent) for the western and Mediterranean regions of Turkey during the first-half of the 21st century. In selected basins for which detailed climate simulations have been conducted, runoff reductions of more than 50 percent are predicted (Seyhan, Gediz, and Buyuk Menderes basins). Similarly, the annual discharge projections for the Euphrates River indicate substantial decreases (30-70 percent) by the end of the 21st

[1] This is Turkey's official estimate (From DSI: http://en.dsi.gov.tr/land-water-resources). While it is different from the FAO/AQUASTAT estimate of 213 BCM (http://www.fao.org/nr/water/aquastat/countries_regions/TUR/), this is the number used in Turkey's international communications, as well as by the international development agencies including the World Bank.

century. In general, shifting precipitation patterns from snowfall to rainfall and faster melting snow covers are expected to lead to water shortages in elevated areas where the snow storage plays a crucial role in regulating water supply throughout the year.

7. Institutional arrangements: The Water Law that provides the basis of the legal framework governing the water sector in Turkey dates back to 1926, and suffers from a number of gaps related to infrastructure investments, industrial water needs, groundwater usage, irrigation, and pollution. The assignments of authority and responsibility to different water-related agencies are also not clear. To address these gaps, GoT has prepared a draft Water Law which aims to (i) harmonize the various water-related legislations passed from 1926 onwards; (ii) address the gaps in the existing legal framework; (iii) clarify responsibilities and ensure inter-sectoral coordination; and (iv) achieve equivalence with the EU Water Framework Directive, with significant emphasis on water quality and integrated basin management. Following extensive consultations and revisions, the draft Water Law is now awaiting submission to the Parliament.

8. While the IAs were first established in 1993, the legal framework for governance and the role of state institutions in the irrigation subsector has gradually evolved over time. In 2011, the supervisory role of DSI over IAs was strengthened through the enactment of the Irrigation Associations Law (Law No. 6172) which (i) authorized the DSI "as the dominant public water authority, to act as an 'advisory and controlling institution' to IAs"; (ii) redefined the status of IAs from 'local administration associations' to 'public legal entities', thus subjecting them to administrative and technical audits; and (iii) opened the possibility for DSI to take the management of irrigation schemes away from IAs, to either manage them itself or through outsourcing to the private sector. While DSI remains the leading agency in irrigation as well as water resources planning and development, GoT has also established a new agency - the General Directorate of Water Management - in the Ministry of Forestry and Water Affairs (MoFWA), as the policy and regulatory body in the water sector, which is furthermore charged with improving inter-agency coordination.

9. Agriculture and Irrigation Performance: Despite large investments in irrigation expansion, Turkey has yet to reach its full efficiency and agricultural productivity potential. Most schemes are based on open channels, where water losses from leakage and evaporation are high compared to closed systems, especially if the channels are not well-maintained. However, the largest fraction of water losses happen at the field-level, since almost 90% of the irrigation area in Turkey has widespread use of inefficient surface irrigation methods (such as flooding, furrow, and border irrigation). The pricing of agriculture water is area-based and not volumetric, which does not incentivize the adoption of more efficient on-farm irrigation systems. In addition, the implementation of physical works for irrigation rehabilitation/modernization has often suffered from long delays, due to the spreading of available resources between too many schemes at the same time. The majority of Turkish farming enterprises are still small holdings or family farms (almost two-thirds are smaller than five hectares), and there is a high degree of fragmentation. While DSI is charged with the provision of common irrigation network, the Ministry of Food, Agriculture, and Livestock (MoFAL) is responsible for (i) land consolidation; (ii) supporting farmers in adoption of efficient on-farm systems; and (iii) providing agricultural extension and marketing services. Land consolidation is beneficial because it reduces the cost of irrigation modernization and enables farmers to adopt efficient operational practices. However, it needs to be initiated well in advance of the commencement of physical works for irrigation development or modernization. Strong coordination between DSI and MOFAL teams at the field-level is critical, given that poor on-farm water management practices, land fragmentation, and inefficient

crop patterns (often supported by subsidy mechanisms) are the biggest constraints in translating irrigation provision into higher agricultural productivity and farmer incomes.

10. As result of these various gaps, irrigation performance lags behind in a large number of schemes in Turkey, which shows in the national-level statistics. An 80 percent increase in agricultural water use between 1992 and 2002 led to only a 12 percent increase in agricultural GDP during the same period. Water consumption per hectare in Turkey amounts to more than 7,000 m^3, and the GDP per ton of water used in Turkey is only about 40 percent of that of high-income countries.

