

Legislative Framework for Water Management in Turkey

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Turkey is a parliamentary democracy. The legislative power is vested in the Turkish Grand National Assembly (TGNA), which is elected by universal suffrage. The President, elected by the TGNA, is empowered to appoint a Prime Minister. Turkey is divided into 81 provinces, 892 districts and 34 367 villages.¹ Governors who are appointed by Government Decrees are heads of provincial administrations. Governors report to the Ministry of the Interior. There are 2951 municipalities, 16 of which are metropolitan municipalities.² Municipalities are governed by a mayor, an assembly and a council. All are elected. Villages were headed by an elected Village Head and a Village Council.

The primary sources of Turkish law are the constitution, laws (acts), decree-laws (law amending ordinances), international treaties, regulations and by-laws. With regards to water as a resource, the three most commonly used categories of legislation are laws (acts), decree-laws and by-laws.³ Water resource development and management is affected by several key elements of Turkish legislation. One can find provisions related to water use, management and allocation in almost 100 different laws (acts), by-laws, decrees etc. There are practical difficulties and contradictions in the implementation and enforcement of water-related legislation.⁴

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¹ *Turkey in Statistics*, TurkStat (TUIK), Ankara, 2010, p.10.

² Metropolitan Municipalities are established when the centrum population of a city exceeds the limit of 750.000 people.

³ Article 87 of the Turkish Constitution authorizes the Turkish Grand National Assembly to make, amend, and abrogate laws. Legislative bills are proposed by the Council of Ministers and individual deputies as stated in Article 88. Such bills are debated and adopted by the Parliament in its plenary session in accordance with the Constitution and the Standing Orders of the Grand National Assembly. The Constitution requires a simple majority for the adoption of ordinary laws in Article 96. Legislative bills adopted by the Grand National Assembly are submitted to the President of the Republic in accordance with Article 89 of the Constitution. The President shall either sign the bill within fifteen days or return it partially or entirely to the Grand National Assembly for reconsideration within the same period. However, budget laws are excluded from this power of the President due to time considerations. If the Grand National Assembly readopts the bill without a change the bill shall be promulgated by the President. Laws are only enacted by publication in the Official Gazette.

Decree-laws (law amending ordinances) have the same legal effects as laws.

By-laws are regulated in Article 124 of the Constitution. The Prime Ministry, the ministries, and public corporate bodies may issue by-laws in order to ensure the application of laws and regulations relating to their particular fields of operation, provided that they are not contrary to these laws and regulations. The law shall designate which by-laws are to be published in the Official Gazette (See S. Yazici, Update: A Guide to Turkish Public Law and Legal Research, 2009, http://www.nyulawglobal.org/Globalex/Turkey1.htm#_Laws. Accessed 20 January 2011).

⁴ Ozbay O (2006) Turkiye Su Mevzuatinin Gecirdigi Evreler. Haber Bulten, Chamber of Geology Engineers, no 3, July-August 2006:37-40.

Principal water legislation in chronological order

- Village Act No. 442, 1924 (Articles 1, 6 and 13)
- Act No. 831 on Waters, 1926
- Act No. 1593 on General Hygiene, 1930
- Act No. 4759 on the organization and duties of The Bank of Provinces Law, 1945 (replacing the Bank of Municipalities Law 2301, 1933)
- Act No. 6200 on the Organization and Duties of the General Directorate of the State Hydraulic Works (Establishment Law of DSI), 1953
- Act No. 7478, Village Domestic Water Supply, 1960
- Act No. 167, Groundwater, 1960
- Act No. 1053, Domestic and Industrial Water Supply Law, which authorizes the DSI to provide domestic and industrial water to Ankara, Istanbul and to cities with a population over one hundred thousand, 1968
- Act No. 2872 on Environment, 1983
- Government Decree No. 181 in Force of Law on the Organization and Duties of the Ministry of Health (Article 9/e), 1983
- Agricultural Reform Act No. 3155 (Article 2/c), 1985
- Act No. 3202 on the Organization of the General Directorate of Rural Services (GDRS) (Article 2/d), 1985 (abolished)
- Act No. 3416 Amending Act No. 2872 on Environment, 1988
- Act No. 3621, Coastal Law, 1990
- Government Decree No. 443 in Force of Law on the Establishment and Duties of the Ministry of Environment, 1991 (abolished)
- Gov. Decree No. 441 in Force of Law on the Establishment of Ministry of Agriculture and Rural Affairs, 1991
- Act No. 4950 Amending Act No. 1380 (1971) on Aquaculture, 2003
- Act No. 4856 on the Organization and Duties of Ministry of Environment and Forestry, 2003
- By-law 19919 on the Control of Water Pollution (RCWP) 1988, which is abolished by By-law 25687 on the Control of Water Pollution, 2004, amendments, 2008
- Act No. 5393 on Municipalities 2005 (Act No. 1580 on Municipalities, 1930 (abolished); Act No. 5215 on Municipalities, 2004 (abolished)
- Act No. 5216 on Metropolitan Municipalities, 2004, which replaces Act No. 3030 (1984)
- Act No. 5177 Amending Act no. 2560 (Act on the Organization and Duties of the Water and Sewage Administration of Istanbul-ISKI, 1981) 2004
- Act No. 5286 on Abolishment of GDRS (1985), 2005
- Act No. 5302 on the Special Provincial Administrations, 2005
- Act No. 5625, Amending Act No. 1053 (1968), which authorizes the DSI to provide water supply to all cities with municipalities without due regard of the population criterion, 2007
- Act No. 5686 on Geothermal and Mineral Waters, 2007

The Constitution of 1982 (currently in effect) establishes the basic principles (Article 168) which govern water resources: water is a public good under the State's trusteeship. The authority to explore and manage water resources is vested in the State. The Constitution also introduces environmental rights as a human right in Article 56: "Everyone has the right to live in a healthy, balanced environment. It is the duty of the state and citizens to improve the natural environment, and to prevent environmental pollution." The Turkish Constitution assigns stewardship of the country's water resources to the public domain, where only public institutions may grant water use-rights to both public and private parties as long as they accommodate 'public benefit' or 'common wealth.'

