

**P001015 Türkiye: Water Efficiency and Climate Resilience for Results
(Results-Based Financing)**

Environmental and Social Systems Assessment

A Summary

March 2026

Background

The Results-Based Project (RBP) aims to enhance water conveyance efficiency and climate resilience in Türkiye's water-scarce and flood-prone regions by promoting modern, pressure-regulated irrigation systems and strengthening flood control capacity. The RBP represents a subset of the Devlet Su İşleri (General Directorate of State Hydraulic Works, DSI) Plan of 2024-2028 and is aligned with its objectives, geographic coverage, financing frameworks, indicators, and target results. The RBP supports operationalization of core components of the national DSI Plan on upgrade and expansion of irrigation systems through improving conveyance efficiency and financing structural flood-control measures. The RBP will be implemented in six years. The financing for the RBP links disbursements to verified and measurable outcomes, including land area equipped with new or expanded climate-resilient irrigation services, increased irrigation conveyance efficiency, and expanded land area with reduced risk of flooding for safeguarding livelihoods, land and people.

Eleven subprojects are included in the RBP:

- Burdur-Golhisar Irrigation Rehabilitation
- Hatay Amik-Afrin Reyhanli Dam¹ Irrigation 1st Section Completion
- Aydin Cine Kocarli Bagarasi Irrigation 2nd Section Completion
- Mersin-Pamukluk Dam Irrigation Completion 2nd Part
- Bayramhacili Pump Irrigation
- Construction of Ordu Fatsa Bolaman Weirs
- Çankırı-Merkez Tatlısuyolu (Değim) Stream 1st Section
- Samsun-Merkez Mert River
- Kastamonu Araç District Araç Stream Rehabilitation Part 1
- Düzce-Merkez Asarsuyu Stream Upper Basin Measures
- Bartın Amasra Çakraz Village Büyükdere 2nd Section

An Environmental and Social Systems Assessment (ESSA) has been conducted for the proposed RBP. The overall objectives of the ESSA are to: (a) assess the potential Environment and Social (ES) risks and impacts of the proposed RBP; (b) assess the adequacy of the systems proposed to be applied to the RBP for managing potential ES risks and impacts; (c) assess the institutional capacity of DSI and involved agencies in managing of ES risks and impacts of the RBP; and (d) recommend actions to strengthen specific aspects of the capacity of involved agencies and these systems for mitigating ES risks and impact during the preparation and implementation of the RBP. Outcomes of the assessment would help the RBP avoid, minimize, or mitigate ES adverse impacts; promote ES sustainability in the RBP design; help clients strengthen their ES systems and develop adequate capacity to manage ES risks and impacts; and promote informed decision-making regarding the RBP's ES effects.

Potential Environmental and Social Risks and Impacts of the RBP.

Overall, the proposed RBP is expected to deliver substantial and mutually reinforcing ES benefits by improving water efficiency, climate resilience, and sustainable land and water management. Modernized irrigation and

¹ The RBP does not finance new dam construction or rehabilitation as these are high-risk and complex hydrotechnical works. Instead, it focuses on downstream distribution networks and localized flood-control interventions

flood control infrastructure will reduce water losses, stabilize water supply, protect soils and ecosystems, minimize losses due to flood impacts, improve water quality, and lower energy use and associated greenhouse gas emissions, while enhancing agricultural productivity and food security. These environmental gains are closely linked to social benefits, including increased incomes, employment generation, strengthened rural livelihoods, improved public health, and reduced disaster-related losses. The RBP will also support more equitable access to water, enable empowerment of the Water User Associations through improved governance and digitalization, promote women's participation and leadership in water management, and enhance community resilience by reducing flood risks and associated displacement. Together, these outcomes contribute to safer living conditions, stronger institutions, and long-term, inclusive, and climate-resilient rural development. The RBP may also be associated with the following ES risks and impacts:

