

Project Fiche – IPA National programmes / Component I

1 IDENTIFICATION

Project Title	Technical Assistance on Economic Analyses within River Basin Management Plans and Water Efficiency Aspects in 3 Pilot River Basins in Turkey
CRIS Decision number	IPA /2013/ 023-651
Project no.	07
MIPD Sector Code	6. Environment and Climate Change
ELARG Statistical code	See IPA programming guide par 7.7
DAC Sector code	41010
Total cost (VAT excluded)¹	4.500.000 Euro
EU contribution	4.050.000 Euro
Management mode	decentralised
Decentralised mngmt: Responsible Unit or National Authority/Implementing Agency	<p>Muhsin ALTUN PAO- CFCU Director Central Finance and Contracts Unit Address: Eskişehir Yolu 4.Km. 2.Cad. (Halkbank Kampüsü) No:63 C-Blok 06520 Söğütözü/Ankara Tel: + 90 312 295 49 00 Fax: + 90 312 286 70 72 E-mail: pao@cfcu.gov.tr</p>
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¹ The total project cost should be net of VAT and/or of other taxes. Should this not be the case, clearly indicate the amount of VAT and the reasons why it is considered eligible.

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Implementing modality	<i>Stand alone project</i>
Project implementation type	<i>Grant</i>
Zone benefiting from the action(s)	<i>Turkey</i>

2 RATIONALE

Turkey has 814.000 km² area and 25 river basins. Consumable ground and surface water potential of Turkey is 112 billion m³/year. Turkey is not a country rich in water resources and it is anticipated to be a water-stressed country by 2030. Most of Turkey is situated in a semi-arid region. Precipitation is limited to 5 to 6 months per year. Surface water pollution is a serious problem in Turkey. Domestic, industrial and agricultural pollution threatens the quality of surface waters. Good water quality is increasingly scarce throughout Turkey and in parts water quantity is limited and often insufficient for demand. With increasing pressures on water resources, overexploitation of aquifers, insufficient recharge due diminishing precipitation, excessive and inadequate use through agricultural activities or tourism and conflicting interests between various users are emerging.

As stated in National River Basin Management Strategy, Turkey has the vision to become a country that is:

- Water, food and energy secure
- Climate resilient
- Managing and restoring aquatic related ecosystem goods and services
- A water efficient and water-saving economy

This vision translates into a number of goals for Turkey, which include:

- Accession to the European Union and full implementation of European Union Directives in the area of environment and climate change
- Reduced climate variability and climate change related risks
- Improved economic growth and development through smart water use and management
- Improved water, food and energy and ecosystem security and managing these trade-offs
- Improved water use efficiency and saving potential

Turkey has been developing its water resources policy taking into consideration the present and future water needs for its growing population, developments at global levels as well as the on-going EU accession process. Priority has been given to policies and plans to fully utilize Turkey's water potential in an efficient manner through necessary measures and projects. The focus has been on securing the quantity and the protection of the quality of water resources.

Within this context, Basin Protection Action Plans for 11 basins were conducted between 2009-2010 by Ministry of Forestry and Water Affairs. Preparation of Basin Protection Action Plans for 14 basins is proceeding. It is planned to complete the Basin Protection Action Plans until 2014. They are expected to comprise the basis for River Basin Management Plans (RBMPs). To provide that expectation, there is a 2011-budget IPA project named "Conversion of River Basin Action Plans into River Basin Management Plans" conducted by Ministry of Forestry and Water Affairs.

Some legislation studies are being carried out by Turkey to determine the duties of institutions and organizations and responsibilities about water management and to strengthen the administrative and technical organizational structure for the protection and improvement of water resources. Water Law and By-law on Inspection and Prevention of Water Loss in Drinking Water Network are among them.

Through the accession negotiation process with the European Commission it has been emphasized that the studies concerning political issues and economic analysis must be conducted by integrating the multilateral organizations and institutions. In this regard a high level steering committee has been established to increase co-ordination among institutions with the aim to develop strategies and policies for further alignment with the *Acquis*.

It is stated in the European Commission's Document named "*A Blueprint to Safeguard Europe's Water Resources, 2012*" that the reasons for the currently insufficient levels of implementation and integration are complex and have been analyzed in the accompanying impact assessment. They consist of a series of water management problems related to the insufficient use of economic instruments, lack of support for specific measures, poor governance and knowledge gaps. It is assumed that the water efficiency and vulnerability measures are expected to have positive impacts on ecological and chemical status and vice versa.

The 2007 Commission Communication on Water Scarcity and Droughts included options related to ‘putting the right price tag on water’, ‘allocating water more efficiently’ and ‘fostering water efficient technologies and practices’. These water efficiency measures fit into the overall resource-efficiency objective of Europe 2020. The reasons for the currently insufficient levels of implementation and integration are complex and have been analyzed in the accompanying impact assessment. They consist of a series of water management problems related to the insufficient use of economic instruments, lack of support for specific measures, poor governance and knowledge gaps.

Within this context, this IPA project will implement a number of activities aimed at achieving high quality results by way of a legal and institutional analysis of WFD and related directives in terms of economic analyses, water efficiency (leakages and losses, re-use of waste water etc), Member State implementations and Turkey-specific solution proposals benefiting from Conversion of River Basin Action Plans into River Basin Management Plans Project results; economic analyses / decision support systems / exemptions / economic modeling geared towards the River Basin Management Plans; a national implementation plan for the economic analysis for Turkey, on the basis of the pilot river basins and a Communication strategy, which will in the end lead to a legislation about water efficiency economics and water use tariffs. This will include characterizing the resource in three river basin districts in Turkey; applying relevant economic approaches, determining cost effective programs of measures to restore ecological status, the cost of implementing climate change adaptation measures in those basins which will contribute to a thorough understanding of managing water quantity and water quality and the relevance of economics tools and principles. If its surface area and number of basins are considered, Turkey needs much more investment on basin management, qualified human resources and financial resource than the EU member states. On the other hand, it is important to finish all RBMPs as soon as possible in line with the closing benchmark requirements of negotiation Chapter 27. To accelerate the harmonization process, this project will provide an additional and national output since 3 River Basin Management Plans (Akarçay, Batı Akdeniz, Yeşilirmak River Basins) will be completed in addition to the economic analyses in accordance with the Water Framework Directive. The quick scan for selection of those basins and the outstanding features of them are explained in the Problem Analysis section.

2.1 PROJECT CONTEXT: ISSUES TO BE TACKLED AND NEEDS ADDRESSED

In Turkey there has never been a holistic approach encompassing the environmental objectives and the economic aspects within the perspective of water resource management and sectoral development goals and policies. Furthermore, in Turkey, there is weak institutional capacity to apply economic approaches and instruments to enable cost effective programs of measures to be produced within the context of river basin management planning, across water quality and quantity dimensions.

Decreasing precipitation due to the global warming and increasing population causes insufficiency of water resources in some regions in Turkey. Water distribution systems in Turkey are unproductive with the average loss ratio of 45%. In other countries of the developed world, water loss ratio is about 10 %. Besides, Turkey does not yet have any legislation about water loss and leakage control.

The water supply institutions/organizations, public and the other natural persons or legal identities using water in the industry, agricultural sector etc. are the stakeholders most affected by these problems.

In order to achieve the main targets conducive to protect water resources for both the present and future generations, it is necessary to reach a series of interim targets that take into consideration economic and social progress that can be attained only by the efficient, reasonable and equitable use of water.

In Turkey, there is a lack of sound pricing policies that provide an incentive to use water efficiently, despite the fact that pricing is a powerful awareness-raising tool for consumers and combines environmental with economic benefits while stimulating innovation. Metering is a pre-condition for any incentive pricing policy. Article 9 also requires cost-recovery (including environmental and resource costs) for water services. In this context, an essential component is the cost-recovery (including environmental and resource costs) for water services, taking into account the polluter pays principle.

By this project the water efficiency measures in all the main water-using sectors (agriculture, industry, distribution networks, buildings and energy production) have to be taken into account, which states that bringing in water accounting and water efficiency targets at sectoral level would provide a stronger basis for effective and targeted water protection measures.

2.2 LINK WITH MIPD AND NATIONAL SECTOR STRATEGIES

In the MIPD 2011-2013, sector objectives for EU support over next three years are defined as;

- Transposition and enhancing implementation of framework and horizontal legislation and establishment of strong administrative capacity at all levels.
- Improved water quality, in particular through advances in the transposition and implementation of the Water Framework Directive and including an integrated approach to the marine environment.

The proposed project will especially support the implementation of the EU Water Framework Directive (2000/60/EC) within Article 5 and 9. At the end of this project, existing legislation will be aligned with WFD by the outputs of the project. Administrative capacity in Turkey will be improved with the help of capacity building component.

The need for economic analysis is explicitly manifested in the WFD which calls for the application of economic principles, economic methods and economic instruments for achieving good water status for all EU waters in the most effective manner.

