



About the Project

Efficient Management of Wastewater, its Treatment and Re-use in the Mediterranean Countries » EMWATER «

Water shortage is currently one of the biggest concerns of human being worldwide and it becomes a global problem that affects seriously the lives of high numbers of the world population. According to the Kyoto summit in 2003 two billion people will not have access to safe drinking water supplies in the year 2015. The Mediterranean region belongs to the most affected countries in the world. The EMWATER partners' aim is to create awareness of innovative solutions in wastewater treatment and its reuse and support the installation of new technologies of wastewater management. Experts from the field, decision-makers and interested citizens and civil organizations have to be involved to reduce the water shortages in the Mediterranean Region. **The primary outcome of the project will be to install and to increase efficiency and effectiveness in the management of wastewater, its treatment and re-use in Turkey, Jordan, Lebanon, and Palestine.** Though the project is limited in time to 48 months, starting in 2003 and ending in 2007, the measures it aims to implement are designed to create long-term, positive effects in the region.

- **The Project**

- Project Overview
- General Objectives
- Specific Objectives
- Stakeholders

- **The Consortium**

- The Partners
- Responsibilities of Partners

-

- Yildiz Techn. University
- Al al-Bayt University
- University of Balamand/Lebanese American Univ.
- Birzeit University
- InWEnt
- Adelphi Research
- TU Hamburg-Harburg
- ENEA Italia

- **The Activities**
- Activities Overview
- Country Studies
- Turkey
- Lebanon
- Jordan
- Palestine
- Pilot Plants
- Turkey
- Lebanon
- Jordan
- Palestine
- Training
- Turkey
- Lebanon
- Jordan
- Palestine
- Public Awareness
- PA programs
- Publications
- Training manuals
- Training materials
- Handbook
- Co-ordination / EU
- Project brochure

The Partners



Internationale Weiterbildung
und Entwicklung gGmbH
Germany / Berlin
InWent gGmbH
Capacity Building International



adelphi research
Germany / Berlin
Adelphi Research gGmbH



Jordan / Al Mafrag
Al al-Bayt University
**Institute of Earth, Environment and
Space**

Responsibilities



Italian National Agency for New Technologies,
Energy and the Environment
Italy / Bologna
ENEA
National Agency for New Technologies,
Energy and the Environment



Technische Universität Hamburg-Harburg
Germany / Hamburg
**Technical University Hamburg-
Harburg**



BIRZEIT UNIVERSITY
Birzeit, Palestine
Palestine / Birzeit
Birzeit University
Institute of Water Studies



Turkey / Istanbul
**Yildiz Technical University of
Istanbul**
Faculty of Science & Art, Chemistry
Dept.



Lebanon / Tripoli
University of Balamand
Dept. of Civil Engineering

CONTACT INFORMATION

Name / Position Institution / Address Phone / Fax / Email / Web

Dr. Ismail AL Baz
Program Director
InWEnt gGmbH
Issam al Ajlouni St. 8
P.O.Box 941408
Shmeissani
Amman 11194
Jordan
Phone: +962 6 / 569 43 41
Fax: +962 6 / 5686184
ismailalbaz@nets.com.jo
www.inwent.org

Andreas Bethmann
Coordination & Financial Manager
InWEnt gGmbH
Capacity Building International
Lützowufer 6-9
10785 Berlin
German
Phone: +49 30 / 25482-106
Fax: +49 30 / 25482-103
andreas.bethmann@inwent.org
www.inwent.org

