



# Policy, legislative and institutional assessments for integrated river basin management in Turkey



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## ABSTRACT

The rapidly growing population, increased urbanization, and intensive industrial and agricultural activities cause degradation and pollution of natural resources, soil erosion, and changes in hydrologic regimes in all over the world. To overcome these situations, it is necessary to develop an effective and holistic management methodology, called Integrated River Basin Management (IRBM). It is an internationally accepted administrative tool.

IRBM is also one of the implementation requirements of the European Commission Water Framework Directive (WFD, 2000/60/EC) for European Union (EU) member states and candidate countries. Turkey, as an EU candidate country, already has started and continues to work toward adaptation of the WFD. Since the early 2000s, river basin studies have been undertaken to help integrate the WFD into Turkish legislation. Although Turkey has a strong legislative background, there are many challenges in this transition period because of several big river basins, the lack of environmental infrastructure, and the cost of carrying out the WFD.

This paper analyses the political, legislative, and institutional advances of the implementation of IRBM in Turkey. Before the assessments of the new Turkish legislation developments and new basin institutions, the general principles of IRBM are explained. Finally, some recommendations for improving the effectiveness of the new basin organizations and water legislation are presented.

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## 1. Introduction

While the world population increased by triple, water use grew six-fold in the 20th century. Moreover, the pollution and deterioration of natural resources, especially water, have risen in parallel with the rapid urbanization and industrialization of the world. Under these circumstances, Integrated River Basin Management (IRBM) has gained increasing importance.

In recent years, especially since the European Commission (EC) Water Framework Directive (WFD) (2000/60/EC) came into force in December 2000, many countries, like Turkey, have started to

change their legal and institutional structures to align with IRBM principles. The WFD requires European Union (EU) member states and/or candidate countries to produce and implement river basin management plans, which are to be designed and updated to include integrated and coordinated participatory processes within collaboration. National water management based on river basins has to be in place in order to achieve “good status” of all water bodies by a set deadline. The concepts of integration, participation, coordination, and collaboration could be reached by legal and institutional adaptation and the development of appropriate governance structures (EC, 2000). Furthermore, these concepts

*Abbreviations:* BMC, :Basin Management Committee; BMCB, :Basin Management Central Board; CCoPWW, Coordination Committee of Provincial Water Management; GDoCDE, General Directorate of Combating Desertification and Erosion; GDoF, General Directorate of Forestry; GDoM, General Directorate of Meteorology; GDoNP, General Directorate of Nature Protection and Natural Parks; GDoSHW, General Directorate of State Hydraulic Works; GDoWM, General Directorate of Water Management; GDoWSA, General Directorate of Water and Sewage Administration; IAs, Irrigation Associations; MoCT, Ministry of Cultural and Tourism; MoD, Ministry of Development; MoEF, Ministry of Environment and Forestry; MoENR, Ministry of Energy and Natural Resources; MoEnUr, Ministry of Environment and Urbanization; MoEU, Ministry of European Union; MoFA, Ministry of Foreign Affairs; MoFAL, Ministry of Food, Agriculture and Livestock; MoFWA, Ministry of Forestry and Water Affairs; MoH, Ministry of Health; MoI, Ministry of Interior Affairs; MoSIT, Ministry of Science Industry and Technology; MoTMC, Ministry of Transportation, Marine and Communication; OG, Official Gazette; OIZs, Representative of Organized Industry Zones; RBPAP, River Basin Protection Action Plan; RBMP, River Basin Management Plan; TWI, Turkish Water Institute.

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have been defined as a set of indicators useful to make an assessment of Turkish legislation as the WFD is incorporated. Turkey, as a candidate country, has been conducting intensive studies on establishing new legal and institutional structures based on basin units in the transposition process of the WFD into Turkish national legislation (MoFWA 1, 2016). In this context, many legal regulations have been made, and related basin institutions have been established, which are explained in detail in the following sections.

A few EU countries to organize their water management based on river basin boundaries before the implementation of the WFD were Spain, France, England, and Wales (Andersson et al., 2012), but many EU member states, namely Germany, Denmark, Poland, Sweden, and the other Baltic countries, reorganised their water management according to IRBM principles after the WFD (Franzén et al., 2015; Hüesker and Moss, 2015; Liefferink et al., 2011). Franzén et al. (2015) stated that implementation strategies of the WFD change from country to country. For example, Denmark has chosen a centralized approach, while Sweden and Poland took up regional approaches. According to the WFD, the member and candidate states are relatively free in their implementation practices provided they adhere to the following main principles and goals (Liefferink et al., 2011):

- a To adopt a river basin approach within a more centralised or a more decentralised or other organisational framework.
- b To ensure the participation of stakeholders.
- c To organize the integration of the WFD's requirements into other policy fields.
- d To provide collaboration and coordination in river basin boundaries.
- e To attain "good status".

