WATER GOVERNANCE IN TÜRKİYE

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Abbreviations

AFAD	Disaster and Emergency Management Authority
BOT	Build-Operate-Transfer
DSI	State Hydraulic Works
EU	European Union
FAO	Food and Agriculture Organization
GD	General Directorate
GWP	Global Water Partnership
ha	hectare
IBNET	International Benchmarking Network for Water and Sanitation Utilities
İLBANK	Bank of Provinces
IMT	Irrigation Management Transfer
ISKI	Istanbul Water and Sewerage Administration
IWRM	Integrated Water Resources Management
MW	Megawatt
NGO	Non-Governmental Organization
O&M	Operation and Maintenance
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
R&D	Research and Development
SDGs	Sustainable Development Goals
SPA	Special Provincial Administration
SUEN	Turkish Water Institute
TRY	Turkish Lira
TurkStat	Turkish Statistical Institute
UN	United Nations
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
USD	United States Dollar
WFD	Water Framework Directive
WWDR	World Water Development Report

1. INTRODUCTION

Definition of (Water) Governance

Governance is the exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences (UNDP, 2001).

Water governance, more specifically, is universally defined as the set of rules, practices, and processes through which decisions for the management of water resources and services are made and implemented, and decision-makers are held accountable (GWP, 2003).

Water scarcity already affects more than 40% of the global population, with nearly half of all people experiencing severe water scarcity at least one month per year, according to the latest assessments (UN, 2024). Demand for water is projected to increase by approximately 55% by 2050, driven by substantial growth in manufacturing, energy production, agriculture, and urban consumption - a projection consistent with OECD scenarios despite being based on earlier modeling (OECD, 2012). Water governance has as such come more into prominence as the lack of good governance is regarded as one of the driving factors of the global water crisis.

2. OECD PRINCIPLES ON WATER GOVERNANCE

The OECD Principles on Water Governance intend to contribute to tangible and outcome-oriented public policies, based on three mutually reinforcing and complementary dimensions of water governance:

- *Effectiveness* relates to the contribution of governance to define clear sustainable water policy goals and targets at all levels of government, to implement those policy goals, and to meet expected targets.
- *Efficiency* relates to the contribution of governance to maximise the benefits of sustainable water management and welfare at the least cost to society.
- *Trust and Engagement* relate to the contribution of governance to building public confidence and ensuring inclusiveness of stakeholders through democratic legitimacy and fairness for society at large.

Figure 1. Overview of OECD Principles on Water Governance

Box 1. The Twelve OECD Water Governance Principles

The OECD Water Governance Principles provide the 12 must-do's for governments to design and implement effective, efficient, and inclusive water policies.

Principle 1. Clearly allocate and distinguish roles and responsibilities for water policymaking, policy implementation, operational management and regulation, and foster co-ordination across these responsible authorities.

Principle 2. Manage water at the appropriate scale(s) within integrated basin governance systems to reflect local conditions, and foster co-ordination between the different scales.

Principle 3. Encourage policy coherence through effective cross-sectoral co-ordination, especially between policies for water and the environment, health, energy, agriculture, industry, spatial planning and land use.

Principle 4. Adapt the level of capacity of responsible authorities to the complexity of water challenges to be met, and to the set of competencies required to carry out their duties.

Principle 5. Produce, update, and share timely, consistent, comparable and policy-relevant water and water-related data and information, and use it to guide, assess and improve water policy.

Principle 6. Ensure that governance arrangements help mobilise water finance and allocate financial resources in an efficient, transparent and timely manner.

Principle 7. Ensure that sound water management regulatory frameworks are effectively implemented and enforced in pursuit of the public interest.

Principle 8. Promote the adoption and implementation of innovative water governance practices across responsible authorities, levels of government and relevant stakeholders.

Principle 9. Mainstream integrity and transparency practices across water policies, water institutions and water governance frameworks for greater accountability and trust in decision-making.

Principle 10. Promote stakeholder engagement for informed and outcome-oriented contributions to water policy design and implementation.

Principle 11. Encourage water governance frameworks that help manage trade-offs across water users, rural and urban areas, and generations.

Principle 12. Promote regular monitoring and evaluation of water policy and governance where appropriate, share the results with the public and make adjustments when needed.

3. ADMINISTRATIVE SYSTEM OF TÜRKİYE

In conformity with the Constitution and laws, executive power is exercised by the President. The legislative power is vested in the 600-seat Grand National Assembly of Türkiye, representing 81 provinces of the country. The legislative power can not be delegated. The judiciary is independent of the executive and the legislature. The judiciary power is exercised by independent and impartial courts on behalf of the Turkish nation.