Economic issues are mainly dealt with in Article 5 (Characteristics of the river basin district, review of environmental impact of human activity and economic analysis of water use), Annex III (Economic analysis) and in Article 9 (Recovery of costs for water services) of the Directive (WATECO 2002). However, economic elements are found in other parts of the Directive's text. Overall, the main functions of the economic analysis include:

- To carry out an economic analysis of water uses in each River Basin District (RBD) (Article 5)
- To assess current levels of cost-recovery of water services including environmental and resource costs (Article 9)
- To support selection of program of measures on the basis of cost-effectiveness criteria to reach the environmental objectives of the WFD (Article 11)

The Blueprint to Safeguard Europe's Water is a policy response at European level to address the implementation issues related to the current EU policy framework (e.g. the WFD and Floods Directives) and to develop measures to tackle in particular water availability and water

quantity problems. The aim is to ensure good quality water in sufficient quantities for all legitimate uses. The Blueprint also addresses water efficiency issues. The time horizon of the Blueprint is 2020 since it is closely related to the EU 2020 Strategy and in particular to the planned Resource Efficiency Roadmap.

In this respect, the water and ecosystem accounts, developed together with the European Environmental Agency (EEA), will quantify how much water flows in and out of the river basins. This is the basic essential information which is largely missing today to optimize water uses at river basin level and look at alternatives, in particular considering the material and virtual water flows between catchments. On this basis, the Blueprint will provide first indications for water efficiency targets at EU level taking into account the great variety of situations across economic sectors and geographic areas.

According to the EUROPE 2020, climate and resource challenges require drastic action. The expansion of the world population from 6 to 9 billion will intensify global competition for natural resources, and put pressure on the environment. The EU must continue its outreach to other parts of the world in pursuit of a worldwide solution to the problems of climate change.

Europe 2020 puts forward three mutually reinforcing priorities:

- Smart growth: developing an economy based on knowledge and innovation.
- Sustainable growth: promoting a more resource efficient, greener and more competitive economy.
- Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.

According to the Action Plan on Climate Change of Turkey, the objective in the environment and climate change sector is for Turkey to fully comply with EU environmental and climate change legislation upon accession requiring adoption of all relevant Directives and legislation, including the necessary investments.

The strategic vision for Turkey is set by the 9th National Development Plan, 2007-2013 (NDP) namely "a country which grows in stability, shares its income equitably, has global competitiveness, has transformed into an information society and completed its harmonization process for EU membership. Natural resources and the environment will be protected considering the future generations, as well." According to 9th National Development Plan the Main Objectives are:

- Conditions for protection and utilization of natural resources will be determined by taking the needs of the future generations into consideration. Environmental management systems will be established in order to ensure equitable utilization of natural resources by everyone.
- The works, which were started to make regulations and establish an administrative structure in Turkey related to the allocation, use and improvement of water resources as well as protection against pollution, will be completed.
- Protection of ground water and surface water resources from pollution will be ensured and use of treated wastewater in agriculture and industry will be encouraged.
- Efficient use of water resources of the country will be ensured by reducing losses and illegal uses in existing water supply facilities

The polluter pays principle is one of the fundamental principles taken into consideration in the preparation of the National Environmental Strategy. Investment is required in order to reduce the amount of the substances that harm the environment or to be disposed of in a manner that will not harm the environment. It is crucial to develop and use the economic instruments in preventing and reducing the environmental pollution. Furthermore, payments for the services provided in order to supply resources for investments oriented to environmental protection services must be collected.

According to the National Environmental Strategy; integration of the environmental policies to economic and social policies will be ensured, the necessary incentives will be provided and the economic tools related to protection of environment will be utilized.

In the water sector, Turkey has made good progress with the adoption of the new water law and legislation on river basin management and groundwater and drinking water. Draft Water Law has been prepared and it is estimated that Water Law will come into force in 2014. According to draft Water Law, new water pricing methodology that ensure cost recovery of water services including environmental and resource cost will be progressed. Also, By-Law on Protection of Water Basins and Preparation of Management Plans came into force in September 2012 and aim of this by law is to regulate procedures and principles with regard to protection of surface water and ground waters in terms of their quantity, physical, chemical and ecological quality within a holistic approach in preparation of river basin management plans. After By-Law on Protection of Water Basins and Preparation of Management Plans published, Water Management Coordination Committee was established with numbered 2012/7, Prime Minister Notice and according to the Prime Minister Notice, the committee was established for determination of necessary measures to conserve the water resources within the framework of integrated river basin management approach. Besides, Communiqué on Composition of Basin Management Board, and Working Principles and Procedures came into force in 2013 and according to this Communiqué, Basin Management Board will give support to the studies of preparation, implementation, monitoring and evaluation of basin management plans.

2.3 LINK WITH ACCESSION PARTNERSHIP (AP) / EUROPEAN PARTNERSHIP (EP) / STABILISATION AND ASSOCIATION AGREEMENT (SAA) / ANNUAL PROGRESS REPORT

In the Accession Partnership Council Decision (2008) for Turkey, it is stated in ‘Chapter 27: Environment’:

- Continue to transpose and implement the acquis related to the framework legislation, international environmental conventions and legislation on nature protection, water quality, chemicals, industrial pollution and risk management and waste management,
- Pursue integration of environmental requirements into other sectoral policies.

The project will support integration of environmental requirements into the relevant sectoral policies according to the outputs of the economic analysis and also the pilot projects. In the water sector, Turkey has made good progress with the adoption of the new water law and legislation on river basin management and groundwater and drinking water, as also reported in the Turkey 2012 Progress Report published on the 10th October 2012 by European Commission, In the following stage, “River Basin Protection Action Plans” will be converted into “River Basin Management Plans”. In this context, this project will support the developments for main targets.

2.4 PROBLEM ANALYSIS

Due to the increasing pressures on water resources, overexploitation of existing aquifers, insufficient recharge due diminishing precipitation, excessive and inadequate use through agricultural activities or tourism and conflicting interests between various users, it is vital that effective economic instruments clearly address the problems and help secure these resources for future generations. Economics is at the heart of one of the key European Union Directives, the Water Framework Directive (WFD) and also at the heart of the European Union Communication addressing the challenges of water scarcity and drought management.

Turkey still needs to improve its capacity for expressing the economic value of water, understanding its scarcity and its value, as well as human needs, and ensuring that the costs and benefits of choices are clear and that the impacts of alternative measures to manage water quality and quantity are determined. The role of water within Turkey has not been firmly established and there is uncertainty regarding the volume of water used in production of goods and services, decision makers cannot understand inter-linkages, impacts, efficiencies and also how water management underpins the economy. Moreover valuing ecosystem services for water resources has not been taken into consideration. Also Turkey still needs to improve its capacity when it comes to applying economic instruments for smarter and more cost effective water management for water quantity and quality.

Water resources are getting more important than in the past in Turkey considering the rapid industrialization period. For the last two decades available amount of water resources per capita in Turkey decreased from 4.000 m³ to 1.430 m³. In next ten years, this number is predicted to decrease about 1.000 m³ in parallel with increasing population. Turkey moves towards to being water stressed country and this makes water resource management even more important.

Decreasing precipitation due to the global warming and increasing population causes insufficiency of water resources at some regions in Turkey. Water distribution systems in Turkey are unproductive with the average loss ratio of 45%. In developed countries, water loss ratio is about 10 %. Besides, Turkey doesn't have any legislation about water loss and leakage control.

The water supply institutions/organizations, public and private using water in the industry, agricultural sector etc. are the stakeholders most affected by these problems in addition to the negative impacts on the water needs of the ecosystem.

Existing Sectoral Development Plans will be taken into consideration in the RBMP phases. The RBMPs as an output will affect and steer upcoming trends in each sector according to the integrated water resource management approach and the RBMPs will interact with Sectoral Development Plans and Spatial Plans.

In order to achieve the main targets conducive to protect water resources for both the present and future generations, it is necessary to reach a series of interim targets that take into consideration: economic and social progress that can be attained only by the efficient, reasonable and equitable use of water.

Additionally, there is a lack of sound pricing policies that provide an incentive to use water efficiently; although, pricing is a powerful awareness-raising tool for consumers and combines environmental with economic benefits, while stimulating innovation. In this frame,

an essential component is the cost-recovery (including environmental and resource costs) for water services, taking into account the polluter pays principle.

As it is stated in the Blueprint Document, the high untapped potential for water efficiency measures in all the main water-using sectors (agriculture, industry, distribution networks, buildings and energy production) has to be taken into account, which states that bringing in water accounting and water efficiency targets at sectoral level would provide a stronger basis for effective and targeted water protection measures.

Water budgeting and the economic evaluation of ecosystem services of natural resources of water are to be estimated to help decision makers concerning the basins.

Regarding the problem of leakage from water distribution networks, the Commission believes that this can only be tackled on a case-by-case basis to assess the environmental and economic benefits of reducing the leakage levels. The situation is very different between and within Member States as leakage rates vary from 7 % to 50% or more. The Commission will work with the EU water industry to accelerate the development and spread of best practices on Sustainable Economic Leakage Levels (SELL) and, more broadly, of a strategic vision for the future of water infrastructure to help it adapt to climate change in a world of evermore scarce resources. Thus, the national water efficiency targets are to be set by this project according to the specific situation of the pilot basins.