The Turkish Civil Code⁵ (2001) considers water in two distinct categories: public water resources and water resources in the domain of private law and private proprietorship. This classification is deduced from Article 715 of the Civil Code: the assets under nobody's possession and the commodities at the service of the public shall be under the command and possession of the Government. The Civil Code, Article 756 regulates springs as a subject to private ownership. It specifies that "any spring is an integral part of the land, the ownership of a spring may be allowed only together with the ownership of the land".⁶ Articles 715 and 756 should be evaluated together, thus, except for privately owned springs, surface and groundwater resources cannot be owned, but are subject to user rights which are granted for beneficial use only, such as domestic and agricultural use, fishing, hydropower generation, industry and mining, transportation and medicinal and thermal uses.⁷ The Civil Code also addresses pollution: If water resources get polluted or spoiled Article 757 regulates matters of compensation and Article 758 regulates issues concerning their restoration.

Assigned user-rights enjoy the right of prior use, and can neither be sold nor transferred. User-rights to water resources in the domain of private law and ownership are subject to title deed registration. Until 1960 this included groundwater resources which were then transferred from the private to the public domain. However, legislation on user rights and ownership is not clear for surface waters.

Water is allocated, in practice, by a variety of agencies and users operating independently of each other. These include State Hydraulic Works (Turkish acronym **DSI**), surface and groundwater water management organizations (irrigation associations, irrigation cooperatives etc.), municipalities and industries. **The Law No. 6200** establishing DSI defines it as the main state agency to develop surface and groundwater resources, to make optimal use of them and to develop them in such a way as to achieve optimum benefit. DSI is empowered to plan, design, construct and operate dams and domestic water and irrigation schemes. Its mandate and responsibilities include the construction of protective facilities for flood and torrent hazards; the construction of irrigation and drainage networks; land reclamation and the drainage of swamps; the

⁵ 'Codes' also stand for 'Laws' as well as for 'Acts'

⁶ Coskun AA (2003) Water law: The current state of regulation in Turkey. *Water International*, vol 28, no 1:70-78.

⁷ Ozbay, op.cit, pp. 37-8.

construction of hydropower generation facilities⁸ and the improvement of the navigability of rivers. DSI plays a leading role in coordinating water sector planning. Any agency and private party is obliged to cooperate with DSI and must obtain prior DSI approval for the source and volume of water to be used by each project and individual. As the licensing authority, it approves both the use and the extraction rate of water for different purposes including groundwater.

The Establishment Law 6200 entitles the DSI to transfer operation and maintenance (O&M) of irrigation systems to irrigation management organizations, such as village administrations, municipalities, cooperatives, irrigation associations⁹ and other private legal entities. From the early 1960s DSI had a programme for such transfers relating to secondary and tertiary canals. Until 1993, however, the DSI was able to transfer O&M irrigation systems amounting to only approximately 70,000 hectares to various types of irrigation management organizations. The process has gained momentum since 1993, and within the past seventeen years the management of irrigation covering more than 2 million hectares has been handed over to local administrations or to Irrigation Associations.¹⁰ Irrigation management organizations are currently constituted under the Local Government Associations Law No. 5355.

DSI is also entrusted with (Act No. 1053) the provision of water supply for cities with more than 100,000 inhabitants, provided that the government authorises DSI and that the concerned city council also approves.¹¹ Greater private sector involvement has been also envisaged in order to construct and operate drinking water plants based on Build-Operate-Transfer (BOT) contracts. Under a BOT contract, the private sector finances, builds and operates a new facility in accordance with performance standards set by the government. The government retains ownership, and the facility is reverted to the state after an operation period of typically 10 to 20 years.

Surface Water Rights: There is no legal framework for surface water rights and only a system of granting access to groundwater, and both are largely open access resources at present. The current national system of recording and harmonizing user rights to water dates back to early years of the Republic and is not well adapted to water short environments. It does not provide security for present users, does not allow for or

⁸ With the Electricity Market Law No. 4628 of 2001 and the Renewable Energy Law No. 5346 of 2005, the Turkish government envisaged the acceleration the development of the underexploited potential by inviting private investors and private financial service institutions.

⁹ A form of transfer considered innovative, where the irrigation scheme covers more than one local administrative unit (for example, a village or municipality).

¹⁰ Kibaroglu A, Baskan A, Alp S (2009) Neo-Liberal transitions in hydropower and irrigation water management in Turkey: main actors and opposition groups. In: Huitema D, Meijerink D (eds) Water policy entrepreneurs. A research companion to water transitions around the globe. Edward Elgar, Cheltenham, UK.

¹¹ Article 10 of Law No. 1053 has recently been amended. The Amended Law No. 5625 has revoked the city criteria (cities with a population of which is over 100,000) and extended the duties of DSI. Thus, since 2007, DSI has been authorized for the domestic and industrial water supply of 3,225 settlements all over Turkey, which have municipality administrations. The Law stipulates that, if necessary, DSI could give priority to wastewater treatment plants in progress.

adequately protect environmental uses of water, and does not provide incentives for an economic use or for orderly transfers among sectors.¹²

Groundwater Law: According to Article 756 of the Civil Code and the Groundwater Law No. 167 (1960) groundwater resources are public waters, and, therefore, shall be under the command and possession of the State. Any spring, in an inherent part of an area under private property, is also considered as private property. Groundwater resources, however, are of public nature and owning a piece of land does not bring along the ownership of water beneath that land. All forms of research, utilization, protection and registration are subject to the provisions of this Law. The Law has put property rights into the public domain. User-rights are subject to licensing upon request (within the safe yield of an aquifer), and can neither be transferred nor sold. State Hydraulic Works issues user licenses, monitors pollution but its mandate does not cover groundwater pollution control. Later, Law No. 3202, which instituted the General Directorate of Rural Services (GDRS), and the Law No. 2560 which introduced the Istanbul Water and Sewage Administration¹³ also began to operate within the domain of Law No. 167. This has resulted in administrative duplications which, in turn, caused improper protection of groundwater resources.