11. Irrigation Modernization and Its Challenges: DSI started irrigation modernization in 2008, thereby focusing on converting the water delivery networks to pressurized, closed-channel (pipe-based) systems, instead of rehabilitating the traditional, open-channel systems. This approach reduces water losses in conveyance, and allows the use of high-efficiency on-farm irrigation systems such as drip and sprinklers. Irrigation modernization is being implemented on a demand-based model. To date, WUAs' interest in irrigation modernization has been quite high, and 185 applications for modernization have been received since 2008. Out of these, 137 irrigation schemes have been accepted; 13 have been completed; 15 are under bidding/construction; and 60 are in the planning and design preparation stage. However, 26 of the irrigation schemes have not moved forward due to a lack of the required actions (such as payment of the required advance contribution) from the proposing WUAs. This underscores the fact that in spite of Turkey's reputation as a pioneer in the establishment of participatory irrigation organizations, a number of WUAs suffer from low technical, managerial and financial capacity. DSI maintains and regularly updates a database of WUAs, and is now conducting a nation-wide assessment of WUAs' capacity and performance. Early results indicate that a growing number of WUAs are in a poor financial condition, arising from a vicious cycle whereby inadequate performance of the irrigation infrastructure and on-farm systems leads to low incomes, thereby constraining the farmers' ability to make productive investments.

12. Irrigation in Turkey's National Transformation Program: Improving irrigation provision and performance is a priority area for GoT, and its 10th Development Plan includes a "Transformational Program" (2014-2018) for improving the efficiency of water use in agriculture. The targets of this program include: increasing the net irrigation area under operation by almost 30 percent, from 2.91 m ha to 3.75 m ha; raising irrigation efficiency from 42 to 50 percent; expanding the use of water saving modern irrigation systems by 10 percent per year; and decreasing the use of groundwater by 5 percent during the plan period. The transition to closed irrigation systems will be accelerated, to cover at least 25 percent of the irrigated lands under modern water-saving irrigation systems The Action Plan prepared by MoFWA for improving water use in agriculture identifies the following priorities: (i) Renewal of old canals and networks and replacement by closed systems; (ii) Expansion of water-efficient closed systems and modern irrigation methods in the existing and new irrigation projects; (iii) Increasing R&D studies and adoption of new technologies; and (iv) Acceleration of land consolidation in irrigation areas and increasing network efficiency. The Plan also includes significant investments and corresponding targets for land consolidation and promotion of good agricultural practices[2]. It is expected that these thrust areas would be maintained in the 11th Development Plan, which is currently under preparation.

[2] A Progress Report on the achievement of the 10th plan targets is expected to be released soon.

13. Based on a request from GoT, the World Bank will aim to support the irrigation modernization element of the agenda under the 10th and the 11th Development Plans. The project will focus on the irrigation schemes which are more than 30 years old, and which have suffered from decades of inadequate O&M funding and an accumulation of deferred maintenance works. Under-utilization and deterioration of networks have reduced the quantity and quality of irrigation delivery, and as a result, these schemes have experienced significant drops in effective irrigated area (within the commands) as well as productivity, thus causing a reversion of a large number of farmers from high-yielding and stable irrigated agriculture to low-yielding and risky rain-fed agriculture. Modernization of these schemes will lead to income and economic growth in these areas, and hence contribute directly to poverty reduction and shared prosperity Furthermore, a key element of these irrigation schemes is that they already have a fixed water allocation dedicated for irrigation in the storage of the associated dam/reservoir, which is currently unused or partially used; therefore the modernization investments will allow productive use of this water allocation, without adversely affecting the basin/sub-basin level water balance.

Relationship to CPF

14. The World Bank's Country Partnership Framework (CPF) for Turkey covers the five-year period FY17-21, and is aligned with the objectives of Turkey's 10th National Development Plan. The CPF is based on the findings of the recently completed Systematic Country Diagnostic, and focuses on three priority themes: (i) Supporting economic growth; (ii) Promoting inclusive development; and (iii) Ensuring resilience and sustainability.