According to the 4th Assessment Report of IPPC, temperature increase in Mediterranean Basin will be 1°- 2°C and aridity will be felt in very large-scaled area. Additionally, it is estimated that annual average temperature in Turkey will increase about 2,5°-4°C, in Aegean and East Anatolia territories it will increase about 4°C, in central part of Turkey it will increase about 5°C. Both IPPC report and national and international scientific model studies present that Turkey will have warmer, more arid and an uncertain climate in terms of precipitation in the near future.

Effects of climate change in Turkey will be expected as; increase in summer temperature, decrease in precipitation in the west part, loss of surface water, increase in drought, soil deterioration, coastal erosion and flood according to Turkish Climate Change First National Communication prepared in 2007.

If its surface area and number of basins are considered, Turkey needs much more investment on basin management, qualified human resource and financial resource than the EU member states. In this project, it is aimed to develop an economic model which will help in the assessment of the costs and benefits of the reference scenarios and the programme of measures, in co-ordination with other tools at national and/or river basin level. This technical Assistance project is planned to be conducted in 3 pilot basins namely, Akarçay, Batı Akdeniz and Yeşilirmak Basins which ensample the environmental state of different parts of Turkey.

Akarçay Basin is located on Central Anatolian part of Turkey and includes only one city. All of the rivers in basin flow into Akşehir and Eber Lakes which have serious water quality problem. The basin is one of the poorest basins regarding to water potential. Industrial and agricultural activities are the main environmental pressures in basin. There exists a rapidly developing thermal tourism in Afyonkarahisar. Additionally there is a problem of excessive and uncontrolled use of groundwater.

Batı Akdeniz Basin is located on the south-western part of Turkey and includes 5 cities. Rivers of the basin flow into Mediterranean Sea and Aegean Sea. High water loss ratios in drinking water distribution systems, large scaled hotel tourism and extensive agricultural activities are the main environmental pressures in basin.

Yeşilırmak Basin is located on the northern part of Turkey and includes 4 cities. All of the rivers in basin flow into the Black Sea. Agricultural and livestock activities are the main environmental pressures in basin. Because Yeşilırmak Basin Development Plan and Yeşilırmak Basin Integrated Water Resources Management Plan were conducted in 2006, required economic and monitoring data for this IPA project can easily be provided from the results of mentioned projects.

Moreover 4 quick scan basins are selected (Maritza/Ergene, Konya, Büyük Menderes and Susurluk Basins) from different geographical locations and differing basin characteristics by means of water tariffs, socio-economic aspects to help enable to characterise the varying features of water economics for the whole country in general and develop suitable economic instruments for sustainable water management to fulfil the WFD requirements.

2.5 LINKED ACTIVITIES AND DONOR COORDINATION

The Ministry of Forestry and Water Affairs (MOFWA) is responsible for the harmonization of national water legislation with the EU legislation and for its implementation. Some studies are conducted in order to reduce surface waters pollution within the coordination of MOFWA with contribution of relevant organizations and institutions taking in to consideration the relevant European Union Directives as appropriate.

From 2007 until 2010, the EU twinning project “Capacity building support to the water sector in Turkey” has been executed. The project has prepared a Draft River Basin Management Plan for the Büyük Menderes River Basin. This IPA 2013 project intends to update the draft RBMP for the Büyük Menderes River Basin, and to make three more RBMPs for a trans-boundary river basin and a closed (endorheic) river basin (Maritza/Ergene, Konya, Büyük Menderes, Susurluk River Basins). It will be ensured throughout the Technical Assistance Project on the additional IPA 2011 project "Conversion of River Basin Protection Action Plans into River Basin Management Plans" that no duplications takes place between the two former projects and this new one under IPA 2013 financing.

The WFD stipulates that RBMPs shall be prepared for each river basin. There are 25 river basins in Turkey. The preparation of the RBMPs requires a prolonged period of data collection, interpretation, planning and stakeholders involvement. In order not to lose momentum, priority measures to improve water quality are determined through River Basin Protection Action Plans. These plans are prepared in a shorter period and form a forerunner to the more comprehensive RBMP; the Action Plans thus help start the implementation of priority measures.

Until now, River Basin Protection Action Plans (RBPAP) have been completed for 11 river basins and these plans are being controlled regularly. Furthermore, RBPAP studies are continuing for 14 basins and the rest of the basins are planned to be completed until the end of 2013. These plans are discussed with all aspects of the basin, also wastewater treatment plants are planned according to these plans. Under the framework of WFD, the first draft RBMP of Büyük Menderes River Basin has been prepared. Completed RBPAPs are planned to be converted into RBMP to meet requirements of the Environment Chapter closing benchmark.

The twinning project "Capacity Building On Water Quality Monitoring in Turkey" on monitoring in the framework of the Water Framework Directive is about to finish in 2013. This twinning will produce a monitoring system and many more data for the chemical and biological assessment. These results that can be used for the river basin management plans that are to be based on the RBPAP.

In 2015 Turkey will have progressed enormously in connecting households and industries to sewage treatment plants. That would mean that the chemical and biological status of Turkish river basin situation in 2015 will be very much different from the situation in 2010. Therefore a new technical assistance is required and this need will be held by the conversion of RBPAP in to RBMP's under IPA funding 2011. The actions implemented as a result of this project will enable the application of economic approaches and instruments the conversion of "River Basin Protection Action Plans" to "River Basin Management Plans" in five basins (Susurluk, Maritza-Ergene, Konya, Büyük Menderes).

Turkey can use several instruments to achieve the aims of its water resources policy, for example stakeholders' involvement (communication), the issuing of permits and the use of financial instruments. Especially the use of financial instruments like taxes can be of added value to achieve the polluter pays principle and to raise funds for investments which lacks in the previously conducted projects and aimed to be fulfilled by this proposed project.

Furthermore "the still ongoing IPA 2011 project "Conversion of RBPAP into RBMP" will be a pioneer for the proposed IPA 2013 project in providing a concrete ground for sustainable management of local administration and especially of basin protection unions. Especially with the pilot implementation and the trainings planned to be given within the scope of this project, awareness of the local authorities will be strengthened and the socio-economic characteristics of the basin and assessment of natural resource valuation and new and sound economic instruments for sustainable water management will feed into the economic analyses part of the new project.

Through the project, information sharing will be possible with the neighbouring countries by way of establishing common working groups, as the Maritza/Ergene basin is one of the pilot basins for which a RBMP will be prepared, thus this will enhance the stakeholder coordination.

Moreover, there is an ongoing project with the title "Reuse of treated wastewater in agriculture" in Turkey that is conducted with the Dutch Government. The objective of the project is to disinfect the effluent of the new treatment facility and utilise the effluent for irrigation downstream. To be able to utilise the effluent for irrigation, compliance with Turkish regulation is needed. To determine whether the reuse of treated domestic wastewater for agricultural irrigation is economic or not, regarding the water efficiency. The results of the proposed IPA 2013 project will also help the application of "Reuse of treated wastewater in agriculture project".

2.6 Lessons learned

Within the scope of the project "Capacity Building Support to The Water Sector in Turkey" the approach to establish a river basin management plan was gathered by current monitoring data. However, data gap has been realized for a successful river basin management. It has been understood that a strong institutional cooperation is a need for an efficient monitoring system in order to assess the statuses of water bodies. Therefore, a project on capacity building for water quality monitoring has been proposed. The results of this project on monitoring will

provide significant input for the project on the conversion of River Basin Protection Action Plans into River Basin Management Plans and this proposed project. Lesson learned from this project is that ensuring institutional coordination and collaboration is an important aspect in preparation and implementation of RBMPs. Also, by means of this project it was clearly understood that monitoring and having accurate and viable data is crucially important for the preparation of RBMPs.

By means of Project “Implementation of the Water Framework Directive in Turkey (MATO1/TR/9/3)” all related stakeholders in the water sector in Turkey became aware of the EU implementation in the water sector and WFD. This project has taught that in order to prepare effective and applicable RBMPs or any other project within the scope of WFD, the participation of all related stakeholder are vital for the preparation of RBMPs. An awareness among all related stakeholders related with the water management in Basin and central level was created which will strengthen the coordination and participation of relevant stakeholders for this new proposed project.

The project “Technical Assistance for Environmental Heavy-Cost Investment Planning For Turkey” (TR0203.03/001) has three main components which are:

- The strategic planning component
- The investment packages component
- The capacity building component

The strategic planning component is intended to develop strategies / plans at three different levels: macro, sectoral and (EU) directive level while defining the priorities in the sector.

Directive Specific Investment Plan for the Council Directive on Urban Wastewater Treatment: the plan describes the current situation in the wastewater treatment sector, specifies the implementation of necessary technical measures, identifies technical gaps, makes cost assessments and identifies possible financial sources to close the gaps and presents recommendations on the investment schedule and transition period for the implementation of the directive which will give essential feedbacks to water pricing/tariffs methodology of this proposed project.

The investment packages component, on the other hand, is limited to identifying the demand and aimed to select six top priority projects in Turkey and develop these into investment packages. A methodology developed for the prioritization of the projects proposed.

