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Commission



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AquaStress Newsletter

Number 1

May 2006

Editorial

Many technical and non-technical options have been studied to mitigate water stress.

Indeed, despite the numerous research activities on this subject, effective water stress mitigation at local, regional and global scale is still below expectations.

The causes of this failure are mainly ascribed to the lack of comprehensive approaches, together with the still lower level of participation of stakeholders and citizens in the decision process.

An improved multi-stakeholder driven approach is needed, integrating culture and social perspective in the development of the most appropriate technology options.

The AquaStress Integrated Project (IP) delivers enhanced interdisciplinary methodologies enabling actors at different levels of involvement and at different stages of the planning process to mitigate water stress problems.

Water stress is a global problem with economic and social implications.

The mitigation of water stress at regional scale depends not just on technological innovations, but also on the development of new integrated water management tools and decision-making practices.

This IP draws on both academic and practitioner skills to generate knowledge in technological, operational management, policy, socio-economic, and environmental domains.

Contributions come from 35 renowned organizations, including SMEs, from 17 Countries.

AquaStress is an attempt to develop stakeholder driven comprehensive and integrated approaches

for the mitigation of water stress.

The project involves researchers and stakeholders, at different stages of the planning process.

AquaStress intends to prioritize actions that allow effective improvement to adapt to change in global systems, knowledge, technology and culture.

The project delivers guidelines for integrated water stress mitigation, in the European and in the Mediterranean region, through:

- Major advances in the understanding, effectiveness and empowerment of stakeholder driven participatory decision making;
- New insights into the drivers of water stress in different regions of the EU and non-EU countries;

What is Water Stress?

“Water stress occurs when the functions of water in the system do not reach the standards (of policies) and or perceptions (of the population) on an appropriate quantity and quality, at an appropriate scale and the adaptability for reaching those is not given.”

[Extracted by Deliverable 2.1-1 - Common Framework for the Characterization of Water Stress, WB 2 /WP 2.1 AquaStress Internal Report, 2005]

- New assessments of diverse policies, institutions and cultural factors as causes and remedies to water stress;
- New approaches to the integration of diversities to strengthen participatory assessment and adaptive planning;
- A culture change approach to water management strengthening bottom-up and adaptive system approach.

AQUASTRESS Partnership

AquaStress involves high diversity of European and non-European partners, from national research councils and universities to international organizations, SMEs, NGOs and public bodies involved in water management.

In addition, multi-stakeholders groups coming from test sites are conveyed to project meetings, workshops, seminars and forums.

The research partnership is highly inter-discipline and intra-sector, covering from water engineering and hydrology to hydrogeology, water pricing, socio-economic aspects of water, water quality, modeling, technology development, considering the various use of water: domestic, agriculture and industry.

The Project Structure

The context of AquaStress research activities

The activities are implemented through seven Work-blocks (WB), each WB including individual Work Packages (WP) for a total number of 31 WPs.

The Work-blocks operate as science management units and Work Packages as sub-units having specific scientific objectives and results.

Each WB and WP is lead by a specified lead scientist - each is responsible for the delivery of their respective WB / WP's contributions to the project.

Work Block leaders

- **Project Coordinator:** Prof. Roberto Passino (CNR - IRSA) - Italy

WB1 - Coordination of activities and dialogue with stakeholders

WB LEADER: National Technical University of Athens (NTUA) - **Greece**

Contact person: Dionysis Assimacopoulos

<http://www.ntua.gr/en/index.htm>

WB2 - Characterization of water stress

WB LEADER: Universität Osnabrueck - **Germany**

Contact persons: Claudia Pahl, Maria Manes

<http://www.uni-osnabrueck.de>

WB3 - Development of mitigation options

WB LEADER: Consiglio Nazionale delle Ricerche - Istituto di Ricerca sulle Acque (CNR-IRSA) - **Italy**

Contact persons: Giuseppe Giuliano

<http://www.irsa.cnr.it/>

WB4 - Integration of solutions into a Solution Supporting System

WB LEADER: Rijksinstituut voor Integraal Zoetwaterbeheer en Afvalwaterbehandeling (RIZA) - **The Netherlands**

Contact person: Michiel Blind

http://www.riza.nl/index_uk.html

WB5 - Testing feasibility of solutions

WB LEADER: Cemagref - **France**

Contact person: Nils Ferrand

<http://www.cemagref.fr>

WB6 - Dissemination, training and schooling

WB LEADER: CIIEAM - IAMB

(Mediterranean Agronomic Institute of Bari - MAIB) - **Italy**

Contact person: Claudio Bogliotti

<http://www.iamb.it>

...other Institutions involved:

