



TWINBASIN MISIONS : REPORTING GUIDELINES

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<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 identify as:</p> <ul style="list-style-type: none"> • Implementation and improvement of monitoring networks (hydro morphological, biological, physic-chemical) and their adaptation to the Water Framework Directive (WFD) requirements. • Economic analysis in water management (and environmental costs), pressures and impacts. <p>Based on the TWINBASIN^{xn} project, it is expected that Basin Organisations (BOs) will:</p> <ul style="list-style-type: none"> • Promote a friendly cooperation between water managers • Tight ties among basin organisations • 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) <i>Júcar</i> and <i>Buzau</i>, and the mission included practical information exchange through informal meetings, visits to the dependencies of the <i>Júcar</i> RBO, oral presentations and technical visits to the fieldwork.</p> <p>The <i>Júcar-Buzau</i> twinning project represents the pilot project in the frame of the TWINBASIN program.</p>

1. CONTEXT

Place, location	<i>Country visited, Basin Organization concerned, other information about location</i> SPAIN, CONFEDERACIÓN HIDROGRÁFICA DEL JÚCAR (CHJ) Address: AVDA. BLASCO IBÁÑEZ Nº 48, Postal Code: 46010 VALENCIA, SPAIN
Mission duration	15 – 25 July 2006

2. OBJECTIVES

Initial objectives		Results	Results indicator
1	Economic analysis	<p>Exchange of information on economic analysis according to Article 5 requirements</p> <ul style="list-style-type: none"> - model of cost recovery <p>Good assimilation of concepts and methodologies</p>	<p>We found interesting elements about the information system AQUATOOL elaborated by Polytechnic University of Valencia and applied in the CHJ. The presentations about economic analysis showed a similarity between Romanian and Spanish approach.</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) - Theoretical notions about cost effectiveness analysis <p>For all other aspects, the cost assessment of measures follows the WATECO guidance and standard economic valuation methods.</p> <p>Possible application of AQUATOOL at Buzau-Ialomita Directorate if the methodology is available and applicable</p>
2	<p>Qualitative and quantitative monitoring networks (surface waters and groundwater):</p> <p>-Quantitative- Automatic hydrologic information systems</p>	<p>-GIS & presentation of the information system GESHIDRO, according to the WFD requirements</p> <p>-Presentation of the hydrological models for predictions, risk maps,</p>	<p>Possible application in Buzau-Ialomita River Basin – if it is possible, because the mainly impediments will be license costs of the GIS applications, and lack of specialized training personnel.</p> <p>Possible and very necessary implementation of an information</p>

	etc	system at Buzau-Ialomita BO if more IT specialists are hired and the Spanish colleagues can provide them technical assistance in the field
- Qualitative	Understanding the functioning of the ICA (quality), SAICA (physic-chemical), ICAB (biological) and piezometric networks	Possible adaptation of the monitoring networks, if the standard and determinators are available. It is necessary a higher financial support from the state (research, laboratory equipment, training).

3. ACTIVITIES DEVELOPED DURING THE MISSION

Activity 1	Topic: <i>Introduction to the Júcar River Basin organisation</i> (<i>Legal aspects, Regulation, Institutional, Finance, Communication ...</i>)
Description (<i>Exchange of experience or practice, Increasing of knowledge and learning, Development of methodology, Training ...</i>)	<ul style="list-style-type: none"> ➤ Presentation and visit to the Júcar RB facilities, general description of the River Basin Authority, description of the Technical Directorate works. ➤ Description of MENBO secretariat (Mediterranean Network of Basin Organizations) hosted by the CHJ ➤ Water management : general aspects, water exploitation; Discharge of waste water, the sanction regime <p><u>Project Alberca</u> - Objectives of this programme are :</p> <ul style="list-style-type: none"> -Modernisation of administrative dossiers PROCESSING TOOLS -Registration and dynamic actualisation of basin organisation water exploitation registries and catalogues -Homogenisation of Administrative Procedures through the computer system. -The Project Alberca computer system contains: <ul style="list-style-type: none"> Utilities for water management and planning Utilities for other administration Public participation Utilities for the user ➤ Introduction to ERDF (European Regional Development Fund)