The Act No. 5393 on **Municipalities** (2005) assigns numerous powers and duties to municipalities¹⁴ which are, for example, the construction of urban water supply and sewerage systems and wastewater treatment plants. Municipalities usually prefer to combine water and urban transport services as a means of obtaining revenue and cross-subsidizing public services. In the non-metropolitan areas, the primary concern of local government is usually water supply rather than wastewater disposal and treatment. However, separating water supply and sewerage services under different management lines preclude the possibility of an integrated approach.¹⁵

Metropolitan areas have faced serious sewerage problems as a consequence of population increases from the 1980s onward. This has encouraged the establishment of new organizational models which link water and wastewater management. Starting with Istanbul and the establishment of Istanbul Water and Sewerage Administration (ISKI) in 1981, autonomous entities were created with the responsibility for planning, designing,

¹² Harmancioglu NN et al. (2007) Gediz basin management: Problems and possible remedies. In: Proceedings, International Congress River Basin Management, 22-24 March 2007, Antalya, Turkey, Vol. II, pp 138-153.

¹³ Responsibilities of Water and Sewage Administrations (within the border of all metropolitan municipalities) are to take legal, technical and administrative measures for preventing groundwater pollution and decreasing quantity. Supplying potable water to rural communities by drilling groundwater wells is one of the main duties of the Special Provincial Administrations after the abolition of GDRS.

¹⁴ A municipal administration can be established in settlements having more than 5,000 inhabitants.

¹⁵ Where the population is less than 10,000, the municipal public works department is responsible for water supply, which is financed from its own budget. In this case, both water supply and sanitation services are grouped with other public services. In municipalities with a population of 10,000–50,000, it is common to have a directorate or ‘water office’ that is responsible for water supply. These offices do not have a separate legal entity. In municipalities with a population greater than 50,000, water supply is generally combined with other municipal services in a separate operating unit established by the municipal council as a legal entity. These service providers are specific organizations rather than autonomous commercial units, and they have budgets assigned to them (See Cinar T (2009) Privatization of urban water sewerage services in Turkey: Some trends. *Development in Practice*, vol 19, no 3:362-63).

constructing and operating water supply and sewerage services in metropolitan areas. In the beginning, ISKI was independent of the Istanbul Municipality, but after the reorganization of the municipality as a metropolitan administration in 1984, ISKI was subordinated to the Istanbul Metropolitan Municipality as a public entity with an independent budget. This water and sewerage administration model was extended to cover other metropolitan municipalities, such as Ankara in 1987 and Izmir in 1989. Today there are 16 water and sewerage administrations within metropolitan municipalities. Metropolitan municipalities and their utilities have been encouraged to mobilize their own resources beyond the Bank of Provinces mechanism and to finance large-scale urban infrastructure investments through foreign loans under the Treasury Guarantee Scheme. In turn, this has stimulated privatization initiatives in the delivery of local services in Turkey.¹⁶

Liberalization of Hydroelectricity Sector

Liberalization and deregulation of the national energy sector in the 1980s with its subsectors including hydroelectricity production marked a clear departure from the mentality of the earlier decades which was characterised and dominated by public investments, with a growing tendency especially in the 1970s, when large dams were constructed without the participation of the private sector.

Since 2001, with the adoption of the Electricity Market Law No. 4628, an independent public institution, namely the Energy Market Regulatory Authority (EMRA) was created to be responsible for issuing licenses for production activities (including hydropower generation) in the electricity market. For hydropower projects in order for private sector to get licenses a *Water Use Right Agreement* should be signed between the DSI and the private entrepreneur (See Electricity Market Licensing By-Law No. 248364, 2002).

The “Law on the Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy” (No. 5346), which entered into force in May 2005, entails “the guarantee of purchase” principle which guarantees the purchase of a company’s service by the government which acts as a strong incentive for private investments.

With the “Electricity Market Law” No. 4628 of 2001 and the Renewable Energy Law No. 5346 of 2005, the Turkish government envisaged the acceleration the development of the underexploited potential by inviting private investors and private financial service institutions.

According to the procedures, companies must first apply to DSI in order to sign Water Use Rights Agreements. In line with the “Regulation on the Procedure and Principle of Signing Water Use Right Agreement to Make Production in the Electricity Market” (2003), the agreement grants the production license to the private company. Private companies apply for those projects they select from EMRA’s pre-determined list of potential projects. The companies start to work after they get EMRA’s approval.

Principal legislation in the electricity sector

2001	Electricity Market Law (No. 4628)
2003	Regulation on the Procedure and Principle of Signing a Water Use Right Agreement to Make Production in the Electricity Market

¹⁶ Ibid., p. 354.

2004	Strategy Paper Concerning Electricity Market Reform and Privatization Programme
2005	Law on the Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy (No. 5346)
2007	Energy Efficiency Law (No. 5627)

Water and Land Resources

In 1960, Law No. 7457 established the General Directorate for Soil and Water, which in 1985 was reconstituted as the General Directorate for Rural Services (GDRS) under the Ministry of Agriculture, Forestry and Rural Affairs. From 1993 until recently, the GDRS operated under the Prime Minister's Office. In 2005, as part of the government's decentralization and cost-cutting programme the GDRS was abolished, and its personnel, cadres, equipments and vehicles and other belongings at the headquarters were transferred to the Ministry of Agriculture and Rural Affairs (MARA) while its personnel and belongings at the provincial level were transferred to the metropolitan municipalities in Istanbul and Kocaeli and to the Special Provincial Administrations (SPA)¹⁷ within local provincial governments in all other provinces.¹⁸ GDRS research stations were also transferred to MARA.

Water and Environment¹⁹

Turkey's legislative commitment to environmental policy targets, in particular, the protection of water resources from pollution, is reflected in a detailed regulatory system. Regulations date back to the early years of the Republican period, the 1920s and 1930s, namely the Village Law (No. 442) of 1924, the Municipality Law (No. 1580) of 1930 and the General Hygiene Law (No. 1593) of 1930 which mandated municipalities and village administrations to provide clean drinking water and to protect it from pollution. However, modern water legislation and a new legal structure for environmental protection and water management emerged from 1980s onwards.