15. The proposed project directly supports the three themes of the CPF, by assisting the key Government agencies in going beyond the routine irrigation infrastructure investments, to harmonization with agriculture productivity interventions and associated value added activities, for reaping the full potential gains of investments. As mentioned above, the project will target the older, deteriorated, and under-performing irrigation schemes, where the modernization investments and associated services will not only lift the incomes of the farmers engaged in low-value agriculture, but also contribute to general economic growth in these areas. Furthermore, since agriculture is the biggest consumer of water in Turkey, improving irrigation efficiency and productivity will contribute directly to enhancing resilience and resource sustainability in this very important sector.

C. Proposed Development Objective(s)

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

The objective of the project is to mprove irrigation service delivery in selected schemes in Turkey, and strengthen institutional capacity in the sector.

Key Results (From PCN)

16. The proposed key results (PDO-level indicators) are presented below:

a) Area provided with improved irrigation services (corporate indicator, hectares)
b) Area brought under efficient on-farm irrigation systems (hectares)
c) WUAs strengthened (number)
d) Water users provided with improved irrigation service (number, gender-specific[3])

D. Concept Description

17. Turkey is already embarked upon an ambitious expansion and modernization program in the irrigation sector, and DSI, as its main irrigation agency, has strong capacity for managing a large infrastructure portfolio. Similarly, MOFAL has a well-developed nation-wide programs of land consolidation, and for provision of agriculture extension and marketing services. In this context, the proposed project will support incremental institutional advancements, related to inter-agency coordination, supporting private sector participation in irrigation, and developing a systematic approach to strengthening of the WUAs. The bulk of project financing will go towards the modernization of selected irrigation schemes, which will serve as a platform for implementing and demonstrating the proposed improvements. Accordingly, the main motivation for this project is to develop a model of comprehensive irrigation modernization that is not limited to the improvements to the irrigation network infrastructure, but includes: (i) integration of measures to improve irrigation operations, on-farm irrigation infrastructure, land consolidation, agricultural productivity, and market linkages; and (ii) a systematic approach to strengthening the capacity of WUAs.

The project will comprise the following components:

18. **Component 1. Irrigation Systems Modernization (~US$ 380 million):** This component will finance investments to rehabilitate and modernize DSI's irrigation systems in the selected schemes. DSI has proposed a long list of 37 irrigation modernization schemes, which cover a total area of approx. 185,276 ha, with a total estimated cost of 2,491 million TL (US$ 683 million). This list includes 7 schemes for which the feasibility studies are ready at this stage. The actual performance levels of the schemes selected for the project financing will be established through a baseline survey to be conducted during the preparation period. This component will be implemented by DSI, and will include irrigation infrastructure modernization (converting from open-channel to pressurized systems), as well as improved operations and metering. The selected irrigation modernization schemes will involve: (i) better upstream integration of agriculture issues into the final design of schemes; (ii) stronger coordination with MOFAL for implementation of field-level activities; and (iii) upstream consultations with WUAs, and incorporation of their feedback in the final design of schemes. The commitment of project funds to the selected schemes would also ensure on-time completion of the modernization works, which would strengthen trust between WUAs and DSI. All irrigation rehabilitation schemes to be financed under the project will be selected during the project preparation process. This component will be planned and implemented in coordination with MOFAL, which will ensure that DSI and MOFAL's field-level teams will provide a more coordinated interface to the farmers for rehabilitation design, land consolidation, support for adoption of efficient on-farm irrigation (sprinkler and drip systems), and provision of agriculture extension and marketing services.

[3] Women are mostly working in agriculture as unpaid family workers, and very few are farmers/land owners or WUA members. Based on the availability of disaggregated gender information in farmer registration systems, the team will explore the feasibility of collecting gender-specific information on beneficiaries during the project preparation phase.

The two agencies have signed a Memorandum of Understanding (MOU) confirming the modalities for achieving closer coordination in the design and implementation of irrigation schemes in Turkey.

