



FINAL MEETING REPORT

First meeting of Task Forces on UNESCO's ecohydrology

University of Algarve, Portugal (7 – 8 June 2006)

Introduction

Task Forces (TFs) of UNESCO's ecohydrology programme were officially launched at their first meeting, which was held at the University of Algarve in June 2006. This meeting was organized as part of the joint work of UNESCO's International Hydrological Programme (IHP) and the Man and the Biosphere (MAB) Programme on "Managing Land-Water-Habitat Interactions through an Ecosystem Approach" for 2006 – 2007, in the broader context of the sixth phase of IHP (IHP-VI: 2002 – 2007). The agenda of the meeting is attached to this report (Annex I).

Mr Luis Chícharo, Vice-President of the Faculty of Marine and Environmental Sciences, University of Algarve, opened the meeting by welcoming the participants to Faro. This was followed by a presentation by Ms Lisa Hiwasaki (UNESCO-IHP) on the context of UNESCO's ecohydrology TFs and the goals and organisation of the meeting. After members of the TFs gave presentations on the work they are involved, on or related to ecohydrology, they separated into meetings of the different TFs to discuss scientific workplans for the biennium 2006 – 2007. A plenary session concluded the two-day meeting, during which each TF presented its workplan, and issues that were common to all TFs were discussed.

The plenary sessions of the TFs was chaired by Ms Hiwasaki, and the break-out sessions of the TFs were chaired by leaders of each TF: Mr Chícharo for Coastal Zones, Ms Maria Carmen Lemos (University of Michigan) for Social Sciences and Ms Monique Dubé (University of Saskatchewan) for Education & Capacity-building. Monitoring & Impacts of Global Change TF did not meet on this occasion. The list of participants is attached to this report (Annex II).

Meeting Conclusions

In break-out sessions, each TF developed its scientific workplan for the biennium 2006 – 2007.

- I. Coastal Zones: with the general objective of disseminating the application of ecohydrology approach to estuaries and coastal areas in different regions around the world, activities of this TF will focus on creating a world-wide network on coastal zones ecohydrology, and producing scientific and information-dissemination materials.
- II. Social Sciences: with the mandate to integrate social and natural sciences in ecohydrology, this TF will focus on producing a "position paper" that will suggest basic principles, frameworks and methodologies that can be considered to integrate social factors into existing ecohydrology projects.
- III. Education & Capacity-building: with the intention to "not reinvent the wheel", this TF will begin its work by synthesizing existing efforts and materials related to the development, application and promotion of ecohydrology through education & capacity-building.

At the plenary session, the following four points were discussed:

1. Facilitating interaction among the TFs and integration of different issues into ecohydrology: the first step is to use the Guadiana Estuary demonstration project site as a test site in order to promote a truly integrated approach to demonstrating ecohydrology.
2. Communication & networking among the TFs: a list serve will be created to facilitate communication among the TF members, and a website will be launched on the UNESCO Water Portal.
3. Strategies for resourcing: TF members will explore opportunities and initiate the process of writing funding proposals to implement certain activities related to ecohydrology.
4. Next meeting of the TFs: it was suggested that the next meeting of the TFs be held in conjunction with a symposium planned to take place in Brisbane, Australia, in September 2007. An alternative would be to hold the next meeting at a demonstration project site.

Detailed Scientific Workplans of each Task Force

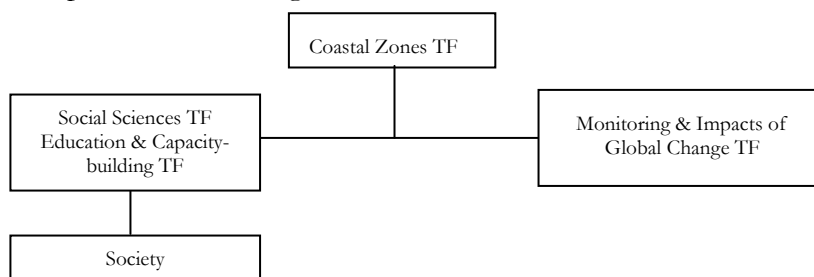
I. Coastal Zones

1. *Chairperson*: Mr Luis Chícharo
2. *Rationale*: now that the ecohydrology concept has been developed in estuaries and coastal areas of Europe, it is important that the knowledge consolidated in Europe is disseminated to other regions, especially those areas where ecohydrology is needed as a way of allowing sustainable use of estuaries and coastal waters resources.
3. *Terms of Reference*:
 - a. advance scientific knowledge towards development and application of ecohydrology tools to estuaries and coastal areas globally;
 - b. promote the application of ecohydrology to find solutions for sustainable development and use of coastal waters and estuaries;
 - c. promote capacity building in estuarine and coastal water ecohydrology;
 - d. facilitate linkages between education, society, and global and local aspects of ecohydrology to ensure that ecosystems continue to provide ecological services to society.
4. *Long-term vision and strategies*: vision—to globally promote the sustainability of estuaries and coastal waters by applying the low-cost technology ecohydrology approach to different regions, based on local scientific knowledge and technology and in relation to society while ensuring quality of life and ecosystem health. Strategy—implementing this vision needs to be based on the strategic articulation between scientific development, education and local society in different regions.
5. *Workplans for the biennium 2006 – 2007*:
 - a. *Objective*: to disseminate application of the ecohydrology approach to estuaries and coastal areas in different regions around the world.
 - b. *Expected results*:
 - i. expansion and dissemination of the ecohydrology approach worldwide;

- ii. transfer of knowledge already developed in Europe to other regions of the world, targeting the scientific, local society and other relevant communities;
- iii. constitution of a global network on coastal zone ecohydrology.

c. *Activities:*

- i. contact scientists in different regions to create a world-wide network on coastal zone ecohydrology and establish scientific and educational cooperation (October 2006 – August 2007);
- ii. contribute to the development of a webpage on coastal ecohydrology, under the UNESCO website (by January 2007);
- iii. organize workshops (Romania, October 2006) and training courses (Russia, Volga delta, July 2007) on coastal zones ecohydrology;
- iv. produce scientific and information-dissemination materials (December 2006);
- v. the following links with the other TFs are proposed to promote scientific development and training activities:



d. *Responsibilities & tasks of each TF member:*

- i. Mr Chícharo: as chairperson of the TF, he will coordinate the activities and promote contacts to establish a global network. He will look for colleagues, institutions and stakeholders worldwide that are willing to collaborate in the development of this project (October 2006 – August 2007);
- ii. Mr Eric Wolanski: will collaborate in the development of ecohydrology models in different regions; he will also support the development of the ecohydrology concept in coastal zones (January – August 2007);
- iii. Ms Suwana Panutrakul: will promote dissemination of ecohydrology concept in Asia, in cooperation with local IHP representatives; she will also establish contacts to organize an advanced study course and workshop in ecohydrology during 2007 (April 2007);
- iv. Mr Francisco Arias Isaza: will promote dissemination of ecohydrology concept in Latin America & Caribbean region.

6. *Partnerships:* the CZTF will develop cooperation with various existing projects, such as:
- a. LOICZ (Land-Ocean Interactions in the Coastal Zone);
 - b. EMECS (International Center for the Environmental Management of Enclosed Coastal Seas);
 - c. UNEP-ICARM (Integrated Coastal Area and River Basin Management);
 - d. Southeast Asia START Regional Center (Global Change System for Analysis, Research and Training network);
 - e. universities and other stakeholders.

II. Social Sciences

1. *Chairperson:* Ms Maria Carmen Lemos
2. *Terms of Reference:* based on the premise that any study on water problems that do not include the human and social contexts will be incomplete and will lead to poor water policy implementation, the SSTF will work with the mandate to integrate social and natural sciences in ecohydrology, such as:
 - a. emphasize the policy value of social scientific approach in how people make decisions to make best use of natural and social science generated knowledge;
 - b. support transition of knowledge and technology to decision-support tools;
 - c. promote usable science iterativity;
 - d. critique interdisciplinarity and transdisciplinarity.
3. *Workplans for the biennium 2006 – 2007:*
 - a. *Objectives:*
 - i. add value to already existing research/ projects in terms of usability and action;
 - ii. reach out to natural scientists without alienating them;
 - iii. emphasize the utility of social science approach for stakeholders.
 - b. *Activities:*
 - i. integrate social sciences into existing ecohydrology demonstration projects, which have recognized the importance of socioeconomic approaches but have not fully included them, through small, self-contained research modules, such as engaging stakerholders, RBA etc., via student exchanges; next, consider starting new demonstration project that is integrated from the beginning;
 - ii. write “position paper on the role of social sciences in ecohydrology”, which will suggest basic principles, frameworks, methodologies that can be considered for different projects. It should be noted, however, that each case has to be considered on its own merits as to the most suitable approach (first draft to be completed by beginning of September, final draft by 30 November 2006);
 - iii. the structure of this paper will be the following:

1. Introduction
 - a. the character of the problem and what is needed to solve is our point of departure to advocate for an integrated, interdisciplinary approach that includes the social sciences in an iterative fashion
 - b. the evolution of environmental problem solving
 - i. the different methodologies/methods that already exist
 - c. critique ecohydrology concept on integration
 - d. address the fact that demonstration projects recognize social perspectives but have yet to engage the social sciences into their research
 - e. request from demonstration sites project summaries to identify areas for inclusion of social science input
 - f. build framework matrix
2. Background on models of integrated problem solving frameworks that are already in place and how they may/have been used in environmental and ecohydrological problem-solving

3. Empirical section
 - a. Address/assess needs of demonstration projects on integration
 - b. Case studies
 - i. Guadiana River basin, Portugal
 - ii. Dead Sea basin, Middle East (both are also IHP-HELP basins)
 - iii. Other sites (where TF members work)
4. Conclusion and recommendations

- c. *Responsibilities & tasks of each TF member:*
 - i. Ms Lemos: introduction, literature review, framework;
 - ii. Mr Clive Lipchin: case-studies section on Portugal and Dead Sea Basin; overall paper integration;
 - iii. Mr Jorge Recharte: case study and critique of ecohydrology;
 - iv. Ms Chiung-Ting Chang: demonstration projects summaries on social sciences integration; literature review on environmental economics;
 - v. Mr Wapulumuka Mulwafu and Mr Roger Monte Domecq: case studies and editing.

4. *Other issues:*

- a. On integration: it is not possible for social scientists to come in with tools; discussion needs to take place first;
- b. Opportunity for social sciences input is mainly in transboundary issues, governance mapping, conflict resolution etc.

III. Education & Capacity-building

1. *Chairperson:* Ms Monique Dubé
2. *Background:* based on the premise that ecohydrology is one set of tools for Integrated Water Resources Management (IWRM), biodiversity and sustainable development, the work of the TF will be based on recognition of the following:
 - a. that there are significant training materials and courses already developed;
 - b. the need for this TF to be cross-cutting across the other TFs (including the demonstration projects) for development, application and promotion of ecohydrology and to ensure continuity and use of existing expertise and momentum;
 - c. that funding is limited and a focused ToR for this TF is essential to avoid an excessive workload associated with participation.
3. *Long-term vision and strategies:* vision—industry standard for the management and development of water resources worldwide will include the principles of ecohydrology (using the relationships between hydrological processes and biotic dynamics for sustainable water resources management within the context of IWRM). Strategy—to develop, apply and promote ecohydrology as a recognizable banner for sustainable IWRM.
4. *Workplans for the biennium 2006 – 2007:*
 - a. *Objectives:*
 - i. to support UNESCO-IHP as a central clearing house for ecohydrology training and education;
 - ii. to facilitate and support ecohydrology training and education, and establish an enabling environment;

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- iii. to ensure that the principles of ecohydrology are understood and applied as a standard context for IWRM.
- b. *Expected outputs:*
- i. Brochure/questionnaire
 - ii. Partner List
 - iii. Bibliography of existing materials and courses offered in ecohydrology
 - iv. Synthesis and gap analysis
 - v. Review of needs and establishing future priorities
 - vi. Information available for inclusion on UNESCO website
 - vii. Coordination of ecohydrology promotional activities through conferences
Targeted conferences include:
 - 5-9 November 2006: Society of Environmental Toxicology and Chemistry North America 27th Annual Meeting, Montréal, Québec, Canada;
 - 9-12 November 2006: Earth System Science Partnership Global Environmental Change Open Science Conference, Beijing, China;
 - 18-23 February 2007: 6th International Symposium on Ecohydraulics, Christchurch, New Zealand;
 - 3-6 September 2007: 2nd International Conference on Environmental Flows, Brisbane, Queensland, Australia.
 Targeted internet sites include the WaterNet website.
 - viii. Pilot ecohydrology course with Haiti case studies (by Mr Emmanuel Evens)
- c. *Activities:*
- i. 2006 – 2007: synthesize existing efforts and materials related to the development, application and promotion of ecohydrology through education and capacity-building, conduct a gap analysis and list of priorities, explore partnerships, increase access to existing information;
 - ii. 2007 – 2008: based on identified gaps and perceived priorities from the previous biennium to consider the development of courses and materials to promote ecohydrology.
- d. *Timeline of activities, responsibilities & tasks of each TF member :*
- i. Phase I: Partner Identification (by 31 October 2006)
Several organizations and individuals have expertise and have expressed an interest in education and capacity-building related to ecohydrology. These individuals/groups will be identified with the assistance of UNESCO and will be contacted to determine their existing activities, interest, and perceived needs related to output of this TF. A brochure/questionnaire describing the plan for EBCTF and asking for partner input will be developed and distributed with the assistance of UNESCO. It is important that examples of ecohydrological activities be included in the brochure to capture audiences who may not consider themselves under the ecohydrology banner.
→ Partner identification to be initiated by UNESCO, coordinated by Mr Evens, all
→ Brochure/questionnaire development by Mr Jay O’Keeffe and production by UNESCO

- ii. Phase II: Synthesis of Existing Materials
Guidelines and manuals on ecohydrology already exist. In addition, several courses (e.g., coastal zone ecohydrology) are already offered and publications for specific research activities are available. In addition many courses deal with aspects of ecohydrology yet are not identified as such. These examples should be captured in the synthesis. These materials/activities will be synthesized in a bibliographic form.
→ Synthesis by Ms Dubé with student support
- iii. Phase III: Gap Analysis and Needs Assessment (Draft 1: by 31 May 2007)
Based on discussions with partners (including other TF leaders) and review of existing materials, a gap analysis will be conducted to identify needs and priorities related to education and capacity-building.
→ Gap Analysis and Needs Assessment by Ms Dubé with student support
- iv. Phase IV: Increasing Access to Existing Information (31 May – 31 July 2007)
The bibliography and gap analysis based on existing materials and courses related to ecohydrology will be made available to UNESCO for inclusion by them on the UNESCO Ecohydrology website.
→ Review of TF Output by all; coordinated by Ms Mary Seely

Plenary Discussion:

1. Facilitating interaction among the TFs:

The importance of interaction among all TFs was stressed, and promoting a fully integrated demonstration project site was recognized as the best way to facilitate this interaction. Mr Chícharo, leader of Coastal Zones TF who works in Guadiana, was identified to be a leader in implementing this process. The steps to be taken are: (a) bringing graduate students (masters & PhD levels) and local social scientists in the demonstration site; (b) expand/moderate existing funding proposals, based on the already existing research activities at Guadiana; (c) members of the TFs will provide inputs and ideas on where to get funding; (d) the TF members could then jointly develop a common framework to move forward ecohydrology in an integrative way, which could be applied to other/new demosites. The initial steps, namely (a) – (c), would be taken this biennium.

2. Communication & networking among the TFs:

A list serve will be created, to facilitate and maintain communication among the TF members. Input into website can be provided through this list serve. Other means of communication, such as teleconferences, could also be used for follow-up.

3. Strategies for resourcing:

UNESCO Secretariat will provide information on possibilities with UNESCO extra-budgetary projects, at the same time, TF members will explore opportunities and initiate the process of writing funding proposals to implement certain activities related to ecohydrology.

4. Next meeting of the TFs:

It was agreed that a joint meeting of the TFs, where the TFs can meet together and then split into separate meetings, is a good format for the next meeting as well. A suggestion to hold the next meeting of the TFs in conjunction with the International Conference on Environmental Flows in Brisbane, Australia, in September 2007 was made (to be followed-up/ discussed with Mr

Stuart Bunn by Mr Yasin Al-Zu'bi). An alternative is to hold the next meeting at a demonstration project site.

It was also suggested that in order to maximize resources, the TF meeting could be held in conjunction with a training course. Alternatively, holding a mini-conference/session in conjunction with the conference was identified as a more feasible and economical option.

5. Other items:

- powerpoint presentations made by each participant will be converted to pdf and be made available to all TF members (*action:* University of Algarve to upload files onto the UNESCO ftp server)
- listserv to be created (*action:* by UNESCO Secretariat)
- website to be launched (*action:* by Secretariat, with inputs from TF members)



AGENDA

First meeting of Task Forces on UNESCO's ecohydrology

University of Algarve, Portugal (7 – 8 June 2006)

Day 1 Wednesday, 7 June (09:30 – 18:00)

Joint meeting of three Task Forces (TFs) on ecohydrology:

- (i) Coastal Zones
- (ii) Social Sciences
- (iii) Education and Capacity-building

09:30-09:40 Welcome by host of meeting (L. Chicharo, University of Algarve, Portugal)

09:40-10:00 Introduction: the context of UNESCO's ecohydrology TFs and the goals & organisation of the TFs meeting (L. Hiwasaki, IHP)

10:00-10:15 Ecohydrology: an integrative science to solve issues surrounding water, environment and people (M. Zalewski, European Regional Centre for Ecohydrology, Poland)

10:15-10:45 Short introductions of TF members

10:45-11:00 *Coffee/tea break*

Break-up into different TF meetings:

11:00-12:15 Presentations by each TF member that review activities taking place on specific topics in his/her country/region (10 - 15 mins each)

Election of chairperson/ TF leader

12:15-13:00 Discussion on Terms of Reference (ToR)

Discussions on long-term vision and strategies of the TF

13:00-14:30 *Lunch*

14:30-16:15 Discussions on workplans for the biennium 2006 – 2007: objectives, expected results & activities (including joint activities with different TFs)

16:15-16:30 *Coffee/tea break*

16:30-18:00 Continuation of discussions

Day 2 Thursday, 8 June (09:30 – 18:00)

- 09:30-11:00 Review of Day 1 discussions by TF leader in order to finalize:
- ToR
 - strategies for implementation of activities
 - workplans for the biennium, including timeline
 - joint activities to be conducted with other TFs
- 11:00-11:15 *Coffee/tea break*
- 11:15-13:00 Continuation of discussions
- 13:00-14:30 *Lunch*
- 14:30-16:00 Presentation by the leaders of each TF on the report of the TF meeting to be presented to the SAC
- Discussions on next meeting in 2007: dates & venue
- Wrap-up
- 16:00-16:15 *Coffee/tea break*
- Joint meeting of the three TFs:*
- 16:15-17:50 Short presentations by TF leaders
- Discussions
- 17:50-18:00 Closure of meeting

Meeting documents

Working documents

- Agenda
- IHP/Bur-XXXIX/13 “Ecohydrology: Appointment of the SAC and TFs”
(a document prepared for the IHP Bureau, regarding ecohydrology activities to be conducted under IHP for this biennium (2006 – 2007) and the organizational structure and general terms of reference (ToR) for SAC & TFs)
- List of participants

Information documents

- Members of UNESCO’s SAC & TFs on ecohydrology
- Compilation of inputs prepared by TF members

Output of the meeting

- Report of each TF (to be drafted by TF leaders/rapporteurs)



LIST OF PARTICIPANTS

First meeting of Task Forces on UNESCO's ecohydrology

University of Algarve, Portugal (7 – 8 June 2006)

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