



“JÚCAR-BUZAU” TWINNING

Date: 1.4.2006

Mission reference
2006 E1 C1 T1

Expert Name and function	Expert 1 – ENRIQUE CORRECHER Expert 2 – IGNACIO LATORRE
---------------------------------	--------------------------------------------------------------------------

<u>Mission Report</u>	
Wording of mission	<p><i>In short, objective or content of mission</i></p> <p>The <i>Júcar-Buzau</i> project is focused on specific areas of interest based on Integrated Water Resources Management (IWRM), that have been identified as:</p> <ul style="list-style-type: none"> • Economic analysis in water management (and environmental costs) • Implementation and improvement of monitoring networks (hydromorphological, biological, physic-chemical) and their adaptation to the Water Framework Directive (WFD) requirements. <p>A short introduction prior to these specific topics was dedicated to the general administrative framework and functioning of the River Basin Authority, departments and structure.</p> <p>Based on the TWINBASIN^{xn} project principles, it was expected from the mission to:</p> <ul style="list-style-type: none"> - Promote a friendly cooperation between water managers - Tight ties among river basin organisations (RBOs) - Improve communication between the basins participating in the twinning - Encourage exchange of expertise, knowledge and technical personnel - Strengthen effectiveness of integrated water management within organisations - Improve, overall, the functioning of these institutions <p>An agenda was previously agreed between the participating River Basin Organisations (RBOs) Júcar and Buzau, and the mission included practical information exchange through informal meetings, visits to the dependencies of the Buzau RBO, oral presentations and technical visits to the fieldwork. A final official meeting took place between authorities of both RBOs, in addition to a formal meeting between Júcar delegation and the Romanian Water State Secretary and Water General Director.</p> <p>This third mission of the “<i>Júcar-Buzau</i>” twinning has taken part of the extension stage.</p>

1. CONTEXT

Place, location	<p><i>Country visited, Basin Organisation concerned, other information about location</i></p> <p>ROMANIA, ADMINISTRATIA NATIONALA APELE ROMANE /Directia Apelor Buzau-Ialomita (DABI) Address: Str. Bucegi, Nr 20 bis, Postal Code: 120228</p>
------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	BUZAU, ROMANIA
Mission duration	18 – 27 February 2006

2. OBJECTIVES

	Initial objectives	Results	Results indicator
	Introduction	<p>A general introduction on relevant topics was provided to the engineers participating in the mission. Information regarding administrative framework, public hydraulic works, flood prevention and legislation was provided in order to offer basis for the detailed examination of the two main working topics (below).</p> <p>In addition, they visited the Ploiesti water treatment plant, a dam, and learned about the shared competences among the different entities in charge of water management (Ministry, Apele Romane, RBOs and their exploitation systems).</p>	A good comparison of entities, their methodologies and functioning was made possible during and after the visit. Both engineers had the opportunity to obtain a general overview of the Buzau RBO and in some degree of Apele Romane (National water administration entity).
1	Economic Analysis	<p>Mission participants were provided with information on economic analysis.</p> <p>There was an exchange of information on this topic and Spanish participants were asked to explain on water prices for users supply, irrigation, the estimation of this price and calculation methods, as well as cost recovery practices.</p> <p>It was also requested to explain, how the average environmental cost as a factor within the analysis is considered, and if it is agreed or established by the Júcar RBO.</p>	<p>Presentations provided, and development of compared methodologies in economic aspects in water management between both RBOs.</p> <p>Specific content of the presentations included:</p> <ul style="list-style-type: none"> - Economic characterisation for the river basin - Measure selection for the river basin (measures or actions to be applied)
2	Implementation and improvement of monitoring networks (hydromorphological, biological, physic-chemical) and their adaptation to the Water Framework Directive (WFD) requirements.	<p>Both participants learned about the works developed by the Romanian RBO regarding WFD implementation.</p> <p>Understanding the functioning of the quality: hydromorphological, physic-chemical, biological and piezometric networks, but more precisely how they have been</p>	<p>Information obtained from the whole network implementation process and comparison to the ones existing in the Júcar RBO.</p> <p>Networks that have been established more recently are strictly following WFD criteria (Júcar networks have also suffered</p>