Activity 2	Topic: <i>SAIH (Automatic System of Hydrological Information) and other Júcar topics</i>
Description	<p>Visit to the SAIH Dpt (Automatic Hydrologic Information System)</p> <p>Introduction to the SAIH</p> <p>Functioning of the SAIH</p> <p>Description of the Hydrological Information System of the River Basin Authority (GESHIDRO)</p>

Activity 3	Topic: <i>Qualitative and quantitative monitoring networks (surface waters and groundwaters)</i>
Description	<ul style="list-style-type: none"> ▪ ICA network (quality network recently adapted to WFD requirements) ▪ SAICA network (physic-chemical) ▪ ICAB network (biological) ▪ Piezometric network <p>Technical visit – “Estación de Afros de Manises” Treatment Station which is part of the Automatic System of Hydrological Information (SAIH).</p> <p>Technical visit – “Estación Automática de Alerta de Calidad de Aguas (SAICA) de Manises” Water quality Automatic Station.</p>

Activity 4	Topic: <i>Economic analysis, pressures and impacts</i>
Description	<p>Introduction to the Pilot River Basin and the Water Framework Directive works</p> <ul style="list-style-type: none"> - economic analysis & EU Water Framework Directive - resource cost - methodology for marginal resource cost assessment: <ul style="list-style-type: none"> - optimization approach -simulation approach - cost-effectiveness analysis for identifying best combination of measures for the Programme of Measures - economic justification of time or objectives derogation. <p>Description of WFD works: article 5.Works developed within the CIS</p> <p>Presentation of the information system AQUATOOL, according to the WFD requirements</p>

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 for River Basin analysis, according to WFD requirements, concerning:

1. Mathematical modeling of cost recovery activity in water management

The group from Polytechnic University of Valencia has developed a system support of decision (SSD) as for planning of hydraulic resources, named **Aquatool**. The valuable experience obtained till now with saying SSD in application to real cases of planning in Spanish basins (Júcar, Segura, Tajo..) and foreigners (Argentina, Brazil, Italy, etc.) they assure the hardiness of the same one and flexibility to shape great variety of systems. The permanent improvement and addition of utilities has for aim continue leading the state of the art in this area of the knowledge.

The AQUATOOL model includes a Management model named *SIMGES*, an Quality model named *GESCAL* and a Hydro economical model named *ECOWIN*.

The software was developed by the Hydraulics and Environmental Engineering Department of the Polytechnic University of Valencia consists of a group of programmes (*SIMGES*, *GESCAL*, *ECOWIN*) of modular functioning which allow the simulation of a water resources system on a monthly scale.

The programme includes joint simulation of surface water and groundwater, water demands, existing infrastructures in the system (dams, channels, etc.), considering legal, institutional, environmental and operational restrictions.

There are also other modules which allow to simulating the water quality variation as well as the economic characterisation of the water resources system.

In Romania, Buzau-Ialomita Directorate applies the Cost recovery Methodology elaborated from National Administration "Apele Romane".

The Model **Aquatool** can be adapted and applied in Romania in order to obtain good results in cost recovery process.

After this exchange we could take in consideration the possibility to create and apply a similar mathematical model or the possibility of an agreement (collaboration witch includes a training specialises) with experts from Polytechnic University of Valencia.

2. Public participation

Júcar River Authority covers areas of 4 communities: Catalonia, Aragon, Castilia La Mancha si Valencia. Extinction and improvement works of water management are financed by communitarian organizations, not by the Government. The community takes the decisions if it is appropriate or not to use water from one river basin.

Júcar River Authority manages 9 river basins.

Water Commissariat is the organization which takes the decisions in water field.