Andrea Notz

Project Assistant

InWEnt gGmbH

Capacity Building International

Lützowufer 6-9

10785 Berlin

German

Phone: +49 30 / 25482-119

Fax: +49 30 / 25482-103

andrea.notz@inwent.org

www.inwent.org

Dr. Ing. Joachim Behrendt

Project Manager

TU Hamburg-Harburg

Eissendorfer Str. 42

21073 Hamburg

Germany

Phone: +49 40 / 42878-3440

Fax: +49 40 / 24878-2648

j.behrendt@tuhh.de

www.tuhh.de/aww

Claudia Wendland

Project Manager

TU Hamburg-Harburg

Eissendorfer Str. 42

21073 Hamburg

Germany

Phone: +49 40 / 42878-3441

Fax: +49 40 / 24878-2648

c.wendland@tuhh.de

www.tuhh.de/aww

Mikael Henzler

Project Manager

Adelphi Research gGmbH

Caspar-Theysss-Str. 14a

14193 Berlin

Germany

Phone: +49 30 / 8900068-0

Fax: +49 30 / 8900068-10

henzler@adelphi-research.de

www.adelphi-research.de

Luigi Petta

Project Manager

ENEA

National Agency for New Techn., Energy & Environment

Via Martiri di Monte Sole, 4

40129 Bologna

Italy

Phone: +39 05 / 16098-759

Fax: +39 05 / 16098-309

petta@bologna.enea.it

www.enea.it

Prof. Nadhir Al Ansari

Project Manager

Al al-Bayt University

Institute of Earth, Environment and Space

P.O.Box 130334

Mafrq

Jordan

prof_alansari@yahoo.com

www.aabu.edu.jo

Omar Ragheb Zimmo
Project Manager
Birzeit University
Institute of Water Studies
P.O.Box 14
Birzeit
West Bank / Palestine
Phone: +970 2 / 298
Fax: +970 2 / 298
ozimmo@birzeit.edu
www.birzeit.edu

Najib Gerges
Project Manager
University of Balamand
Dept. of Civil Engineering
P.O. Box 100
Tripoli
Lebanon
Phone: +961 6 / 9302-50
Fax: +961 6 / 9302-78
najib.georges@balamand.edu.lb
www.balamand.edu.lb

Göksel Akcin
Project Manager
Yildiz Technical University
Faculty of Science & Art, Chemistry Dept.
Davutpasa Campus
34210 Topkapi
Istanbul - Turkey
Phone: +90 212 / 44918-31
Fax: +90 212 / 44918-88
akcin@yildiz.edu.tr
www.yildiz.edu.tr

Wastewater Treatment Plant to be built at the University of Balamand Campus



From left: Dr. John Davey (moderator), Dr. Gerges, Prof. Hashwa, Dr. Al-Baz.

UOB and LAU-Byblos are making headway towards the creation of two wastewater treatment plants that will serve both university communities and provide a training stage for students, engineers, and municipal operators.

Plans for design, construction, and operation of the pilot plants (one at each university) were approved during a meeting held at the Byblos Campus May 16–18, 2005.

The €3.4 million project, officially identified as [“Efficient Management of Waste Water, its Treatment and Re-use”](#) is funded by the European Union and involves six countries working in partnership: Germany, Italy, Palestine, Turkey, Jordan, and Lebanon.

Delegates from these countries discussed progress reports, action plans and budgetary issues during the meeting in May.

Once operational, the facilities will be used for teaching purposes and most importantly for training local engineers and prospective municipality plant treatment operators.

UOB and LAU have already scheduled for this summer, specialized training workshops on recent advances in wastewater treatment technologies.

The project will continue through April 2007. It had kicked off in April 2003, driven by the efforts of Deans Michel Najjar (Balamand) and Fuad Hashwa (LAU).

The project coordinator, Dr. Ismail Al-Baz from InWent-Capacity Building International in Berlin, Germany, along with the rest of the delegates, appreciated the tireless work of project managers Dr. Najib Gerges (Balamand) and Dr. Sima Tokajian (LAU) for bringing the meeting to fruition.

EMWATER - Efficient Management of Wastewater, its Treatment and Re-use

Given the fact of water shortage crisis in the Mediterranean countries the EMWATER project aims to highlight innovative solutions in wastewater treatment and wastewater reuse. With this goal in mind experts from the field, decision-makers, interested citizens and civil organizations should be sensitized to these issues.

A more specific aim is the strengthening of regional co-operation through the creation of networks among the experts as well as through cross-border knowledge transfer. Additionally the project aims at strengthening capacity building through local and regional training programs, the development of regional policy guidelines for wastewater treatment and reuse in the region.

The improvement of the security and safety of water supply in the Mediterranean countries is the best recipe for social, economic and political stability in the region and is, thus, the foremost goal of the project.

