



## Reporting guidelines

Number of pages:  
1/10

### Mission reference

2006 C3 T18 M 1

### Date :

21.06.2006

# Mission report

### Expert Name and Function

**Ventsislav Nikolov** – Director of BSBD Varna

**Elitsa Hineva** – junior expert Monitoring department

**Cenka Vasileva** – junior expert Administrative department

### Wording of missions: *In short, objective or content of mission*

**BSBD Varna- Region of Crete - Directorate of water** project focuses on specific areas of interest, based on Integrated Water Resources Management (IWRM), that have been identified as:

- Implementation of the Water Framework Directive
- (WFD): the GIS works developed Article 5 requirements.
- Groundwater (exploitation and protection)
- Monitoring networks
- Administrative framework (organization of the River Basin authority)

There are specific goals and numerous of expectations associated to the **Region of Crete - Directorate of water** project. Overall, from the twinning between the basin organizations, much is expected to be gained regarding the operation of the other's organization, as well as the exchange of practices and knowledge on IWRM that will help improve their work. Based on the TWINBASIN XN project, it is expected that BOs will:

- Promote a friendly cooperation between water managers.
- Strengthen ties among basin organizations. Improve contact between the basin management organizations participating in the twinning project.
- Encourage the exchange of expertise, knowledge and technical personnel.
- Improve the effectiveness of integrated water management within organizations.
- Improve the overall functional operation of these institutions.



## 1. CONTEXT

<b>Place, location</b>	<p><i>Country visited, Basin Organization concerned, other information about location</i></p> <p><b>GREECE, CRETE</b>  <i>Region of Crete / Directorate of water</i>  <i>Address: Ikarou &amp; 2 Stergiou Spanaki .; Heraklion, PC 71307, Crete</i></p>
<b>Mission duration</b>	<i>One week 04 June – 11 June 2006</i>

## 2. OBJECTIVES

<b>Initial objectives</b>	<b>Results</b>	<b>Results indicator</b> <i>explain with some details how far the results have been achieved if compared to initial objectives</i>
<p><b>1</b> Exchanging information for the implementation of the Water Framework Directive 2000/60/EC (WFD)</p>	<p>Concept, methodology, and adaptation of WFD for Integrated Water Resources Management (IWRM) in <i>Region of Crete / Directorate of water</i></p> <p>Monitoring programmes of surface water bodies, groundwater, waste water, drinking water, coastal water</p>	<p>The Bulgarian experts were acquainted with the integrated water management within the requirements of WFD in the region of Crete:</p> <ul style="list-style-type: none"> <li>-Legislative framework</li> <li>-Administrative organization of management structures – functions, obligations, responsibilities, subordination</li> <li>-Practical approaches in decision of specific problems (e.g. technical decisions of problems with saline intrusion, sustainable freshwater supply, etc)</li> <li>-Cooperation with other institutions related with water resource management and exploitation (e.g. non-profit organizations, scientific institutions) <ul style="list-style-type: none"> <li>- Stakeholder involvement (e.g. major water users)</li> <li>- Telemetric system of monitoring water and its application in water management</li> <li>- GIS and computer model application in water quality and quantity management,</li> <li>- Implementation of decision</li> </ul> </li> </ul>



3	Administrative framework organization of the river basin authority: all departments and their functions.	Technical knowledge about the administrative structure of <i>Region of Crete / Directorate of water</i>	As a result of the first mission the following knowledge about the structure and functions of the two directorates have been gained: -The administrative framework is similar; -The two directorates are new, but having some common particularities. For example: administrative structure and organization at basin level. It would be interesting to see each department's functioning in depth as well as coordination between <i>Region of Crete/ Directorate of water</i>
---	--	---	--

### 3. ACTIVITES DEVELOPED during the mission

<b>Activity 1</b>	<b>Topic :</b> <i>(Legal aspects, Regulation, Institutional, Finance, Communication ...)</i> <b><i>Institutional Framework and Capacity building of Region of Crete / Directorate of water in Heraklion</i></b>
<b>Description</b> <i>(Exchange of experience or practice, Increasing of knowledge and learning, Development of methodology, Training ...)</i>	Exchange of experience and the acquaintance with administrative framework and capacity of Greek institution, responsible for integrated water management at the basin level. Visit to <i>Region of Crete / Directorate of water</i> in Heraklion - description of departments, areas and their functioning. We visited Crete water management structure and observed how it functioned.

