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Exploring the Challenges and Opportunities for Participatory Water Management in Turkey

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Abstract: Water is among the most challenging natural resources to manage, in almost all over the world. Population increase, consumption-based life styles, increasing energy needs, economic and environmental policies and implementations, and global warming have been increasing day by day the pressure on water resources, which are not distributed evenly on Earth. Throughout this process, different stakeholders of water confront each other and have disagreements because of their conflicting interests and demands. It is widely accepted that most of the water related problems and conflicts arise from the top-down management approaches and therefore, participatory-collaborative-approaches which allow active participation of stakeholders are needed. According to the national development efforts, top-down management applications and related conflicts on water resources are also the case in Turkey since 1950s and these have increased dramatically from the beginning of the 2000s. On the other hand, linked to the harmonization with the European Union's Water Framework Directive, there have been legal-administrative revisions related to water management in Turkey for the last ten years, which emphasize basin-based management and stakeholder participation. The purpose of this article is to identify and evaluate the current state of and opportunities for participation in water management in Turkey, within the scope of the national political and legal-administrative framework affecting the management of water directly, which has been revised during the last ten years. Then, current state is discussed in respect with different rungs and forms of participation. In conclusion, collaboration in three levels and contexts is proposed for the development of active participation in water management in Turkey.

Key words: Collaboration, Legislations, Participation, Top-down management, Water management

Türkiye'de Katılımcı Su Yönetimi için Zorlukların ve Fırsatların İncelenmesi

Özet: Su, hemen hemen tüm dünyada yönetimi en zor doğal kaynaklardan biridir. Nüfus artışı, tüketime dayalı yaşam biçimleri, artan enerji ihtiyaçları, ekonomik ve çevresel politika ve uygulamalar ile küresel ısınma, Dünya üzerinde eşit dağılmamış olan, su kaynakları üzerindeki baskıyı her geçen gün artırmaktadır. Bu süreçte, suyun farklı paydaşları, çatışan çıkar ve taleplerine bağlı olarak birbirleriyle karşı karşıya gelmekte ve anlaşmazlıklar yaşamaktadır. Su kaynaklı pek çok sorunun ve çatışmanın yukarıdan-aşağı yönetim yaklaşımlarından kaynaklandığı geniş kabul görmüştür ve buna bağlı olarak, ilgi gruplarının aktif katılımına olanak veren, katılımcı kolaboratif yaklaşımlara ihtiyaç duyulmaktadır. Ulusal kalkınma çabaları kapsamında, su kaynaklarıla ilgili yukardan-aşağı yönetim uygulamaları ve neden olduğu anlaşmazlıklar 1950'li yıllardan bu yana Türkiye'de de yaşanmaktadır ve anlaşmazlıklar 2000'li yılların başından itibaren önemli ölçüde artmıştır. Diğer taraftan su ile ilgili yasal- yönetsel yapıda, son 10 yılda, Avrupa Birliği Su Çerçeve Direktifi'ne uyum çalışmaları ile bağlantılı olarak, havza bazında yönetimi ve ilgi grubu katılımını vurgulayan değişiklikler ve düzenlemeler olmuştur. Makalenin amacı, bu süreçte su yönetimini doğrudan etkileyen, yasal-yönetsel düzenlemeler ve ulusal politikalar kapsamında, Türkiye'de suyun yönetiminde katılımcılığın mevcut durumunu ve ilgili olanakları belirlemek ve değerlendirmektir. Belirlenen mevcut durum, katılımcılığın farklı düzey ve formları açısından değerlendirilmiştir. Sonuç olarak, Türkiye'de su yönetiminde aktif katılımın gelişmesi için üç düzeyde ve kapsamda kolaborasyon önerilmiştir.

Anahtar kelimeler: Kolaborasyon, Mevzuat, Katılımcılık, Yukarıdan-aşağı yönetim, Su yönetimi

Introduction

As water is vital for life, water management has always played a key role in the development of early and modern societies. Multi-dimensional interactions between water management and human activities such as farming, settlements, industrial activities and energy production have controlled, transformed, and reshaped landscapes and societies (Gleick 2000; Priscoli 2004; Falkenmark et al. 2004; Barton et al. 2010; Mithen 2010). Increasing water demands of societies, environmental consequences of past and present human activities and the 20th century's water management approach and, social and economic dynamics have all increased the pressure and conflicts over water resources (Gleick 2000, 2003; Priscoli 2004). Thus, unevenly dispersed on Earth, water is one of the most challenging natural resources of the 21st century, being subject to various and conflicting demands of various sectors and stakeholders and, conflicting interests related with water quality, quantity and timing on associated landscapes (Gleick 2000, 2003; Leach and Pelkey 2001; Swallow et al. 2001; Poff et al. 2003; Imperial 2005; Wolf et al. 2005).