	<p>implemented and adapted to the WFD requirements. Updating and looking in depth evolution and changes in the networks since their establishment (surveillance, operational and investigation surface networks).</p>	changes in order to be adapted)
--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------

3. ACTIVITIES DEVELOPED DURING THE MISSION

Activity 1	<p>Topic: <i>Introductory topics</i> <i>(Legal aspects, Regulation, Institutional, Finance, Communication ...)</i></p>
<p>Description (<i>Exchange of experience or practice, Increasing of knowledge and learning, Development of methodology, Training ...</i>)</p>	<p>As an introduction to the working topics, one technical day was dedicated to introduce both engineers to the administrative framework of Buzau-Ialomita and Apele Romane in Bucharest. Romanian technicians provided visits to the different buildings, descriptions of departments, areas and their functioning, as well as an overview of legislation national level of WFD implementation, quality problems and flood prevention. The representatives visited the different departments, meeting their major representatives and learning about their functions <i>in situ</i>. In addition, they learned about the climatic and geographic characteristics of the region through technical visits.</p> <p>The presentations provided covered technical topics, including:</p> <ul style="list-style-type: none"> - Presentation: administrative/legal framework, DABI building visit, description of departments, areas and their functioning - Introduction to water management in the RBO, and its exploitation systems (sub-basins). - Basin management plan. - Transposition of European Directives to the Romanian legislative framework - Infrastructures, investments in hydraulic works (Meeting in Apele Romane) - Losses in economic amounts (flood prevention investment needed): vulnerable areas, risk assessment by basin and provinces

Activity 2	<p>Topic: Economic analysis in water management</p>
<p>Description <i>According to the WFD and "polluter-pays principle": description of economic analysis activities: environmental cost, cost-recovery processes and cost-effectiveness assessment practices on water management.</i></p>	<p>Different meetings and presentations were provided during the fourth and fifth day of the visit in order to show the activities developed within the Buzau RBO on economic analysis.</p> <p>A detailed description was provided on water tariffs, bills, and allocation of costs.</p> <p>Representatives from both RBOs had a detailed discussion on how amortisation of infrastructures is taken into account, the administration's role on providing flood protection to users through lamination, and how</p>

	<p>users are in turn charged for the use and maintenance of dams and other hydraulic works.</p> <p>Infrastructures and hydraulic works investments were also presented, focusing on flood prevention measures. In addition, Romanians provided a full explanation of how they establish a basic price (m³ of water) at the national level, how prices differ between surface, Danube and groundwater resources (these latter ones have higher prices due to their better quality and in order to protect these resources), competences and coordination between Administration and private companies.</p> <p>An interview was provided with the Head of Implementation of Economic Mechanism Office in Buzau, who provided information on water regulation, transport and water treatment (facilities, costs and further distribution to municipalities).</p>
<p>Activity 3</p>	<p>Topic: Implementation and improvement of monitoring networks (hydromorphological, biological, physic-chemical) and their adaptation to the Water Framework Directive (WFD) requirements.</p>
<p>Description <i>Existing monitoring networks and data analysis have been adapted to WFD requirements. New monitoring networks have been implemented following these guidelines for both surface and groundwaters.</i></p>	<p>Important information was provided during the second and following days of the mission on qualitative monitoring networks (surface waters and groundwater) as well as the water policy applied. Very complete and detailed technical presentations were provided on qualitative monitoring networks and the policy activity.</p> <p>A technical visit was organised to the water treatment facility of Ploiesti (exploitation system of Buzau), a unique case within Romania where management, treatment, supply and distribution is provided by River Basin Authority through Buzau-Ialomita Directorate.</p> <p>Information was provided on quality aspects and point-source pollution due to spills occurring in the Danube tributaries, pollution through mineral mining areas, and diffuse pollution due to agricultural and cattle raising.</p> <p>Visit to the upper and lower reaches of the Prahova River to observe the biotic and hydromorphological framework.</p> <p>In addition to identifying the pre-drinking quality control, a visit was organised to the water treatment plant of Ploiesti. During this visit, participants could see the treatment station and the laboratory for water analyses. Ploiesti is considered an exploitation subunit within Buzau RBO. The Júcar representatives also visited the offices of Buzau RBO in this city, as well as the valley of Prahova. The visit finished at the water regulation Paltinu Dam.</p>
<p>Additional activities</p>	<p>Introductory topics</p>