Target Areas

The project's target areas are the following rural or peri-urban areas in the Mediterranean partner countries:

- **Turkey**, Peri-urban area of Istanbul
- **Jordan**, Mafraq area
- **Lebanon**, Koura area - Jbeil (Byblos)
- **Palestine**, Birzeit / Albiereh

Target Groups

The main target groups to achieve the general and specific objectives in the Mediterranean partner countries by strong involvement, support and acceptance in the project will be:

- Decision-makers in governmental authorities and economy and other local institutions dealing with water and wastewater problems in general (stakeholders)
- Non government organizations (NGO's) such as user and consumer associations , women and environmental protection organizations
- Universities and teaching institutions

General Objectives

The EMWATER project has set the following general objectives:

- Strengthening long-term regional co-operation and sustainable development in the Mediterranean countries.
- Improving efficiency and effectiveness in integrated water resource management.
- Promoting transfer of innovative wastewater treatment technologies and improving current technologies used in rural areas.
- Encouraging reuse-oriented wastewater management.
- Enhancing public awareness of the insufficient respectively wrong wastewater treatment and reuse and for the necessity of an improved hygienically safe disposal.
- Providing decision-makers with up-to-date, relevant information in order to help them choosing the most suitable technology.
- Exchange of experiences and know-how between the European and Mediterranean partner countries and among the Mediterranean partner countries.

Specific Objectives

The general objectives will be complemented by the following tasks:

- Elaboration of regional policy Guidelines for wastewater treatment and reuse.
- Adapted training and capacity building programs for technicians, engineers and employees of authorities and non-government organizations in the field of wastewater treatment and reuse.
- Design and construction of pilot plants for demonstration and training purposes.

Stakeholders

Stakeholders in Turkey, Jordan, Lebanon and Palestine

Successful project planning and implementation require a participation of all decision-makers:

- Public authorities dealing with water management in general such as ministries and municipalities etc.
- Universities and teaching institutions
- Non government organizations which have a strong interest in water and environmental issues
- Women and environmental protection organizations
- Health organizations
- Farmers and consumers organizations etc.

As stakeholders they are a part of the regional and local steering committees assisting the Mediterranean project management in the project.

Responsibility of Partners

The responsibilities of the European partners are to work jointly with the Mediterranean partners to achieve the objectives of this project. These are know-how transfer of water especially wastewater treatment and reuse, to strengthen the capacity building, to assist the partner countries in the design and the construction of pilot plants for research and demonstration purposes and in the elaboration of policy guidelines.

The responsibilities of the Mediterranean partner countries are the implementation of the results of the project and the transfer into actions as part of their water policies and strategies.

To fulfil their responsibilities the partners have set up the following groups for this project:

- Project management team (located in each partner country)
- Local steering committees (in each Mediterranean partner country)
- Regional steering committee (representatives of European and Mediterranean partner countries)

Responsibility of European Partners

- The European Partners (InWEnt, ENEA, TUHH-Hamburg, Adelphi Research) will assist the Mediterranean partner countries by implementing the project of integrated wastewater management and reuse.
- **InWEnt** as an international foundation for training and human resources development is the leading institution and contributes with its strong experience in human resources development by designing and implementing training programs throughout the world, with a special focus on computer based training programs. Additionally InWEnt is responsible for the over all management of the project.
- The **Technical University Hamburg-Harburg**, a young applied science university highly regarded in Germany for the interdisciplinary and industrial orientation of its research, is working closely together with the Yildiz Technical University of Istanbul in *Turkey*.
- **ENEA**, the Italian National Agency for New Technologies, Energy and the Environment, is assisting the Al al-Bayt University in *Jordan* and the Birzeit University in *Palestine* in implementing the project.
- **Adelphi Research**, a non profit research organisation in environmental policy and technology transfer, acts as adviser for the Mediterranean partner countries, especially for the University of Balamand in *Lebanon*.

Responsibility of Mediterranean Partners

All partners in the Mediterranean partner countries are well established scientific institutions with experience in water related issues. Their responsibilities within their own countries will be the collection and evaluation of relevant data on water topics, the dialogue with the local authorities and other stakeholders, the organization of the implementation of planned measures, general dissemination and follow-up activities.

