

## Session Two

### Responses by Representatives of the HKH Countries and Collaborating Institutions

**Chairman: Professor M. Fazlul Bari, Bangladesh**

**Mr. S. Mohammad**, one of the delegates from Afghanistan, presented a paper on the state of the hydrological network in Afghanistan and asked for cooperation in rehabilitating the destroyed hydrological stations in Afghanistan. He strongly supported the establishment of FRIEND in the HKH and confirmed his country's willingness to participate in the project.

**Professor M. Hussain**, one of the official delegates from Bangladesh, highlighted the highland-lowland linkages in hydrological behaviour. He pointed out that the proposed work was beneficial and reaffirmed Bangladesh's interest in cooperating and supporting the project.

**Professor Wei-Zu Gu** from China described research work in the Lhasa area and expressed his willingness to collaborate and exchange experiences on behalf of his institution in his personal capacity.

**Dr. R.P. Singh** described the modelling, GIS, and database activities of his institution and expressed his willingness to contribute to the programme. He emphasised the need for funding and monitoring the network and the training needs of technical staff.

**Dr. B.P. Parida**, supported Dr. R.P. Singh's views and pointed out that the present proposed project was desirable and beneficial. He emphasised the need for uniformity in methodology, instruments, and monitoring activities. He urged that uniform guidelines be developed for future monitoring and research activities. He also suggested that water quality data be collected.

**Mr. U.Y. Myint**, one of the official delegates from Myanmar, described the state of hydrometeorological stations in Myanmar and highlighted the problems therein. He agreed with the proposed name for the FRIEND project and confirmed Myanmar's support.

**Mr. A.P. Pokhrel**, representing Nepal officially, noted that the project proposal was good and expressed Nepal's willingness to participate actively in the proposed project and its programme activities. He stated that the proposed HKH-FRIEND regional data centre was necessary and could be located at ICIMOD. However, he pointed out that the budgetary aspect was lacking from the proposal. He also suggested the incorporation of water quality monitoring in the programme.

**Professor B.A. Chandio**, official delegate from Pakistan, spoke of the flexibility in exchange of hydrological data in his country. He cited the example of the exchange of hydrological data between India and Pakistan in the context of the flood warnings for the Ravi and Sutlej rivers. He expressed Pakistan's willingness to support the proposed FRIEND-type project for the HKH and also added that a database centre under the pro-

posed project could be located in Pakistan. He further offered to provide logistics' and institutional support.

**Dr. Z.W. Kundzewicz**, WMO representative, stated that WMO was interested in the assessment of water resources at the regional level and in promoting international cooperation in operational hydrology and would consider it if the HKH-FRIEND requested help.

**Dr. W. Grabs**, Head, Global Runoff Data Centre (GRDC), Koblenz, Germany, described the activities of GRDC and expressed his interest in supporting and assisting the proposed HKH-FRIEND.

**Dr. L. Molnár**, member of the Slovak Committee on Hydrology, Slovakia, expressed his willingness to assist in the training programme.

**Professor A. Herrmann** said that the German IHP/OHP committee strongly supported the establishment of a FRIEND Group.

## Discussions

**Dr. S. Shah** said that, when data collection was considered, the coastal areas should be kept in mind too.

**Dr. B.P. Parida** suggested that incentives be given to encourage regional countries to participate in the proposed project. The incentives could be that a FRIEND member country could have access to FRIEND data globally and also assistance in the study of global trends in hydrological processes.

**Dr. R.P. Singh** again emphasised the fact that academic institutions and scientists could collaborate in the proposed project better than their government counterparts.

**Professor A. Herrmann** pointed out that FRIEND was an IHP project under the auspices of UNESCO, and that the official channels of UNESCO could be used to disseminate information. Normally, research work in FRIEND Europe was carried out by universities and private agencies.

**Dr. A. Gustard** mentioned that it had taken more than 10 years to establish the European FRIEND. In Europe and South Africa, FRIEND had used UNESCO whenever it was conducive and useful. There were FRIEND countries that might not necessarily have an IHP committee. He recommended starting on a small scale, as all FRIEND projects had done, using minimal data, funds, and staff. He also stated that FRIEND Europe and South African-FRIEND were ready to provide consultancy support. On the question of the scale/area of the basins, he suggested they should not be rigid about having 500sq.km. as the minimum size. He also stated that there was no such limit in South Africa and suggested that existing research projects could be used to introduce FRIEND in the HKH. He also suggested that a new direction for the science, e.g., water quality and sedimentation, be introduced and emphasis be given to supporting the establishment of new stations rather than just collecting available data. He stressed the fact that training and follow-up activities should be given high priority. He also suggested a measure of flexibility, by starting small and

giving it the shape of a club. He stated that then most countries would want to join in. The name should be easily identifiable. Database security was important and the access to databases should be established by the participating countries and not by third parties. For this, it was better to establish a protocol to restrict the data within the region. He suggested that the project start gradually.

**Dr. W. Grabs** stated that GRDC worked on a signed mandate and followed resolutions adopted by WMO for exchange of data.

**Dr. S. Shah** noted that donors were more interested in the environment than in issues of hydrology.

**Dr. A. Gustard** responding to Dr. Shah, stated that there were some institutions in Europe (e.g., Brussels Small Hydropower) which were interested in small-scale hydropower and low-flow studies. On database collection, he suggested that developing new database directories of institutions and researchers could also be considered.

**Dr. L. Molnár** emphasised the need to monitor existing research projects and pointed out that all scales were important.

**Dr. A. Gustard** pointed out that UNESCO had made significant efforts to support research in hydrology in South America and similar efforts should be made in this region as well.

**Mr. L.A. Mandalia** stated that UNESCO had already compiled a list of hydrologists in the region. Setting up a database would be the first step.

**Professor S.R. Chalise** noted that so far the main effort had been to bring all countries of the HKH together to cooperate in research for an improved understanding of very complex hydrological systems. He pointed out that it was difficult for any country to have an answer to all the hydrological problems, whether these involved small hydropower or Glacial Lake Outburst Floods (GLOFs). The generation of sufficient data would require substantial funds. The Regional Working Group had been created with the philosophy of a small-scale project. In this forum, they were reiterating what they had said five years previously. He concluded by saying that the need for the project had been expressed unanimously, and the countries that could contribute should join and proceed and those that could not join would hopefully join later. The whole philosophy of FRIEND was based on exchange. No one belittled the capacity of research in the region but knowledge had to be shared among all the centres. On behalf of ICIMOD, he offered to undertake the job of preparing a hydrological database with regional cooperation and support.

**Mr. L.A. Mandalia** welcomed this offer and said that they should think of cutting costs. ICIMOD would be a good centre since it already had an established data centre. He suggested that the project be introduced in two or three countries with a secretariat at ICIMOD.

**Professor M.F. Bari**, who was chairing the discussion, noted that budgetary constraints did exist. He also stated that the countries that had agreed to join HKH-FRIEND were Afghanistan, China (Research Institute Level), India (individual basis), Myanmar, Nepal, and Pakistan.