<p>Description</p>	<p>Visit to the Automatic Hydrologic and Quality Information System of Apele Romane.</p> <p>Readily available automatic information on water is accessible at the national level: flows, dams level, and water quality and its associated risk assessment.</p> <p>Degree of information flow increases according to risk. Information, in case of emergency, is transferred in real time to personnel in charge of making decisions when flooding events and water pollution episodes are predicted.</p> <p>Visit to a Hydropower Plant</p> <p>The Júcar representatives visited a hydropower plant near Buzau. The plant benefits from the Buzau river waters and the slope gradient generated by the dam, in which there is a hydroelectric channel that feeds the plant and an outlet to respect the ecological flow of the river.</p> <p>Visit to the Paltinu Dam and Buzau River: Flood Prevention plans, safety measures and water resources regulation for drinking water production, and general hydraulic works building within the RBO.</p> <p>Flood prevention plans – description. Structural measures: dams, channels.</p> <ul style="list-style-type: none"> - During the visit important information on dam security, water quality, building materials, compacting problems, geology, dam auscultation, methodologies and water supply was provided. - Information on climatic factors affecting structures (period of visit: winter). - Major differences were observed with the Júcar RBO regarding biological and geographical characteristics of the area. Both Júcar and Buzau face important flooding problems.
---------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4. LESSONS LEARNT during the mission *(what could be shared with other partners and/or introduced in guidelines, as far as IWRM is concerned)*

- **About Methodology:**

The methodologies learnt for Economic analysis and Monitoring Networks adaptation to WFD requirements:

1) Economic analysis: environmental cost

It was observed that important works are being developed on consolidating water pricing systems. Detailed information was provided on how water tariffing and billing is organised. In general, there is a basic price established at the national level, and this is later adapted to the type of user and resource origin, having as a result different situations on the global balance and for the different RBOs in Romania. Price varies according to the services provided to users including management (planning, exploitation, hydrological and quality control, hydraulic works: dams, channels), treatment and distribution. The major difference observed between the Júcar and Buzau RBOs referred to the amortisation system / cost-recovery focus (infrastructure amortisation is not taken into account in Romania) and to the water price (some RBOs show a deficit, but there is an overall compensation when all economic results are put together)

In Romania, a single price for water is established for the whole country, depending on the type of resource (surface, groundwater and Danube) and the user that it's destined to (industrial, communal manager, agrozootechnic, electric power plants, irrigation, fisheries).

In Spain, there is a price for each infrastructure (users) in each RBO.

2) Monitoring Networks

Monitoring networks in both RBOs have similar characteristics and follow the WFD criteria. In Buzau-Ialomita Directorate, there are on-going activities on the development and monitoring networks, according to the WFD requirements. It must be pointed out that the development of Biological monitoring networks in both cases is very similar.

The physic-chemical control network is very well defined, with groups of parameters and appropriate control frequencies. The implantation of the biological control network is very recent, having only a few measuring results for some of the indicator organisms (fish species, for example). It was observed the distinction among pollution sources: diffuse of agricultural origin due to nitrates (historical farms are treated separately from other persistent pollution sources).

Point-source pollution (spills) seems to be one of the major problems. Following WFD requirements, additional facilities for water treatment are needed in populated areas. The socioeconomic development of the country has reduced point-source pollution from industrial origin (decrease or closing of activities and improvement of water resources uses), which has in turn caused an improvement of the water bodies quality. In addition, Buzau technicians expressed the need for constructing and completing some of the dams (when building new works, there is a need of taking into consideration: hydromorphological alterations, highly modified water bodies, specific controls of stored water).

Other topics discussed in Buzau-Ialomita RBO and at the Ministry of Environment and Apele Romane covered the political will of decentralisation for decision making in environmental and more specifically in water issues, public participation as one of the priorities, and the functioning of the Black Sea Commission and the International Danube Committee.