The President, elected every five years, is the head of state and government. The President is the leader of the cabinet in the exercise of executive power. There are currently 16 ministries in Türkiye.

- Ministry of Agriculture and Forestry
- Ministry of Culture and Tourism
- Ministry of Energy and Natural Resources
- Ministry of Environment, Urbanization and Climate Change
- Ministry of Family, Labour and Social Services
- Ministry of Foreign Affairs
- Ministry of Health
- Ministry of Justice
- Ministry of National Defence
- Ministry of National Education
- Ministry of Industry and Technology
- Ministry of Interior
- Ministry of Trade
- Ministry of Transport and Infrastructure
- Ministry of Treasury and Finance
- Ministry of Youth and Sports

There are also non-ministerial organizations directly reporting to the President's Office (e.g. Presidency of Strategy and Budget).

Local Authorities

There are 81 governorates in Türkiye, one for each province, headed by the governor appointed by the President on the proposal of the Minister of Interior. The governors are officials responsible for the implementation of legislation, constitutional and government decisions in their provinces. Governors, as civil servants, are legally obliged to be politically neutral and have power over public offices within their province. They also have a certain role in local government, though mayors and councillors are elected to these roles in local elections.

The Turkish Constitution enumerates local governments as municipalities, special provincial administrations (SPAs) and villages. The administrative and financial autonomy of local governments is secured in the Constitution. The Constitution provides the following for local governments:

- Their decision-making bodies shall be directly elected by the electorate.
- They have public legal personality.
- Their organization, functions and powers shall be governed by law in accordance with the principle of decentralization.
- Local government elections shall be held every five years.
- The central government shall have the power of tutelage over local governments as described by law.
- Local governments shall be allocated with financial resources commensurate with their functions.

The SPAs are in charge of building the physical infrastructure for rural settlements (villages) in 51 provinces of non-metropolitan status. In 2014, the SPA's were abolished in the 30 provinces where the metropolitan municipality status was accorded, and its functions were transferred to metropolitan municipalities.

Established first in Istanbul in the second half of the 19th century and then in other cities, municipalities had organizations, functions and responsibilities governed by a law enacted in 1930. Premised on a strong central tutelage on municipalities, the law of 1930 remained in effect for 85 years to be ultimately repealed in 2005.

In the said period, municipalities were established in many small settlements. The number of municipalities that stood at 421 in 1923 went up to 3.215 by 2000. Nevertheless, the trend was thereafter reversed by consolidating municipalities into larger organizations to benefit more from economies of scale.

Table 1: Historical evolution of number of municipalities

Year	Number of Municipalities
1923	421
1950	628
1970	1.303
1980	1.727
1990	2.061
2000	3.215
2010	2.950
2025	1.404

With the goal to establish a sound population base for municipalities, town municipalities were merged to provincial or district municipalities in 2008. A new legislation in 2013 accorded the metropolitan status to 14 more provinces, thus increasing the total from 16 to 30. Accompanied by this reform was the abolition of local governments other than municipalities, i.e. special provincial administrations and villages in these provinces.

The rationale for the metropolitan municipality practice were as follows:

- It would not be possible to align services such as urban transport, infrastructure, water and sewer, environment and even land development undertaken by various municipalities in the same space.
- It is required technically and for economies of scale to single-handedly plan and manage the said services for the entire urban space.
- An administration, strengthened administratively and financially, is needed to plan and execute these services effectively and economically.

Approximately 93% of the population in Türkiye live within municipal boundaries. The recent amendments to the municipal system placed 78% of the country population within metropolitan municipality boundaries.

Functions of municipalities may for convenience be categorized as mandatory and optional though the law makes no distinction. Land development, public transportation, water and sewer services, waste management, cemeteries and fire-fighting are mandatory functions of municipalities. Municipalities also have optional functions for which they are authorized but not held accountable (e.g. public education activities, social services and social aid, reducing poverty).

4. WATER GOVERNANCE IN TÜRKİYE

Türkiye is not a water-rich country. Considering the economic and physical constraints, the annual exploitable water potential is estimated as 112 billion cubic meters of which 94 billion is surface and 18 billion is groundwater. According to the projections of the Turkish Statistical Institute (TurkStat), Türkiye's population will reach to nearly 90 million in 2030, and the available water will drop from the current ~1.300 m^3 to ~1.200 m^3 per capita per year. For this very reason, water resources are protected, developed and managed as an indispensable strategic asset.

The 12th National Development Plan for the period of 2024-2028 underlines the importance to put in place principles of good governance which make it possible to transparent, accountable, responsive and rapid decision-making as well as to include citizens in this decision-making process. Türkiye has accordingly taken major steps in the good governance of water resources.

The prominent central governmental institutions in water management is presented in Figure 2.

