PROPOSED SOLUTION (BMC)

ABSTRACT

This study identifies the current water management practices of Turkey in terms of legal and institutional framework. The gradual development of water management in Turkey as a can didate country of European Union (EU) was evaluated. In addition, the problems encountered in the water management practices and the lessons leamed are discussed in the historical process. The proposed structure is designed to be managed at the level of the river basin in an integrated manner with the coordinated work of relevant institutions and the participation of stakeholders, taking into account the quality and quantity of all water resources. In tliis regard, handling basii specific issues via sufficient data and information, increasing awareness and knowledge, as well as strengthening stakeholder participation are suggested

AIMS AND BACKGROUND

Current management style of river basins, the so-called integrated river basin gov ernance, considers that every single river basin hasits own problems and solutions. It suggests coordinated activities, bottom-up approaches, strategic planning, inte grated goals.proactive solutions, partnerships and cost sharing programs, flexible management, encouragement of commitment in staff provision of appropriate, relevant and affordable information and equitable management via stakeholder participation in order to reach better management. As documented by Tortojada", it is important to structure a balanced approach between various integrated assets at thein scale, including but not limited to water quantity

However, effective implementation of continues to be its main challenge because of the diverse economic, cultural, legal, pliysical and social conditions of different parts of the world.

When water-sharing arrangements are negotiated, there is always a process of identifying for what and why water is needed for different parties, followed by

HISTORICAL DEVELOPMENTOF WATER MANAGEMENT STRUCTURE IN TURKEY

Water management in Turkey is based on the central management basis. In this context, the water resources management administrative system has three levels: the national, the provincial, and the local levello However, in recent years, a number of studies have been carried out on the transition to the structure based on integration of quality and quantity management and participation of the local stakeholders in the basin on the basis of harmonisation with the European Union (EU) acquis. Progress on the institutional structure in Turkey is presented in Fig. 3. Some ministries were combined in June 2018 with the transition to a new govern ment system in Turkey. In this context, the Ministry of Forestry and Water Affairs (MOFWA) and the Ministry of Food, Agriculture and Livestock (MOFAL) were combined as Ministry of Agriculture and Forestry (MoAF). Thus, water manage ment related institutions were gathered under this ministry

In the global context Big Dams Era' started in 1950s and continued until the late 1980s. As depicted in Fig. 3. the water resources development and manage ment in Turkey progressed through a set of events, and gained momentum

With the establishment of General Directorate of State Hydraulic Works (DSI), which is the main regulatory agency in-charge of operational, investment and infrastructure development plans and strategies in Turkey. The outcomes were integrated into policy and investment actions through preparation ofbasın scale preliminary master plans in 1960s, which is still active. During the early stages of water management developinent period, the basic actions were driven through supply management and/or infrastructure enhancement activities. In the later stages, implementation of IWRM principles paved the way for integration of demand driven measures into the plans.

Second phase of water resources development in Turkey starts with the regional development projects Regional development projects are not only water resources development projects but also tourism, culture, education, health, energy projects,

Experiences gained through basin scale projects helped implementation of Tegional developinent plans including South East Anatolia Regional Development project (GAP) in 1970s, which was followed up by the Regional Development plans in Konya Plain (KOP) in 1980s and Eastern Anatolia Development Plan (DAP).

two times higher than the population. In addition to domestic needs, the irrigation water requirement based on food production is also remarkable in the Euphrates Tigris

Population and flow ratios across river basins in Turkey

As modelling approaches are more commonly used, the value of data will become evident, because they are indispensable for calibrating and validating these models and then as a consequence, more emphasis may be put on data collection and storage Hence, data collection, storage and evaluation processes have to be structured along the lines of integrated and structured mechanisms at the basin scale.

Water allocations should be based on scientific methods including environ mental, social, economic analysis and social inputs? The structure of any particular system of water allocation is of course influenced by the existing institutional and legal frameworks as well as the water resources infrastructure. Indeed, some forms of allocation are likely to require a specific set of laws and regulations, organisa tions, and water resources infrastructure to operate effectively

Considering Turkey is at the ridge of facing gradually increasing river basin management problems at least because its water resources are limited. The prob lems of availability of waterresources in Turkey are exacerbated by the significant increase of consumption, lack of coordination between institutions, reducing water inflow from neighbourhood countries pollution due to increasing population and industrialisation, and extreme events such as droughts, due to climate change.

In this study, basic dimensions of water management practices and the lessons learned in Turkey were evaluated in terms of legal and institutional framework

EXPERIMENT
AL

STUDY AREA

Turkey streaming network has a more complex structure compared to other Euro pean countries. In this context, the country is divided into 25 hydrological basins depicted. In the Turkish setting. It is important to comprehend spatial variability of water resources at the basin scale

There are significant imbalances between flow rates and population in Tur key. On the one extreme, there is the case of Marmara basin, 111 which population is approximately four times higher than the flow rates. This condition places significant pressure on sustainable use of water resources, which should be addressed through supply and demand management measures. The other extreme is the case of Euphrates-Tigris basin, in which flow rate is approximately.

CONCLUTION

The problems in water resource management in Turkey concem administrative boundaries, institutional structure, databases, monitoring and control points, laws, sanctions and policies,

It is necessary to strengthen legal and institutional capacities for sustainable management of basins and to ensure coordination and cooperation among institu tions and stakeholders. The following issues can be recommended to strengthen legal and institutional capacities:

Taking policy decisions related tobasin management high level monitoring of implementation results and carrying out institutional arrangements at the national and basin level that will ensure that the assessment is carried out in coordination

with the relevantinstitutions and the authorised representatives of the stakeholders,

. Prioritise basins regarding pressures and impacts on water resources, con sidering development needs and potential so that basin investments and activities carried out byrelevant institutions and organisations can be carried out according to appropriate priorities;

• Establishment of effective database systems:

• Management of water resources as a whole in basin scale planning, pro tection, rehabilitation, monitoring, supervision and implementation should be executed by one responsible institution wherever possible, otherwise coordination among institutions should be ensured by clear tasks and responsibilities enacted by legislation

Participation of basin management committees to the water management effectively:

Definition of tasks and responsibilities of the institutions in the frame of basın boundarin

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