- Environmental risks: The environmental risks associated with the RBP are assessed as medium, temporary, site-specific, reversible and manageable, and the RBP is expected to deliver overall positive environmental outcomes. During the construction phase, irrigation and flood control sub-projects may result in temporary air, noise, and dust emissions; generation of construction and demolition waste; soil erosion and sedimentation; localized water pollution from runoff; occupational and community health and safety risks; and limited, short-term disturbance to habitats, particularly in riparian areas. These impacts are predictable, largely reversible, and limited in scale and duration. They can be effectively mitigated through standard construction practices, sound water and drainage management, biodiversity avoidance measures, and compliance with national legislation and international good practice. Notably, the RBP eligibility criteria explicitly exclude high-risk activities that would result in significant adverse impacts on critical natural habitats, protected areas or biodiversity areas as defined by national law, or physical cultural heritage. During the operational phase, irrigation projects may pose risks related to increased water abstraction, waterlogging and salinization, agrochemical runoff, localized pressures on biodiversity, and a low likelihood of invasive species introduction. Flood control projects may affect natural flood regimes, sediment transport processes, erosion patterns, downstream distribution of flood risks, and water quality. As a result, RBP-financed investments are not expected to generate significant, cumulative, irreversible, or adverse environmental impacts.
- Social risks: The RBP's social risks are assessed as moderate, site-specific, and manageable across irrigation and flood control investments. During the design and preparation phase, key social risks arise from land acquisition and resettlement, as well as from gender and social inclusion constraints, particularly when eligibility for project benefits is tied to land ownership and formal registration with irrigation institutions. Land acquisition by subproject implementation would cause physical displacement, requiring careful management to avoid adverse impacts on the livelihoods of affected households. During the construction stage, temporary community health and safety risks may arise from excavation works, heavy machinery, construction traffic, and short-term disruptions to community spaces. In the operational phase, irrigation projects may face risks related to imbalances in water distribution and continued gender-based barriers to participation in water governance, while flood control structures may affect land use and access along river corridors and pose localized public health risks if not properly managed. Overall, these social risks can be effectively mitigated and managed through robust planning and standard measures, including inclusive stakeholder engagement, transparent and well-planned land acquisition and compensation - including livelihood support provisions to affected households, labor and community interaction management, community health

and safety measures, and equitable water and asset governance.

- Capacity of involved agencies to manage the identified risks and impacts under the RBP: DSI is the key agency responsible for managing the identified ES risks and impacts of the RBP. The agency has long-standing experience in executing large-scale water infrastructure projects that involve environmental assessment and permitting, land acquisition, and community engagement. Its internal procedures are aligned with national regulations and have been successfully adapted to international standards in previous externally financed projects. The presence of established systems for environmental assessment, Occupational, Health and Safety (OHS) compliance, and grievance management reinforces the credibility and applicability of DSI’s institutional practices to the RBP context. DSI’s implementation experience provides a solid operational foundation for ES risk management and monitoring. Despite the overall adequacy of DSI’s institutional framework, several ongoing challenges remain that could affect the full effectiveness of ES management. These include uneven documentation and monitoring practices across regional offices, limited integration of gender and social inclusion considerations into project planning, and the absence of a unified digital system for tracking ES performance data. In certain cases, coordination among departments could be strengthened to improve information flow and reporting consistency. While these issues do not undermine the overall functionality of DSI’s ES management system, they highlight areas requiring continuous improvement to ensure harmonized performance and compliance across all regions.

Environmental and Social Actions

The ESSA concludes that the key ES risks and impacts of the proposed RBP are considered to be medium, site-specific, temporary, reversible, and predictable, which can be effectively mitigated with standard construction practices and compliance with national environmental regulations. To ensure that the identified ES risks and impacts associated with the RBP are properly managed, the following key areas require further strengthening:

- Coordination between DSI and relevant agencies on ES aspects of the RBP.
- ES and OHS monitoring, supervision and reporting function of DSI.
- Improvement of the grievance mechanism to ensure that it is culturally appropriate and not only affected people by the projects under the RBP but also local people and concerned agencies in the seven basins can also lodge the issues, if any, and the issues are resolved and responded in a timely manner;
- Reinforcing land acquisition and land consolidation oversight through the preparation of a standardized monitoring template, routine monitoring of land acquisition and consolidation progress, providing compensation by replacement cost, and providing compensation and assistance for the informal land users, if any.
- Conducting gender assessment, and preparing, implementing, and monitoring a Gender Action Plan to strengthen women’s participation and engagement, minimize and manage of gender impacts by the RBP, support providing gender benefits from the RBP implementation, as well as to facilitate gender equality and gender mainstreaming by the RBP.