<b>Activity 2</b>	<b>Topic: Surface water monitoring programmes according to WFD</b>
<b>Description</b>	Mr. Kritsotakis presented the experience in design of monitoring programmes for surface waters: - Detailed presentation of the natural conditions of the Crete Island in relation with the water management: water circle, main water users, water balance, naturally and anthropogenic induced problems; - Surface water typology; - HPI analysis; - Monitoring programmes for surface water.

	<p>Both directorates meet similar problems as concerns development of biological indices for assessment of ecological status of running waters:</p> <ul style="list-style-type: none"> <li>- Region of Crete: Because of natural conditions during the summer, rivers dry up which imposes development of their own bio - indices.</li> <li>- Black Sea basin Directorate – an adaptation and development of bio indices for assessment of surface waters is running at present in Bulgaria;</li> </ul> <p>There are rivers, which does not have permanent flow during summer within Black sea basin area. These rivers are identified in an individual type. Bulgarian experts as concerns the quality assessment of the drying rivers can use the experience of Greek experts in future beyond the TWINBASIN missions.</p>
<b>Activity 3</b>	<b>Topic: Measures for reduction of the saline intrusion into groundwater and use of desalinated water</b>
<b>Description</b>	<ul style="list-style-type: none"> <li>- BSBD experts visited the brackish spring Malavra in order to gain knowledge about measures for reduction of the intrusion of saline water into ground fresh water. By means a barrier of cement columns constructed into the ground at a depth of - 60 meters asl, in the contact area between saline and ground fresh water mixing (interface) in order to reduce the effects of sea water intrusion.</li> </ul> <p>The spring water is used twofold: 1<sup>st</sup> for irrigation of olive trees and 2<sup>nd</sup> for recharge of the Bramianou reservoir. The water of the spring conveyed to the dam and mixed with freshwater, within irrigation standards, and therefore an increased capacity of the dam is archived. (BSBD experts visited). The reservoir is also a protected area for protection of birds, lizards, and crustaceans.</p> <p>BSBD experts visited agricultural cooperation, irrigated from the reservoir. Also the system for cooling / warming the greenhouses, where the stable temperature groundwater is circulated, is very interesting.</p> <p>BSBD experts can use the practical experience in reduction of saline intrusion in Black sea basin. And circulation system.</p>
<b>Activity 4</b>	<b>Topic: Approaches for sustainable water use. Stakeholder and scientific involvement</b>
	<ul style="list-style-type: none"> <li>- BSBD experts visited the “Institute of Olive tree and subtropical plant of Chania” where learned about new scientific knowledge and practice for improvement of irrigation of cultures in order to reduce waste of water. In particular they were acquainted with an automatic experimental system for observation of the water need of plants depending on environmental conditions (type of cultivations, soil, air humidity, temperature, precipitation etc.) and farmers involvement in economic and sustainable water use. They learnt about a system for free exchange of data between different users.</li> <li>- BSBD experts visited the Wastewater treatment Plant of Chania. They learned about the wastewater treatment process, and the monitoring programmes of the effluents.</li> <li>- BSBD experts visited Western Crete Development Organization. They got acquainted with structure and functions of the non-profit management organization. They visited the telemetric system observation and management of the aqueduct both domestic and irrigation system. The issues discussed and practical experience in monitoring, management and sustainable use of water can be applied also in Black</li> </ul>