The basic functions of the water commissariat are:

- Proposal of concessions and authorizations granting related to water and river beds from the public hydraulic domain
- Management of the Water Registry and the discharge census and inventory of the existing exploitation and spillage
- Inspection and surveillance of works derived from concessions and authorizations and the general water exploitation
- Direction of the fluvial guard and water and river bed police.
- Sanction regime: protection and replacement
- Issues related to continental water regime, including assessment, hydrologic and water quality studies
- Dossier creation for the constitution of Users Communities and the approval of their statutes, terms and conditions

In Spain the public participation plays an important role .The public participation is accomplished through the confederation magazine, web page and different meetings with various themes.

All the information regarding the activity of Jucar RBO can be accessed by all persons through the confederation web-page.

In Romania, the activity of the Public Participation, according to Article 14 of Water Framework Directive 2000/60/EC, is based on the "Public Participation" guideline elaborated by European Union and of Strategy on Public Participation for Danube District.

Basin Committee according to GD1212/2000, represents the main unit for information and consultation of the public at basin and local level. Also, the Basin Committee certify public participation in the process of decision making in the water field.

On National Administration "Romanian Waters " level there have been elaborated instructions regarding methodology of "Public Participation". The instructions were based on the guide developed by the UE and the strategy regarding public participation for Danube Hydrographical District.

There are similarities between the process of decision making in the water field in Buzau-Ialomita Directorate and Júcar River Authority.

This transparent system could be also used in Romania at Administration and Directorate levels.

3. The monitoring network

SAICA Automatic Alert Stations provide information in real time on water quality so any pollution events are identified immediately and their origin isolated.

Strategies:

- Analysis and transmission in real time of physical-chemical controlled parameters.
- Detection of water quality warnings in case of non compliance with water quality objectives/ standards.
- Information about working equipment alarms.

-Very interesting presentation / approach of monitoring water development, mainly concerning the new network according to the WFD requirements (e.g. hazardous substances).

The Spanish side are more advanced on practice because they started with long time before us and the biological data series contains far more years then us.

In the future we recommend that in this domain the accent should be put on research.

4. Acquiring funds

Jucar RBO has contracts with specialised consulting companies. One of the consulting companies is working inside the Jucar Confederation and they're job is to developed projects that will be made with money from **structural funds**.

In the near future (probably from January 1-th) Romania will also benefit from the Structural Funds. In the past there were problems with the funds for different projects because pre-accession funds were limited. With structural funds there will be no problem with the money for projects.

Because of the great amount of money we can benefit through this purposed projects from the structural funds we should take in consideration as fast as we can the possibility of a collaboration with a specialised consulting company or creating inside Directorates an office with this specific task.

- **About Practice:**

- **Automatic network system**

The technical visit to a warning automatic station helps us to understand SAICA.

SAICA is an automatic information system that provides water quality data using the integrated water quality networks along the different water basins in Spanish territory.

It provides a systematic and specific analysis of water quality along section of rivers for the different defined uses (drinking water and irrigation) and it maintains surveillance of industrial and urban wastewater discharges made to the rivers.

The SAICA network is composed of Automatic Alert Station, River Basin Processing Centers and a Main Processing Centre. Communication between the Processing Centers is automatic and instantaneous and the satellite Hispasat transfers all the data from the automatic alert stations. The system offers permanent surveillance of Spanish rivers water quality.

Equipments installed inside station:

- multiparametric probes
- ammonium analyser
- nitrate analyser
- phosphate analyser
- organic matter by u.v.
- turbidity meter
- level probe

Buzau-lalomita River Basin doesn't have an automatic measurement and warning station.

The experience of our colleagues from Jucar River Authority can be used to put in place a system to manage water quality of river networks along particular river basins.

In present Jucar River Authority doesn't have their own laboratories and all the analyses are made by private companies.

- **MENBO**

MENBO (Mediterranean Network of Basin Organizations) was created in Madrid from a constitutive assembly. This organization is a regional network within the International Network of Basin Organizations (INBO) and its main objective is to promote an integrated water resource management as an essential tool for sustainable development.