In Turkey, the way for environmental protection has been paved since the 1970s. Environmental awareness rose internationally because negative environmental impacts of industrialization became increasingly apparent. In 1973, following the United Nations Conference on the Human Environment of 1972, environmental concerns were addressed for the first time in the country's third *Five Year Development Plan*. It took another five years, until in August 1978, the first department, *Prime Ministry Undersecretariat for the Environment*, responsible for the coordination of activities related to environment was established. Moreover, the Constitution, Article 56 grants the right to a healthy environment and stipulates the prevention of environmental pollution as a duty of the

¹⁷ With the Act No. 5302, adopted in 2005, 81 SPAs are established in the country; one in each province. The SPAs cover areas that fall neither within municipal nor village boundaries. The SPAs are the public entities enjoying administrative and financial autonomy, which are set up to meet the local and common needs of the people dwelling in the province, and whose decision-making branch (general provincial assembly) is elected and made up by electors. They are composed of the general provincial assembly, the provincial council and the governor. The governor (chief executive of the province and principal agent of the central government) is the chief of the Special Provincial Administration and the representative of its legal personality.

¹⁸ Act No. 5286 on Abolishment of the General Directorate of Rural Affairs, 2005.

¹⁹ This section is largely drawn from Orhan G and Scheumann W (2011 forthcoming) Turkey's Water Policy for Combating Water Pollution In: Kibaroglu, Scheumann and Kramer (eds.) Turkey's Water Policy: National Frameworks and International Cooperation, Springer Verlag, Heidelberg.

State and its citizens. The law provided the first framework legislation for environmental regulations to come.

The **National Parks Law** of 1983 (No. 2873) prohibits all activities, including water pollution, that may contribute to the degradation of the environment and ecological balance in areas designated as National Parks, and asks for strict measures to be applied for activities outside of protected areas that may affect them.

The **Environment Law** of 1983 (No. 5491) which was revised on 26 April 2006, is a framework document that determines general principles concerning the protection of the environment and the prevention of pollution. It endorses the 'Polluter Pays Principle' and handles environmental issues broadly. The aim of the law, which considers the environment as a whole, is not only to prevent and eliminate environmental pollution, but also to allow for the management of natural and historical values and land in such a way as to utilize and preserve its richness for future generations. According to its basic principles, citizens as well as the State bear responsibility for the protection of the environment. It emphasizes that every effort should be made to minimize and solve environmental problems in economic activities, in particular when determining production methods.

Since the Environment Law (1983) is a framework document, it was assumed that the relevant regulations would be introduced after three years. Instead, it took more than one decade, but recent efforts towards EU alignment have accelerated legislative change:

The **By-law on Environmental Impact Assessment (EIA)** which was issued in 1993 and revised several times²⁰, the latest revision being in 2008, is mandatory for all large-scale projects, including storage facilities (dam reservoirs) with a reservoir volume of 10 million cubic meters (MCM) and more, and for run-off the river type projects of 25 MW and more. Development projects on agricultural lands (irrigation and drainage projects), water supply and sanitation facilities, and wetlands, lakes and eco-systems which are rich in biodiversity, as well as lands protected under national law or accord with international agreements which Turkey signed, are subject to EIA studies. These international agreements are the Barcelona Convention and the Ramsar Convention, which concern the protection of the Mediterranean Sea and the protection of wetlands respectively. Turkey has not yet signed the Espoo Convention (1991) which refers to EIA in a transboundary context. However, as EU accession talks progress, Turkey will have to reconsider signing the Espoo, Aarhus and other UNECE conventions.

The **By-Law for Water Pollution Control** of 1988 (No. 19919) revised in 2004 (No. 25687) and 2008 (No. 26786) aims at both conserving the quality of water resources and water-dependent ecosystems, and protecting and improving water quality to meet human demands. It establishes emission limit values (or discharge standards) which define the maximum allowable discharge of pollutants (including priority substances as defined in the Dangerous Substances Directive, the Nitrate Directive) into receiving natural and

²⁰ The four revisions made to date (1997, 2002, 2003, 2008) are owed to the progressive harmonisation of Turkish environmental legislation with the European Union environmental acquis.

artificial water bodies. By means of classifying inland surface waters into four classes,²¹ water quality standards of receiving water bodies are defined. In order to prevent further pollution and/or to improve water quality, the MoEF may restrict waste water discharges until watershed protection plans are prepared, including the establishment of watershed protection zones around drinking water reservoirs and wells. Discharge limit values may be modified if current and future usage of the respective water bodies is negatively affected. It further regulates the permit system for direct (into receiving natural water) and indirect dischargers (into municipal sewage systems), and authorizes the Provincial Environment and Forestry Directorate to issue the permits (the Local Environment Commissions act as their advisors). Although MoEF is responsible of inspection, monitoring and controlling, State Hydraulic Works, provincial governors, municipalities and Water and Sewage Administrations are also authorized to the implement this By-Law.

The **By-Law on the Protection of Waters from Agricultural Nitrate Pollution** of 2004 (No. 25377) deals with nitrate and nitrate-based components that originate from agricultural practices (application of fertilizer and animal waste) and pollute ground and surface waters and soil. It defines standards for drinking water and criteria for determining regions at risk. The Ministry of Agriculture and Rural Affairs is responsible for promoting good agricultural practices, i.e. fertilizer use in agriculture and for developing programmes towards this end.

The **By-Law on Controlling Water and Environmental Pollution Stemming from Dangerous Substances** of 2005 (No. 26040) covers technical and administrative standards for identifying dangerous substances that pollute surface waters, estuaries and regional waters; for preparing pollution reduction programs, for monitoring and preventing pollution; for making an inventory of dangerous substances discharged into water resources; for determining waste water discharge standards and water quality standards related to fourteen dangerous substances in receiving environments (Appendix 1), and determines environmental quality standards for marine waters and estuaries (not for inland water bodies) for forty less dangerous substances (Appendix 2) that can be released into the water bodies.

The **By-Law for the Quality of Surface Waters that are used for Drinking Water Purposes** of 2005 (No. 25999) categorizes surface water,²² and authorizes the Ministry of Environment and Forestry to prepare water protection plans, determine quality criteria and means to improve water quality. Major implementing authorities are DSI, the Bank of Provinces, municipalities and the Special Provincial Administrations.

²¹ Classification is based on a) physical and inorganic chemical, b) organic, c) inorganic pollution and d) bacteriologic parameters. Class I waters refer to high quality waters, Class II waters refer to minimal pollution, Class III refers to polluted water and Class IV refers to highly polluted water (the number of parameters on which assessments rest was extended to 45 in 2004), see Amendments to the By-Law, Table 1.