One of the main causes of the conflicts and problems associated with water has been the traditional management dominated by the "command and control" approach. This approach has been focused on agricultural production, economic productivity, and water supply and has been guided by experts and bureaucrats, assuming that all data that can affect the decisions were accessible and that the results were predictable. However in this approach, ecological and socio-cultural dimensions of water landscapes and related stakeholders have been neglected (Gleick 2000, 2003; Lachapelle et al. 2003; Peterson et al. 2003; Bilen 2008; Pahl-Wostl 2009).

As a result of the above mentioned weaknesses, it has been widely accepted that command and control approach is an unsuitable approach to deal with the present and future challenges of water management and to manage the conflicts among water stakeholders in a democratic and sustainable manner. As such, in order to meet the diverse and complex ecological, social, democratic and, economic needs and demands, participatory decision making processes have been needed also in water management like other natural resources (Gleick 2000, 2003; Wallace et al. 2003; Giordana et al. 2007; Pahl-Wostl et al. 2007a, 2007b, 2008, 2009; Antunes et al. 2009).

In this context, there has been a shift in water resources planning and management approach since the 1990s, in order to meet the increasing demand for democratic legitimacy with increased awareness of the important role of public participation in solving the complex water problems. Public participation has been officially recognised as an essential component of water management by several national and international declarations, directives and regulations such as Dublin Statement (1992), Agenda 21 (1991), Helsinki Water Convention (1992), Protocol on Water and Health (1999) and the European Union (EU) Water Framework Directive (WFD) (2000) (Mostert 2003; Bilen 2008). Being one of the guiding legislations for the EU countries and also for Turkey in water management, WFD highlights the stakeholder and public participation.

Water management in Turkey has concentrated on the construction of physical water infrastructure since the beginning of the mid-1950s; in order to meet the irrigation demand, to improve the agricultural infrastructure, to minimize the natural disasters such as floods and to meet domestic water and energy needs (Sümer 2011a). In the succeeding years, the need and demand for water have increased in the country in various sectors, in parallel with the increase in population. As such, due to the conflicting interests, local and national stakeholders of water and landscapes have confronted with each other in several platforms such as law courts and local protests (Anonymous 2011; Hamsici 2011). On the other hand, national and international legal and administrative statements and commitments that can contribute to solve the water centred stakeholders conflicts, to develop the participatory management process and to protect landscapes, are also in force nowadays in Turkey. In this framework, there have been several changes in Turkish water management since the last five years at the level of geographical management unit and organizational level.

The aim of this paper is to examine and describe the state of art management approach and stakeholder participation within the water management process in Turkey, based on the related legislations. In this context, this paper addresses the concept of collaboration as a main approach that has the potential to struggle with the indicated challenges in water management.

Public participation and collaboration in water management

Public participation, which is described as allowing the public to influence the outcome of plans and working processes in WFD, is regarded as a process that will contribute to the overall success of the Directive (EC 2003; Jonsson 2005). "Access to background information, consultation and encourage active involvement" has been prescribed as the three main forms of public participation (EC 2003; Jonsson 2005; Franzén et al. 2011; Carr et al. 2012) in the Directive. According to the International Association for Public Participation (IAP2), public participation is "*any process that involves the public in problem solving or decision making and uses public input to make better decisions that incorporate the interests and concerns of all affected stakeholders and meet the needs of the decision-making body*" (Anonymous 2014). As stated by Johnson *et al.* 2002, Gleick 2003, Mostert 2003, Tippett et al. 2005, Giordana et al. 2007 and Pahl-Wostl et al. 2007a, 2007b, the importance of participatory management that allows stakeholder involvement, consensus, negotiation and collaboration among different actors, and considers the needs, constraints, and livelihoods of local people for the win-win situations in water management have started to be recognized by also researchers and managers.