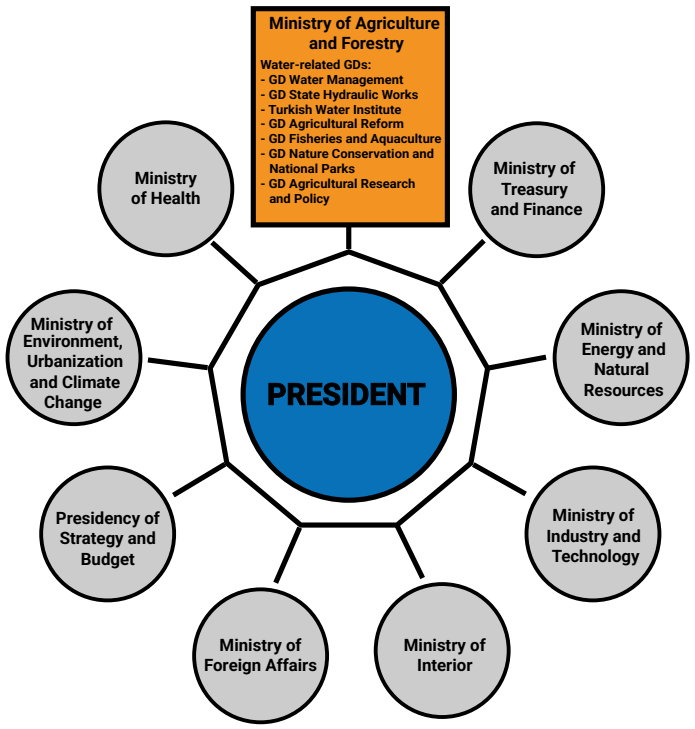


Figure 2. Primary Central Authorities in Water Management

Ministry of Agriculture and Forestry is the leading institution in the policy development and execution of the protection, development and use of water resources. The ministry is primarily mandated to ensure coordination of water management, prepare river basin management plans, develop measures and set objectives and environmental standards for the management and protection of water environment and devise strategy and policies for flood risks by preparing flood management plans.

State Hydraulic Works (DSI), as a legal entity under the Ministry of Agriculture and Forestry, is the national investment agency responsible for the development of water resources at national level. DSI plans and constructs large-scale hydraulic facilities (e.g. dams, transmission lines, irrigation and flood control structures) and transfers these to the relevant organizations (e.g. water and sewerage administrations, irrigation unions) for operation and maintenance. DSI is also responsible for the development of hydropower projects and taking necessary measures against floods.

Ministry of Environment, Urbanization and Climate Change is responsible for the protection and improvement of the environment. The ministry sets the principles and policies, develop criteria and standards and prepare relevant programs for environmental pollution prevention and protection. The ministry is also the coordinating authority in climate change negotiations as well as adaptation and mitigation policies. The Bank of Provinces (İlbank), affiliated to the ministry, meets the financing needs for investments of the local administrations.

Ministry of Health possesses particular responsibilities for drinking water and bathing water quality in the protection and betterment of public health.

Ministry of Energy and Natural Resources is responsible for the protection and development of geothermal sources and natural mineral waters and, in cooperation with DSI, development of hydropower projects.

Ministry of Foreign Affairs is the leading authority in the coordination of issues related to transboundary waters. The ministry has a dedicated department for transboundary waters.

Ministry of Interior has power of tutelage over local governments and has the authority to administratively audit local governments in case of malpractices. Special Provincial Administrations affiliated with the ministry is responsible for water supply to non-metropolitan rural areas. Another agency under the ministry, the Disaster and Emergency Management Authority (AFAD), in collaboration with DSI, is responsible for flood response.

Ministry of Industry and Technology plays an important role in industrial water and wastewater management given that the share of industrial water demand in total consumption amounts to ~15%.

Presidency of Strategy and Budget is the leading organization in the preparation of the national investment program and allocation of central budget financial sources.

PRESIDENCY OF THE REPUBLIC OF TÜRKİYE

Presidency of Strategy and Budget

Central Budget Investment Program and Resource Allocation

NATIONAL

Ministry of Agriculture and Forestry

Planning, Development and Protection of Water Resources

State Hydraulic Works

Turkish Water Institute

Ministry of Environment, Urbanization and Climate Change

Water Quality and Wastewater Control, Climate Change

GD of Meteorology

İLBANK
Financing for Local Government Investments

Ministry of Energy and Natural Resources

Geothermal Sources and Natural Mineral Waters

Hydropower

Ministry of Health

Drinking and Bathing Water Quality

Ministry of Interior

Supervision of Local Governments

Ministry of Foreign Affairs

Transboundary Waters

Disaster and Emergency Management Authority (AFAD)

Flood Emergency Response

REGIONAL/BASIN

Basin Water Boards

Regional Directorates of the Ministry and State Hydraulic Works

Regional Directorates of İLBANK

Regional Directorates of the Ministry

PROVINCAL

Provincial Water Boards

Provincial Directorates of the Ministry

Provincial Directorates of the Ministry

Directorates of Public Health

Governorates

Special Provincial Administrations

(Metropolitan) Municipalities

Water and Sewerage Administrations

Figure 3. Key Governmental Organizations in Water Management

Basin Level Management of Water Resources

Türkiye is divided into 25 hydrological basins. Recent reforms have been made to achieve basin-scale management of water resources.