THE UNIVERSITY OF READING; UNITED KINGDOM; IDC - BELGIUM; WAGENINGEN UNIVERSITY - NETHERLANDS; UNIVERSITY COLLEGE LONDON - UNITED KINGDOM; GEONARDO ENVIRONMENTAL TECHNOLOGIES LTD. - HUNGARY; WATER DEVELOPMENT DEPARTMENT - CYPRUS; FEUP - FACULTY OF ENGINEERING OF THE UNIV. OF PORTO - PORTUGAL; CRANFIELD UNIVERSITY - UK; APRE - ITALY; HYDRODATA S.P.A. - ITALY; UNIVERSITY OF EXETER - UNITED KINGDOM; UNIVERSITY OF TECHNOLOGY - POLAND; ALTERRA - NETHERLANDS; CENTRE FOR ECOLOGY AND HYDROLOGY - UNITED KINGDOM; TNO - NETHERLANDS; DHI - DENMARK; RWTH AACHEN UNIVERSITY - GERMANY; UNIVERSITY OF BARCELONA - SPAIN; IRD - TUNISIA; WATER QUAL. PROT. & MANAG., UNIVERSITY OF HANNOVER - GERMANY; WL Delft HYDRAULICS - NETHERLANDS; CRACOW UNIVERSITY OF TECHNOLOGY - POLAND; SEECON DEUTSCHLAND GMBH - GERMANY.

WHERE IS AQUASTRESS IMPLEMENTED?

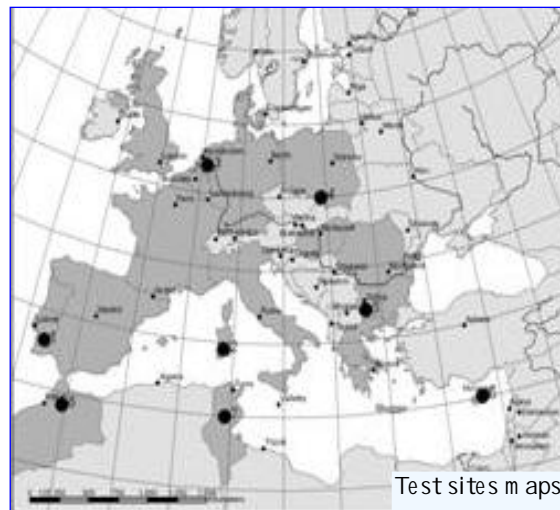
Eight areas have been identified to select relevant case studies on the base of the accessibility to existing information, local involvement of stakeholders, the type and diversity of water stress problems, representativeness of the water stress issue across Europe and North Africa.

Research, dissemination and training will be carried out in these areas, in cooperation with local institutions and stakeholders.

The areas of test sites are:

1) The Portuguese Guadiana River Basin (**Portugal**), which represents the 17% of all river basins in Portugal and is characterised by extensive agriculture that represents the major water user (95%) and cause of pressure on natural waters.

2) The Flumendosa-Mulargia River Basin (1,824 km²) located in the south-eastern part of Sardinia (**Italy**). The basin includes six interconnected reservoirs supplying water resources in Southern Sardinia for the different conflicting uses (domestic, agriculture, industry). The basin presents important water scarcity and quality problems.



3) The Vecht catchment, which is a part of the Rhine basin (**The Netherlands**). The Vecht is a middle-size river originating in Germany. The Dutch part of the river is more intensively used than the German part.

4) The Przemsza river catchment situated in the Silesian Upland (**Poland**). The area is significantly transformed by the mining activities and stress on waters is still seen today by the change of natural regimes and quality.

5) The Iskar River Basin (**Bulgaria**). The Iskar river is the longest in Bulgaria, situated in the western part of the country. The main water stress issues are the non-rational regulation of water volumes together with the current trend to drought, water losses in supply systems and river pollution.

6) The island of Cyprus, with typical Mediterranean climate and strong seasonal variations in temperature, precipitation and weather in general. The average aridity index is 0.295 classifying the whole island as "semi-arid". Main water stress is marked by users conflict, reduced water yields, weak water governance, need of water saving, water pricing.