19. **Component 2: Innovation and Institutional Support (~$15 million):** This component will provide direct design and implementation support to DSI in the following areas:
    a) Subcomponent 2 (A) - Promoting Private Sector Participation: This will provide structured support to DSI for implementing private sector partnerships in irrigation. DSI has previously attempted to contract two Build-Operate-Transfer (BOT) projects in irrigation, but the tenders had to be cancelled due to inadequate response. In addition to the need for expertise in design and implementation of private sector partnerships, it is also critical to carefully assess the legal and policy constraints that may hamper private sector participation in irrigation in Turkey. Accordingly, this subcomponent will provide beginning-to-end support to DSI in this area, including (i) using systematic screening criteria to identify good candidate projects for private sector participation in irrigation, with due consideration to various possible modalities of engaging the private sector; (ii) hiring expert consultants to conduct pre-feasibility analyses (including technical, economic, financial, social, environmental and legal aspects) of the short-listed projects; (iii) selecting projects for detailed feasibility analysis, design, and preparation of bid documents; (iv) organizing a pre-bid contractors' conference to increase private sector interest and get feedback; (v) providing expert support for finalizing bid documents and conducting contract negotiations; and (iv) monitoring contract implementation and troubleshooting of emergent problems through the duration of the project.
    b) Subcomponent 2 (B) - Designing and Piloting a National Program for WUA Capacity-Building: This will include a GEF grant to provide design and implementation support to DSI for developing a national program for WUA's capacity-building for water management. The program would build on DSI's ongoing efforts to develop a web-based, participatory water use monitoring platform for WUAs, and will include: (i) support for roll-out and implementation of the participatory water use monitoring; (ii) upgradation of national WUA's database, to allow performance monitoring on various dimensions; and (iii) WUA trainings for improving technical and financial management capacity. Based on a successful roll-out, this program may be expanded to include incentive-based elements for improving WUA performance. A successful implementation of this sub-component would establish a systematic and incentive-based approach for addressing the capacity strengthening needs of WUAs (and, possibly, other types of IAs) at varying levels of performance throughout the country.
    c) Subcomponent 2 (C) - Piloting Solar-Powered Groundwater Irrigation: This will include a GEF grant to support the feasibility analysis and pilot implementation of solar-powered groundwater irrigation in Bolvadin, Afyon. The objective is to design and implement a sustainable solar-powered irrigation system that (i) provides low-cost alternative to the current fossil fuel-based pumping used by the farmers; (ii) ensures reliable supplemental irrigation based on groundwater; and (iii) incorporates the appropriate regulatory and conservation measures for ensuring the long-term sustainability of groundwater resources.
    d) Subcomponent 2 (D) - Project Management: This will finance the multiple activities required for coordination and management of the project; and will include, *inter alia*, community consultations and partnership program, communications, grievance redress mechanisms, monitoring and evaluation, and environmental and social management.

20. The proposed project design is intrinsically linked to addressing the increasing water security threat from climate change, by promoting more efficient use of water resources in agricultural production.

Modernization of irrigation systems (conveyance and field-level), land consolidation, and piloting of solar-powered groundwater irrigation will reduce water usage, energy consumption, and GHG emissions. GHG accounting will be undertaken during the preparation phase, to quantify the GHG emission savings from the project.

21. Project Activities Sequencing: The contracts for irrigation rehabilitation schemes include the construction period (3-4 years), and O&M period (2-3 years). The sequencing of project activities, within the proposed project duration of 7 years, is presented below for five typical irrigation rehabilitation schemes. Depending on the size of the scheme, the construction contracts are usually phased to minimize the disruption of agricultural activities; accordingly, a large irrigation scheme may be rehabilitated in two or three phases.

Figure 1: Timing and Duration of Main Project Activities

Scheme	Progress (in area covered, ha)						
	2018 (Y1)	2019 (Y2)	2020 (Y3)	2021 (Y4)	2022 (Y5)	2023 (Y6)	2024 (Y7)
Scheme 1							
Scheme 2							
Scheme 3							
Scheme 4							
Scheme 5							

Legend

Beige: Construction; Blue: O&M (will also include on-farm systems and extension services)

Note to Task Teams: The following sections are system generated and can only be edited online in the Portal.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

The project will finance investments for modernizing DSI's irrigation systems in the selected schemes. DSI has proposed a long list of 37 irrigation modernization schemes, which cover a total area of approx. 185,276 ha, with a total estimated cost of 2,491 million TL (US$ 683 million). This list includes 7 schemes for which the feasibility studies are ready at this stage. The possible project investments will be selected from this long list of schemes, which are spread over the country, but only in the inland basins of Turkey. Therefore, the project location will correspond to the location of the irrigation schemes that are finally selected for modernization under the proposed project. While the first set of schemes to be financed under the project will be finalized during the preparation process, the selection of subsequent schemes will be completed during the early part of the project implementation period.