	sea region in future.
<b>Activity 5</b>	<b>Topic: Monitoring of coastal waters</b>
	<p>- Experts from BSBD visited the Institute of marine biology and genetics. They learned about the organization of sample taking and analysis (microbiological and chemical) of marine waters and monitoring programmes for microbiological parameters.</p> <p>The issues discussed were of big importance about the BSBD which meets the same problems concerning coastal water monitoring. Providing tasks connected with implementation of WFD in Black sea basin directorate and great experience of their Greek colleagues more deepen exchange of experience between the two structures is necessary.</p>
<b>Activity 6</b>	<b>Topic: Use of computer models in sustainable water management. Telemetric system.</b>
	<p>- Mr. Dimitrius Papamastorakis made a demonstration on of the existing Telemetric system for constant monitoring of ground water and for meteorological conditions.</p> <p>- Mr. Kritsotakis presented a demonstration of functions of models for management and prognosis of quality and quantity of ground waters and surface waters.</p> <p>The Greek experts shared their experience connected with the process of choice of a model, development of the system and exploitation of the system.</p> <p>At present BSBD does not have any experience in exploitation of a telemetric system and computer models for simulation of quality and quantity of waters. The presentations of these topics were very interesting and useful and concerning the future development of the BSBD more exchange of experience is necessary.</p>

## 2. 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 following main accents of the approach for integrated water management in the Region of Crete should be shared with other partners or included in a Guidance:

- Approaches for sustainable water management in conditions of restricted water quantity (predetermined by both natural and anthropogenic conditions)
- Relation with other institutions – scientific, non-profit and stakeholder organizations. Approaches for their involvement.
- Application of GIS and computer models in the process of monitoring, prognoses and management of quality and quantity of water. Approaches for design and optimization of a monitoring set and programme. Methods for control, analysis and assessment of the monitoring data.

- **About Practice :**

The following practical experience should be shared with other partners:

- Practical issues connected with prevention of intrusion of marine water into ground water
- Irrigation systems for different cultures (non greenhouse and greenhouse cultures)
- Wastewater treatment processes and monitoring of the effluent water
- System for observation (monitoring) of the water needs for agriculture
- System for observation (monitoring) of quantity of waters in an irrigation system
- Telemetric system for observation of the precipitation and their relation with the ground waters
- Modelling of water quantity and decision support system.

## 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 in BSBD Varna especially for departments: Water and water economic cadastre, administrative economic department; Monitoring, prognoses and information assessment; Planning and management department. The dissemination of information could be performed through the site of BSBD Varna ([www.bsbd.org](http://www.bsbd.org)), as well as directly by e-mailing information to people involved in relevant issues.

### b) National IWRM practice:

The learnt lessons are applicable to the Ministry of environment and water MOeW, Water Direction. The dissemination of information could be performed through the site of MOeW ([www.moew.government.bg](http://www.moew.government.bg)), as well as directly to the people involved in different activities.

### c) Regional experiences:

The learnt lessons and obtained information are applicable to the International Network of basin Organizations. In particular the Mediterranean Network of Basin organization on the related to the implementation of WFD the EURO- INBO – group. The information could disseminate by Internet through the site of INBO ([www.Inbo.org](http://www.Inbo.org)).

### d) Worldwide :

The learnt lessons as well as obtained information are applicable to the International Network of basin Organizations. Particularly, The Mediterranean Network of Basin organization on the related to the implementation of WFD the EURO- INBO – group. The information could disseminate by Internet through the site of INBO ([www.Inbo.org](http://www.Inbo.org)). Furthermore, the specific web site that has been designed for The TWINBASIN project ([www.twinbasin.org](http://www.twinbasin.org)), could facilitate the exchange of information on best water resources management practices of River Basin Organization.

## 6. IDENTIFIED TIPS

*Identified tips which could be useful for colleagues*

The mission is characterized as a successful, achieving all goals, and some contributing to the that are summarized below:

- o An agreement on the agenda before the mission;
- o Experts should present the related to the agenda topics;
- o PowerPoint presentations ;
- o Demonstration of software, electronic maps, GIS, etc.