It is expected that with the adhesion of Romania to the EU, European Regional Development Funds will be invested into water management and environmental projects.

The technicians from Buzau expressed their wish to exchange more information on the methodology of water quality assessment and technical assistance for coherent reference conditions, definition and intercalibration.

- **About Practice:**

5. DISSEMINATION (opportunities and difficulties). In what measure these learnt lessons are applicable to:

a) The Basin Organisation the expert belongs to:

The knowledge and exchange of expertise acquired were shared and discussed with different departments within the Júcar RBO. The coordination and development of the mission was carried out by the Planning Department, nevertheless, one of the technicians belongs to the Water Commissariat, and other departments like the Secretariat, and the Technical Department, shared views and technical questions. During the first mission of the project, when the technicians from the Buzau RBO visited Valencia, personnel from all these different departments collaborated by providing presentations and documentation, and by sharing technical views. During mission 2, when two technicians from the Júcar RBO visited Buzau, the Planning Dpt. asked the other departments to provide specific technical questions to bring to Romania. After the development of the mission, emails were exchanged and meetings were held in order to disseminate all the results. In addition, an internal report was circulated within

the Júcar RBO departments. This process of dissemination reinforced the importance and effectiveness of the technical exchange.

There was a high interest for distinguishing within the diffuse pollution sources those that come from historical activities from those that originate in persistent pollution practices, for its application for measure programs. Similarly, this level of concretisation of physic-chemical control by groups of parameters (indicated in the national legislation) could be used in the Júcar RBO.

b) National IWRM practice:

The dissemination of results was extended not only to the Júcar RBO departments, but also to the Spanish Ministry of environment. As previously mentioned, a more formal cooperation agreement is expected to be established between both parties regarding water management aspects (coastal water, transboundary water, WFD implementation, and public participation). Romanians asked for collaboration and information regarding the Spanish experience in the management of European Regional Development Fund.

The approach to the techniques with which a different country resolves the practices of WFD implementation, can be extremely helpful to other RBOs in Spain, not only to the Júcar RBO.

c) Regional experiences:

Like in the first two missions, and because the Júcar RBO hosts the Mediterranean Network of Basin Organisations (MENBO), the learnt lessons will be disseminated during upcoming Mediterranean regional meetings. As before, the experience will be presented to other RBOs who might be interested, and will hopefully result in the promotion of further twinings between other Mediterranean RBOs. The technical and human experience may encourage other Mediterranean countries to participate in the TWINBASIN project and benefit from technical missions applied to IWRM.

d) Worldwide:

The results of this third mission were already presented in the TWINBASIN session celebrated during the IV World Water Forum in Mexico, in the Steering Committee of the Project, and shared with other RBOs at the international level.

Further dissemination of results will be developed through meetings of the International Network of Basin Organisations, Global Water Partnership Mediterranean, and other international organisations dealing with IWRM issues. Also, the use of websites, meetings at the Ministerial and regional levels, brochures and CDs may help in disseminating results, and pin-point future possible cooperation activities.

6. IDENTIFIED TIPS

➔ *Identified tips which could be useful for colleagues*

In order to ensure the success and the accessibility to the technical interests of the mission, according to the project's objectives, it is vital that a fluent and regular communication is maintained, not only during the development of the mission, but also during previous and subsequent stages.

In order to have basic knowledge on the subjects to be analysed, it is interesting to revise the documentation of previous participations as well as the current situation in the administration to be visited.

It is important to maintain fluent and frequent communication prior and after the mission, to ensure its success and the technical interests agreeing with the project's objective. All possible technical and logistical questions should be clarified to avoid misunderstanding.

Linguistic aspects might, of course, cause an impediment at some point, hence the importance of assigning technicians who will be able to communicate in a second language. It is essential to identify and appoint technicians who have a real interest in other countries' water management techniques, and who are open to different cultures. Motivation and positive predisposition are fundamental aspects to guarantee the success of the mission, and the lack of it could put it in jeopardy. A good idea would also be to revise technical vocabulary associated to the subjects to be analysed prior to the mission.

