

Report of the Fourth Hydrology 2020 Group meeting
University of Calgary, Canada
27-29 October 2004

The IAHS Hydrology 2020 Working Group met for the 4th time at the University of Calgary, Alberta, Canada from 27th to 29th October 2004. Originally the meeting was to be held in Burkina Faso in December 2004 but the dates were brought forward because of the planned publication deadline for the report. The main aim of the meeting was to review draft chapters for the Group's report on the Future of Hydrology to be published in the "Red Book" series by IAHS Press in 2005. At the Group's last meeting, at the IUGG2003/IAHS Assembly in Sapporo, Japan, in July 2003, an initial structure of the report had been identified. Since then four specialist subgroups had prepared draft chapters for the report on the topics of: global water resources assessments and water resource management, land surface processes, surface and subsurface hydrology (including water quality and ecohydrology), water policy and societal needs.

On Day One of the meeting the draft chapters were presented by each subgroup to the rest of the Group and evaluated. From this discussion it was decided to restructure the report to create a more unified and logical document. Sections of the draft chapters will be incorporated in the revised report structure and each chapter will be multi-authored. The report will not aim to provide a comprehensive review of hydrology since this can be found in numerous textbooks, but instead it will summarise the group's discussions of the current and future state of hydrology. The agreed revised report structure is as follows:

- Preface
- Chapter 0: Executive summary (to be translated into all major world languages by the group members)
- Chapter 1: Introduction to the book
- Chapter 2: Hydrology and societal water needs in the 21st century
- Chapter 3: World water resources, water use and water management
- Chapter 4: Current state-of-the-art in hydrology
- Chapter 5: Intersection of hydrology and other disciplines
- Chapter 6: Gaps and bottlenecks in hydrology and the future of hydrology
- Chapter 7: Conclusions and recommendations
- References
- Appendix: Hydrology 2020 group meeting reports

At the start of Day Two of the meeting the contents of each chapter in the revised report structure were identified in more detail. The majority of the day was spent brainstorming on the content of Chapters 6 and 7 of the report. For this the Group first identified bottlenecks that are impeding progress in hydrology under three categories: scientific, technological/practical and organisational capacity and communication. From each category one major bottleneck was selected to explore in more detail what sequence of actions would be required in order to overcome it. For example, the first action required in order to create a global hydrological database might be for hydrologists to demonstrate the value of hydrological data to policy makers. As a result of the brainstorming activity, roadmaps were produced to suggest how major obstacles to progress in hydrology can be overcome.

The roadmap exercise was completed at the start of Day Three of the meeting. A list was also compiled of each member of the group's vision for the future of hydrology, key messages and

recommendations for the report. Writing tasks and approximate number of pages were assigned for chapter subsections, co-ordinators were identified for each chapter and the group started work on redrafting the report chapters. The working deadline for receipt of the group's report by IAHS Press had been set for 1st December 2004. However the Group felt that submitting the report by this deadline would compromise its quality and utility. A new schedule for the report preparation was therefore devised which will include external review of the document by nominated reviewers outside the Hydrology 2020 Group and will also enable feedback to be incorporated from the Group's workshop at the IAHS Symposium in Brazil in April 2005. A more-or-less complete draft of the report would be available by April 2005 and would be finalised at another meeting of the Group in May/June 2005 for submission to IAHS Press in summer 2005.

Finally the Group discussed the content and format of workshop W1 "Hydrology in 2020: What shall we target now?" in Brazil in April 2005. The main aims of the workshop will be to solicit feedback from the wider hydrological community on the content of the draft report and also to discuss how best to promote discussion of the future of hydrology by young hydrologists after the formal disbanding of the Hydrology 2020 Group. To form a basis for discussion it is intended to make the table of contents and the introductory and concluding chapters of the book available on the web prior to the workshop. At the workshop the content of the report will be presented by the Group members and input will also be invited from the nominated external reviewers of the report. In order to encourage input from all participants at the workshop, "breakout" groups would discuss issues such as "a vision for hydrology". Each group's discussions would then be summarised as a basis for overall discussion amongst all workshop participants. This format was used at the Group's workshop at the IUGG2003/IAHS Assembly in Sapporo, Japan, in July 2003 and appeared to work well. The Group invite all delegates at the IAHS Symposium in Brazil in April 2005 to attend the workshop and is looking forward to discussing the draft report with them.

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