The Mediterranean Regional Network has the following main objectives:

- to develop lasting relations among the organizations in charge of integrated water management in the Mediterranean region, and favor exchanges of experiences and expertise among them.
- to facilitate the implementation of tools suitable for institutional and financial management, for knowledge and follow up of water resources, for the organizations of data bases, for the concerted preparation of water management plans and action programmes in the medium and long term
- to encourage populations awareness on these issues
- to promote these principles in international co-operation programmes
- to evaluated on-going actions initiated by member organizations and disseminate their results.

➤ CEE NBO

The Central and Eastern European Network of Basin Organisation (CEE NBO) has been created at the beginning of February 2002, Romania, Sinaia. The organisation promotes the principles of the integrated water resources management at the river basin level, as an essential tool for sustainable development. This organisation seeks to improve relationships among organisations in charge of water management in the Central and Eastern European region, focusing on implementation of Water Framework Directive in the region. The Association's Head Office is that of the Secretariat. **The Permanent Technical Secretariat of CEE NBO is ensured by the National Administration "Apele Romane" since February 2002.**

Both Organizations, MENBO and CEE NBO are Regional Networks within INBO (International Network of Basin Organisations) and there is a very good cooperation between them.

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

a) The Basin Organization the expert belongs to:

The learnt lessons are applicable to the Buzau-Ialomita River Basin Authority, especially for the departments: River Basin Management and Planning Office, Water Quality Protection Office, Water Quality Laboratory. The dissemination could be made on the site of the Buzau-Ialomita River Basin Authority or, directly, by e-mail, to the people involved in different activities. (www.apebuzau.ro)

b) National IWRM practice:

The learnt lessons are applicable to the APELE ROMANE National Administration and the Ministry of Environment and Water Management, as well. The dissemination could be made on the site of the APELE ROMANE National Administration (www.rowater.ro) or, directly, by e-mail, to the people involved in different activities.

c) Regional experiences:

The learnt lessons are applicable to the Full-members and Observers of Regional Network CEE NBO - *Central and Eastern European Network of Basin Organization*. The dissemination of information could be made within CEE NBO meetings (General Assembly, Liaison Bureau and workshops), by e-mail - to the CEE NBO Liaison Bureau members and to the members of Expert's Committee – or put on the network site (www.ceenbo.org).

d) Worldwide:

The learnt lessons and obtained information are applicable to the *International Network of Basin Organizations*. The most interested in this matter is *Mediterranean Network of Basin Organization* and, related to the implementation of the Water Framework Directive, the *EURO-INBO* group. The information could be disseminated by Internet, through the site of INBO (www.inbo.org).

Also all the information regarding the TWINBASIN project can be accessed at www.twinbasin.org

6. IDENTIFIED TIPS

➡ *Identified tips which could be useful for colleagues*

During the 4-th mission we have met several specialists from different domains of activity (all involved water management) .We propose that through the already established contacts our colleagues can also keep in touch with this specialists.

7. PERSONAL COMMENTS

➤ *What does the missionary think about his mission*

The people involved in organizing this mission have done a tremendous job regarding the different activities that we've been part of.

Also we have very much appreciated the involvement of the high level staff in receiving the Romanian delegation and the warmth of all people that we've met was simply overwhelming.

Both technical and human support was very much appreciated.

The presentations and materials offered were of great interest and highly detailed technically.

The main topics envisaged were: monitoring network and economic analysis according to the WFD.

Because the 4-th mission of the Jucar - Buzau TWINBASIN project was officially the last one, we think that all the missions were a success.