As the leading institution in this regard, one of the mandates of the Ministry of Agriculture and Forestry, through the GD of Water Management, is to conduct the necessary coordination for the preparation and implementation of river basin management plans. Given that water management is a multi-level public responsibility, the ministry works in close cooperation with different ministries, public bodies and other stakeholders related to water management issues.

The National Water Board was established for the coordination and cooperation in water issues with the highest level of participation from relevant institutions. The Committee presided by the Minister of Agriculture and Forestry in which other member ministries' vice ministers participate, plays an important role at the central level and steers national water policies.

The Basin Management Committee and the Provincial Water Management Coordination Committee composed of local bodies of the ministries, water and sewerage administrations and other relevant local stakeholders (including NGO's, universities, irrigation unions) ensure coordination for water issues at basin and provincial levels.

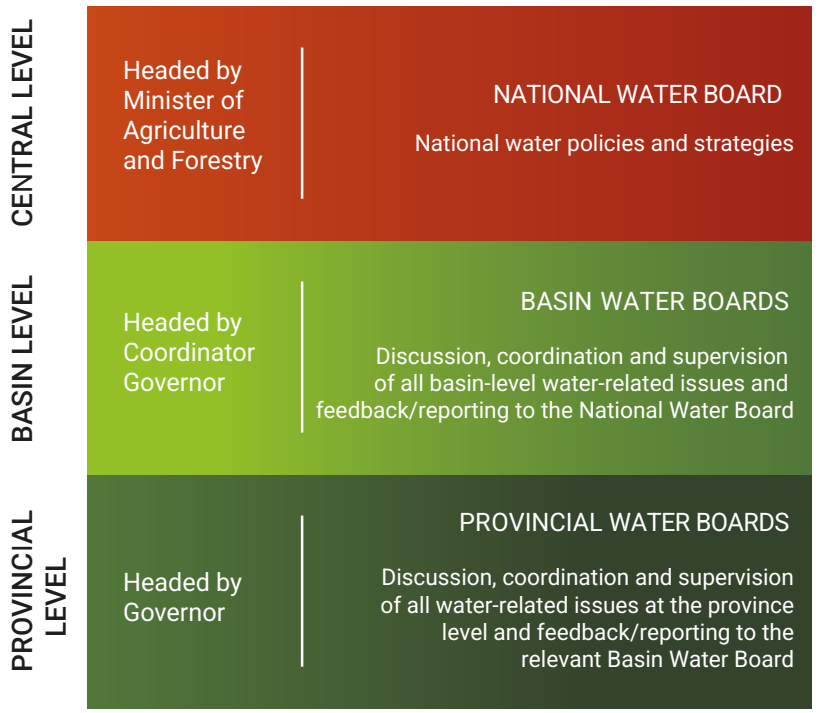


Figure 4. Structure and Layers of Basin-Scale Water Resources Management in Türkiye

Figure 5. River Basins in Türkiye

Box 2. National Water Efficiency Campaign and the "Agriculture per Available Water" Approach

Türkiye's National Water Efficiency Campaign, launched in 2023, is a nationwide effort led by the Ministry of Agriculture and Forestry to safeguard the country's water resources and ensure sustainable access for future generations.

The key objectives are to;

- Cultivate a culture of water efficiency across all sectors—urban, agricultural, industrial, and household
- Reduce the average daily per capita water consumption to 120 liters by 2030 and to 100 liters by 2050
- Reduce water loss and waste, aiming to minimize losses in drinking water systems from to 25% by 2033 and 10% by 2040
- Increase irrigation efficiency to 60% by 2030
- Encourage reuse of treated wastewater, rainwater harvesting, greywater reuse, and adoption of water-smart technologies across sectors

A critical step in the field of agricultural water management has been the introduction of the "agriculture per available water" model by Türkiye's Ministry of Agriculture and Forestry, placing water resources at the heart of agricultural production planning. Enacted into law in 2023, this model requires the Ministry to plan agricultural production based on available water supplies. As part of its implementation, water-efficient crops are promoted, and practices that reduce water consumption are financially supported by the government.