For more than forty years, Arnstein's ladder of participation has been recognised at the core of participatory approaches. In the ladder, different levels of participation were described according to different degrees of decision making power through a linear model (Tippett et al. 2005; Collins and Ison 2006, 2009). According to the degree of the citizens' power in decision making and in determining the end product, at the lowest rungs are labelled as manipulation and therapy which corresponds to non-participation of stakeholders, next three rungs labelled as *Informing*, *Consultation, Placation which were called as the levels of tokenism* and the highest rungs of participation are labelled as *Partnership*, *Delegated Power,* and *Citizen Control which were called as* "levels of citizen power" (Arnstein 1969). The higher rungs of the Arnstein's ladder propose and consider active involvement of public to the decision making process. The core and main characteristics of active involvement are long term changes and improvements based on more power of stakeholders in decision making, on negotiation and on public responsibility and sense of ownership on a given planning and management issue (Arnstein 1969; Selin and Chavez 1995; Dijkstra et al. 2011). When considered as a social and integrated process, the success of participatory processes in water management are linked with active involvement of public through collaboration of stakeholders on shared goals and shared values based on working together (Moore and Koontz 2003; Trippett et al. 2005; Pahl-Wostl et al. 2007a, 2007b; Margerum 2008; Pahl-Wostl et al. 2008). Collaboration in water management is a comprehensive and strategic process aiming to achieve consensus on shared goals and interests among the groups within the boundaries of a water basin, throughout which long term and short term goals are established (Sabatier et al. 2005, Ferreyra and Beard 2007; Margerum 2008; Margerum and Robinson 2015). In this process, interactions among ecological, social, economic, institutional and political factors are taken into account in a shared working. Therefore, collaborative water management is both a technical and a social process. As a technical process, collaborative water management deals with the use and protection of surface and underground waters; while as a social process, it emphasizes taking into consideration the perspectives of different interest groups and their values interests and demands (Sabatier et al. 2005; Ferreyra and Beard 2007). In accordance with this, Imperial (2005) and Margerum (2008) classified the collaboration in water management in three levels such as political, organizational and operational (action) levels;

- Operational (action) level collaborative groups focus and work on 'on-the-ground' activities such as water quality monitoring, habitat and river restoration, education of locals.
- Organizational collaborative groups/partnerships focus on the coordinating the activities to improve policies and programs of institutions for the conservation or restoration of a specific water basin and the associated natural landscape.
- Policy collaborative groups focus on change or improvements in policies or regulations of governments. The overall all intention is the positive outcome at ground level by change in organizational level through policy level (Imperial 2005; Margerum 2008; Margerum & Robinson 2015).

Water Management and Participation in Turkey

Turkey is a country where annual rainfall average, evaporation and surface water flow show great differences, and which consists of 25 water basins and is surrounded by water on three sides. Despite this, it is not a rich country in terms of fresh water existence. The inequalities between the amount of water

across the water basins and the population they serve have been increasing the water use and the pressure on water resources (General Directorate of State Hydraulic Works (Turkish acronym DSI) 2014).

The average annual precipitation in Turkey is approximately 643 mm, which corresponds to 501 billion m^3 of average annual water. Considering evaporation, underground water discharge and surface runoff, gross surface water potential is 193 billion m^3 in Turkey. With 14 billion m^3 of groundwater potential; available surface and groundwater water supply potential is 112 billion m^3 per year on average in Turkey and, 44 billion m^3 of this supply is used with distribution of 73% for irrigation, 16% for domestic water use and 11% for industrial use. Water demand for irrigation, urban and industrial use has been increasing rapidly in Turkey in parallel with the population growth. Today, annual per capita usable water is 1.519 m^3 in Turkey. Turkish Statistical Institute (Turkish acronym TÜİK) states that for the year 2030 per capita water would be around 1100 m^3 annually, based on the estimated country population of 100 million. In this regard, Turkey is experiencing water stress and will be confronted with water scarcity in the near future (Aküzüm et al. 2010; Muluk et al. 2013; DSI 2014). Furthermore, it is estimated that the consequences of climate change will increase the pressures on water resources and will worsen the water scarcity problems in Turkey (Muluk et al. 2013; Demircan et al. 2014).