Project Management Team

A project management team is located in each partner country. The main tasks of the project management team are to plan, to build up, to implement and to monitor all local actions, which include the installation of local management and steering teams in each of the Mediterranean partner countries. The Lead office is located in Amman, Jordan.

Local Steering Committees

In each of the Mediterranean partner countries an external Advisory Committee (local steering committee) composed of representatives of stakeholders from local institutions, NGOs, users and consumer associations, women and environmental protection organisations and water authorities assists the local project coordinator in all aspects of the project to achieve the optimal results.

Regional Steering Committee

A regional steering committee composed of representatives from the local steering committees assists the Project Director by monitoring the entire project at a regional level.

This committee, meeting twice a year, guides and monitors the project and the evaluation process. Detached from the day-to-day details of the project, the committee can ask evaluative questions about project direction and methods, review operational data collected by the participants, suggest modifications to project direction and provide an evaluative commentary on the final report.

Activities

In addition to the necessary starting activities (conduction of the first regional »kick off meeting« 19.- 23.5.2003 in Berlin and the local steering committee meetings in the Mediterranean partner countries) the milestones for the next two years will be the:

- conduction of 4 **Country Studies**
(Turkey, Lebanon, Jordan, Palestine)
- conduction of 4 local and 1 regional **Training Program**
- design and construction of 4 **Pilot Plants**
(Turkey, Lebanon, Jordan, Palestine)
- elaboration of regional policy **Guidelines**
- elaboration of **Public Awareness Programs**
- development of a website
- **Publications**

In order to gain basic experiences as soon as possible which thereafter may be amended or changed to achieve the optimum results.

Country Studies

A study, acting as baseline document of the project, is prepared for each participating Mediterranean partner country in 2003. The objective of the studies is to analyse the present state of water and wastewater management and reuse in each country.

Therefore relevant data are collected in different fields, such as

- national institutions, policies, guidelines and standards in the water sector
- situation of the water resources (quantity, quality, demand, consumption)
- rural and urban water distribution systems
- wastewater quantity and composition, and disposal systems
- status of wastewater treatment and reuse, existing wastewater treatment facilities

The studies provide an insight into the situation of the water sector in the Mediterranean partner countries. An overview about possible partners and contact persons in the countries is gained. By collecting information on similar projects that have been or are being implemented in the region, synergies are being created.

After finalizing and comparing the different studies of the countries, solutions for waste water treatment, particularly with regards to its reuse, wastewater treatment and reuse standards and human resources development based on the local experience will be suggested. Information sharing, technology transfer and the regional exchange of best practices will be facilitated.

The results of the country studies will provide the basis for all further activities within the project, like the development and construction of pilot plants, the formulation of wastewater treatment and reuse guidelines and the implementation of different training programs.

- Country study: Turkey *Done*
- Country study: Lebanon *Done*
- Country study: Jordan *Done*
- Country study: Palestine *Done*

Pilot Plants

Complementary to the objectives of developing policy guidelines and providing sustainable capacity building through training programs it is important to apply new know how practically. Thus it is necessary to demonstrate appropriate techniques of wastewater treatment and reuse in pilot plants. In operation the pilot plants will demonstrate small scale and low cost technologies which participants of training programs will be able to apply to their local situation.

The tendering process of the pilot plants has begun.
For more information please watch the EuropeAid website
http://www.europa.eu.int/comm/europeaid/index_en.htm

- Pilot Plant: Turkey *Done*
- Pilot Plant: Lebanon *Done*
- Pilot Plant: Jordan *Done*
- Pilot Plant: Palestine *Done*

Training

The participants will be trained to build up a functioning wastewater treatment management and to promote appropriate technologies in the Mediterranean partner countries.

There are different kinds of training programs:

- Regional training program »train the trainers«
- Local training program for professionals in

Jordan

Lebanon

Palestinian Territories (West Bank)

Turkey

- e-learning

The trainers as well as the participants will be conveyors of the project topics and enhance the regional cooperation

Regional Training Program

- The participants of the regional training program will be trained how to transfer technical knowledge of efficient management of wastewater and wastewater treatment plants to the technicians and administrative staff of the stakeholders with advanced experience in the field participating in the local training programs. It will be implemented 3 times for 15 days and approx. 20 participants.
- The actual Regional training program was implemented in October 2004

Local Training Program

The participants of the local stakeholders, who are responsible for the local water and wastewater management, will be trained in all aspects of practically management of water and wastewater such as operation and maintenance of wastewater treatment plants, treatment technologies, their cost recovery, environmental impact assessment etc.