Box 3. Integrated Water Resources Management (IWRM) in Türkiye

Integrated Water Resources Management (IWRM) is defined by GWP as "a process which promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment."

An indicator (6.5.1), as part of the Sustainable Development Goals (SDGs), was defined to track the degree of IWRM implementation. Based on the reporting made to the custodian agency of the indicator, UNEP, Türkiye scored 72 out of 100 in the year of 2023. The assessment is made on four key components: enabling environment, institutions and participation, management instruments and financing.

Driven by the alignment works with the EU water acquis, the score of Türkiye is to significantly rise with the recent accomplishments. Some exemplary accomplishments towards a full degree in IWRM can be highlighted as below:

- In line with EU Water Framework Directive, River Basin Management Plans for all basins in the country will be completed by 2030.
- Basin Water Boards were formed to formulate strategies and plans, take measures to ensure coordination and cooperation among sectors, adopt an integrated basin management and contribute to national objectives. Participation by civil society organisations, universities, irrigation unions, organised industrial areas etc. areas are ensured to have a say through committees established at basin and provincial levels.
- Sectoral Water Allocation Plans are prepared for all basins to set out the principles for water allocation of the sectors in the basin, factoring in economic, social and environment aspects.
- A national water information system is created to enable all water-related data (quantity, quality, flood, drought etc.) to be gathered and utilized under an online platform to support an integrated approach in the planning and management of water resources.

Primary Local Actors in Water Management

Provincial and Regional Offices of the Central Government Authorities

The ministries with monitoring, supervision and execution tasks have directorates in each province to exercise their duties at provincial level. The State Hydraulic Works carries out the planned investments through its regional directorates. The governors are in charge of coordination and supervision of the activities of the directorates of the ministries at provincial level.

Water and Sewerage Administrations

Water and sewerage administrations are public utilities affiliated to the Metropolitan Municipalities with an independent budget approved by the Metropolitan Municipal General Assembly of which its members are elected by the residents of the province. The administrations are mandated to supply water to households and other consumers and collect and treat wastewater of the entire city. They serve ~78% of the country population.

The Board of Members of the administration, where the Mayor of the city is the chairman, is the highest executive body of the organization. There are currently 30 water and sewerage administrations in the 30 metropolitan cities.

Special Provincial Administrations (SPAs)

The SPA's under the authority of governors are in charge of building the physical infrastructure for non-metropolitan rural areas.

Irrigation Unions and Cooperatives

Under the supervision of DSI, the unions are authorized to undertake operation, maintenance, repair and management works for irrigation facilities. The unions are critical as agricultural water use is the highest water-consuming sector.

Organized Industrial Zones (OIZs)

Organized industrial zones are designed to enable private-sector companies to manufacture in a designated zone with ready-to-use infrastructure and social facilities. The OIZs are important actors in industrial water consumption and wastewater management.

Non-Governmental Organizations (NGOs) and Academia

The local governments cooperate closely with NGOs (e.g. chambers of professions and trade, associations, foundations etc.) in related issues in water management (e.g. as member in basin committees).

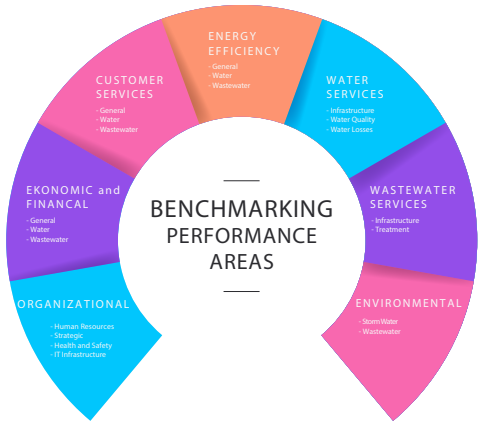
There are numerous on-going projects (e.g. R&D, vocational training) carried out by the local governments in close collaboration with universities.

Box 4. Benchmarking of Water and Wastewater Services in Türkiye (SUEN, 2022)

Benchmarking has become an instrumental tool in the water sector, in particular since the 1990s, to promote and achieve performance targets for water and wastewater companies. Benchmarking is defined as a "tool for performance improvement through systematic search and adaptation of leading practices" (IWA, 2011).

In this regard, a comprehensive study was completed by Turkish Water Institute (SUEN) in the year of 2022 in which water and wastewater sewerage administrations (in total 30) were benchmarked in the designated performance areas (water services, wastewater services, organization/human resources, financial management, customer services, environmental sustainability and energy efficiency).

Through a web-based tool developed in the scope of the project, a set of 192 variables were requested from the administrations with which 173 performance indicators were estimated. Following validation and consistency assessments of the data, a detailed analysis was undertaken where strengths and weaknesses were presented and reported in detail.