The fact that water is one of the main sources for multiple sectors and functions, leads to its division into many areas in terms of management and use. This situation makes participatory and joint actions necessary in water management in the country. However, the problems and weaknesses listed as follows hinders and/or makes it difficult to ensure the participation in water management and to take joint action at the national, regional and/or local level:

- Lack of coordination in water resources management, disorder and conflicts of authority,
- lack of coordination and cooperation in data collection, data flow and audit,
- presence of duplicated mandates,
- deficiencies in the mechanisms providing for the participation of interest groups in the planning and implementation processes,
- lack of organization,
- shortcomings in monitoring and control mechanisms,
- insufficiencies in providing stakeholders participation and local ownership,
- lack of transparency and information sharing about the implemented projects and works,
- inadequate number and capacity of non-governmental organizations operating in the field of water resources,
- negative perception of society about the interest, contribution and reliability of private sector in the area of water management (Anonymous 2001; Anonymous 2006; Baylan 2012; Muluk et. al 2013).

Opportunities and Improvements for a More Inclusive and Basin-Based Water Management

Since the 1920s, diverse political and legal frameworks have been developed as regards to the water management in Turkey, in the sectors like potable water services, irrigation, environmental health, public health, and use of natural resources, protection of ecosystems, energy production and other related sectors (Burak *et al.* 1997; Bilen 2008; Kibaroğlu and Başkan 2011).

The first policy regulation relating to the water resources was effected in the early years of the Republic by the Law on Waters enacted in 1926. Later, in 1954 DSI was established and the provincial organization of water management was created on the basis of regional directorates related with regional basins. Being an investor and leading coordinator institution of the central government for water management, DSI adopted the US Tennessee Valley Authority model and the "hydraulic mission" approach (Kibaroğlu and Başkan 2011; Sümer 2011a). During this period, water resources development was regarded as one of the most important requirements of regional and national development of Turkey. The activities of DSI focused on increasing the water supply especially in the first years of its establishment, and focused on increasing energy production in the country in the succeeding years (Akkaya et al. 2006; Bilen 2008; Kibaroğlu et al. 2009). DSI, being an investor and leading coordinator institution of the central government for water management has been still in active today as the most important actor of water management and development at the national level and it has been continuing its operations, within the Ministry of Forest and Water Affairs (MFWA). Today, policies and practices related to water resources in Turkey are mainly formed under the influence of related legislations, Five

Year Development Plans, government policies and the EU harmonization process. In connection with the multidimensional purpose of the water use, many ministries and their various sub-units are involved in the management of water resources in Turkey (Sümer 2011b, 2011c). MFWA was established as the primary guiding institution, with the mandates of creating policies on the protection and use of water resources, national water management and coordination (Official Gazette 2011). In the framework of the accession negotiations with the EU, necessary arrangements and revisions have been being made in the water resources management approach and structure of the Ministry with the work conducted under the heading of "Environment". One of the basic documents guiding these regulations and revisions is the WFD.

WFD obliges the EU countries to cooperate with each other in river basin management and envisages that the related work is to be carried out for establishing the proper collaboration with the non-EU member countries. In this context, there have been legal and institutional arrangements and revisions in Turkey on water management "particularly after 2003" (EC 2000; Sümer 2011b, 2011c).The establishment of the General Directorate of Water Management (GDWM) within the MFWA is one of the most important arrangements in this framework. With the establishment of the GDWM, a policy change has been raised for managing the water resources on the basis of basin from the centre through the provincial organizations. The foundation purpose of the GDWM can be summarized as the management of water at the national and international level, with an integrated basin management approach from a single centre (Kınacı 2012). In the framework of protection, improvement and usage of water resources, the GDWM has been assigned the following tasks;

- formulating policies,
- providing coordination at the national and international level,
- on the basis of basin, preparing or getting prepared river basin plans, conducting legislative studies about integrated river basin management, making necessary coordination about the sector based allocation of water resources (Official Gazette 2011).

As another important step, Water Basin Management Planning Department has been established under the GDWM. This has been another important step in transition to the water basin management approach in water resources management in Turkey. The principal mandate of this unit is to prepare and implement the *Water Basin Protection Plans and River Basin Management Plans* (Official Gazette 2012a). The purpose of this regulation is, through a holistic approach, to safeguard the amounts of surface and underground waters and their physical, chemical and ecological quality, and to regulate the procedures and principles for the preparation of water basin management plans (Official Gazette 2012a). Today, the process of making Basin Protection Plans in order to form the basis of River Basin Management Plans has been continuing in Turkey. Under the coordination of the MFWA, Basin Protection Plans for 11 basins have been completed. The project related to 14 basins, comprising the work to update the basin protection action plans which had been completed individually, has been launched by the GDWM (GDWM 2013).