8. CONTACTS

➤ *principal local contacts met*

Name	Occupation	E-mail	Phone Number
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9. BIBLIOGRAPHY

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

Name	Description / Notice
Confederación Hidrográfica del Júcar, 2004. <i>Jucar Pilot River Basin. Provisional Article 5 Report pursuant the WFD</i> . 208 pages	Report 2004 of Jucar RBMP, according to the WFD requirements
Ministry of Environment. Confederación Hidrográfica del Júcar, <i>La Directiva Marco Europea del Agua. Una nuevo perspectiva en política de aguas</i> . 25 pages	WFD – the new perspective in the water field . Jucar Pilot River Basin (in Spanish)
Ministry of Environment. Confederación	Information and detailed maps about the

Hidrográfica del Júcar. <i>Proyecto de restauracion medioambiental del rio Amadorio</i> (Brochure)	objectives, description of the environment restoration project of the Amadorio River
<i>Confederación Hidrográfica del Júcar</i> (Brochure)	Short presentation on covered area, governance and administration, administrative units
Confederación Hidrográfica del Júcar. <i>Propuesta de clasificacion de los embalses catalanes segun la Directiva 2000/60/CE del Parlamento Europeo.</i> 2 pages (Note)	Proposal of reservoirs typology according with system B, Annex 2, WFD (in Spanish)
Ministry of Environment, Confederación Hidrográfica del Júcar. <i>Automatic Hydrologic Information System (SAIH). Jucar Basin Water Authority</i> , 3 pages (Note)	Short review of the SAIH Jucar, description, services, future trends
Camara de Comercio, Valencia-Curso Gestion de Recursos Hidricos. <i>Economia de recursos hidricos (Water resources economics)</i> , 41 pages	Presentation PowerPoint. Manuel Pulido (in English)
<i>Methodology & Tools for integrated assessment of resource and environmental requirement costs. Application to the Jucar River Basin</i> , 49 pages	Presentation PowerPoint. Manuel Pulido (in English)
Journal of Hydrology-M.A. Pulido- <i>Modeling of stream-aquifer interaction: the embedded multireservoir model</i> , pages 167-181	Journal of Hydrology 313 (2005)
M.Pulido, M.W.Jenkins and J.R. Lund - <i>Economic values for conjunctive use and water banking in southern California</i> , 15 pages	Water resources research, vol.40, 2004
Ministry of Environment, Confederación Hidrográfica del Júcar. <i>Automatic Water Quality Information System (SAICA)</i> . 4 pages (Note)	Main objectives of SAICA, Automatic Alert Station equipment and process diagram.
Economic analysis in the WFD - Cost effectiveness analysis	Presentation PowerPoint. José Ignacio Latorre Iranzo (in English)
Júcar river basin participation in the common implementation strategy of the Water framework directive	Presentation PowerPoint. José Ignacio Latorre Iranzo (in English)
Basin organisations: organisation, legal framework and functions The case of the Júcar River Basin Authority	Presentation PowerPoint. José Ignacio García Alandete (in English)

Websites		
Name	Description / Notice	Address
MENBO (Mediterranean Network of Basin Organisations)	<i>Information on IWRM activities and projects at the river basin level. Events, conferences and useful links related to water management.</i>	www.remoc.org
	<i>All information regarding the Júcar</i>	www.chj.es

CHJ, Confederación Hidrográfica del Júcar	River Basin Authority: functions, works, projects, WFD activities, events and news.	
MMA, Spanish Ministry of Environment	Broad environmental information of Spain. Links to all Spanish River Basin Authorities, natural parks, water issues...	www.mma.es
Water Information Systems: EMWIS, HISPAGUA	Updated information regarding water mainly in the Mediterranean area.	www.emwis.org http://hispagua.cedex.es
Natural Parks in the Valencian Region, Regional Government	All natural parks, an areas of special environmental interest, in the Autonomous Region of Valencia	www.cma.gva.es/cidam/espacios/parques/
Spanish Center of Studies and Experimentation of Public Works (CEDEX)	Information on water related works and infrastructures in Spain.	http://www.cedex.es/

N.B. This framework provides necessary information for further capitalisation and dissemination, but should not prevent experts from making any other comments (as far as basins characterisation is concerned, for instance).