To present the overall performance of each administration, a general performance index was developed by customizing the IBNET Apgar score of World Bank taking Turkey's specific conditions into consideration. The index has been coined as the "Customized Apgar index". Based on the index evaluation, larger-scale administrations were observed to perform better which is attributed to the benefits of economies of scale. In addition, newly established administrations (esp. the ones formed in 2012) were seen to perform lower than those with an older history of establishment.

Major improvement areas in general were the low rate of wastewater reuse (~1% on average) and the high rate of water losses (~40% on average). The monetary value of the water losses of the entire country were estimated to be ~10 billion TRY (~1,5 billion USD) in 2020 prices.

The formation of a special union of water and sewerage administrations was proposed under which similar benchmarking studies may be carried out on a regular basis not only in water and wastewater services but also in other municipal services (e.g. solid waste, air quality etc.).

Water Legislation

Pursuant to Article No. 56 of the Turkish Constitution, each citizen has the right to live in a healthy and balanced environment. It is the duty of the state and citizens to improve the natural environment, to protect the environmental health and to prevent environmental pollution. In addition, as per Article No. 168, natural wealth and resources are under the authority and at the disposal of the state. The right to explore and exploit these belongs to the state. The state may delegate this right to persons or corporate bodies for a certain period.

Türkiye has compatibly taken a wide range of legislative actions for the protection, sustainable development and use of water resources. The prominent legislation (laws and their relevant by-laws) are non-exhaustively presented in Table 2.

As an EU accession country, Türkiye has substantially transposed the water-related EU directives into national legislation.

A water law is drafted by the Ministry of Agriculture and Forestry with the need of a framework law to eliminate any uncertainty concerning roles and responsibilities in water management and set out general norms and principles by encompassing matters such as basin-scale water management and allocation, establishment of a national council for water management, full cost recovery, reuse of treated wastewaters, coordination of water management, national water plan, national water information system, and water allocation registry system. The law is planned to be passed by the parliament in the year of 2026.

Other secondary legislative works (esp. in the form of by-laws) are in progress related to subject matters such as reuse of treated wastewaters, bathing waters and tariff setting.

Table 2. Primary Water-Related Legislation (Laws and By-Laws)

Law / Decree Law	Scope	Relevant By-Law(s)
Turkish Civil Code	General principles on proprietary rights and use of water resources	
Groundwater Resources	Rules on the extraction and use of ground water resources	Technical Implementation by State Hydraulic Works
Public Health	Roles and responsibilities in the safeguarding of public health	The Quality of Water Intended for Human Consumption
Environmental Law	Rules and obligations on the protection of environment within the principles of sustainable environment and development	- Water Pollution Control - Environmental Impact Assessment - Surface Water Quality - Urban Wastewater Treatment - Protection of Groundwater Resources Against Pollution - Bathing Water Quality - Protection of Wetlands
Establishment of the Ministry of Agriculture and Forestry	Structure and duties of the Ministry of Agriculture and Forestry	- Preparation, Implementation and Monitoring of River Basin Management Plans - Preparation, Implementation and Monitoring of Flood Management Plans - Protection of Drinking Water Basins/Reservoirs - Protection of Water Basins and Development of Management Plans - Surface Water Quality of Existing and Planned Drinking Water Resources - Quality and Treatment of Supplied Drinking Water - Protection of Waters against Nitrate Pollution from Agriculture - Monitoring of Surface and Ground Waters - Water Loss Control in Water Supply and Distribution Systems - Control of Water Use and Reduction of Water Losses in Irrigation Systems

Table 2. Primary Water-Related Legislation (Laws and By-Laws) (Cont'd)

Law / Decree Law	Scope	Relevant By-Law(s)
Establishment of the Ministry of Environment and Urbanization	Structure and duties of the Ministry of Environment and Urbanization	Tariff Setting for Wastewater Infrastructure and Municipal Solid Waste Disposal Plants
Soil Protection and Land Use	Principles for soil protection and land use in accordance with sustainable development principles	The Protection, Use and Planning of Agricultural Lands
Aquaculture	Protection, production and control of fisheries	- Aquaculture Production - Water Needs and Area Allocation in Aquaculture Production Investments
Establishment of Istanbul Water and Sewerage Administration (ISKI)	Structure and duties of ISKI, applicable to other Water and Sewerage Administrations	- Wastewater Discharge into Sewer Networks - Principles of the Supervision on the Leasing of Spring Waters and Sales, Transport and Consumption of Groundwaters - Implementation of Customer Tariffs
Supply of Drinking and Industrial Water in Ankara, Istanbul and Provinces with Populations over 100,000	Rules for the supply of water to large communities with populations over 100.000	-
Services to Villages	Principles on the provision of services to villages	-
Metropolitan Municipalities Municipalities	Legal status, duties and responsibilities of metropolitan municipalities and municipalities	-
Irrigation Union Associations	Roles and responsibilities in the use and operation of the constructed or planned irrigation facilities	-
Drinking Water for Villages	Responsibilities in the provision of drinking water to villages	-