The primary infrastructure investments, financed by Component 1 of the project, involve replacement of open-channel systems (canals and distribution networks) with closed, pressurized systems. This component will be implemented by DSI, and will also include improved operations and maintenance, and capacity-strengthening support for Water User Associations (WUAs). . Component 2 is aimed at innovation and institutional strengthening at a nation-wide level, and will include a GEF-funded solar-powered irrigation pilot in a selected area (Afyon Bolvadin), that would aim to provide a low-

cost alternative to the current pumping method.

B. Borrower's Institutional Capacity for Safeguard Policies

The key counterpart of the project will be (i) DSI, which is an associated agency of the Ministry of Forestry and Water Affairs (MOFWA). Of course the farmer communications part of the project will be supported by the Ministry of Food, Agriculture and Livestock (MOFAL). DSI had participated in World Bank-financed projects quite a while ago, but does not have recent experience of World Bank engagements, and therefore it will be necessary to provide the training on World Bank safeguard policies. Apart from the WB safeguards policies, DSI is very competent in implementing both the national expropriation law and resettlement law. There are qualified expropriation experts in these institutions however during project preparation the capacity to manage social risks and stakeholder engagement will be assessed by the Bank staff.

C. Environmental and Social Safeguards Specialists on the Team

Sanjay Agarwal, Social Safeguards Specialist
Arzu Uraz Yavas, Social Safeguards Specialist
Esra Arikan, Environmental Safeguards Specialist

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The project will include infrastructure investments for modernization of irrigation schemes, the selection of which is yet to be finalized by the Government and World Bank teams. The primary infrastructure works will involve replacement of existing open channels (earthen/concrete) with pressurized closed channels (pipes) for irrigation. Since the short-list of investments will be determined during the project preparation stage, an Environmental and Social Management Framework (ESMF) (for Category B projects) will be prepared and disclosed before appraisal. Site specific ESMPs, which will be required by appraisal, will be agreed with the Borrower in line with their procurement plan for the first year (approx. 3-4 sub-projects). For the sub-projects which are not identified before appraisal, the ESMF will describe the roadmap for preparing site-specific ESMPs. The ESMF and ESMPs will also include a consideration of the broader impacts of the transformation of the open-channel irrigation systems to "closed" water systems, and will include consultations and mitigation measures to address any negative impacts. Moreover, the ESMF and site specific ESMPs will address water utilization and

		potential impacts on resource sustainability, communities and other water users. The main environmental impacts will be similar to basic construction work impacts. Issues related to excavation waste disposal, disposal of demolished material, impacts on top soil, vegetation, impacts related to dust formation, air quality, noise impacts, occupational and community health and safety will be addressed in the ESMPs. The project will have significant social impacts, which are mainly expected to be positive. Among the safeguards instruments, there will be a standalone Social Impact and Gender Assessment (SIGA) and a Resettlement Policy Framework (RPF) which will be prepared prior to Appraisal. The SIGA will also inform the ESMF and the ESMPs which will consider the entire range of social impacts, including any changes in land use patterns under Component 1, which can have social impacts on different user groups and may prompt conflicts among them. Activities under Components 2 will also lead to changes in pricing, crop patterns and land use, which will have social impacts on farmers. The SIGA's scope will cover, assessing pricing changes and how it is perceived by different water users (upstream-downstream), stakeholder mapping among these users and a stakeholder engagement plan together with a GRM will be proposed. Also the SIGA will look into any child labor or forced labor risks in agriculture (for example with Syrian refugees or seasonal workers) and propose mitigation measures, as necessary and appropriate. Issues related to the Government’s pre-existing and ongoing land consolidation program will also be evaluated under the SIGA for legacy issues that can reflect on the project activities.
Natural Habitats OP/BP 4.04	No	Since the project investments will be exclusively limited to the modernization of existing irrigation schemes, they will not impact any designated natural habitats. If there are any cases of (non-designated) natural habitats which overlap with the designated irrigation areas, the project will avoid investments in such areas, and screening criteria will be used to systematically identify such cases.