3 DESCRIPTION

3.1 OVERALL OBJECTIVE OF THE PROJECT

The overall objective of the project is to fulfill the economic requirements of the EU Water Framework Directive to achieve good water status in Turkey and to ensure water efficiency and develop economic instruments for this goal.

3.2 SPECIFIC OBJECTIVE(S) OF THE PROJECT

The specific objectives are:

- to finalize 3 river basin management plans;
- to carry out a quick scan of water economics in selected 4 basins (Maritza/Ergene, Konya, Büyük Menderes, Susurluk Basins) which will help to make a general estimation of sampling of different water economics characteristics of Turkey;
- to carry out an economic analysis of water uses in selected River Basin Districts which is manifested in Article 5 of the WFD;
- to assess current levels of cost-recovery of water services including environmental and resource costs which is manifested in Article 9 of the WFD;
- to increase the institutional capacity in Turkey in the use of economic principles and instruments to for river basin management planning, across water quality and quantity;
- to increase the institutional capacity in Turkey to test the cost and effectiveness of measures in pilot river basins, across water quality and quantity;
- to provide re-use of treated waste water in agricultural irrigation;
- to provide guidance for economic levels of leakages and methods of water loss control and reduction in water supply systems to save water resources;
- to develop suitable economic instruments for water resource management.

3.3 RESULTS

RESULT 1. Analysis of Legal and institutional amendments of Water Framework Directive and Other Related Directives concerning water efficiency and economic analysis in place to fully implement the *acquis* and draft legislations

OVI 1: Draft legal document for the “Water economics and tariffs” of the WFD for transposition into Turkish legislatio

OVI 2: Draft a national guidance document and template to guide the economic characterisation of water use and services, structured to meet the requirements of Water Framework Directive Article 5 (Economics Report)

OVI 3: Draft legal document for “the water loss and leakage control” for the transposition into Turkish legislation

OVI 4: Draft legal document for “reuse of treated water” for the transposition into Turkish legislation

RESULT 2: Quick scan of water economics in selected 4 basins (Maritza/Ergene, Konya, Büyük Menderes, Susurluk Basins) which will help to make a general estimation of sampling of different characteristics of Turkey

OVI 1: Report on the existing situation of water economics four 4 quick scan Basins which will give a general overview of the characteristic economic features for Turkey

RESULT 3. Report on Status Classification which will consist of water quality data and explanation how status classification is made is to be completed

OVI 1: 2 training workshops on status classification for 3 pilot basins for the training of the related institutional staff who will conduct the RBMP’s implementation in the Basin

OVI 2: A report on status classification which will consist of water quality data and explanation how status classification is made (separately for each pilot river basin district)

RESULT 4. Programme of Measures chapter of the RBMPs is to be completed

OVI 1: Report on 2 stake holder consultation events in 3 pilot basins on the programme of measures

OVI 2: 2 training workshops on program of measures for 3 pilot basins for the training of the related institutional staff who will conduct the RBMP's implementation in the Basin

OVI 3: A detailed report on program of measures and exemptions. (Separately for each pilot river basin district)

OVI 4: A report on public participation (separately for each pilot river basin district)

OVI 5: 1 study visit on program of measures in member states

OVI 6: 1 study visit on exemption justifications in member states

OVI 7: 1 awareness campaigns on the Programme of Measures and Exemptions. (Separately for each pilot river basin district)

RESULT 5: Three RBMPs are to be completed.

OVI 1: 1 training workshop on description of the pilot river basin districts, Identification of water bodies, Identification of typology, analysis of pressures and impacts

OVI 2: A report on the description of the river basin districts. (Separately for each pilot river basin district)

OVI 3: A report on the typology of water bodies. (Separately for each pilot river basin district)

OVI 4: A report on the pressures and impacts of the river basin districts. (Separately for each pilot river basin district)

OVI 5: 1 training workshop on the Draft River Basin Management Plans for 2 pilot basins

OVI 6: 1 awareness campaign on the Draft River Basin Management Plans for 2 pilot basins

OVI 7: 3 Draft River Basin Management Plans for 3 pilot basins including all the required reports according to WFD

RESULT 6 Report on Article 5 of WFD is to be completed

OVI 1: 1 training workshop on economic analysis and baseline scenario

OVI 2: Assessment reports on key hydrological and socio-economic drivers likely to affect pressures and the forecast changes in them. (Separately for each pilot river basin district)

OVI 3: A report on the Business as Usual (BAU) scenario in pilot RBDs.

OVI 4: Compiled socio-economic master plans for River Basin Districts.

OVI 5: A report on the identification of water uses and services by socio-economic sectors. (Separately for each pilot river basin district)

OVI 6: Assessment reports on water budgets of the river basin districts. (Separately for each pilot river basin district)

OVI 7: A report on the existing situation of infrastructures in pilot RBDs

OVI 8: A report on analysis on the current water loss ratio in pilot RBDs

OVI 9: A report on the review of pricing of water for municipal, industrial and agriculture in each pilot river basin districts.

OVI 10: A gap analyses report concerning the water status resulting from the baseline scenario and the WFD's objectives in pilot RBDs to advice on future development strategies

OVI 11: 1 training workshop on cost recovery (together with OVI 1)

OVI 12: Assessment reports on the price currently paid by users in each Pilot River Basin District and calculation of the cost recovery rates for all user groups.

OVI 13: An institutional mechanism model for the cost recovery.

OVI 14: 1 training workshop on environmental objectives, protected areas and risk assessment

OVI 15: A report on the assessment on environmental objectives for each water bodies, including MEP's and GEP's and the identification of protected areas and their unique requirements. (Separately for each pilot river basin district)

OVI 16: A risk assessment report. (Separately for each pilot river basin district)

OVI 17: 2 stake holder consultation events in 3 pilot basins on the characterisation report.

OVI 18: Revision of Article 5 report, if needed.

OVI 19: 1 study visit on economic analysis and cost recovery in member states

OVI 20: 1 study visit on environmental objectives, protected areas, risk assessment in member states

OVI 21: 1 awareness campaign on the characterisation reports (separately for each pilot river basin district)

RESULT 7: Report on water efficiency is to be completed.

OVI 1: 2 training workshops on significant issues, existing water loss and leakage situation, water efficiency targets, pricing options

OVI 2: 1 awareness campaign on water efficiency (separately for each pilot river basin district)

OVI 3: A report on water efficiency (separately for each pilot river basin district)

RESULT 8: An Economic Model is to be developed.

OVI 1: 1 training workshops on developing an economic model

OVI 2: A report consisting of the assessments on the different climate change scenarios, and the economic analysis of the adaptation measures for those scenarios and the effects of reuse of treated or non-treated water within the water budget and assessment of effectiveness of water loss and leakage control. (Separately for each pilot river basin district)

OVI 3: A cost effectiveness and benefit analysis for the reuse of treated wastewater in leading sectors (separately for each pilot river basin district)

OVI 4: A fully operational economic model (separately for each pilot river basin district)

OVI 5: 2 stake holder consultation events in 3 pilot basins on the decision support systems

OVI 6: 1 training workshop on the decision support systems (consisting 3 of the pilot river basin districts)

OVI 7: A decision support system model (separately for each pilot river basin district)

RESULT 9: A National Implementation Plan is to be formed

OVI 1: 1 Training workshop on the National Implementation Plan

OVI 2: 1 Awareness campaign on the National Implementation Plan

OVI 3: A guidance document regarding national implementation strategy of Turkey for economic analysis, on the basis of the pilot river basins

OVI 4: A methodology report on cost and benefit assessment of water measures supporting cost-effectiveness and further implementation of the concept of payment for ecosystem services which will help identify water efficiency measures and also implement the polluter pays principle.

RESULT 10: Report on Communication Strategies is to be completed

OVI 1: 3 stakeholder consultation events in 3 pilot basins on the water efficiency and the economic analysis

OVI 2: A communication strategy report . (Separately for each pilot river basin district)

OVI 3: 3 Training workshops on the Communication Strategy Report for 3 pilot basins

OVI 4: 1 Awareness campaign on the outcome of RBMP's on water efficiency and water economics (pricing)

3.4 MAIN ACTIVITIES

Below is a summary of the links between the various activities foreseen, and their relation with results and indicators.

RESULT 1. Analysis of Legal and institutional amendments of Water Framework Directive and Other Related Directives concerning water efficiency and economic analysis in place to fully implement the acquis and draft legislations

Activity 1.1 Gap analysis report by updating of the legal and institutional gap analysis of the water efficiency and economic analysis in Turkey

Activity 1.2 Analysis report of the EU country examples of water efficiency and economic analysis of WFD on institutional basis

RESULT 2: Quick scan of water economics in selected 4 basins (Maritza/Ergene, Konya, Büyük Menderes, Susurluk Basins) which will help make a general estimation of sampling of different characteristics of Turkey

Activity 2.1: Description of the pilot river basin districts

Activity 2.2: Analysis of pressures and impacts

Activity 2.3: Identify water uses and services by socio-economic sector (agriculture, industry households and recreation)

Activity 2.4: Assessment of the water budget distribution by sectors (agriculture, industry households and recreation) for the pilot RBDs

Activity 2.5: Assess the relative socio-economic importance of water uses through established metrics.