7) The Mergue IIII River Basin, one of the largest in **Tunisia**, exploited essentially for agriculture and exported for human consumption to the tourist coast line. Water Use Efficiency, Water Productivity, Irrigation System Performance are low and, together with high climatic variability, are the main water problems in the area.

8) The Tadra irrigation scheme in **Morocco**, covering 125.000 ha, located 200 km south-east of Casablanca. The sustainability of groundwater exploitation and participatory irrigation management are at the center of many water problems in the area.

The following Regional Project Partners represent the project's areas:

- I IDROMOD Lda (Portugal)
- I idrocontrol S.c.r.l (Italy)
- Politechnika Krakowska (Poland)
- University of Architecture, Civil Engineering and Geodesy - UACEG (Bulgaria)
- AEOLIKI Foundation (Cyprus)
- Institut National Agronomique de Tunisie (Tunisia)
- Institut Agronomique et Vétérinaire Hassan II (Morocco)

A cycle of information days has been carried out to local stakeholders

A cycle of information days have been carried out in the project test-sites with the purpose of informing relevant local stakeholders on AquaStress, conveying selected local stakeholders in local fora, ensuring the commitment of stakeholder fora to co-operate with the project and indicate to project partners local needs and concerns.

International Workshop on Water Stress, Cyprus, July 2005

This is the first International Workshop (IW) carried out in the frame of AquaStress. The Workshop has been carried out in Cyprus (one of the project test sites) between 4th and 7th July 2005.

The IW has been carried out jointly with a one day Info-Day. This Info Day, a dissemination seminar addressed to local stakeholders and the society. Both events have been hosted by the **University of Nicosia**.

The International Workshop aimed at disseminating and strengthening the dialogue among the partners of the project, particularly the regional partners from the other test sites, and the local stakeholders on the major concerns identified during the first day (Info-Day), possible options to be adopted and actions to be taken to mitigate water stress.

The work done, prior to the joint event, with the local stakeholders has been served to identify major topics of discussion and select specific key-note speakers to animate the discussion.

The workshop has centred on the following activities:

- Presentation of key-notes and discussion with project partners (mainly regional partners) and stakeholders from Cyprus;
- Internal working group with Regional Partners on project deliverables and event assessment;
- Meeting (working group) with stakeholders from Cyprus to identify further concerns and suggest actions to be implemented by AquaStress.



Main events occurred

- Nicosia Info Day, July 4th and the 7th 2005 - Cyprus
- Fiquih Ben Salah city Info Day, September 29th 2005 - Morocco
- Sardinia Info Day, Cagliari, October 7th 2005 - Italy
- Guadiana Info Day, October 13th 2005 - Portugal
- Sofia Info Days, November 2nd to 4th 2005 - Bulgaria
- Przemsa Info Day, November 17th and 18th 2005 - Polonia



Focus on

Sardinia Information Day, Cagliari, October 2005 - Italy

The information day of the Sardinian test site (**Flumendosa basin**) was held in Hydrocontrol on the 7th of October.

The main objectives of AquaStress project and the strategic importance of the stakeholder support and collaboration were presented.

Many stakeholders took part in the infoday and the protocol of cooperation has been signed by all the Bodies, Associations, Consortia which have been involved in the project.

After a brief presentation of the test site and of the local public stakeholder fora, an overview of all the social, environmental, economic, institutional and governance problems perceived by the stakeholders have been presented.

Finally the open discussion between partners and stakeholders started.

During the discussion the main problems and points which arose have been the following:

- The lack of dialogue between stakeholder of high and low level with consequent strong social problems;
- The strong delay in the reorganisation of water service and tariff system in Sardinia. For ten years Sardinia government has been trying to reorganise water service in order to constitute the unique SIM management.
- The difficulty for the industrial sector to face dry season and the importance of urban wastewater reuse in industry. In **Flumendosa** reservoirs system, the industrial Consortium built a tertiary treatment plan for civil wastewater recycling partly in industry and in irrigation use, and partly for supplying freshwater into Cagliari lagoon. The plant is not yet functioning and advises how to solve operational doubts, linked in particular to disinfection processes by using ultraviolet rays, would be strongly appreciated.

- The problems in agriculture linked to conflict of uses inadequate crop patterns and irrigation practises during drought were discussed as well as the importance of a socio-economic analysis in term of producing the most profitable crops.

- The importance of sharing information among all stakeholders and, consequently, of maintaining the Local Partner Stakeholders Forum (LPSF) for all the project.