Box 5. Irrigation Management Transfer (IMT) in Türkiye

Similar to in other countries, agriculture is by far the largest user (74%) of Türkiye's water resources. Governments across the world have responded and embarked on a process of irrigation reforms aimed to tackle the increasing demands on irrigated agriculture and to enhance its performance. Among the reforms in irrigated agriculture, irrigation management transfer (IMT) has appeared as the most important and far-reaching reform thus far. The two drivers of this process were the global movement towards liberalism and the call for a more participatory management approach. The underlying motives for IMT have been the expected increase in efficiency and productivity and achievement of full cost recovery of services (FAO, 2007).

As the leading organization in the development and management of water resources, one of the mandates of the Turkish State Hydraulic Works (DSI) under the Ministry of Agriculture and Forestry is the construction and operation and maintenance (O&M) of agricultural irrigation facilities.

In parallel with the aforementioned global trend towards IMT, as from the year of 1993, State Hydraulic Works has initiated an accelerated transfer program of O&M services of irrigation schemes to Irrigation Unions. By the end of 2024, 81% of DSI-built irrigation projects (2.95 million ha of the total 3.66 million ha area) were transferred to various organizations of which 82% are under the domain of Irrigation Unions. The remaining 18% are operated by municipalities, cooperatives and villages.

An important milestone was achieved in 2011 where the Law on Irrigation Unions was ratified in the parliament by which the Irrigation Unions received a clear legal status. The unions were designed to function in a semi-autonomous manner under the supervision of DSI. Within the geographical domain designated by the government, the unions are authorized to undertake operation, maintenance, repair and management works; collect the payments for water use; pay back the investment cost of the facilities taken over; with the approval of DSI, develop the facilities taken over; cooperate with the agricultural planning offices of the ministry in the planning of crop production; cooperate with other organizations in R&D and capacity building activities related to irrigation and other agricultural practices.

The major achievements observed as a result of IMT were: higher efficiency in the use of water, more areas irrigated with the same amount of water, higher effectiveness in maintenance and repair works, decrease in conveyance and distribution losses and an accountable service-oriented management approach.

Some amendments were made on the law in 2018 as a result of the experiences gained along the process. The major amendment was with regard to the appointment of head of the union. To improve the check and balance in the system, it was enacted that the head of the union is appointed by the Minister of Agriculture and Forestry upon the proposal by DSI. Another trend accelerated since then has been the consolidation of the unions to benefit more from the economies of scale; i.e. the number of unions amounting to 384 dropped to 181 by the end of 2024.

Box 6. Public-Private Partnership in the Turkish Water Sector

OECD (2010) defines public-private partnership (PPP) as "an agreement between government and a private partner(s) (that may include the operators and financiers) according to which the private partner(s) delivers the service in such a manner that the service delivery objectives of government are aligned with the profit objectives of the private partner(s) and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partner(s)." The PPP model has come into prominence as a model to meet the ever-increasing investment needs to achieve the Sustainable Development Goals (SDGs). The model has been resorted to shorten the construction periods and lower investment costs.

The PPP model has been widely applied in many sectors in Türkiye; primarily in transport, health and energy. Though not as extensive as in the said sectors, private sector participation is, in various forms and degrees, prevalent in the water and wastewater sector.

Given the critical nature of the sector, water sector has traditionally been under dominant public control. The highest degree of private sector participation, such as concessions and leases, is limited to few cases, mostly having resulted in public dissatisfaction due to different reasons.

In the urban water and wastewater sector, the tendency of water and sewerage administrations has been to perform supply, management or turnkey contracts, including BOT arrangements in some cases such as in the construction of wastewater treatment plants. As the largest water and sewerage administration in the country, Istanbul Water and Sewerage Administration (ISKI), for instance, outsources below services on a management contract basis to the private sector: O&M of drinking and wastewater networks (to different contractors in different districts), operation of wastewater treatment plants (to two contractors in the Asian and European part of Istanbul), reading of meters and other support services (e.g. security, catering, transport).

In the hydropower sector, intensive private sector participation took place with the adoption of the by-law on water use for hydropower production in 2003. With the legislation, private sector gained the opportunity to develop hydropower projects for a designated period under the supervision of the Turkish State Hydraulic Works (DSI). By the end of 2024, 712 projects were in operation by the private sector amounting to a total installed capacity of over ~18.000 MW.