In this study, the main principles of IRBM and their legal and institutional requirements have been examined. Turkish national policy, existing legislation, and institutions were reviewed and summarized in terms of water and environment with respect to the IRBM approach. The studies on new legislation and established institutions based on basins in Turkey were set forth. The studies on new legislation and established institutions based on basins in Turkey were set forth and evaluated in three stages: The first stage is the preparation or proposal of relevant laws or regulations; the second stage is the adoption, approval, or establishment of such laws or institutions; and the third stage is enforcement and implementation of the adopted legislation or institution. After that further recommendations are presented. The literature on this topic is rather scarce. Therefore, it is expected that this study will contribute as an example of legal and institutional approaches to IRBM for EU member and candidate countries.

### 1.1. IRBM and its principles

IRBM is an interdisciplinary management approach that integrates biophysical, ecological, technological, socioeconomic, and political sciences for planning and implementing management activities of natural resources. Employment of IRBM is critical for guaranteeing long-term sustainability of ecological and economic development (Crischlow, 2001; Tiwari et al., 2008). IRBM should ensure the protection of the environment and equitable distribution of existing resources among stakeholders. Andersson et al. (2012) and Franzén et al. (2015) emphasized that successful IRBM could be obtained by the appropriate institutional arrangements providing participation, coordination, and collaboration processes in river basin boundaries. These concepts are accepted as common basic principles of IRBM that have been adopted by the world and defined in the WFD. These principles should be exerted in

legislative and institutional arrangements and provided during all steps of implementation of IRBM –namely assessment, planning, implementation, and evaluation– for achieving sustainable development (Andersson et al., 2012; EC, 2000). Although these principles are commonly accepted, some differences in their context and implementation may exist for some countries.

River basins are essentially recognized as administrative units for natural resources. A river basin is defined by the European Environment Agency (EEA) as the area of land from which all surface runoff flows through a sequence of streams, rivers, and possibly lakes into the sea at a single river mouth, estuary, or delta. In Turkey, public institutions within their study areas have different administrative boundaries and there are some different basin definitions based on different borders (Girgin, 2008). For example, the management of agricultural activities is based on the boundaries of agricultural basins defined by themselves. Also, the region boundaries of development agencies, the region areas of State Hydraulic Works, and the working areas of the Turkish Statistical Institute (TSI) are different from each other. Turkish Water Authorities defined 25 river basin boundaries, according to the EEA definition, and basin studies are executed by this definition. The need for a national basin system and map agreed upon by the water related institutions has been stated in the National Basin Management Strategy Document (NBMS, 2014).

Integration can be realized by thinking of holistic management of all different natural resources (water, land, forest, etc.) and should be supported by all different levels of public and private institutions, such as policymakers, managers, and academics between various sectors (agriculture, industry, residential, etc.) within the watershed boundary (Watson, 2004). Integration is a pre-requisite for implementing IRBM according to the WFD, especially:

- Among bodies involved directly with water resources (responsible for water quality and quantity).
- Between water organizations and other sectors, such as agriculture, industry, energy, land-use planning, and tourism.
- Linkage of "surface- and ground-water" and "inland and coastal waters."

For transboundary basins, integration calls for establishing cooperation between countries and any existing bilateral or multilateral agreements (EC, 2000).

Participation in all steps of the management process means that all stakeholders within the river basin work together to identify criteria for sustainable management, set priority constraints, evaluate possible solutions, select technologies and policies, and monitor and evaluate impacts (Johnson et al., 2001; Potter et al., 2001). Participation of civilians and non-governmental organizations (NGO) in water resource development is a requirement of the WFD. Article 14 (1) of the WFD requires both the active involvement of all interested stakeholders to be encouraged in the process of River Basin Management Plans (RBMPs) and in the whole process of implementing the WFD. Furthermore, public participation should be supported by public awareness programs and public education, institutional capacity building, and the application of appropriate technology. Participation and its context play an important role in shaping the institutional structures that inform, consult with, and actively involve all interested stakeholders and their duties and responsibilities (EC, 2000).

Legal and institutional arrangements should provide effective coordination and collaboration between all state institutions and the other stakeholders. They should ensure the resources and services of the basin are allocated in an equitable manner between their beneficiaries and stakeholders, because interventions that make good sense for individuals or communities may not be good for

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