RESULT 3. Report on Status Classification is to be completed

Activity 3.1: Identify the status of a selected number of water bodies in accordance with Article 8 of WFD

RESULT 4. Programme of Measures and Exemptions chapter of the RBMP completed

Activity 4.1: Identify the environmental objectives for the water bodies in the pilot basins

Activity 4.2: Identify the MEP and GEP for the water bodies

Activity 4.3: Identify basic measures and planned investments for implementing existing water legislation

Activity 4.4: Identify supplementary water-related measures

Activity 4.5: Determine the water loss control method and equipment

Activity 4.6: Identify measures that may cause significant damages

Activity 4.7: Identify measures that are disproportionately expensive

Activity 4.8: Identify measures that have marginal cost effectiveness

Activity 4.9: Identify measures to achieve MEP and GEP

Activity 4.10: Identify cost effective measures to achieve the good water status for natural water bodies

Activity 4.11: Inform and consult stakeholders on programme of measures

Activity 4.12: Study visit on experiences on programme of measures from member states

RESULT 5: Four RBMPs are to be completed

Activity 5.1: Description of the pilot river basin districts

Activity 5.2: Identification of water bodies

Activity 5.3: Identification of typology

Activity 5.4: Analysis of pressures and impacts

Activity 5.5: Gathering existing monitoring data in pilot river basins

Activity 5.6: Modelling for water quality determination in pilot river basins

Activity 5.7: Carrying out monitoring at some of the basins if necessary

RESULT 6: Report on Article 5 of WFD is to be completed

Activity 6.1: Assess trends of key hydrological and socio-economic drivers that are likely to affect pressures (demography, climate, sector policies)

Activity 6.2: Forecast changes in pressures based on changes in economic and physical drivers

Activity 6.3: Gather and/or compile socio-economic development plans based on existing studies in the selected River Basin Districts for the formation of baseline scenario

Activity 6.4: Construct a Business as Usual (BAU) scenario

Activity 6.5: Identify water uses and services by socio-economic sector (agriculture, industry households and recreation)

Activity 6.6: Assessment of the water budget distribution by sectors (agriculture, industry households and recreation) for the pilot RBDs

Activity 6.7: Assess the relative socio-economic importance of water uses through established metrics

Activity 6.8: Estimate costs of water services, including financial, environmental and resource costs

Activity 6.9: Initiate a review of pricing of water for municipal, industrial and agriculture

Activity 6.10: Assess the existing situation of infrastructures in pilot RBDs

Activity 6.11: Analyse the current water loss ratio in pilot cities within the pilot RBDs which are estimated to have the biggest water loss ratio, taking into account the Sustainable Economic Level of Leakages method

Activity 6.12: Estimate the gap between the water status resulting from the baseline scenario and the WFD's objectives (good water status)

Activity 6.13: Identify the price currently paid by users and calculate the cost recovery rate for all user groups

Activity 6.14: Description of the institutional mechanisms in place for cost recovery

Activity 6.15: Identify areas designated for special protection (e.g. drinking water, bathing water, economically significant aquatic species etc.)

Activity 6.16: Analyze of the risk of water bodies not achieving the environmental objectives

Activity 6.17: Inform and consult stakeholders, if needed revise the Article 5 Report

Activity 6.18: Develop socio-economic plans for each pilot basin

Activity 6.19: Study visit on experiences on Article 5 Reports from member states.

RESULT 7. Report on water efficiency is to be completed

Activity 7.1: Summarize the significant issues identified in each RBD

Activity 7.2: Water loss calculations in selected urban areas within 4 basins to determine sustainable economic levels of leakage

Activity 7.3: Analysis of water use by the reuse of water (whether treated or not, differentiating according to various use areas; industry, household, municipal, agriculture etc.)

Activity 7.4: Setting the water efficiency targets for selected cities within the pilot basins

Activity 7.5: Analysis of the pricing options as an instrument for achieving water efficiency targets

RESULT 8: An Economic Model (with a Decision Support System) is to be developed

Activity 8.1: Assess the different climate change scenarios, and the economic analysis of the adaptation measures for those scenarios

Activity 8.2: Assessing the effects of reuse of treated or non-treated water within the water budget

Activity 8.3: Perform cost effectiveness and benefit analysis for the reuse of treated wastewater in leading sectors (agriculture, industry, urban use, household use etc.)

Activity 8.4: Assessing the effectiveness of water loss and leakage control

Activity 8.5: Integrate the results of these scenarios in a fully operational economic model developed concerning all the economic analyses information for the pilot RBDs, including the water efficiency analysis (leakage and loss control or minimization and reuse of water) with a holistic approach with other sectoral policies affecting the achievement of environmental objectives

Activity 8.6: Modelling a decision support system which will enable to inform about the economic efficiency of the measures with respect to their fulfilling the environmental objectives including the outputs of the economic model for each RBD

RESULT 9: National Implementation Plan is to be formed

Activity 9.1: Making a guidance document for national implementation strategy for economic analysis for Turkey, on the basis of the pilot river basins

Activity 9.2: Developing a methodology to assess the costs and benefits of water measures supporting cost-effectiveness and further implementation of the concept of payment for ecosystem services which will help identify water efficiency measures and also implement the polluter pays principle

Activity 9.3: Developing a methodology for water efficiency targets which should be integrated into RBMPs

RESULT 10: Report on Communication Strategy is to be completed

Activity 10.1: Execute trainings on water efficiency and economic analysis outputs of the river basin management plans concerning each pilot river basin for the stakeholders in the basins

Activity 10.2: Defining communication mechanism in the pilot basins among the stakeholders in view of water efficiency and economic analysis

Activity 10.3: Building a sustainable mechanism for the implementation of the measures in the basins for water efficiency and economic analysis for internal and external stakeholders

Means / Contracts

- There will be one Technical Assistance Contract covering all assignments falling under this project.
- Field works, data collection excursions, expert missions, study visits, desk studies, trainings, workshops, field visits will take place within the project.
- Necessary staff, accommodation and other resources will be provided from related ministries and other stakeholders, including from local offices
- Organizations and delivery of trainings including study tours will be realized.
- Organization and facilitation of pilot projects will be achieved.

3.5 ASSESSMENT OF PROJECT IMPACT, CATALYTIC EFFECT AND CROSS BORDER IMPACT (WHERE APPLICABLE)

This project meeting the requirements of WFD will support the activities of Barcelona and Bucharest Conventions.

Other impacts are listed below:

This Project,

- will enhance the harmonization of environmental Acquis Communautaire, especially for WFD with regard to surface waters, groundwater make the decision making and the implementation more accelerated and more effective by creating the actual basis for its implementation in economic terms;
- will be a good instrument for the preparation of plans and programs for the National Policy on waters;
- will make the supervision system more effective;
- will be a good example for Turkey's other basins and also neighbouring countries in terms of the objectives of integrated and holistic approach;
- will enable better environmental management, and to protect environment,
- will increase the institutional capacity in Turkey in the use of economic principles and instruments to for river basin management planning, across water quality and quantity.
- will increase the institutional capacity in Turkey to test the cost and effectiveness of measures in pilot river basins, across water quality and quantity.
- will provide re-use of water in relevant sectors
- will provide water loss control and reduction in water supply systems to save water resources.

Therefore water efficiency targets will be achieved.

Although the main objective of this project is to fulfill the economic requirements of the EU Water Framework Directive to achieve good water status and water efficiency in Turkey, the additional and natural output will be three River Basin Management Plans completed additionally as the economic analyses take place in every step of the WFD RBMPs (Maritza/Ergene, Konya, Büyük Menderes, Susurluk Basins) in accordance with the Water Framework Directive. These plans, *inter alia*, will enable the Beneficiary and stakeholders to plan the necessary investments and capacity building training. The staff from the other basins will also be trained during the making of RBMPs for the pilot basins in the project.

The investments and capacity building training will lead to sustainable capacity in the Ministry of Forestry and Water Affairs in order to execute the all the activities to be undertaken for the drafting of the economic analyses of River Basin Management Plans for all basins in Turkey in accordance with the Water Framework Directive.

Furthermore, the project will provide a concrete ground for sustainable management of local administration and especially of basin protection unions. Especially with the pilot implementation and the trainings planned to be given within the scope of this project, awareness of the local authorities will be strengthened.

3.6 SUSTAINABILITY

This will enhance Turkey's profile as a candidate country to the European Union and by accession; the provisions of the EU Water related Directive's will be a strong driver for Turkey to ensure the sustainability of the results of this project.

Draft Water Law has been prepared and it is estimated that it will come into force in 2014. According to Draft Water Law, new water pricing methodology which ensures cost recovery of water services including environmental and resource costs will be progressed. Also, By-Law on Protection of Water Basins and Preparation of Management Plans which came into force in 17th of September, 2012 and aiming to regulate procedures and principles with regards to protection of surface water and ground waters in terms of their quantity, physical, chemical and ecological quality within a holistic approach for the preparation of water basin management plans.

