

## Guatemala

(681)

### UNITWIN/UNESCO Chairs Programme

#### Progress report

Period of activity: 2005 - 2007

#### UNESCO Chair on Water Resources Sustainability

**Report established by:** MSc Eng. Joram Gil, UNESCO Chairholder Regional School for Sanitary Engineering and Water Resources (ERIS), University of San Carlos de Guatemala (USAC).

### I. Activities

#### 1. Education/Training/Research

##### Education

During its most recent period of activity, the Chair implemented one major education program:

- *Specialization on river hydraulics*

Duration: 180 hours. Four courses of 45 hours

Target groups: group of engineers (30) in the field of river hydraulics.

Geographical coverage for partners and participants: Guatemala City.

##### Training

During the reporting period the Chair established some training courses:

- *Environmental hydrology course*

Expected results: Engineers trained

Duration: 45 hours (theory and practice).

Target groups: Civil engineers

Geographical coverage for partners and participants: Guatemala City.

- *Groundwater course*

Expected results: Engineers trained

Duration: 40 hours (theory and practice).

Target groups: Civil engineers

Geographical coverage for partners and participants: Guatemala City

- *The directives of sewer water discharge and reuse, and sludge disposal*

Expected results: That mayors and municipal technicians are targeted for the implementation of the regulation

Duration: One day on each place.

Target groups: 163 persons (mayors and municipal technicians)

Geographical coverage for partners and participants: Cities of Escuintla, Jutiapa, Sololá and Santa Rosa.

- *Climate change course*

Expected results: Which professionals are trained in the subject?

Duration: Three days (March 27, 28 and 29. 2006)

Target groups: Multidisciplinary teams

Geographical coverage for partners and participants:

- *Workshop “Modelling and pipe design with EPANET”*

Expected results: Training in computer-aided design for piping

Duration: Four days (May 23, 24, 25 and 26. 2006), 16 hours

Target groups: Civil engineers and technician

Geographical coverage for partners and participants: Guatemala City.

## **Research**

The following projects of research and the titles of the works:

- *Arid Zones Mapping*

Duration: 2 years

Target groups: INSIVUMEH (Instituto Nacional de Sismologia, Vulcanologia, Meteorologia e Hidrologia), ERIS, Ministry of Environment and Natural Resources and Cazalac.

Geographical coverage for partners and participants: All the country

Intended use of results: Application in the south east of the country

- *National Water Budget*

Duration: 2 years

Target groups: INSIVUMEH and ERIS.

Geographical coverage for partners and participants: All the country

Intended use of results: Knowing the provision of water in Guatemala.

## **2. Conferences/Congresses/Meetings**

The Chair held several events in its most recent period of activity:

- *Chair’s objectives*

Date and place: October 5, 2005. IV National Environmental Health Fair, Guatemala City.

Participants: In this activity participated 35 multidisciplinary people, who were interested in research and initiatives about the integrate water resources management.

- *UNESCO Water Chair*

Date and place: May 24, 2005. Global Water Partnership world meeting, held in Antigua Guatemala.

Participants: 50 Latin-Americans.

- *Integrated Water Resources Management (IWRM)*

Date and place: September 27, 2005. Civil Engineering Students Congress, Guatemala.

Participants: 60 students of civil engineering were present.

### Others Conferences:

1. *Compound sampling an implementation of the equipment.*

2. *Directives of solid wastes in Latin America.*

### 3. Solid wasted situation in Guatemala.

Date and place: April, 3, 4 and 5, 2006. Central library of the University of San Carlos de Guatemala, Guatemala City.

Participants: 25 people took part in these events.

- *Integrated Water Resources Management (IWRM)*

Date and place: September 7, 2006. IV National Congress of Sanitary and Environmental Engineering, Guatemala City.

Participants: 50 people took part.

- *Workshop on integrated water resources management*

Date and place: April 3, 4 and 5. Guatemalan Association of Sanitary and Environmental Engineering (AGISA). Guatemala City.

Participants: 40 people took part.

### 3. Interuniversity Exchanges/Partnerships

The chairholder participated in the international course on IWRM in Argentina resulting from the invitation of the University of Buenos Aires, Argentina.

## II. Outcomes

During the reporting period the Chair had some important outcomes.

- 41 students and professional were trained by two postgraduate courses. The trained people came from different governmental institutions NGOs and universities (USAC and UVG (Universidad del Valle de Guatemala)).
- Every year Civil engineering under graduate students from USAC and URL (Universidad Rafael Landívar) were oriented on the Chair related topics, at the Civil Engineering Students Congress.
- A Workshop was carried out about the research currently done at ERIS, in relation with the Chair's topics. This workshop was held in the framework of the Environmental Health Fair and the Inter American Water Day.
- It was defined the two research projects, which are: Arid zones mapping and national water budget.
- The documentation center has been established at ERIS, in order to document the research, information and bulletins about the water resources sustainability.
- The Chair has been promoted through the bulletins and the Water and Sanitation journal, which is a scientific publication of ERIS for the Central American region.
- It has been given support to the Institute of Training and Productivity (INTECAP), which represents the managerial and governmental sector.
- It has carried out the seminar on directives of sewer discharges and reuse and sludge disposal.
- It has been carried out conferences on compound sampling and implementation of the equipment; solid wastes directives in Latin America; Solid wastes situation in Guatemala; and integrated water resources management, in order to contribute to disseminate knowledge about water related topics.
- It was lectured courses on climate change ant modelling and pipe design through EPANET model.
- It has been contributed to the specialization of river hydraulics, which aims to update the knowledge of engineers dealing with the subject.
- There cooperation agreements between Solar Foundation - Faculty of Engineering USAC and the University of Buenos Aires - Faculty of Engineering USAC.

- The Water Quality of the Master of Water Resources change for Integrated Water Resources Management.
- Participated in the international course on IWRM in Argentina resulting from the invitation of the University of Buenos Aires, Argentina. In this way the case was presented to the Orange River Basin which is the operationalization of the concept of this first initiative on IWRM in Central America.

All efforts by the UNESCO Chair are designed to contribute to the Millennium Development Goal # 7, target # 10.

### **III. Forthcoming Activities**

Plans are with the National Council on Science and Technology for funding from part of this institution and continue with the work.

### **IV. Development prospects**

Increasingly it has established the UNESCO Chair in ERIS. At this moment the Chair are in the process to operate the Research Institute for Water Resources.