Establish monothematic meetings: during the exchange there were many topics covered during the first two missions, and more specific meetings with experts during the second stage (e.g. economic analysis). This focus might be useful of other RBOs participating in the TWINBASIN project.

If two rounds of exchanges are established for a twinning project, it is interesting to switch the seasons in which the missions take place. For example, during this 3rd mission the engineers could witness how low temperatures affect water resources management and infrastructures since the visit took place in the month of February (while the 2nd mission took place during summer).

7. PERSONAL COMMENTS

☞ *What does the missionary think about his mission*

For the duration of the visit, Romanian technicians offered remarkable support to the Spanish visitors, both in the technical and in the personal aspect. The presentations and materials offered were of great interest and highly detailed technically, and were very much appreciated by the Spanish technicians, who were impressed by the quality and efficiency of the work carried out in both Buzau RBO and Apele Romane.

Knowing the way other European technicians develop their work is very interesting. In this sense, it has been suggested the idea of carrying out this exchanges over a longer period of time (1-3 months), in an "internship" way perhaps. This would allow the technicians involved to, instead of just learning about the other country's methods and practices, work in the day-to-day routine of water management in a different country.

At different points of the mission, it was pointed out the uniqueness of the Romanian country. It is considered to have a Latin culture bordered by Slav countries. This situation facilitated the approximation of both groups of technicians, easing the understanding of the political and social situation and the exchange of technical information.

Technicians involved in previous missions already noticed that both administrative systems are very similar. The water management framework and departments' functioning are as well similar, which made easy the understanding of their competences.

Romanians expressed interest in learning about economic aspects of water management in Spain, amelioration of monitoring networks and control and management of spills and the "polluter-pays principle" application. They showed a deep interest in the definition of environmental cost, and Spanish technicians pointed out that also in this topic there are important doubts on the definition, that it is still a concept with an open definition, and that it is expected to have it finalised in the future. It was also mentioned that any progress in this field would be transmitted to them.

Due to the eutrophic status of the Black Sea, Romania has been classified as Sensitive Area, and has been allowed for an important extension for the implementation of rigorous wastewater

(urban and industrial) treatment up to 2018. This will allow the reception of European funds and their use for these activities.

Due to the important flood risk that the whole Danube area suffers, it could be a possibility to establish further exchange of information of flood management, and risk cartography/GIS mapping techniques. This could be achieved within the framework of other European projects, or could consist of an exchange of information through specific requests.

From the exchange of experiences developed so far, it was clear that both Ministries of Environment are currently focused on applying an Integrated Water Resource Management (IWRM) through the implementation of the WFD. Both are also prioritising public participation in the decision making process. It is expected that a formal cooperation agreement will be established among both Ministries to formalise and continue the technical teamwork already established between Romania and Spain.

The General Water Secretary, Lucia Ana Varga listed the following points of interest on which they would like to focus the cooperation and exchange of experiences:

- Water Framework Directive Implementation
- Decentralisation in decision-making
- Public participation
- Public Information
- Integrated coastal water management
- Transboundary water

Once again, this mission followed the guidelines and principles established by the TWINBASIN project. All the objectives established prior to the development of the mission were achieved, with the bonus of great professional and personal satisfaction of the technicians involved and a possible further cooperation between Ministries.

8. CONTACTS

➔ *Principal local contacts met*

Name	Occupation	E-mail	Phone Number
Daniela Radulescu	Secretary of CEENBO	<i>daniela.radulescu@rowater.ro</i>	+40 (2) 13 155535
Adriana Petcu	Chief of exploitation and Safety works Dpt. (DABI)	<i>adriana.petcu@daib.rowater.ro</i>	+40238725446
Jorj Madalin Mihailovici	General Manager	<i>Madalin.mihailovici@rowater.ro</i>	+40213151301
Ovidiu Gabor	Deputy General Manager	<i>Ovidiu.gabor@rowater.ro</i>	+40 213151301
Petru Serban	Director (RB Management Plan)	<i>petru.serban@rowater.ro</i>	+40213155535
Catalina Mares-Isbasoiu	Chief Engineer-E.S.Z.Prahova	<i>Catalina.mares@eszph.daib.rowater.ro</i>	+40244513157
Anemarie CIUREA	Office Head	<i>ane_marie@mappm.ro</i>	+40213352591
Vasiu	Head of	<i>aurora.vasiu@rowater.ro</i>	+40213155535