- Inside visit and discussions with the involved experts;
- Preparations of a dossier, including all relevant information, articles, maps etc.
- A learn about the evolution of conveyance system in Crete from early Minoan period (2.500 B.C.) via Romans via huge Venetian's constructions up to the contemporary systems

## 7. PERSONAL COMMENTS

*What does the missionary think about his mission*

The mission was very interesting, useful and it was well organized.

It should be mentioned that that over 15 people were involved in different activities developed. The people which were involved were experts in are specific field concerning the management of water sources. Furthermore, the hospitality and warmth of all Cretan People (typically southern people trait), turned a business trip to a wonderful experience exchange for all participants.

There are the Attached photos from missions.

A very important remark is that water management systems are similar, but we found out also that we have some differences in some activities. In that reason, we determined in details all differences, which help us to decide major problems.

Bulgaria and Greece are the countries, witch are neighbours. BSBD, geographical according EU legislation is a body for management of water at the basin level, witch is management structure at the same level as Directorate of water in Heraklion . BSBD is the only basin directorate in Bulgaria witch deals with the monitoring and management of coastal waters and some very close partnership, would be of great importance, providing long term experience of Greece institution in this area.

They are similar as basin authorities and they are quite close in principles and concepts for implementation of WFD 2000/60 EC.

It would be very useful and we fully support the idea for the next round of exchanges within TWINBASIN project until end of 2006.

## 8. CONTACTS

*principal local contacts met*

Name	Occupation	E-mail	Phone Number
PAPAMASTORAKIS DHMHTRIOS	WATER DIRECTOR	watermgn@otenet.gr	00302810278620
KRITSOTAKIS MARINOS	GEOLOGIST	marinos@crete-region.gr	00302810278620
MARTINO AGGELIKI	CHEMIST ENGEENEER	martinou@ crete-region.gr	00302810278620
ANDROULAKI MARIA	ECONOMIST	m.androulaki@ crete-region.gr	00302810278620
KOKOLAKIS STERGIOS	GEOLOGIST	kokolakis@ crete-region.gr	00302810278620
AMARGIANITAKIS IOANNIS	MINOR ENGINEEER	jamargian@ crete-region.gr	00302810278620
PARASKAKIS NIKOS	TECNICAL CONSALTANT	oadyk@oadyk.gr	00302810278620
XARITAKIS GIORGOS	RESPONSIBLE FOR WATER DISTRIBUTION FOR OADYK (GEO-	oadyk@oadyk.gr	

	AGRONOMIST)		
SPANOUidakis MANOLIS	GENERAL DIRECTOR- CIVIL ENGINEER	oadyk@oadyk.gr	00302810278620
VARDoulAKI JENNIE	GIS	jennie@oadyk.gr	00302810278620
XATZIDAKI MARIA	ECONOMIST	oadyk@oadyk.gr	00302810278620

## 9. BIBLIOGRAPHY

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

Bibliography	
Name	Description / Notice

Websites		
Name	Description / Notice	Address
	Region of Crete (Authority)	<a href="http://www.region-crete.gr">www.region-crete.gr</a>

*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).*



Reporting guidelines

Number of pages:  
10/10

Mission reference

2006 C3 T18 M 1

Date:

21.06.2006

## Financial report

Expert Name:

Ventsislav Nikolov; Elitsa Hineva; Cenka Vasileva

Start	Departure	days	days cost (€)	travel cost (€)	Total
				1345.50	
				30.00	
04 June 2006	11 June 2006	7x70x3	1470.00	<hr/> 1375.50	2845.50

Papers to join:

Original justificatives Plane Ticket and Boarding Pass

Original justificatives per diem

Just keep one copy of due justificatives for yourself.

Send due report to following address:

Techware  
Strada 52 Poggio dei Pini  
09012 CAPOTERRA-CAGLIARI  
ITALY  
E-mail: [info@techwarenet.org](mailto:info@techwarenet.org)  
Fax: