Annual Report* of IGCP Project No. 604

IGCP project short title: Groundwater and Wetlands in Ibero-America

Duration: 2011-2016

Project members(s):
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Date of submission of report: November, 15, 2012

Signature of project leader:
1. Website address(es) related to the project
http://www.mdp.edu.ar/hidrogeologia/IGCP604

2. Summary of major past achievements of the project
A main achievement was the design of data sheets in order to standardize basic information for a representative group of wetlands from Ibero-America and the Iberian Peninsula that include:
a) Hydrological characterization of wetlands related to groundwater: geological environment, climate, geomorphological genesis, wetland hydrology, hydrogeology of the related aquifer, chemistry of the wetland and groundwater, wetland knowledge state and management actions,
b) Wetland ecosystem services survey: provisioning, regulating and cultural services; assessment of global status and trends of these services and
c) Direct drivers of change to wetland ecosystem services: intensive exploitation, land use changes, modulation of the hydrological cycle, contamination, climate change and global change.

3. Achievements of the project this year only

3.1. List of countries involved in the project
Argentina, Brazil, Colombia and Spain teams are directly involved as members of the project; Chile, Ecuador, Dominican Republic and Portugal are associated countries to the Project. Other Latin (Ibero) American countries will hopefully be involved in the future.

3.2. General scientific achievements and social benefits
The IGCP 604 group currently consists of 5 members from 4 countries. Scientists from Argentina, Chile, Dominican Republic, Ecuador, and Portugal have been recruited to help in the project and they have actively participated in the Meetings of IGCP 604.
The contents of the data forms provide useful information on the hydrological characterization of groundwater dependent wetlands, wetland ecosystem services survey, and direct drivers of change to wetland ecosystem services.
Professionals and researchers from 8 countries cooperated filling data forms for 28 study cases have been gathered up to now.
The case studies inventoried have been synthesized in order to get a generalized view of different wetland ecosystems, services, and drivers of change.
Methodological discussion was held on the creation/proposal of environmental quality indicators of wetlands.
Commitments made by each participant, both project members and guests, including the participation of undergraduate and graduate students in conducting literature reviews, practical work in hydrogeology courses and specialized monographs.
Other important outcome was the dissemination of the project during the ALHSUD Congress, and the presentation to the Latin American scientific community of the first approach to an assessment of the human services of groundwater related wetlands.
After the meeting a cooperation activity between the National University of Mar del Plata and the University of Antioquia was carried out. The activity consisted in a conference held in Medellin addressed to professionals from Water Management and Environment institutions and a scientific visit to the Embalse Peñol Guatapé, one of the largest water reservoirs in Latin America (more than 22 km² in surface area).

3.3. List of meetings with approximate attendance and number of countries
Pre 2nd Meeting: 20th June 2012. Buzios, Rio de Janeiro, Brazil. In the framework of the 22nd Salt Water Intrusion Meeting (SWIM)
Project members: Dr. Gerson Cardoso da Silva (Brazil), Dr. Teresita Betancur (Colombia), and Dr. Emilio Custodio (Spain). Guest participants: 8 professionals from Brazil, Portugal and
2nd Meeting: 21st August 2012. Cartagena de Indias, Colombia. In the framework of the XI Congreso Latinoamericano de Hidrogeología (ALHSUD)

Project members: Dr. Emilia Bocanegra (Argentina), Dr. Gerson Cardoso da Silva (Brazil), Dr. Teresita Betancur (Colombia), and Dr. Marisol Manzano (Spain). Guest participants: 7 professionals from Argentina, Chile, Dominican Republic and Ecuador.

Two meetings were held to encourage all members of the project team to discuss progress and next steps. The results of the Pre 2nd Meeting in Brazil were transferred to the 2nd Meeting in Colombia.

Scope of Meetings:
- Evaluation of the contents of the three data forms that were designed and implemented to carry out the inventory of cases during the first year of the project: 1) Hydrological characterization of wetlands, 2) Wetland ecosystem services survey, 3) Direct drivers of change to wetland ecosystem services.
- Assessment of mechanisms for the dissemination of the information in the Ibero-American academic and professional fields, Water Management and Environment Institutions and stakeholders.
- Methodological discussion on synthesis and generalization of the inventoried case studies.
- Methodological discussion on the creation/proposal of environmental quality indicators of wetlands.
- Comments on IGCP-604 website http://www.mdp.edu.ar/hidrogeologia/IGCP604

3.4. Educational, training or capacity building activities

There are some Bachelor, M.Sc. and Ph.D. students incorporated in the Project in order to prepare their thesis on subjects related to the general topic of the Project: 5 from Colombia, 3 from Argentina, 1 from Brazil, 2 from Ecuador, and 1 from Spain.

3.5. Participation of scientists from developing countries, and in particular young and women scientists

The amount of scientists from developing countries is very high since the IGCP 604 develops in Iberio-America. Latin American researchers represent the majority of participants in IGCP 604. Women scientists represent 70% of the participants.

3.6. List of most important publications (including maps)

BETANCUR, T., BOCANEGA, E., ROMANELLI, A., SANTA, D. 2012. Métodos para


3.7. Activities involving other IGCP projects, UNESCO, IUGS or others

4. Activities planned

4.1. General goals

The work plan for 2013 includes:

- Application of the data forms to case further studies in the countries involved in the Project: Argentina, Brazil, Colombia, Chile, Dominican Republic, Ecuador, Portugal and Spain.
- Inclusion of new Ibero-American countries to the Project in order to increase the number of case studies.
- Synthesizing the work performed in the ecosystem assessment of Spain (http://www.ecomilenio.es) to define methodological issues useful to support the possible correlation between services and hydrological or hydrogeological types.
- Synthesizing methodological aspects related to the issue of environmental indicators.
- Inclusion of students looking to contribute to the project activities and add case studies from literature review, from Brazil, Colombia and Argentina.
- Presentation of the paper “First approach to characterize the hydrology and services from groundwater dependent wetlands in Iberia and Ibero–America” during the 4th Multidisciplinary Conference on Hydrology and Ecology, Rennes, France, 13-16 May 2013.
- Dissemination of the IGCP 604 Project in the Argentine Hydrogeological Congress in
La Plata, Argentina, September 2013.

✓ Preparation of papers for international journals.

4.2. Tentative list of specific meetings and field trips (please list the participating countries)

3rd Meeting of the IGCP 604
Date: September 17-2113. Venue: La Plata, Argentina
The date of the 3rd IGCP-604 Meeting was chosen in order to foster the attendance of the project partners to the Congreso Argentino de Hidrogeología and Seminario Hispano Latinoamericano de Temas Actuales de Hidrología Subterránea, to be held in La Plata, Argentina, on September 17-20, 2013. Forecasted participant countries: Argentina, Brazil, Colombia, Chile, Dominican Republic, Ecuador, Spain.

5. Project funding requested
Delegates from two countries, Dominican Republic and Ecuador, were invited this year by the project leaders to attend the 2nd IGCP 604 Meeting in Cartagena de Indias.
Full funds (USD 10000) are requested to promote the attendance of more Latin American participants and keep up a good performance of the Project.

6. Request for extension, on-extended-term-status, or intention to propose successor project
N/A

7. Financial statement ($ USD only)

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<th>Received by (list names)</th>
<th>Country of origin</th>
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<tr>
<td>Gerson Cardoso</td>
<td>Brazil</td>
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<td>Emilia Bocanegra</td>
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<td>Samantha Jiménez</td>
<td>Ecuador</td>
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<td>Xiomara Lluberes</td>
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**Subtotal Transportation Expenses**

4800 USD

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<td></td>
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**Subtotal Accommodation Expenses**

2000 USD

**Organizing Expenses** (should be less than 10% of the allocation)

Bank fees, web page design cost, working lunch

**Subtotal Organizational Expenses**

700 USD

Enter GRAND Total of Above 7500 USD

Federal University of Rio de Janeiro, Brazil and University of Antioquia, Colombia partially supported the attendance of members to the meeting. Dr. Emilio Custodio was supported by the Salt Water Intrusion Meeting (SWIM) Organizing Committee.