Aurora Romanita	European Integration Department		
Sorin Niculae	Director (D.A. Buzau-Ialomita-E.S.Z.Prahova)	<i>sorin.niculae@pcnet.ro</i>	+40244513157
Stefania Mateiu	Manager of Buzau-Ialomita RBO	<i>stefania.mateiu@daib.rowater.ro</i>	
Marian Tanase	Eng. Flood prevention, DABI	<i>marian.tanase.@daib.rowater.ro</i>	+40238725446
Oana Ristea	Eng. DABI	<i>oana.ristea@daib.rowater.ro</i>	
Sena Soaita	Eng. DABI	<i>sena.bisceanu@daib.rowater.ro</i>	
Mirela Marinescu	Chief of RB Management Plan	<i>mirela.marinescu@daib.rowater.ro</i>	

9. BIBLIOGRAPHY

➤ *Main documents, manuals or supports used during the mission which could be useful for colleagues*

Name	Description / Notice
Structures and responsibilities in the field of drinking water supply and wastewater treatment, (6 slides)	Presentation
Basin Committee description	Part of Romanian law translated into English
Delineation and characterisation of groundwater bodies in Romania	Presentation
Presentation of the state of plan of the implementation of the WFD in Romania and the national strategy used for the basin characterisation	Power Point presentation, Petru Serban
Water Management Romania	Power Point presentation
Acquis Communautaire -Transposition and Implementation in Romania legislation	Power Point presentation, Mirela Marinescu, Head of RBMDSC
Monitoring Systems for the Water Quality	Power Point presentation, Biol. Oana Ristea and Biol. Sena Soaita
Water Management in Romania - Water Buzau-Ialomita River Basin	Power Point presentation, Eng. Marian Tanase
La Direction des Eaux Somes-Tisa	Brochure. L'Administration Nationale « Apele Romane »
La Direction des Eaux Siret	Printed copy of Power Point presentation
La Direction de Eaux Olt	Printed copy of Power Point presentation
L'Administration Nationale "Les Eaux Roumaines"	Printed copy of Power Point presentation. La Direction des Eaux. DOBROGEA - LITTORAL
La mise en place de la Directive Cadre dans le domaine de l'eau. Le Plan de Gestion du bassin Hydrographique.	Printed copy of Power Point presentation
Romanian Waters	Brochure. National Administration. Apele

	Romane.
Economic Analysis in the context of WFD	Power Point Presentation, Eng. Marilena Velea
The priority biological elements according to WFD 60/2000	Biol. Oana Ristea
Monitoring System for the Water Quality	Biol. Sena Soaita
91/676/EEC Directive Transposition and implementation in Romania	Chemist Luminita Tache

Websites		
Name	Description / Notice	Address
Apele Romane	<i>Information on the governmental institution in charged of water management, its projects, works, WFD activities, events and news</i>	http://www.rowater.ro/
<i>Buzau-Ialomita Directorate</i>	<i>All information regarding the Buzau-Ialomita River Basin Authority: functions, works.</i>	http://www.rowater.ro/ViewTopic.asp?Topic=1017&lang=EN
<i>Central and Eastern European Network of Basin Organisations</i>	<i>All information related to INBO's regional network: activities, projects, budgets etc.</i>	http://www.ceenbo.org/
<i>Romanian Centre for River restoration</i>	<i>Activities, projects, agreements, structure and organisation of this Centre, which Secretariat depends on Apele Romane.</i>	http://www.rcrr.org/
<i>Aquadoc Romanian focal point</i>	<i>Water information system</i>	http://aquadoc.rowater.ro/
<i>Hydrotechnical magazine</i>	<i>With updated Romanian articles on hydraulics</i>	http://www.revistahidrotehnica.ro/
<i>Romanian Institute of Statistics</i>	<i>Statistical data of the country</i>	http://www.insse.ro/