In order to provide inter-sectoral coordination, collaboration and speeding up investment in water provision for an effective water management, Water Management Coordination Committee was established with numbered 2012/7, Prime Minister Notice. According to this Prime Minister Notice, the committee was established for the determination of necessary measures to conserve the water sources within the framework of integrated river basin management. Besides, Communiqué on Composition of Basin Management Board, and Working Principles and Procedures came into force in 2013 and according to this Communiqué, Basin Direction Board and Basin Management Board will give support to the studies of preparation, implementation, monitoring and evaluation of basin management plans.

In this context, after proposed project completed, Basin Management Committee will ensure to implement RBMPs measures, evaluate and audit implementation of measure and monitor water quality. Also, Basin Management Committee will give support to providing inter-sectoral coordination, collaboration and speeding up investment within the scope of RBMPs.

Within the scope of Communiqué on Composition of Basin Management Board, a governorship was determined for each basin and that determined governorship will be chair of Basin Management Board which consists of the representing members of all related institutions in that specific basin. Basin Management Board will be gathered under the chairmanship of governor semi-annually and follow up implementations of measures of the River Basin Management Plan of that basin and coordinate sectoral decisions according to RBMP's. Related Regional Directorates of State Hydraulic Works is a member of Basin Management Board for each basin and that regional directorate will be responsible for monitoring in each related basin according to RBMP's.

Moreover, the results of the project will ensure to achieve the use of relevant economic instruments for sustainable water management and give rise to legal arrangements concerning water economics and tariffs linked to the Draft Water Act.

Besides the developed economic model is to be integrated into decision making processes of the water management which will ensure the effective use of financial resources in reaching the goals of the WFD.

Finally the outputs of this project will give direct feedbacks to national climate change adaptation action Plan of Turkey in relation to water resources and drought management plans which will be conducted by The Ministry of Forestry and Water Affairs.

3.7 ASSUMPTIONS AND PRE-CONDITIONS

There is an ongoing twinning project ("Capacity Building On Water Quality Monitoring") on monitoring in the framework of the WFD which is about to finish in 2013. This twinning will produce a monitoring system and many more data for the chemical and biological assessment. Results of the IPA 2011 twinning will be used for this project. It is assumed that;

- The monitoring results of the international and national projects will be evaluated in this project;
- The accurate data sets needed for the project activities will be collected (if not available) by the technical assistance of this project;
- The stakeholders are willing to participate wherever and whenever necessary (there is a core group of relevant stakeholders assigned among institutional level);
- Relevant countries will have to be willing to host a study visit;
- Sufficient stability of related ministerial staff at all levels is ensured;
- Data, maps and other required information available in an adequate format and timely manner;
- Field visits will be possible;
- Study visits will be possible;
- Disaster risk resilience and risk prevention and management will be promoted in the preparation and implementation of the proposed project.

4 IMPLEMENTATION ISSUES

4.1 INDICATIVE BUDGET

Indicative Project Budget (amounts in EUR)

			SOURCES OF FUNDING										
			TOTAL EXPENDITURE	TOTAL PUBLIC EXPENDITURE	IPA CONTRIBUTION		NATIONAL PUBLIC CONTRIBUTION					PRIVATE CONTRIBUTION	
ACTIVITIES			EUR	EUR	EUR	%	Total	%	Central	Regional/Local	IFIs	EUR	%
			(a)=(b)+(e)	(b)=(c)+(d)	(c)	(2)	EUR	(2)	EUR	EUR	EUR	EUR	(e)
							(d)=(x)+(y)+(z)		(x)	(y)	(z)		
Activity													
TA Contract			4.500.000 €	4.500.000 €	4.050.000 €		450.000 €		450.000 €			-	
TOTAL IB			4.500.000 €	4.500.000 €	4.050.000 €		450.000 €		450.000 €				
TOTAL PROJECT			4.500.000 €	4.500.000 €	4.050.000 €		450.000 €		450.000 €				

(1) In the Activity row, use "X" to identify whether IB or INV

(2) Expressed in % of the **Public** Expenditure (column (b))

(3) Expressed in % of the **Total** Expenditure (column (a))

4.2 INDICATIVE IMPLEMENTATION SCHEDULE (PERIODS BROKEN DOWN BY QUARTER)

Contracts	Start of Tendering	Signature of contract	Project Completion
TA Contract (36 months)	QR3 2013	QR2 2014	QR1 2017

"The Turkish authorities commit themselves to provide national co-financing according to the above provisions. The NAO will verify that co-financing has been provided in line with the above provisions before submitting requests for funds and final declarations adjusting payment requests to the above ratio as necessary."

"In the context of beneficiary staff participating in missions outside of Turkey paid for under a contract, the maximum amounts eligible for accommodation costs and daily allowances ("per diems") are the official rates provided for by EuropeAid for the destination country (see website for the latest rate). Provided the total cost of daily allowance and accommodation charged to the contract remains below these maximum rates, the applicable Turkish rules and regulations for per diems shall be applied when reimbursing these costs for public servants from the beneficiary institutions. Where a contract foresees the reimbursement of such expenses for Turkish public servants and other beneficiaries of IPA projects during missions inside of Turkey, the maximum costs reimbursed under the contract will be those provided for domestic missions under the applicable Turkish legislation provided that they are subject to the same ceiling for maximum rates. This provision cannot be construed and applied in contradiction with the IPA Framework Agreement and in particular the IPA Implementing Regulation."

4.3 CROSS CUTTING ISSUES

4.3.1 *Equal Opportunities and non discrimination*

Participation in this project will be open to both males and females involved in the sector. Records of professionals' participation in all project related activities will reflect this and will be kept with the project documentation and for monitoring purposes.

4.3.2 *Environment and climate change*

The Project itself is focused on the achievement of long-term environmental improvements and adaptation to different climate change scenarios for Turkey. The Project itself will probably not have any adverse environmental or climate change impacts, other than those due to normal activities (e.g. transport). Nevertheless, as an example to others and as a matter of principle, the environmental impact of activities must be minimised as far as possible, e.g. by conserving paper.

4.3.3 *Minorities and vulnerable groups*

According to the Turkish Constitutional System, the word minority encompasses only groups of persons defined and recognized as such on the basis of multilateral or bilateral instruments to which Turkey is a party. This project has no negative impact on minority and vulnerable

groups. Besides, the disabled people shall be provided the same level of access to the project as all other participants, via a sensitive design of activities.

4.3.4 Civil Society/Stakeholders involvement

All related ambitious NGOs such as Basin Protection Unions, local NGOs, REC Turkey and Universities, etc. shall be informed of the activities and results of this project and shall be provided the opportunity to participate in the meetings and workshops. Public participation and consultation procedure will be considered by the project according to WFD art. 14.

ANNEX 1: Logical framework matrix in standard format

LOGFRAME PLANNING MATRIX FOR Project Fiche		Technical Assistance on Economic Analyses within River Basin Management Plans and Water Efficiency Aspects in 3 Pilot River Basins in Turkey	
		Contracting period expires: 2 years after the signature of the Financing Agreement	Disbursement period expires: 1 year after the end date for the execution of contracts
		Total budget	4.500.000 €
		IPA budget:	4.050.000 €
Overall objective	Objectively verifiable indicators (OVI)	Sources of Verification	
To fulfill the economic requirements of the EU Water Framework Directive to achieve good water status in Turkey and to ensure water efficiency and develop economic instruments for this goal.	Recognition by EC that considerable progress about the requirements of WFD is being made at the end of 2016.	EU and Turkish reports on accession period of Turkey to the EU	
Specific objective	Objectively verifiable indicators (OVI)	Sources of Verification	Assumptions
<ul style="list-style-type: none"> to finalize 3 river basin management plans to carry out a quick scan of water economics in selected 4 basins (Maritza/Ergene, Konya, Büyük Menderes, Susurluk Basins) which will help us make a general estimation of sampling of different water economics characteristics of Turkey. to carry out an economic analysis of water uses in selected River Basin Districts which is manifested in Article 5 of the WFD. 	<p>Legal and institutional analysis report concerning water efficiency and economic analysis</p> <p>Carrying out the requirements of WFD Article 5</p> <p>Calculation of water efficiency</p>	<p>Official documents from Turkish Ministry of Forestry and Water Affairs and river basin authorities.</p> <p>All project outputs, reports, plans, study visit reports, mission reports, developed models and systems</p>	