The courses were implemented in

- Lebanon
- Turkey
- Jordan
- Palestinian Territories (West Bank)

E-learning Program

An E-Learning will be implemented as an advanced course for professional engineers in the efficient management of wastewater treatment. The participants can improve their knowledge in construction and design of wastewater treatment plants, appropriate treatment and reuse technologies, cost recovery planning, quality standards, environmental aspects etc. within approx. 40 hours.

Public Awareness Program

The project will be successful when the people in the Mediterranean partner countries will get accustomed to the efficient use of water and disposals, in particular the protection of drinking water and the best way to reuse wastewater and will accept these approaches as part of their everyday life.

Therefore public awareness programs will be implemented throughout the duration of the project by newspaper activities, video, radio, publication in international journals, dissemination through website.

- Public awareness program: Turkey *in process ...*
- Public awareness program: Lebanon *in process ...*
- Public awareness program: Jordan *in process ...*
- Public awareness program: Palestine

Publications

Publications are an essential part of exchanging experiences. The results of the project will be published professionally in order to achieve an utmost dissemination.

Downloadable Documents

- **Application Forms**
[Application Form for E-Learning Course](#) (Doc-file, 100 KB)
[Training Schedule for e-learning course](#) (pdf file, 8KB)
- **Training manuals**
will be available soon ...
- **Training materials**
will be available soon ...
- **Handbook**
At the end of the project in 2007 a handbook will be published summarizing the results of the whole project.
- **Project brochure**
will be available soon

European Union

Disclaimer

This publication has been produced with the assistance of the European Union. The contents of this publication is the sole responsibility of [InWEnt gGmbH](#) and can in no way be taken to reflect the views of the European Union.

About the European Union

The European Union is made up of 15 Member States who have decided to gradually link together their know-how, resources and destinies. Together, during a period of enlargement of 50 years, they have built a zone of stability, democracy and sustainable development whilst maintaining cultural diversity, tolerance and individual freedoms.

The European Union is committed to sharing its achievements and its values with countries and peoples beyond its borders.

EuropeAid Co-operation Office programs and projects

More information can be found at the following internet addresses:

http://europa.eu.int/comm/europeaid/projects/index_en.htm

English

http://europa.eu.int/comm/europeaid/projects/index_fr.htm

French

http://europa.eu.int/comm/europeaid/projects/index_es.htm

Spanish

EuropeAid - MEDA - Southern Mediterranean an the Middle East

More information about the Euro Mediterranean Regional Programme for Local Water Management can be found at:

http://europa.eu.int/comm/europeaid/projects/med/regional/localwater_en.htm

English

Masthead / Credits

Disclaimer

This publication has been produced with the assistance of the European Union. The contents of this publication is the sole responsibility of [InWEnt gGmbH](#) and can in no way be taken to reflect the views of the [European Union](#).

The contents of these pages have been gathered with utmost care. Nevertheless, no guarantee will be given regarding correctness and accuracy of the information displayed. Liability claims regarding damages directly or indirectly resulting from using these pages are therefore fully rejected unless based on purpose or gross negligence. Despite careful textual control we do not take responsibility for the contents of linked pages. For those contents, only the operators of the pages in question are to be held responsible.

InWEnt gGmbH

Capacity Building International
Lützowufer 6-9
10785 Berlin
Germany

Project coordination

Wilhelm Henry
Marienfelder Str. 34
15831 Mahlow-Waldblick
Germany

Phone:

Fax:

Email:

+49 3379 / 370767

+49 3379 / 379117

w.henry.vbv@t-online.de

Masthead / Credits

Web design, programming and consulting

punkt punkt komma strich - new media

Thomas Wengel

Spandauer Damm 89

10245 Berlin

Germany

Phone: +49 30 / 845799-0

Fax: +49 30 / 845799-99

info@ppks.net

www.ppks.net

The End