The following are the detailed ES actions that will be implemented by DSI under the RBP:

No	Issues to Strengthen	ES Actions
1.	<ul style="list-style-type: none"> • ES responsibilities are distributed among different departments of General Directorate (GD) of DSI. 	<ul style="list-style-type: none"> • GD of DSI will assign and maintain ES focal points for the RBP (one for environment, one

No	Issues to Strengthen	ES Actions
	<ul style="list-style-type: none"> Designated ES focal points are needed to coordinate efforts and ensure that all ES risks and impacts of the RBP are properly managed. 	<p>for social and one for OHS) who will coordinate and be responsible to address ES and OHS issues and actions.</p>
2.	<ul style="list-style-type: none"> Since most of the sub-projects are exempt from EIA Regulation and construction works are ongoing at all sites, the ES, OHS, and Community Health and Safety (CHS) monitoring and supervision function of DSI for construction activities needs to be strengthened to ensure strict compliance with ES and OHS legislation (Enhanced on-site ES and OHS monitoring and supervision of construction works is required). 	<ul style="list-style-type: none"> GD of DSI will prepare environmental, health and safety monitoring checklist and monthly ES monitoring report format to be used for the RBP. GD of DSI (through its regional directorates) will regularly monitor and supervise construction activities to ensure that contractors strictly comply with relevant ES, OHS, and CHS legislation, including at least monthly ES and OHS site visits. The Regional Directorates of DSI will submit monthly reports to GD of DSI. This will include completion audit of each sub-project at the end of construction activities. GD of DSI will adopt ES monitoring and reporting system for RBP.
3.	<ul style="list-style-type: none"> Grievance Redress Mechanism: In-line with national legislation, DSI shall respond to written grievances submission of petitions via physical or digital platforms within 15 days. The grievance redress mechanism shall be strengthened to ensure that verbal complaints or requests are recorded and responded to in a timely manner. Roles of village leaders in the GRM will be strengthened in sending the issues to DSI Regional Directorate and monitoring implementation of measures to manage the advert impacts of the RBP. 	<ul style="list-style-type: none"> The General Directorate of DSI will instruct Regional Directorates and contractors to record all verbal grievances received. These records will be included in monthly reports prepared during monitoring activities under Action 2. Communication channel will be agreed between the Regional Directorate of DSI with the village leaders of the RBP area and also in the seven basins. Simple guidance will be provided by the Regional Directorate of DSI to the village leaders. Village leaders can send complaints related to the RBP to the Regional Directorate of DSI and monitor the implementation of measures to manage advert impacts of the RBP.
4.	<ul style="list-style-type: none"> Payment of compensation sufficient to cover the cost of replacement for affected land and structures ; protect rights and compensation for the losses of affected informal users, ensure income and livelihoods restored by severely affected households, vulnerable affected households, including informal users. 	<ul style="list-style-type: none"> DSI is to continue applying its internal legislation and practices paying compensation sufficiently to cover full replacement cost for affected lands and assets, and protect rights and compensation for the losses of affected informal users. GD of DSI will prepare land acquisition checklist format (including also the indicators of compensation by replacement cost, protect rights and compensate for losses of informal users, and livelihood restoration of severely affected households and vulnerable affected households by the RBP, including informal users) and land consolidation. GD of DSI (through its regional directorates) will monitor regularly land acquisition progress including compensation payment unit rate,

No	Issues to Strengthen	ES Actions
		<p>compensation for informal users, and livelihood impacts of severely affected households and vulnerable affected households, including informal/secondary users – and land consolidation.</p> <ul style="list-style-type: none"> • DSI will assess impacts on severely affected households, vulnerable affected households, including secondary/informal users; if needed (livelihoods of the households are not restored), prepare and implement additional support measures or a Livelihood Restoration Program (LRP) for the households.
5.	<ul style="list-style-type: none"> • Although there is legislation in Türkiye that protects women’s rights, differences in implementation, invisible barriers, and cultural and structural factors can limit the actual protection of women. To ensure that women and girls are not adversely affected by activities under the RBP, local females can participate in the RBP activities, gender benefits brought about by the RBP, and to facilitate gender equality and gender empowerment, gender-related parameters will be assessed and a Gender Action Plan will be prepared for implementation for the RBP. 	<ul style="list-style-type: none"> • Assessment will be conducted to identify the gender impacts of RBP during preparation, implementation and operation of the RBP. • Based on the assessment and consultation, measures to manage the identified impacts; measures to ensure local females can participate in the RBP’s activities; and measures to ensure women are benefited from the RBP’s activities will be prepared. In addition, measures to promote gender equality and gender empowerment will also be explored. • A Gender Action Plan will be prepared for implementation (with the gender measures, institutional arrangements for implementation and monitoring, budget, time-schedule of implementation and monitoring, monitoring indicators, and reporting mechanism).