



The Joint IAHR-IAHS Working Group on Climate Change Impact on the Hydrological Cycle, Water Management and Engineering



PROJECT DESCRIPTION

Motivation

1 It is now well accepted that, in the light of the recent IPCC reports and the award of the Nobel Prize to the Panel, the vast majority of members of the scientific community are convinced that the climate is changing or at least will experience a significant fluctuation already during the current century. However, some hydrologists, water experts and hydraulic engineers are not yet ready to incorporate climate change scenarios in their designs for such projects as:

- flood protection and river training,
- dam rehabilitation,
- water resources management under water scarcity and changes in the hydrological regimes.

2 In view of the above, it is important to investigate the extent and cause of this reluctance to incorporate climate change scenarios in designs and engineering feedback, and take appropriate action for promoting it.

Establishment of the Working Group

3 The Joint IAHR-IAHS Working Group on Climate Change Impact on the Hydrological Cycle, water management and Engineering was established by the two parent Associations in 2008, with the following membership:

For IAHR

Toshiharu Kojiri, Water Resources Research Center, Kyoto University,
Japan & IAHR Working Group on Climate Change
Arthur Mynett, WL Delft Hydraulics, the Netherlands & UNESCO-
International Flood Initiative
Roberto Ranzi, University of Brescia, DICATA, Italy & IAHR Working
Group on Applied Hydrology

For IAHS

Nigel Arnell, Walker Institute for Climate System Research, University of
Reading, UK
Valentina Krysanova, Potsdam Institute for Climate Impact Research,
Germany & President-elect of the International Commission on Water Quality
Esko Kuusisto, Finnish Environment Institute, Finland

4 It was decided that the Working Group will be chaired by Roberto Ranzi, nominated by IAHR, until its meeting in November-December 2009, with Valentina Krysanova acting as vice-chair. From then until November-December 2010, these two roles will be reversed, at which time the Group will choose a new chair and vice-chair for the remainder time of the project.



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Objective

5 The objective of the project is to encourage a close co-operation between the scientific and engineering communities in taking appropriate and timely action in response to the impact of climate change on the hydrological regime and on water resource projects.

Expected outputs and products

6 The expected outputs are:

- Inventory of climate change impact studies and the engineering feedback for the adaptation to climate change impact on the hydrological cycle, and
- Scientific Report.

7 The Working Group will prepare the Scientific Report in two parts, with IAHS and IAHR respective WG members as leading authors on:

(a) the current state of knowledge as regards the impact of projected climate change on the hydrological regime in different regions of the world, where these regions are defined not just in geographic terms but also on the basis of their level of economic and water resources development;

(b) the extent to which these impacts are recognized and taken into account by national water authorities, engineering organizations and other regulating bodies in setting their standard practices and procedures for the planning, design and operation of water works. This will include both “hard” responses, such as the construction or enlargement of engineering structures, and “soft” responses, such as changes in legislation or the operating rules of existing structures.

7.1 The report will include recommendations on:

(c) what the climate and hydrological communities still need to do to overcome the reluctance of those responsible for designing and managing water projects to take account of climate change scenarios in their work, and

(d) if they do take these scenarios into account, what sort of response is considered appropriate on the side of the water engineering and management communities.

7.2 Each of the two parts of the Report will be in the order of 15-20 pages in length, including a one-to-two page Executive Summary.

7.3 The Working Group will make proposals as to what further work might be undertaken as a follow-up to the present project and who might undertake that work.

8 The Report will be accompanied by an Inventory of climate change impact studies including all the information used in its compilation and the names of the people and institutes contacted and supplied information. It will list existing projects, studies, directives, laws taking into account the impact of climate change on the hydrological cycle and water projects. This Inventory will be structured as a metadata base, designed as simple as possible and will be web-based.



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Allocation of responsibilities

9 All members of the Working Group will contribute to all aspects of the report, but there will be a need to allocate principal responsibility for topics/sections to individuals. Accordingly, work on the topic referred to under 7(a) above will be led by the IAHS members of the Group, and topic 7(b) will be led by the IAHR members, the three members concerned in each case deciding amongst themselves how to distribute lead responsibility for sub-topics, for example, such as snow and ice or groundwater in 7(a) and flood control or irrigation in 7(b) - see the Work Plan below.

Work plan and milestones

2008

October: Kick-off Meeting in Capri

December: Completion of the meeting report and Project Description.

2009

February: Submission of the Project Description to IAHR and IAHS.

February-March: Endorsement of the proposals by IAHS and IAHR. Agreement on a more detailed division of responsibilities, on template(s) for the collection of information, and the way(s) of contacting the scientific community.

March: Design of a Questionnaire template asking about studies related to topics 7(a) and 7(b). Design of the structure of the Inventory metadata base.

March-July: Distribution of the Questionnaire and start of the information collection from existing studies using published literature and contacts with members of IAHR and IAHS, and other individuals and institutions.

August – September: Information about the Joint Working Group activities and distribution of the Questionnaire at the Vancouver Congress (IAHR) and at the Hyderabad Assembly (IAHS).

August – September: Compilation of a brief report on preliminary results (Milestone 1) and their presentation to IAHR at the Vancouver Congress and to IAHS at the Hyderabad Assembly.

October – November: Collection of further information and setup of a web based inventory.

November – December: Preparation of a more complete set of results, their presentation and discussion at a meeting of the Working Group. One representative per association (at least) has to participate.



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2010

January – September: Collection of further information seeking inputs more widely through direct contacts and through the web.

October – December: Compilation of the first draft of the final Report (Milestone 2) and the web-based Inventory (Milestone 3).

2011

January – March: Peer review of the draft report.

April – May: Preparation of Final report (Milestone 4)

June – July: Presentation of the final Report and Inventory to IAHR and IAHS Assemblies in Australia for their consideration leading to decisions as to its possible presentation to WMO, UNESCO, etc. plus decision of the two Associations on the future of the project and other joint activities.

2012

Publication of the Scientific Report (Milestone 5) and the Inventory (Milestone 6). Dissemination of the project results.