

REPORT OF THE 3RD HYDROLOGY 2020 MEETING

This is the long version of the report of the meeting held on the 12-13 of July 2003 at Lake Toya, Hokkaido, Japan. I have reported greater detail here so that our four friends who could not attend the meeting can get a better picture of the discussions that we had. Please use this document for internal use only.

The meeting was attended by 8 of the 12 committee members plus eight young hydrologists from Japan. The Japanese hydrologists held a meeting discussing the future of hydrology earlier in the year and they were therefore well prepared for actively participating in our discussions. On the first day, our Japanese colleagues introduced us to their research projects and their ideas on the future of hydrology. It was impressive to see the diversity of research projects that are being carried out by this group, ranging from land surface-atmosphere interactions, N-cycling, different aspects of forest hydrology, remote sensing, global tracer studies, urban hydrology, snow hydrology to catchment modeling. The presentations were followed by an interesting open discussion.

Dr. Koichiro Kuraji (University of Tokyo), who understands the danger of having too many cyber-hydrologists, presented an interesting viewpoint. He described most current hydrologists as so-called “first-mode” hydrologists and stated that we need more “second-mode” hydrologists. The latter is characterized by a wider interdisciplinary background and carries out projects in a more holistic manner. This enables better communication with colleagues from other disciplines (other natural and environmental sciences, social sciences, etc.). In brief, the second-mode science does not aim to be evaluated by existing science but its value exists in social contributions.

On the second day, Caterina reported the results of her initiative to solicit opinions and suggestions from the Canadian hydrological community. The approach involved a questionnaire sent first by regular mail and then followed up by e-mail that described the Hydrology 2020 working group’s mission and variations of the four questions from our flyer. Unfortunately, out of 100 letters that were sent out, only two hydrologists responded. This poor response was partly attributed to a lack of cohesion amongst Canadian hydrologists and the diversity across the country. In response to the question, “Should hydrology be integrated into other sciences or be an “integrator” of other sciences”, both respondents (one an Engineer and the other a Geographer) replied that hydrologists should be the integrators because other sciences will use hydrology as

they need it and do so poorly. The hydrological community does not have consistent approaches or standards so scientists from other disciplines do not always use the correct approach when dealing with hydrology. With regard to the technological hurdles facing the advancement of hydrology, the respondents claimed the lack of knowledge of scale effects and the lack of access to data. When asked how hydrologists could promote international networks for measurement, knowledge and cooperation, both agreed that funding was a key issue. The response was similar to the question of how to attract young, interested students to the field. Ignorance of hydrology by the general public was also cited as a problem. This same ignorance was also indicated as an obstacle to effectively influencing water policy. One suggestion was to demonstrate change versus variability and link it to risk. Assisting developing countries also involved demonstrating the relationship between variability and risk. This would help to raise funds for research in developing countries. Donating used and older but functioning equipment to developing countries might also be helpful.

Kate reported from a workshop to discuss the future of hydrology that was held during the last meeting of the British Hydrological Society in September 2002. The UK seems to be better organized with a biannual meeting of hydrologists from different disciplines (engineering, geography, others). The four science questions were discussed in small groups. The outcome was that the groups addressed similar issues as discussed in our last meeting and the intermediate report. One new issue that came out of the workshop discussions was the cost of water services: some workshop participants thought that water provision should be free, whilst others believed that it would inevitably have a cost. It was decided that few new thoughts (summarized in a report from Kate and circulated by email in 2002) will be integrated into our final report (the red book).

After hearing some of the criticisms about our group and its activities from audience members of the H2020 workshop in Sapporo, we discussed some ideas on how to continue the group's mandate after our activities cease in 2005. We felt that a "junior hydrologist" should always be invited to IAHS bureau meetings in the future. In addition, during all future IAHS symposia there should be a workshop on the future of hydrology. This workshop should be closed to hydrologists over the age of 35 in order to encourage a free-thinking atmosphere. A young hydrologist (probably the "junior hydrologist") should organize this workshop. We will perform an open call for this person after the next IAHS meeting in Brazil. Kate will contact Louise Heathwaite of the IAHS Bureau to discuss these proposals.

The rest of the meeting was used to organize the next steps involved in completing the final report. We agreed on the following structure for the Red Book:

Chapter 0: Executive Summary (about 2 pages).

- Suggestion: Translation into Japanese (Taikan), German (Wolfgang, Stefan) and French (Harouna, Pierre). Does anybody speak Spanish? KATE CAN PROBABLY FIND A SPANISH SPEAKER. HOW ABOUT TRANSLATIONS ALSO INTO RUSSIAN (JEANNA) AND MANDARIN (FU)?

Chapter 1: Introduction.

This chapter will include text on the uniqueness of hydrology and links to social demands. (led by Taikan)

Chapter 2: State-of the-Art

- Divided into 4 main chapters with an overview/review character, including a description of the state-of-the-art of our fields, milestones and key references (about 10-20 pages each chapter).
- *Group one:*
 - Taikan, Jeanna, and Fu: (global water resources issues) (led by Taikan).
- *Group two:*
 - Kate, Susan, and Stefan: (subsurface processes and links to ecohydrology) (led by Kate).
- *Group three:*
 - Caterina, Stewart and Pierre: (surface processes) (led by Caterina)
- *Group four:*
 - Johan, Wolfgang and Harouna: (social issues) (led by Johan)

Chapter 3: Scientific and social obstacles, gaps, bottlenecks, Social demands, future technologies

- (led by Susan, (bottlenecks), Johan (social), Stewart and Caterina (technologies))

Chapter 4: Future, incl. timeline and road map (led by Caterina)

Chapter 5: Key messages, concluding remarks (led by ?)

Deadlines:

- December 2003: First drafts of chapter 2
- Spring 2004: First drafts of chapters 3 and 4
- Summer 2004: next working group meeting
- December 2004: Completion of all chapters, incl. reviews etc.
- January 2005: Send material to IAHS Press
- April 2005: IAHS conference in Brazil, incl. workshop about the future of hydrology, presentation of our red book and Hydrology 2020 party with many Caipirinahs and Brazilian dancing!!!

Next meeting: For several reasons, including a desire to fulfill the IAHS mandate to support less developed countries, we would like to have the next meeting in Burkina Faso (first preference), or St. Petersburg (second preference). Taikan will contact Harouna about a suitable time (dry season, etc.) and organizational details (possible meeting place etc.). Taikan will also contact IAHS president Kuni Takeuchi about financial support. All members will check with their national committees about other sources of funding.

Further decisions:

- Caterina will ‘kick’ the rest of us to keep on working by a regular e-mail at the start of each month.
- Phone conferences within/between the working groups are planned.

Last but not least, the whole trip to Lake Toya, including the Japanese Hotel, bath, dinner, beer, sake and fireworks were outstanding. Thanks again to Taikan and the marathon man “K”.

Reporter: Stefan Uhlenbrook