²² A1: surface waters that become drinkable after basic physical treatment and disinfections; A2: surface waters that become drinkable after physical treatment, chemical treatment and disinfections; A3: surface waters that become drinkable after intensive physical and chemical treatment, advanced treatment and disinfections.

The **By-Law on Urban Waste Water Treatment** of 2006 (No. 26047) regulates the collection, treatment and discharge of urban waste water to protect the environment from negative effects of untreated industrial and domestic waste water. It defines technical and administrative principles pertaining to the collection of urban and industrial waste water that is discharged into sewage systems, their treatment and discharge; it details administrative mandates for monitoring and reporting of waste water discharge; it specifies a transition period for municipalities to complete their waste water collectors and treatment plants in parallel with population growth. Discharge is permitted into receiving water bodies and connection is permitted into sewage systems (pre-treatment might be necessary) are both regulated whereby the Local Environment Commissions advice authorities.

The **By-Law on Bathing Water Quality** of 2006 (No. 26048) aims to prevent recreational and bathing waters from pollution, mainly microbiological, for the sake of human health and the environment. It covers quality criteria for bathing and recreational waters and administrative procedures for monitoring and reporting. The By-Law prohibits the discharge of untreated waste water and solid waste disposal into bathing waters. Major responsibility for implementing this by-law rests with the Ministry of Environment and Forestry.

Turkey's National Programme for the Adoption of the European Union *Acquis* (2001, 2003 and 2008)

The National Programme is an official document prepared with contributions from relevant ministries of Turkey, setting out the details, timetables and costs for fulfilling each priority area as defined in the Accession Partnerships. The First National Programme, which basically listed the EU legislation to be adopted by Turkey, was published in 2001. A revised National Programme for the Adoption of the *Acquis* was adopted on 24 July 2003²³. With respect to the water sector, the EU legislation that was prioritized under the heading 22.1 "Improvement of the Water Quality" was studied by relevant ministries. Subsequently, by-laws (see above) have been prepared and entered into force in Turkey.²⁴

The National Programme, again revised in 2008²⁵, proposed a harmonization schedule for "water management." According to the 2008 National Programme, harmonization with the WFD will be realized when a clear perspective of EU membership appears. Apart from WFD and other water-related directives (Bathing Water Quality Directive, 2006/7/EC, Assessment and Management of Flood Risks Directive, 2007/60/EC and Directive 91/676/EEC on Nitrates from Agricultural Sources), transposition of most of the remaining water-related directives are said to be finished in 2009.

²³ Secretariat General for EU Affairs (2003) National Program of Turkey for the Adoption of the EU *Acquis*, Official Gazette Dated 24 July 2003, no. 25178.

²⁴ See <http://www.cevreorman.gov.tr>. Accessed 16 December 2009

²⁵ Secretariat General for EU Affairs (2008) National Program of Turkey for the Adoption of the EU *Acquis*. Official Gazette Dated 31 December 2008, no. 27097. Available online at <http://www.abgs.gov.tr/index.php?p=42260&l=2>. Accessed 6 January 2010

Water *Acquis* and Turkey's Progress²⁶

European Directive	Transposition Status & Date	Leading Ministry
Water Framework Directive (2000/60/EC)	Deadline for transposition tentatively set for 2011	MoEF
Dangerous Substances Directive (76/464/EEC)	Accession of Turkey is not envisaged before the repeal of this Directive, no transposition is required	MoEF
Daughter Directive on Priority Substances (2008/7/EC)	Full transposition after 2015	MoEF
Bathing Waters Directive (New) (2006/7/EC)	Date for full implementation will be determined through the proposed Project titled "Harmonization of the New Bathing Water Quality Directive and Strengthening the Monitoring System of the MoH" submitted to 2010 IPA Program	MoEF and MoH
Bathing Waters Directive 76/160/EEC	Transposed on 09.01.2006	MoEF
Directive on the Quality of Water intended for Human Consumption (98/83/EC) (Drinking Water Abstraction Directive, 75/440/EEC is repealed in 2007)	Transposed on 17.02.2005	MoEF
Urban Wastewater Treatment Directive (91/271/EEC)	Transposed on 08.01.2006, with a period of implementation until 2023	MoEF
Nitrate Directive (91/676/EEC)	Partially transposed in 2004, full transposition no sooner than 2013	MARA and MoEF
Integrated Water Pollution Prevention and Control Directive (96/61/EC)	Transposition by the end of 2012	MoEF
Major Accidents (Seveso) Directive (96/82/EC)	Transposed in 2009, implementation until 2014	MoEF
Sewage Sludge Directive (86/278/EEC)	Transposed on 31.05.2005	MoEF
Plant Protection Products Directive (91/414/EEC)	Transposition will be completed by the end of 2010	MARA
Water for Freshwater Fish Directive (78/659/EEC-consolidated version 2006/44/EC)	Accession of Turkey is not envisaged before the repeal of this Directive, no transposition is required	MARA and MoEF
Flood Risks Assessment and Management Directive (2007/60/EC)		MoEF
Marine Strategy Framework Directive (2008/56/EC)		MoEF
Environmental Impact Assessment Directive (85/337/EEC)	Partially transposed including clauses on public participation	MoEF
Habitat (92/43/EEC) and Birds (79/409/EEC) Directives	Partially transposed, full transposition after 2011	MoEF
Daughter Directive on Groundwater (2006/118/EC)	Deadline for transposition tentatively set for 2011	MoEF
Water for Shellfish Directive (2006/44/EC)	Transposed through a circular in 2008	MoEF
Sampling and analysis of surface water intended for the abstraction of drinking water Directive (79/859/EEC)	Transposed on 20.11.2005	MoEF
Groundwater Directive Dangerous Substances (80/68/EEC)	Accession of Turkey is not envisaged before the repeal of this Directive, no transposition is required (will be repealed in 2013)	MoEF
Shellfish Directive (79/923/EEC)	Accession of Turkey is not envisaged before the repeal of this Directive, no transposition is required (will be repealed in 2013)	MoEF

²⁶ Ministry of Environment and Forestry (2010) Draft National Implementation Plan for Water Framework Directive. Ministry of Environment and Forestry, Ankara.