These developments have been followed by the establishment of "Water Management Coordination Council" in 2012, under the MFWA, in order to pave the way for the water stakeholders in the country to work together. The president of the Council is the Minister of the MFWA and the undersecretaries of related bodies and institutions are the board members. The principal duties of the Council can be summarised as follows:

- Determination of measures which are necessary for protecting water resources in the framework of integrated basin management approach, development of strategies, plans and policies for attaining national and international targets and the supervision of basin plan implementations, and
- High level coordination and cooperation in this process (official gazette 2012b).

Another study which supports stakeholder participation in water resources management is the National Basin Management Strategy (2014-2023) prepared under the leadership of the MFWA. *"Coordinated, participative and ecosystem based management of the basins of our country"* is stressed in the vision of the Strategy. The goal of the Strategy is defined as "*the formation of a common framework for the realization of studies conducted by different institutions in a coordinated and integrated manner ... in the context of the protection, improvement and sustainable utilization of water basins* of the country. One of the sub goals stated in the Strategy is; *"Strengthening legal and institutional capacities for sustainable management of the basins, ensuring coordination and cooperation among institutions and stakeholders* (Official Gazette 2014). "Water Basin Management Committee" is described in the Strategy, as one of the

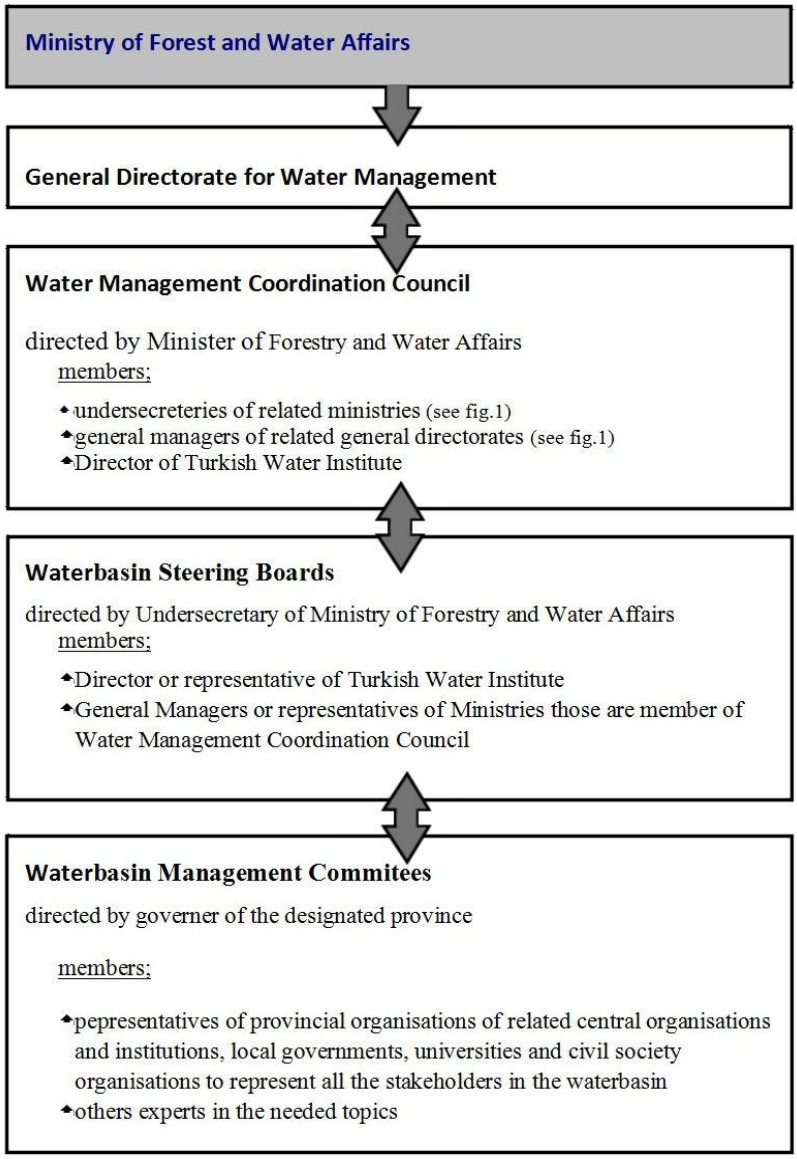
management units for the water basin management model. This Committee is defined as "*the committee composed of the related public institutions and other stakeholders of the water basin area, in order to conduct the work related to; taking joint decisions at the basin level regarding the management of the basin, monitoring and evaluating the implementation results, and providing coordination*" (Official Gazette 2015). The stakeholders related to the water basin management have been listed under the headings of "public institutions and organizations" and "other stakeholders" (Table 1).