Why addressing the water-stress?

This is the first issue of the AquaStress Newsletter edited in the frame of the dissemination activities of the Integrated Project AquaStress.

The inextricable link between population growth, socio-economic development and water demand forces many regions of the world, including Europe, to face the problems of water stress.

For example, in the Euro-Mediterranean area, due to its particular climatic conditions, water stress is very much related to the chronic problem of water scarcity, which is extending at such a rate that it threatens the sustainable development of the region.

- The importance of an efficient water planning, which includes also solutions and options on how to get rid of red tape for the realisation of interventions in Sardinia, and the improvement of authorization issues; aspects could have a positive impact also from a social point of view.

All stakeholders agreed in the great opportunity that the project offers them in term of experiences transferring, confronting with the stakeholders and the experts of other Countries in order to realise how water

system is managed and problems faced in different realities.

They all also agreed in the importance of the sociological aspects in Sardinia and are worried that the project could have a predominant technological layout.

In this regard the question they asked, which needs an answer, is: 'How can Partners help Sardinian stakeholders to solve the sociological problems?'

At the end of the day, during the discussion among partners, it was established to organise, in a date still to decide, a round table among stakeholders, site partner and WB3 partners in order to elaborate in detail the priorities of problems and consequently case studies.

PROJECT NEWS IN BRIEF

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<http://www.aquastress.net>

The project meeting of Aquastress held in Porto from 16th to 19th of January 2006.

The First day (Monday January 16th, 2006) was entirely dedicated to an Internal Forum open for the members of the PSG (Project Steering Group).

The second day (Tuesday January 17th, 2006) was dedicated to a meeting between the Work Block (WB) Leaders and the Regional Partners.

The discussion included:

- Regional Partners reports on the test sites, including a presentation of the "demand" from each test site for expertise offered by the project.
- Lessons learned from test-site activities in Cyprus.
- WB progress reports on the work done in the project test sites.
- Open discussions on the lessons learned and from the first year's activities in the test sites and overview of the program for the next 18 months.
- Progress on horizontal issues (public participation, overall mitigation process).
- Discussion of present level of integration among WBs.
- Discussion and definition of case study development process, including the realisation of joint teams for the different test sites, and ways to improve the participatory process.

The Regional Partners, the link persons, the WB leaders and representatives of the WBs indicated

by their respective leaders participated to the meeting.

The third Day (Wednesday January 18th, 2006) and the morning of Thursday were dedicated to specialized meetings between WBs and between the WBs and the Regional Partners.

The afternoon of fourth Day (Thursday January 19th, 2006) served to the Project Steering Group to agree on decision and actions discussed in the previous days.

Workshop with Stakeholders in Sardinia

A Workshop was been carried out in Sardinia on 11th April 2006

The Workshop was centred on the prioritisation of case-studies and the identification of relevant research, training and dissemination activities to be carried out in the frame of the case-studies.

Read all into the AquaStress web site
www.aquastress.net



Sardinia Workshop

EVENTS

Summer School**“Flumendosa’s summer school”**

It will take place in Cagliari, Italy, from 15th to 20th of May 2006.



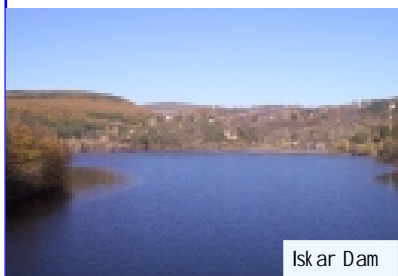
Flumendosa

All the courses will be in Italian and are organised in 3 sessions:

- Session 1 – Elementary school “Randaccio”, for 40 children, 7 years old;
- Session 2 – Elementary school “Randaccio”, for 40 children, 9 years old;
- Session 3 – Middle school “Alfieri”, for 40 children, 11-12 years old.

“Iskar’s summer school”

It will take place in Borovets, Bulgaria, from 26th to 29th July 2006.



Iskar Dam

The courses will be in Bulgarian and in English (with translation in Bulgarian).

There will be one big session for 60 students of first grade University (selected by UACG-Sofia).

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Earth System Science Partnership - Global Environmental Change**Open Science Conference**

The ESSP conference will be held in Beijing

The Conference will be held in Beijing on 9-12th November 2006.

Partners of AquaStress intend to present some project preliminary results and further disseminate project goals and activities.

For information:

www.essp.org/ESSP2006/BeijingGuide_index.html

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