Turkey and International Water Law

Multilateral Agreements

Turkey has entered a number of bilateral agreements on transboundary water resources management with its neighbours. Turkey is also a signatory to multilateral agreements on the protection of marine environments and freshwater ecosystems, such as the Convention on Wetlands of International Importance, called the Ramsar Convention (1971), the Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona Convention, 1995) and the Convention on the Protection of the Black Sea against Pollution (Bucharest Convention, 1992).

In 2003 The Turkish Ministry of Foreign Affairs formulated a set of principles which delineates Turkey's official policy regarding the use of transboundary rivers:²⁷

- "Each riparian state in a transboundary river has the sovereign right to make use of the water in its territory.
- Riparian states must make sure that their utilisation of such waters does not inflict 'significant harm' on others.
- Transboundary rivers should be used in an equitable, reasonable and optimum manner. ('Equitable use' does not mean the equal distribution of waters of a transboundary river among riparian states."

Whereas Turkey explicitly distinguishes between the terms "international rivers" and "transboundary rivers" and considers international rivers only to be those that constitute a border between two or more countries such as the Meric river which forms the border between Turkey and Greece and the Arpacay river (Aras basin) where it forms the border between Turkey and Armenia. While such boundary rivers are to be shared equally between the riparian countries, the water of transboundary rivers should be allocated equitably.

However, Turkey has been reluctant in signing multilateral agreements that lay down the principles of international water law - especially when they include compulsory mechanisms for dispute settlement and the procedures for prior notification. For this reason, Turkey, as one of only three countries, has voted against the United Nations Convention on the Law of the Non-navigational Uses of International Watercourses (UN Watercourses Convention). The arguments Turkey put forward during negotiations of the UN Watercourses Convention sheds further light on this position.²⁸

²⁷ Turkish Ministry of Foreign Affairs (2003) The looming water shortage and Turkey's water management in a transboundary context. NATO Parliament Assembly, 48th session. Istanbul, 15-19 November 2002.

²⁸ Turkey specifically raised the following points during negotiations: The main purpose of the Convention should be to achieve an equitable and reasonable arrangement regulating water utilisation among the watercourse states: 'any other approach turns the Convention into a document which unilaterally restricts, in terms of both quantity and quality the utilisation rights of states in which watercourses originate; due attention should also be paid to establishing an equitable balance of rights and obligations among all watercourse states'. Yet, according to the Turkish Government, while these requirements were taken into account to a certain extent in the general principles set forth in Part II of the Convention, the same cannot be said of Part III and Part IV of the document. In fact, as regards Part III (Articles 11-19) of the Convention, Turkish authorities delivered severe criticism mainly on the point that Part III comprises detailed procedural arrangements such as determining the period for reply to notification, ignoring the basic

Equally, Turkey has not signed four of the five environmental conventions²⁹ under the auspices of the United Nations Economic Commission for Europe (UNECE), namely the

- Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki Convention)
- Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)
- Convention on Environmental Impact Assessment in a Transboundary Context (EIA/Espoo Convention)
- Convention on the Transboundary Effects of Industrial Accidents.

Turkey has been consistently advised by the European Commission, through its regular progress reports, to become party to those international conventions (UNECE environmental conventions, in particular) to which the European Union is a party. That communication between the EU and Turkey constitutes, in fact, an obligation which Turkey needs to fulfil before the membership to the Union.

Selected Bilateral Agreements

Euprates/Firat-Tigris/Dicle Rivers System and the Orontes/Asi River Basin:

The Protocol of 1987 between Turkey and Syria

The Turkish-Syrian Joint Economic Commission meeting on 17 July 1987 had an important outcome regarding the negotiations on the water issue. Hence the first

fact that each international watercourse possesses different and specific characteristics. Accordingly, the Turkish proposal was to reduce the dispositions of Part III to a minimum and to set forth certain general principles regarding planned measures. Turkish authorities had a series of criticisms about Article 5 (equitable and reasonable utilization and participation) as well. They were eager to make it clear that the principle of equitable and reasonable utilisation should be understood in light of the fundamental principle of the sovereign rights of states over their territory. It should also be applied by taking fully into account all the particularities of the watercourses, including the distinction of whether they are transboundary by nature or international (forming a boundary) between states. In relation to the first paragraph of Article 5, Turkish officials suggested that the principle of 'optimal utilisation' should aim at both protecting the watercourse and at optimising the interests of riparian states in a way that avoids water waste. Yet, the first paragraph of Article 5 does not clearly state that 'optimal utilisation' should not be restricted to the protection only but should be seen also as comprising the concept of 'efficient use'. Turkey also asserted that the obligation not to cause significant harm should be subsidiary to the principle of equitable and reasonable utilisation. In other words, if a state made use of a watercourse in conformity with the principle of equitable and reasonable utilization, the exercise of that right should not be limited by a second criterion. Turkey claimed that the draft convention was broader than had been intended in the General Assembly resolution 51/206; it should have merely established general principles, the application of which would be determined by means of specific agreements taking account of the particular characteristics of each watercourse. Contrary to what should be the case with a framework convention, the draft convention established a mechanism for prior notification on planned measures which had no basis in general and customary international law, and which created an obvious imbalance among states by setting up an obligation to obtain prior approval on planned measures from other riparians. A framework convention was not the appropriate place for setting out obligatory dispute settlement rules; the latter should be left to the discretion of the States concerned. Parties to existing agreements should be free to choose whether or not to accept the principles set forth in the draft articles. As for future agreements, there again the parties must be free to conclude both, agreements that took account of the framework convention's provisions and agreements that diverged there from, even to a substantial extent (See U.N. Doc A/C.6/51/SR.62 (1997).