Table 1. Stakeholders of water basin management in Turkey (Official Gazette 2015)

Governmental institutions	**Subunits/divisions**
Ministry of Forestry and Water Affairs	General Directorate of Combatting Desertification and Erosion; General Directorate of Forestry; General Directorate of State Hydraulic Works; General Directorate of Water Management; General Directorate of Nature Conservation and National Parks; General Directorate of Meteorology; Department of Information Technologies; Strategy Development Department; Turkish Water Institute
Ministry of Food, Agriculture and Livestock	General Directorate of Agricultural Reform; General Directorate of Vegetative Production; General Directorate of Agricultural Research and Policies; General Directorate of Fisheries and Aquaculture; Department of Training Extension and Publications; Department of Geographical Information Systems
Ministry of Environment and Urbanization	General Directorate of Spatial Planning; General Directorate of Environmental Impact Assessment, Permit and Inspection; General Directorate of Environmental Management; General Directorate for Preservation of Natural Heritage; General Directorate of Ilbank; General Directorate for Infrastructure and Urban Transformation Services
Prime Ministry	Under secretariat of Treasury; Disaster and Emergency Management Authority
Ministry of Development	
Ministry of Internal Affairs	General Directorate of Local Administrations
Ministry of Energy and Natural Resources	General Directorate of Mine Works
Ministry of Culture and Tourism	
Ministry of Education	
Ministry of Health	
Local Administrations	Governorates; District Governorates; Provincial Administrations; Municipalities; Other units
Regional Development Administrations	
Development Agencies	
Other Stakeholders	
Non-governmental Organizations	NGOs associated with soil and water resources, biological diversity and rural development; Associations etc.
Professional organizations, chambers	
Basin Unions	
Rural communities living in basins	
Urban communities	
Institutions of science and education	The Scientific and Technological Research Council of Turkey (TÜBİTAK); Universities; Research Institutes; etc.
Related private sector institutions	

In this framework, it has been envisaged that there would be water basin action plans prepared for 25 river basins and water basin management committees established where all the stakeholders located in the basin would be represented. The monitoring and coordination of the works is to be conducted by the GDWM. The coordination of the works of these committees will be made by the Basin Management Supreme Board that is composed of the high level representatives of related public institutions and other stakeholder. Authorized management units directly responsible from water resources management in Turkey at the national and water basin level and their relationship among each other, as revised by recent legal and organizational changes are summarized in Figure 2.

Figure 2. Directly responsible units for water resources management at national and water basin scale in Turkey



Another important means which shape the policies regarding water resources management in the country is five year development plans prepared by the Ministry of Development. Besides effective management of water resources, "*monitoring the protection-usage balance of natural resources at the basin level*" is stated as a priority issue in the X. (2014-2018) Development Plan of the current period we are in. The goal determined in this context is; "*preservation and improvement of the amount and quality of water resources, and development of a management system which will provide its sustainable usage especially in the agriculture sector where the demand is highest".* One of the policies envisaged to attain this goal is "*to clarify the duties, authorities and responsibilities of institutions through avoiding the deficiencies and*

uncertainties in the legislation related to water management, to improve cooperation and coordination among all institutions and organization associated with water management" (Ministry of Development 2013).

Conclusions

This paper has attempted to identify the current state of stakeholder participation in water management in Turkey in the context of revised and established legislations during the last ten years. It is observed that water management in Turkey focuses on increasing the water supply and meeting the energy need. The implementation tools of this process, in which decision making is designed in accordance with power relationships are; related government policies, national and international laws and regulations, statutory decrees, Five-Year Development Plans, strategic plans of related governmental units and, associated regional and local infrastructure projects. In this process, where strategic decisions are taken by the central government and affiliated management units, the decisions and the plans/projects are implemented by the implementing units of the related ministries, provincial organizations, local administrations and private sector. The previous and current responsibilities of the central government institutions and organizations responsible from water management are defined as "policy formulation, designing or getting designed the plans/projects, and coordination, collaboration, cooperation and monitoring-evaluation". As such, it is concluded that top-down (command-and-control) approach has been adopted in water management in Turkey since the 1950s, where centralized power and authority is dominant in decision making and implementation. This approach shapes the involvement of stakeholders in the water management in Turkey. Although there is, yet partial, coordination and cooperation between the central government units and their provincial organizations, these processes are also guided by the top-down approach.