<ul style="list-style-type: none"> • to assess current levels of cost-recovery of water services including environmental and resource costs which is manifested in Article 9 of the WFD. • to increase the institutional capacity in Turkey in the use of economic principles and instruments to for river basin management planning, across water quality and quantity. • to increase the institutional capacity in Turkey to test the cost and effectiveness of measures in pilot river basins, across water quality and quantity. • to provide re-use of treated waste water in agricultural irrigation • to provide guidance for economic levels of leakages and methods of water loss control and reduction in water supply systems to save water resources. • To develop suitable economic instruments for water resource management. 	<p>Preparation of Status Classification Programme of Measures</p> <p>Developed Economic Model</p> <p>Developed Decision Support Systems</p> <p>National Implementation Plan</p> <p>Preparation of Communication Strategy</p> <p>Draft River Basin Management Plans for 2 pilot basins</p>		
Results	Objectively verifiable indicators (OVI)	Sources of Verification	Assumptions
<p>RESULT 1. Analysis of Legal and institutional amendments of Water Framework Directive and Other Related Directives concerning water efficiency and economic analysis in place to fully implement the acquis and draft legislations.</p>	<p>OVI 1: Draft legal document for the “Water economics and tariffs” of the WFD for transposition into Turkish legislation</p> <p>OVI 2: Draft a national guidance document and template to guide the economic characterisation of water use and services, structured</p>		<ul style="list-style-type: none"> • The monitoring results of the international and national project will be evaluated in this project. • The accurate data sets needed for the project activities will be collected (if not available) by the technical assistance of this project • The stakeholders are willing to participate wherever and

<p>RESULT 2: Quick scan of water economics in selected 4 basins (Maritza/Ergene, Konya, Büyük Menderes, Susurluk Basins Basins) which will help us make a general estimation of sampling of different characteristics of Turkey.</p> <p>RESULT 3. Report on Status Classification which will consist of water quality data and explanation how status classification is made is to be completed.</p>	<p>to meet the requirements of Water Framework Directive Article 5 (Economics Report).</p> <p>OVI 3: Draft legal document for “the water loss and leakage control” for the transposition into Turkish legislation</p> <p>OVI 4: Draft legal document for “reuse of treated water” for the transposition into Turkish legislation</p> <p>OVI 1: Report on the existing situation of water economics four 4 quick scan Basins which will give a general out view of the characteristic economic features for Turkey.</p> <p>OVI 1: 2 training workshops on status classification for 3 pilot basins for the training of the related institutional staff who will conduct the RBMP’s implementation in the Basin..</p> <p>OVI 2: A report on status classification which will consist of water quality data and explanation how status classification is made (separately for each pilot river</p>		<p>whenever necessary</p> <ul style="list-style-type: none"> • Relevant countries will have to be willing to host a study visit • Sufficient stability of related ministerial staff at all levels is ensured • Data, maps and other required information available in an adequate format and timely manner • Field visits possible • Study visits possible
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<p>RESULT 4. Programme of Measures chapter of the RBMPs is to be completed.</p>	<p>basin district)</p> <p>OVI 1: Report on 2 stake holder consultation events in 3 pilot basins on the programme of measures.</p> <p>OVI 2: 2 training workshops on program of measures for 3 pilot basins for the training of the related institutional staff who will conduct the RBMP's implementation in the Basin.</p> <p>OVI 3: A detailed report on program of measures and exemptions (separately for each pilot river basin district)</p> <p>OVI 4: A report on public participation (separately for each pilot river basin district)</p> <p>OVI 5: 1 study visit on program of measures in member states.</p> <p>OVI 6: 1 study visit on exemption justifications in member states.</p> <p>OVI 7: 1 awareness campaigns on the Programme of Measures and Exemptions. (Separately for each pilot river basin district)</p>		
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<p>RESULT 5: Three RBMPs are to be completed.</p>	<p>OVI 1: 1 training workshop on Description of the pilot river basin districts, Identification of water bodies, Identification of typology, Analysis of pressures and impacts</p> <p>OVI 2: A report on the description of the river basin districts. (Separately for each pilot river basin district)</p> <p>OVI 3: A report on the typology of water bodies. (Separately for each pilot river basin district)</p> <p>OVI 4: A report on the pressures and impacts of the river basin districts. (Separately for each pilot river basin district)</p> <p>OVI 5: 1 training workshop on the Draft River Basin Management Plans for 2 pilot basins</p> <p>OVI 6: 1 awareness campaign on the Draft River Basin Management Plans for 2 pilot basins</p> <p>OVI 7: 3 Draft River Basin Management Plans for 3 pilot basins including all the required reports according to WFD.</p>		
<p>RESULT 6: Report on Article 5 of WFD is to be completed.</p>	<p>OVI 1: 1 training workshop on economic analysis and baseline scenario</p>		

	<p>OVI 2: Assessment reports on the key hydrological and socio-economic drivers that are likely to affect pressures and the forecast changes in them (separately for each pilot river basin district)</p> <p>OVI 3: A report on the Business as Usual (BAU) scenario in pilot RBDs.</p> <p>OVI 4: Compiled socio-economic master plans for River Basin Districts.</p> <p>OVI 5: A report on the identification of water uses and services by socio-economic sectors. (Separately for each pilot river basin district)</p> <p>OVI 6: Assessment reports on water budgets of the river basin districts. (Separately for each pilot river basin district)</p> <p>OVI 7: A report on the existing situation of infrastructures in pilot RBDs.</p> <p>OVI 8: A report on analysis on the current water loss ratio in pilot RBDs.</p> <p>OVI 9: A report on the review of pricing of water for municipal, industrial and agriculture in each pilot river basin districts.</p>		
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	<p>OVI 10: A gap analyses report concerning the water status resulting from the baseline scenario and the WFD's objectives in pilot RBDs to advise on future development strategies</p> <p>OVI 11: 1 training workshop on cost recovery (together with OVI 1)</p> <p>OVI 12: Assessment reports on the price currently paid by users in each Pilot River Basin District and calculation of the cost recovery rates for all user groups.</p> <p>OVI 13: An institutional mechanism model for the cost recovery.</p> <p>OVI 14: 1 training workshop on environmental objectives, protected areas and risk assessment</p> <p>OVI 15: A report on the assessment on environmental objectives for each water bodies, including MEP's and GEP's and the identification of protected areas and their unique requirements (separately for each pilot river basin district)</p> <p>OVI 16: A risk assessment report (separately for each pilot river basin district)</p> <p>OVI 17: 2 stake holder</p>		
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<p>RESULT 7. Report on water efficiency is to be completed.</p>	<p>consultation events in 3 pilot basins on the characterisation report.</p> <p>OVI 18: Revision of Article 5 report, if needed.</p> <p>OVI 19: 1 study visit on economic analysis and cost recovery in member states.</p> <p>OVI 20: 1 study visit on Environmental objectives, Protected areas, Risk Assessment in member states</p> <p>OVI 21: 1 awareness campaign on the characterisation reports (separately for each pilot river basin district)</p> <p>OVI 1: 2 training workshops on significant issues, existing water loss and leakage situation, water efficiency targets, pricing options</p> <p>OVI 2: 1 awareness campaign on water efficiency (separately for each pilot river basin district)</p> <p>OVI 3: A report on water efficiency (separately for each pilot river basin district)</p> <p>OVI 1: 1 training workshops on</p>	
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<p>RESULT 8: An Economic Model (with a Decision Support System) is to be developed.</p>	<p>developing an economic model.</p> <p>OVI 2: A report consisting of the assessments on the different climate change scenarios, and the economic analysis of the adaptation measures for those scenarios and the effects of reuse of treated or non-treated water within the water budget and assessment of effectiveness of water loss and leakage control. (Separately for each pilot river basin district)</p> <p>OVI 3: A cost effectiveness and benefit analysis for the reuse of treated wastewater in leading sectors (Separately for each pilot river basin district).</p> <p>OVI 4: A fully operational economic model (separately for each pilot river basin district)</p> <p>OVI 5: 2 stakeholder consultation events in 3 pilot basins on the decision support systems.</p> <p>OVI 6: 2 training workshops on the decision support systems (separately for each pilot river basin district)</p> <p>OVI 7: A decision support system model (separately for each pilot</p>		
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<p>RESULT 9: A National Implementation Plan is to be formed.</p>	<p>river basin district)</p> <p>OVI 1: 1 Training workshop on the National Implementation Plan.</p> <p>OVI 2: 1 Awareness campaign on the National Implementation Plan.</p> <p>OVI 3: A guidance document regarding national implementation strategy of Turkey for economic analysis, on the basis of the pilot river basins.</p> <p>OVI 4: A methodology report on assess the costs and benefits of water measures supporting cost-effectiveness and further implementation of the concept of payment for ecosystem services which will help identify water efficiency measures and also implement the polluter pays principle.</p>		
<p>RESULT 10: Report on Communication Strategies is to be completed.</p>	<p>OVI 1: 3 stakeholder consultation events in 3 pilot basins on the water efficiency and the economic analysis.</p> <p>OVI 2: A communication strategy report (separately for each pilot river basin district)</p>		