²⁹ Turkey is party to the UN ECE Convention on Long-range Transboundary Air Pollution since 1983.

arrangement was the Protocol of Economic Cooperation signed by Turkey and Syria in 1987. The Protocol was not solely devoted to the water issue. It is important to note that the Protocol was regarded as a temporary arrangement. It embodies several articles pertaining to the water issue.³⁰ The text of Article 6 of the Protocol reads as follows: 'During the filling up period of the Atatürk dam reservoir and until the final allocation of the waters of Euphrates among the three riparian countries the Turkish side undertakes to release a yearly average of more than 500 m³/sec at the Turkish-Syrian border and in cases where monthly flow falls below the level of 500 m³/sec, the Turkish side agrees to make up the difference during the following month'. Article 7, on the other hand, states that 'the two sides shall work together with the Iraqi side to allocate the waters of the rivers Euphrates and Tigris in the shortest possible time'. While, Article 8 states that 'the two sides agreed to expedite the work of the Joint Technical Committee on Regional Waters'. Under Article 9, both states agreed in principle to construct and jointly operate irrigation and hydroelectric power projects.

One of the most important legal texts between Iraq and Turkey on the water resources of the Euphrates and Tigris rivers and tributaries is the Protocol annexed to the **1946 Treaty of Friendship and Good Neighbourly Relations**.³¹ The Protocol provides a framework for the two parties to deal with their respective interests in the above water resources. The main features of this agreement read as follows:

- (i) In order to ensure the maintenance of a regular water supply, to regulate the water flow and to avoid the danger of floods during the annual periods of high water, it had been found necessary to construct dams and permanent observation stations in Turkish territory (Preamble),
- (ii) Authorisation to undertake studies with a view to controlling the rivers: Iraq may send to Turkey groups of technical experts to make investigations and surveys, collect hydraulic and geological information needed for the selection sites for the construction of the dams and observation stations to be constructed on the Tigris, Euphrates and their tributaries (Article 1),
- (iii) Collaboration in carrying out the projected studies (right of access). Provision of facilities: The technical experts from Iraq shall collaborate with Turkish technical experts; Turkey shall authorise them to proceed to the places to be visited and shall provide them with the information, assistance and facilities necessary for the accomplishment of their task (Article 2),
- (iv) Turkey shall install and operate permanent flow measurement facilities, and transmit periodically the readings and the recorded data to Iraq (Article 3),
- (v) Turkey in principle accepts to construct flow regulation works needed in the interest of Iraq in Turkish territory (Article 4),

³⁰ This Protocol covered a wide range of issues from oil and gas exploration, banking and customs formalities to livestock transport. The Protocol had a positive impact on Turkish-Syrian trade published in the *Resmi Gazete*, Ankara, Turkey, 10 December 1987.

³¹ The Treaty of Friendship and Good Neighbourly Relations between Iraq and Turkey, Protocol on Flow Regulation of the Tigris and Euphrates rivers and of their tributaries, *United Nations, Legislative Texts and Treaty Provisions Concerning the Utilisation of International Rivers for Other Purposes Than Navigation*, UN/Doc. ST/LEG/SER. B/12, 1963, p. 376.

(vi) Turkey shall inform Iraq of projects for waterworks on any of the Protocol watercourses, and shall consult with Iraq with a view to accommodating the interests of both countries' (Article 5)' .³²

The protocol provides a framework for the two parties to deal with their respective interests along the river system. The protocol emphasised mainly the urgency of building up flood control works on the Euphrates and Tigris rivers and underlined the positive impact of storage facilities to be sited in the Turkish territory.

On December 23 and 24, 2009 Turkey and Syria signed fifty Memorandum of Understandings (MoUs) at the first meeting of the High-Level Strategic Cooperation Council in Damascus including four MoUs related to regional waters:

- The Memorandum of Understanding Between the Government of the Republic of Turkey and the Government of the Syrian Arab Republic for the Construction of a Joint Dam on the Orontes River Under the Name "Friendship Dam." According to this, both countries will share costs of the dam, which will be built at the border. It will produce energy for both sides and irrigate 20,000 hectares of agricultural area in Turkey and 10,000 hectares in Syria. Although the details of the dam will be ironed out in the feasibility study, it is expected to be approximately 15 meters high and have a capacity of 110 MCM of water storage. Of that total, 40 MCM will be used to prevent flooding and the rest for energy production and irrigation. The foundation of the dam is expected to be laid out in 2010.
- The Memorandum of Understanding Between the Government of the Republic of Turkey and the Government of the Syrian Arab Republic on Establishment of a Pumping Station in the Territories of Syrian Arab Republic for Water Withdrawal From the Tigris River. With this protocol, the quantity of water drawn annually from the Tigris River by Syria, when the flow of water is within the average, will be 1.25 BCM. The water withdrawals are arranged according to monthly flows, and it is indicated that pumping will be done when time and place allows.³³
- The Memorandum of Understanding between the Government of the Republic of Turkey and the Government of the Syrian Arab Republic in the Field of Efficient Utilization of Water Resources and Combating of Drought.
- The Memorandum of Understanding between the Government of the Republic of Turkey and the Government of the Syrian Arab Republic in the Field of Remediation of Water Quality.³⁴

Among the forty eight Memorandum of Understandings (MoU) which were signed between Turkey and Iraq on 15 October 2009, one was on "water". With that protocol the two sides agreed to exchange hydrological and meteorological information as well as

³² Ibid.

³³ In 2002, a bilateral agreement between Syria and Iraq was signed concerning the installation of a Syrian pump station on the Tigris River for irrigation purposes. The quantity of water drawn annually from the Tigris River, when the flow of water is within the average, will be 1.25 km³ with a drainage capacity proportional to the projected surface of 150,000 hectares. Personal communication with the Turkish officials at Ministry of Foreign Affairs and DSI, January 2010.

³⁴ "Joint Statement of the First Meeting of the High-Level Strategic Cooperation Council between Syria and Turkey," Dec 24, 2009, Syrian Arab News Agency.

exchanging expertise in these fields. Both sides also emphasized utilization and management of regional water resources in an efficient manner.

Meric/Maritsa/Evros River Basin

Turkey-Greece

The first agreement on the Meric between Greece and Turkey was signed in 1934. "Agreement pertaining to the construction of hydraulic facilities on both banks of the Meric-Ebros River", mainly covered specifications for infrastructure that both parties were allowed to build for flood protection and erosion control. It also included provisions for exchanging topographic data, notification to the other party prior to construction, and for dispute settlement between the two parties.

