

APPLICATIONS OF TRANSBOUNDARY SURFACE WATER MANAGEMENT IN WORLD AND TURKEY

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EXPERTISE THESIS ABSTRACT

The aim of this thesis study is to investigate the outstanding management approaches in the world and our country's approaches being implemented for the transboundary waters and to search the environmental impact assessments of these approaches. By doing this, it is intended to increase the technical capacity and knowledge of our experts so that it would improve the approaches being implemented by our country and contribute to our future road map, to be determined on the transboundary waters, as a sustainable and efficient manner.

In this respect, investigation of developments, doctrines and conventions regarding transboundary waters, approaches of European Union (EU), United States of America (USA), Canada and Mexico were studied with the pilot river basins and case study was conducted for the analysis of environmental impacts for the Aral Lake located in Central Asia. Furthermore, transboundary river basins of our country were taken into consideration and policies implemented were addressed in the study.

According to the assessments made within the study, it was evaluated that countries have generally been making bilateral cooperation agreements on the transboundary waters and quantitative allocation and water quality studies have been done in line with these agreements. However, it was seen that in consequence of many factors, the international agreement that would be commonly accepted by all countries does not exist and establishing such an agreement is a hard work at all. Considering the management approaches being applied on transboundary waters, both USA and its riparian's, EU countries and our country have been implementing the Integrated River Basin Management approach. This approach, accepted as a good practice for the transboundary water management around the world, has depended upon the bilateral agreements and joint commission that coordinates the agreements in USA and its riparian's while in EU it has been conducted within the scope of the River Basin Management Plans being prepared in line with the Water Framework Directive.

In addition, studies were also conducted for the specific pollutants and their environmental quality standards (EQS), stipulated to be determined in the scope of the EU acquis by the riparian basin countries on the river basin basis. In this manner, Danube River Basin and Maritza-Ergene River Basin the latter for which Greece and Bulgaria have already designated the specific pollutants and their EQSs were studied, mass balance was established for the pollutants and by doing this, pollutant concentrations likely to be observed in the countries due to the coming upstream flow were determined and the issue that whether EQS could meet and different EQS values set by different countries affect each other was investigated as well.

Within this context, according to the mass balance calculations done for the Danube River Basin considering the specific pollutants and their EQSs set by the riparian countries, it was demonstrated that all downstream countries in the basin particularly Bulgaria and Romania will probably be faced with the situation of not meeting their own EQSs due to the potential pollution loads coming from the upstream countries. Similar mass balance study was also conducted for the Maritza-Ergene Basin for which our country is the downstream position and comparison was made for the common pollutants and their EQSs determined by our country, Bulgaria and Greece. In this framework, it was found that concentrations of the iron, chromium and prometryne coming from the Bulgaria and cobalt, 1,3-dichlorobenzene and 4-chloroaniline coming from the Greece will probably be higher than the our draft EQSs values in our country; therefore, it was deduced that there is a risk of meeting these draft EQS values in our country. Considering all the findings, it was concluded that in order to achieve good water status, it would be beneficial for the transboundary river basins that specific pollutants and their EQSs should be jointly determined on a river basin scale by the riparian countries sharing the basin by applying common approach.

Keywords: Transboundary water, transboundary river basin, river management plan, management approach, environmental quality standard.