	<p>OVI 3: 3 Training workshops on the Communication Strategy Report for 3 pilot basins</p> <p>OVI 4: 1 Awareness campaign on the outcome of RBMP's on water efficiency and water economics (pricing)</p>		
Activities to achieve results	Means / contracts	Costs (€)	Assumptions
<p>Activity 1.1 Gap analysis report by updating of the legal and institutional gap analysis of the water efficiency and economic analysis in Turkey</p> <p>Activity 1.2 Analysis report of the EU country examples of water efficiency and economic analysis of WFD on institutional basis</p> <p>Activity 2.1: Description of the pilot river basin districts</p> <p>Activity 2.2: Analysis of pressures and impacts</p> <p>Activity 2.3: Identify water uses and services by socio-economic sector (agriculture, industry households and recreation)</p> <p>Activity 2.4: Assessment of the water budget distribution by sectors (agriculture, industry households and recreation) for the pilot RBDs.</p> <p>Activity 2.5: Assess the relative socio-economic importance of water uses through established metrics.</p> <p>Activity 3.1: Identify the status of a selected number of</p>	<p>Technical Assistance Contract</p> <p>Field work, data collection excursions, expert missions, study visits, desk studies, trainings, workshops, field visits</p> <p>All the assignments are to be covered by the technical assistance project</p> <p>Necessary staff, accommodation and other resources from related ministries and other stakeholders</p> <p>Necessary staff, accommodation and other resources from local offices</p> <p>Organization and delivery of trainings including study tours</p> <p>Organization and facilitation of pilot projects</p>	<p>Technical Assistance</p> <p>4.500.000 €</p>	<ul style="list-style-type: none"> • The monitoring results of the international and national projects will be evaluated in this project. • The accurate data sets needed for the project activities will be collected (if not available) by the technical assistance of this project • The stakeholders are willing to participate wherever and whenever necessary • Relevant countries will have to be willing to host a study visit • Sufficient stability of related ministerial staff at all levels is ensured • Data, maps and other required information available in an adequate format and timely manner • Field visits possible • Study visits possible

<p>water bodies in accordance with Article 8 of WFD.</p> <p>Activity 4.1: Identify the environmental objectives for the water bodies in the pilot basins.</p> <p>Activity 4.2: Identify the MEP and GEP for the water bodies.</p> <p>Activity 4.3: Identify basic measures and planned investments for implementing existing water legislation.</p> <p>Activity 4.4: Identify supplementary water-related measures.</p> <p>Activity 4.5: Determine the water loss control method and equipment.</p> <p>Activity 4.6: Identify measures that may cause significant damages</p> <p>Activity 4.7: Identify measures that are disproportionately expensive</p> <p>Activity 4.8: Identify measures that have marginal cost effectiveness</p> <p>Activity 4.9: Identify measures to achieve MEP and GEP</p> <p>Activity 4.10: Identify cost effective measures to achieve the good water status for natural water bodies</p> <p>Activity 4.11: Inform and consult stakeholders on programme of measures.</p> <p>Activity 4.12: Study visit on experiences on programme of measures from member states.</p>			
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<p>Activity 5.1: Description of the pilot river basin districts</p> <p>Activity 5.2: Identification of water bodies</p> <p>Activity 5.3: Identification of typology</p> <p>Activity 5.4: Analysis of pressures and impacts</p> <p>Activity 5.5: Gathering existing monitoring data in pilot river basins</p> <p>Activity 5.6: Modelling for water quality determination in pilot river basins</p> <p>Activity 5.7: Carrying out monitoring at some of the basins if necessary</p> <p>Activity 6.1: Assess trends of key hydrological and socio-economic drivers that are likely to affect pressures (demography, climate, sector policies).</p> <p>Activity 6.2: Forecast changes in pressures based on changes in economic and physical drivers</p> <p>Activity 6.3: Gather and/or compile socio-economic development plans based on existing studies in the selected River Basin Districts for the formation of baseline scenario.</p> <p>Activity 6.4: Construct a Business as Usual (BAU) scenario.</p> <p>Activity 6.5: Identify water uses and services by socio-economic sector (agriculture, industry households and recreation)</p> <p>Activity 6.6: Assessment of the water budget distribution by sectors (agriculture, industry households and recreation) for the pilot RBDs.</p> <p>Activity 6.7: Assess the relative socio-economic importance of water uses through established metrics.</p>			
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<p>Activity 6.8: Estimate costs of water services, including financial, environmental and resource costs.</p> <p>Activity 6.9: Initiate a review of pricing of water for municipal, industrial and agriculture.</p> <p>Activity 6.10: Assess the existing situation of infrastructures in pilot RBDs.</p> <p>Activity 6.11: Analyse the current water loss ratio in pilot cities within the pilot RBDs which are estimated to have the biggest water loss ratio, taking into account the Sustainable Economic Level of Leakages method.</p> <p>Activity 6.12: Estimate the gap between the water status resulting from the baseline scenario and the WFD's objectives (good water status)</p> <p>Activity 6.13: Identify the price currently paid by users and calculate the cost recovery rate for all user groups.</p> <p>Activity 6.14: Description of the institutional mechanisms in place for cost recovery.</p> <p>Activity 6.15: Identify areas designated for special protection (e.g. drinking water, bathing water, economically significant aquatic species etc.).</p> <p>Activity 6.16: Analyze of the risk of water bodies not achieving the environmental objectives.</p> <p>Activity 6.17: Inform and consult stakeholders, if needed revise the Article 5 Report.</p> <p>Activity 6.18: Develop socio-economic plans for each pilot basin.</p> <p>Activity 6.19: Study visit on experiences on Article 5 Reports from member states.</p>			
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<p>Activity 7.1: Summarize the significant issues identified in each RBD.</p> <p>Activity 7.2: Water loss calculations in selected urban areas within 4 basins to determine sustainable economic levels of leakage.</p> <p>Activity 7.3: Analysis of water use by the reuse of water (whether treated or not, differentiating according to various use areas; industry, household, municipal, agriculture etc.)</p> <p>Activity 7.4: Setting the water efficiency targets for selected cities within the pilot basins</p> <p>Activity 7.5: Analysis of the pricing options as an instrument for achieving water efficiency targets</p> <p>Activity 8.1: Assess the different climate change scenarios, and the economic analysis of the adaptation measures for those scenarios.</p> <p>Activity 8.2: Assessing the effects of reuse of treated or non-treated water within the water budget,</p> <p>Activity 8.3: Perform cost effectiveness and benefit analysis for the reuse of treated wastewater in leading sectors (agriculture, industry, urban use, household use etc.)</p> <p>Activity 8.4: Assessing the effectiveness of water loss and leakage control</p>			
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<p>Activity 8.5: Integrate the results of these scenarios in a fully operational economic model developed concerning all the economic analyses information for the pilot RBDs, including the water efficiency analysis (leakage and loss control or minimization and reuse of water) with a holistic approach with other sectoral policies affecting the achievement of environmental objectives</p> <p>Activity 8.6: Modelling a decision support system which will enable to inform about the economic efficiency of the measures with respect to their fulfilling the environmental objectives including the outputs of the economic model for each RBD.</p> <p>Activity 9.1: Making a guidance document for national implementation strategy for economic analysis for Turkey, on the basis of the pilot river basins.</p> <p>Activity 9.2: Developing a methodology to assess the costs and benefits of water measures supporting cost-effectiveness and further implementation of the concept of payment for ecosystem services which will help identify water efficiency measures and also implement the polluter pays principle.</p> <p>Activity 9.3: Developing a methodology for water efficiency targets which should be integrated into RBMPs.</p> <p>Activity 10.1: Execute trainings on water efficiency and economic analysis outputs of the river basin management plans concerning each pilot river basin for the stakeholders in the basins.</p> <p>Activity 10.2: Defining communication mechanism in</p>			
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<p>the pilot basins among the stakeholders in view of water efficiency and economic analysis.</p> <p>Activity 10.3: Building a sustainable mechanism for the implementation of the measures in the basins for water efficiency and economic analysis for internal and external stakeholders</p>			
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Indicative timetable:

		1 st QR	2 nd QR	3 rd QR	4 th QR	5 th QR	6 th QR	7 th QR	8 th QR	9 th QR	10 th QR	11 th QR	12 th QR
TA	Legal gap analysis and the gap analysis of Water Framework Directive and Other Related Directives concerning water efficiency and economic analysis in place to fully implement the acquis and draft legislations.												
TA	All the economic analysis requirements of the WFD is fulfilled. (RBMP's of pilot basins are completed.)												
TA	An economic model and decision support systems are developed												
TA	Complete National Implementation Plan for water economics and efficiency												

TA	Stakeholder Consultation and Communication Strategies are fulfilled												
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Amounts (in €) Contracted and disbursed by quarter for the project (IPA Contribution)

Contracted	2014 QR2	2014 QR3	2014 QR4	2015 QR1	2015 QR2	2015 QR3	2015 QR4	2016 QR1	2016 QR2	2016 QR3	2016 QR4	2017 QR1	Check
TA Contract	4.500.000 €												4.500.000 €
Cumulated	4.500.000 €	4.500.000 €	4.500.000 €	4.500.000 €	4.500.000 €	4.500.000 €	4.500.000 €	4.500.000 €	4.500.000 €	4.500.000 €	4.500.000 €	4.500.000 €	4.500.000 €
Disbursed													
TA Contract	900.000 €			1.575.000 €			1.575.000 €					450.000 €	4.500.000 €
Cumulated	900.000 €	900.000 €	900.000 €	2.475.000 €	2.475.000 €	2.475.000 €	4.050.000 €	4.050.000 €	4.050.000 €	4.050.000 €	4.050.000 €	4.500.000 €	4.500.000 €