A "Memorandum of Understanding Concerning Cooperation on Environmental Protection" was concluded between Turkey and Greece in 2000. It stipulated, that the two parties "shall exchange scientific, technical and legal information among governmental bodies and shall encourage such exchange among academic institutions" (Article 2). "Coordination of co-operation in the different fields of activities shall be managed by a Joint Committee comprising five representatives from each of the two countries" (Article 8). The possible fields of cooperation named do not, however, include river management. Yet, some of the areas mentioned, such as "combating marine pollution", "Environmental Impact Assessment", "land-based sources of pollution", provide options for cooperation relating to the management of the Meric river.

Turkey-Bulgaria

In 1968, Turkey and Bulgaria signed the "Agreement between the Republic of Turkey and the People's Republic of Bulgaria on the Cooperation of the Utilization of the Waters of the Rivers Flowing in the Territories of the Two Countries", which refers to the principles of international law and good neighbourly relations. The main objective was to regularise beneficial use of boundary and transboundary rivers and to provide for flood protection. The parties committed themselves to cooperate in research and the study of ventures which would be beneficial to both of them, to not inflict serious damages on each other by constructing and operating facilities on the rivers, to exchange information on floods and icing as rapidly as possible, and to exchange hydrological and meteorological data. A Turkish-Bulgarian Joint Commission composed of equal numbers of experts from both countries was authorised with settling disputes which may have arisen during the implementation of the agreement.

The 1975 "Agreement on Long Term Economic, Technical, Industrial and Scientific Cooperation" between the Government of the Republic of Turkey and the Government of the People's Republic of Bulgaria" states that cooperation between the concerned Turkish and Bulgarian enterprises and organisations shall be simplified in all the fields of economy including "energy production and irrigation, including the joint use of the waters whose shores are on both countries, for energy production and irrigation purposes" (Article 5).

Recognising the need for cooperation to alleviate the severe consequences suffered by both parties due to drought, the "Agreement on Assistance and Cooperation in the Field of Water for Reducing the Negative Effects of the Drought" of 1993 was signed. It states that Bulgaria, on a one-off basis and limited to 1993, should provide additional water to Turkey from the river Tunca. In turn, Turkey should allocate US\$ 0.12 per m³ of water

provided by Bulgaria. Accordingly, Turkey purchased 15,866,000 m³ of irrigation water from Bulgaria at 1,903,904 US Dollars cost.

The Turkish-Bulgarian Joint Committee for Economic and Technical Cooperation signed the “Agreement on the Approval of the 15th Term Protocol” in 2002.³⁵ Under the subheading “Environment”, both parties agree to further environmental cooperation for the protection of surface and groundwater resources and water related environments. Under “Energy and Environment”, the Turkish side repeated the request to establish a joint technical working group to investigate the conditions for building the Suakacagi Dam on the Tunca river.³⁶ The Bulgarian side confirmed that this issue would be addressed promptly. Both sides agreed to continue hydrological data exchange in order to prevent flooding and to exchange data regarding water levels and releases from dams on the Meric, Arda and Tunca. They further agreed that the Technical Working Group which was created under the 1968 Agreement should continue its regular activities.

Coruh River Basin

In 1927, Turkey and the Soviet Union signed the *Protocol on the Beneficial Uses of Boundary Waters* (the so-called Kars Protocol) which addressed, inter alia, the use of the Coruh River because it forms the boundary between the two states for 3 km. The basic provisions of the arrangement are a fifty-fifty allocation of water (Article 1) and several regulations on infrastructure and dam building. A Joint Boundary Water Commission was established later. Since this agreement only applies directly to those stretches of the river forming a border, it does not cover all transboundary effects that might occur because of changes of the river flow elsewhere in the basin.³⁷ For instance, article 5 of the protocol demands compensation if a party suffers from dam building on a river that constitutes a border. However, it is rather unlikely that this (and other provisions of the protocol) applies to the dam projects under consideration, because this is not an agreement concerning transboundary resources flowing across the boundaries. The Soviet Union and Turkey signed another protocol which regulates necessary technical cooperation to avoid changes of the river bed in several border rivers, inter alia the Coruh River. In the 2000s up until today, a series of meetings were held and memoranda of understanding signed, focusing on potential impacts in Georgia of dams constructed in Turkey.

Kura-Aras River Basin

An important agreement between Turkey and the USSR is the Protocol on the Joint Construction of the Arpacay Dam dating from 1964. This protocol provides a set of rules concerning joint dam construction the waters of which would be shared on a fifty-fifty

³⁵ The Protocol of the Fifteenth Session of the Turkish-Bulgarian Joint Committee for Economic and Technical Cooperation contains provisions on trade and economic relations: bilateral trade relations, trade promotion activities, standardisation, industry and transport (inter alia, road transport and maritime transport), telecommunications and postal services, agriculture, and environment (Sofia, 22-23 January 2002, Resmi Gazete, 2002-07-03, No. 24804, pp. 3-36; see Annex 7).

³⁶ Joint construction of the Suakacagi Dam has been planned with Bulgaria starting in 1968 but has not been completed until to date. The dam would irrigate 50 000 hectares, protect 2,000 hectares from being flooded and operate three turbines, two on the Bulgarian and one on the Turkish side to generate 100 GWh/year energy.

³⁷ For instance, Article 5 regulates the right of the parties to build a dam on the waters constituting the border; it further states that those parties that experience damage because of a dam on the boundary waters, should be compensated.

basis. Both states are free to use their water for irrigation purposes and may build a hydropower plant on their respective territories. In addition, article 18 of the protocol regulates quantitative water use downstream of the dam up to the Iranian border. Equally, issues such as the allocation of construction costs and the compensation for land losses are addressed in the protocol; the same is true for the founding of a joint dam commission to operate the infrastructure. The 1964 protocol was later followed by the “Cooperation Agreement on the Construction of a Dam on the Bordering Arpacay (Ahuryan) River and the Construction of a Dam Lake.” The cooperation agreement, which was signed on 26 October 1973 and officially ratified in 1975, assures the basic principles that were already outlined in the 1964 protocol. The provisions of the 1975 agreement play a key role in the regulation of boundary waters; they explicitly provide for regulations concerning the tributaries and make several clarifications omitted in the 1927 agreement.