Forests OP/BP 4.36	No	Since the project investments will be exclusively limited to the modernization of existing irrigation schemes, they will not impact any designated forest areas.
Pest Management OP 4.09	TBD	The project may indirectly result in changes in farm-level activities, including cropping patterns, and nutrient and pest management. This will be discussed at the appraisal stage.
Physical Cultural Resources OP/BP 4.11	TBD	Necessity to trigger this policy depends on the outcomes of the project preparation. The chance finds procedure will be applied and will be included in the ESMF and ESMPs regardless of the policy being triggered. In case the policy is triggered, a cultural heritage management plan will be a part of the EA documentation.
Indigenous Peoples OP/BP 4.10	No	
Involuntary Resettlement OP/BP 4.12	Yes	Component 1 of the project, involves replacement of open-channel systems (canals and distribution networks) with closed, pressurized systems. DSI will make an effort to use existing roads and follow current irrigation schemes, and where additional land is required, may need to expropriate land. Therefore, OP 4.12 will be triggered. Some sub-projects may involve already completed and/or initiated land consolidation activities. During project preparation, a Social Impact and Gender Assessment (SIGA) will be conducted for the project, which will aim to investigate several social impacts and gender issues associated with the project scope. This will also include a thorough research on the land consolidation activities carried out by the Government and possible impacts on the sub projects that are likely to be included. The outcomes of the study will also provide additional input in the RPF in terms of both background information and land acquisition issues in areas where land consolidation has taken place. The SIGA will also identify gaps, if any, between land consolidation undertaken under Turkish legislation and under OP 4.12 principles. Preliminary assessments indicate that the land consolidation program in Turkey is being carried out by MoFAL successfully and on the basis of voluntary participation of farmers. However, there are also some cases where consolidation has been involuntary. The

		SIGA will identify the sub-projects in which land consolidation activities have been completed or about to be completed. For sub-projects, in which land consolidation is yet to start, DSI will have control over the land consolidation process and DSI will ensure that the process is compliant with OP 4.12. However, for those sub-projects, where land consolidation activities have been completed or are about to be completed, the SIGA will identify ways to ensure compliance with OP 4.12. However, in the unlikely case that it is found that land consolidation may involve involuntary resettlement, Resettlement Action Plans (RAPs) will need to be prepared for those specific investments. A Resettlement Policy Framework (RPF), which will describe the procedures for preparing and implementing RAPs for such sub-projects selected during implementation, will also be prepared. Legacy land consolidation issues, resulting from the sequencing of land consolidation and irrigation modernization activities may also pose a reputational risk if they are perceived as part of the World Bank-financed project. The SIGA will assess legacy issues and a plan will be put in place to monitor these risks.
Safety of Dams OP/BP 4.37	TBD	This project will not finance any dams or reservoirs. However, the policy may have to be triggered since many investments under Component 1 (pressurized irrigation systems) derive their water supply from an upstream dam/reservoir. The final decision for triggering this policy and the required instruments will be clarified as soon as the project investment list is finalized.
Projects on International Waterways OP/BP 7.50	No	Project will only finance schemes which are located in the National Basins list of Turkey. The list has been agreed with the Government of Turkey by the Legal Department of the World Bank, and will be provided in the environmental assessment document to be prepared by the client.
Projects in Disputed Areas OP/BP 7.60	No	

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Dec 15, 2017

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

The project is initially categorized as 'B' since it envisages no new investments in greenfield land or significant change of land use. The project will mainly focus on modernization of existing irrigation systems, and providing assistance to farmers and Water User Associations for adopting modernized irrigation and farming practices. It is anticipated that any activity which may trigger Category A designation will be excluded and made ineligible for project financing.

Since the short-list of investments will be determined during the project preparation stage, an Environmental and Social Management Framework (ESMF) (for Category B projects) together with a standalone Social Impact and Gender Assessment (SIGA) and a Resettlement Policy Framework (RPF) will be prepared and disclosed before appraisal. For the first set of project investments (which will be agreed with the borrower), site-specific Environment and Social Management Plans (ESMPs) will be prepared and disclosed in addition to the ESMF. For the sub-projects which are not identified before appraisal, the ESMF will describe the roadmap for preparing site-specific ESMPs. The ESMF and ESMPs will also include a consideration of the broader impacts of the transformation of the open-channel irrigation systems to "closed" water systems, and will include consultations and mitigation measures to address any negative impacts.

However, in the unlikely case that it is found that land consolidation activities supported by the project may involve involuntary resettlement, Resettlement Action Plans (RAPs), in accordance with the RPF, will need to be prepared for those specific investments. The ESMF will include an RPF, which will describe the procedures for preparing and implementing RAPs for such sub-projects selected during implementation.

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