Similar to urban water services, there have been limited cases in the agricultural irrigation sector where PPP forms with high degree of private sector participation were executed. Some attempts were made by DSI to apply a BOT model that were not fully materialized. The majority of the irrigation projects are constructed by private contractors through a tender process led by DSI and after completion handed over to DSI to be eventually transferred to Irrigation Unions for operation. Yet, as targeted in the 12th National Development Plan (2024-2028), alternative new domestic and foreign finance methods are devised by the government to expedite the completion of remaining irrigable areas.

Box 7. Pricing of Water Services in Türkiye

Setting the price right for water services is a critical element in the demand management of limited water resources. Water and sanitation services are ultimately financed by Tariffs, Taxes and/or Transfers: shortly the “3Ts” per OECD's (2009) definition. The sustainable manner of financing of the services is deemed to be through tariff revenues.

Water demand for municipal needs in Türkiye falls mainly under the domain of water and sewerage administrations. Partly supported by central government transfers, the administrations’ main source of income is through tariff revenues. Upon the tariff proposal by the administration based on the future investment and O&M needs, tariffs are finally approved by the municipal council. The by-law on tariff implementation issued by Istanbul Water and Sewerage Administration (ISKI), stipulates below principles:

- Tariffs are to be set based on the projected and measurable quantity of water to be sold by deducting physical losses from the water production.
- The tariffs are to cover the costs for management, operation, maintenance, depreciation, non-capitalizable renewal, rehabilitation and expansion works and a profit margin deemed necessary to sustain future activities.

As such, users are expected to cover the costs for water and wastewater services based on the “user and polluter pays” principle. Water and sewerage administrations commonly practice cross-subsidization among different user groups by differentiation of tariff levels. In the benchmarking study of SUEN (2022), the average tariff for industrial users was estimated to be around 3 times higher than that of domestic users. Likewise the tariff for in-city users was, on average, estimated to be more than twice as high as the tariff applied for users in the villages. In the same study, the average share of the bill amount paid for domestic water and wastewater services in household incomes estimated to be 1,15%. This rate was found to be reasonable considering the internationally quoted range (~1-4%) for affordability of water and sanitation services.

The tariffs for water use in agricultural irrigation are based on the principle of cost recovery as well. The “water usage service tariffs" prepared by Turkish State Hydraulic Works (DSI) and approved by the Minister of Agriculture and Forestry, include the reference values that Irrigation Unions are to use as thresholds in the setting of their tariffs.

Tariff levels differ if the irrigation is by gravity or pumped considering crop types and water supply method as well. In conformity with the annual budget, prepared on a non-profit and balanced basis and approved by DSI, the unions are to fully cover all expenses made for the transmission and distribution of water from source to the field by means of water usage service fees.

5. CHALLENGES AND FUTURE

Türkiye has a sound basis in the governance of water resources, yet there are challenges that bring about opportunities. Given the cross-functional and cross-sectoral status of water, designing a fully defragmented water sector is impractical as water management is by nature a multi-level public responsibility. Yet, achievement of effective coordinaton and coherence among all relevant stakeholders on national and basin levels is a must. Recent reforms and accomplishments for the management of water resources on basin-level are highly notable.

The effectuation of IWRM principles is important to reap the benefits to arise therefrom. The full functionalization of basin-level organizations will be instrumental in achieving the targets towards a higher degree of IWRM implementation. Engaging all stakeholders, including user groups, and incorporating the economic and social value of water into strategic decision-making on water allocation is of high importance.

There are fundemantally four parties in the water sector: environmental regulator, economic regulator, water and wastewater service providers, and consumers/users (represented by user/customer/consumer associations). The continuation of heavy-cost environmental investments will be inevitable to sustain good ecological status for all water bodies. In this regard, a central economic regulator may be contemplated to assure service providers/investment agencies are financially capable by that rational tariff-setting is supported to build up required financial sources. The economic regulator shall not only be regarded as a tariff approving body but also as an authority to monitor and steer operational performances (e.g. water losses, service coverage). In addition, the issue of higher engagement of user associations/groups will come to the fore as it is deemed that users may be represented in a higher degree in decision-making processes.

Another practical challenge faced in basin-scale water resources management is the fact that the established basin committees do not have budgetary and punitive powers and basin boundaries do not necessarily overlap with administrative boundaries. This issue may be addressed by discussing the possible establishment and operationalization of river basin authorities as legal entities with allocated staff and budget.

The adoption of the draft Water Law will be an important milestone to clarify roles and responsibilities in the water sector. Given the overarching role of this framework law, it is important that the law is passed with a consensus of all stakeholders.

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