It is observed that throughout the preparation and implementation processes of regional and local water management projects, the participation mechanisms' - which are used because of legal obligations- aim and their promise to the participants, is limited to giving information. This obligatory information giving processes correspond rather to the manipulation and therapy rungs and tokenism levels of Arnstein's participation ladder. During these processes, one-way flow of information -from officials or engineers to locals- is dominant and lack of active involvement procedures also indicate the top-down approach. In this regard, active participation of local interest groups and individuals in the water management is almost non-existent in Turkey and the current participation form is far from meaningful participation.

In connection with the harmonization process with the EU, the changes and innovations that have been observed in the national legislation and the related organizational structure in order to apply the WFD can be regarded as important opportunities for the provision of national and regional coordination and cooperation and, for active interest group participation in water management. According to the observed changes in the tasks of responsible bodies on water management and the cross-departmental hierarchy, it is seen that, the renewed institutional structure for the water management through the recently established units –such as General Directorate of Water Management, Water Management Coordination Council, Waterbasin Steering Boards, Waterbasin Management Committee- has the potential for the development of participation forms specified as "information supply" and "consultation" in the WFD. "Strategic Environmental Assessment (SEA) Directive", to which Turkey has not yet been a party but on the agenda to be accepted, is also one of the potential means to support public participation in water resources management and in other natural resources planning and management in the country. Furthermore, Turkey's becoming a party to Landscape Convention (ELC) and being ratified the Convention since 2003, in which "participation" is emphasised in national and local landscape planning and management is another tool that can be utilized to improve participatory approaches in water management and in the associated landscapes.

On the other hand, the fact that Turkey is still not a party to the Aarhus Convention (1998) is worrying in terms of the sufficiency of the "information supply" in the water management process as in other issues related with environment. In addition, the revised and newly established institutional structure is formed at the central level by high level bureaucrats and at the local level by the representatives of the basin management units, mostly provincial representatives of central management. Besides, the regional and/or local civil society capacity about water management is quite low. These suggest that the participation by non-governmental organizations and local people in water management in Turkey would remain to be

insufficient. This situation, when considered with the lack of tools and processes to carry the interests and concerns of all affected stakeholders into the decision making processes; has been revealing the fact that there needs to be comprehensive and long term technical and social studies for attaining meaningful participation -active stakeholder participation- in water management.

In this regard, there is a need to develop processes and platforms to introduce and develop the participation capacity and culture in the new founded water management units at national and basin scale. Guidelines and procedures to be developed in order to involve and to introduce the sense of responsibility by supporting the active participation of local stakeholders and public into decision making and implementation processes. In this context, like in several cases of water management in different locations of the world (Chrislip and Larson 1994; Healey 2003; Innes and Booher 2010), collaborative approaches and processes have potentials to encourage and improve the active involvement and collective action among stakeholders also for Turkey.
For a shared and wise solution of the current and possible problems of the future, there needs to be developed collaborative processes, dominated by shared goals rather than power at different structures and levels of water management. When the analysed national legal and administrative structure is considered, collaboration at three levels comes upfront for water management in Turkey. According to this;

- **At the level of water management policy formulation, implementation and monitoring**; GDWM, Water Management Coordination Council, Water Basin Management Supreme Boards, Ministry of Food, Agriculture and Livestock, Ministry of Environment and Urbanization, Ministry of Development, Ministry of Energy and Natural Resources, Ministry of Culture and Tourism, Ministry of Health, related professional chambers;
- **At the level of preparation, implementation, implementation and monitoring of organizational policies of institutions associated with water management**; related sub-units of institutions in collaboration at policy level;
- **At the level of preparation and implementation of plans and projects at local and regional scale related with water and associated ecosystems**; Water Basin Management Committees, development agencies, local administrations, NGOs focusing on local environmental and nature conservation, professional organizations and regional and local representatives of chambers, individuals from local public, related private sector institutions and organization, agricultural and irrigation unions and associations should be in collaboration.

The realization and improvement of such processes in water management offers significant opportunities to revise the described top-down approach and to develop participatory management mechanisms for water that is a shared resource and value of the geography in which the Turkey is located.

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