

## Conference Report

### **International Workshop on Reservoir Inundation-related Issues**

6 October City, Egypt, 12–13 February 2007

The International Workshop on Reservoir Inundation-related Issues was held at the Regional Centre for Training and Water Studies (RCTWS), 6 October City, Egypt, 12–13 February 2007. It was organized by the Third World Centre for Water Management and the International Hydropower Association, with the support of the Arab Fund for Economic and Social Development, Ministry of Water Resources and Irrigation of Egypt, International Commission on Irrigation and Drainage, Arab Water Council and International Water Resources Association.

Impacts of large dams have been a much-debated issue during the past decade, primarily because of their perceived negative social and environmental impacts. Issues such as losses of archaeological treasures and the production of greenhouse gases because of reservoir inundation are also receiving attention. However, as important as all these negative impacts are, discussions in general have not been very objective for the most part because the positive impacts of dams have often been underestimated, and also because of the absence of serious and reliable analyses of the positive and negative impacts of large dams after years of their operation.

The international workshop thus had the objective of exchanging experiences and information among experts, disciplines and countries on reservoir inundation-related issues. These included reservoir-induced greenhouse emissions and their possible impacts on the climate, case studies of resettlement and rehabilitation policies and practices, and preservation practices of archaeological treasures. Some 30 participants were specially selected and specifically invited in their personal capacities to review experiences from Argentina, Australia, Brazil, China, Egypt, India, South Africa, Turkey and the United States. Discussions and analyses focused on the lessons learnt (both positive and negative), constraints faced and how these could be overcome, as well as on the way forward for the future for the construction and operation for properly planned large dams.

During the discussions of the case studies presented at the workshop, experiences on resettlement and rehabilitation policies and practices exemplified both benefits and costs of large dams. Most importantly, the analysis showed their progressive evolution over time to increase societal benefits. The presentations included actual experiences from Argentina (Salto Grande and Yaciretá dams); Brazil (Manso Dam in Mato Grosso); India Bhakra-Nangal Project and Sardar Sarovar [Narmada] Dam; Lesotho (Highlands Water Project); South Africa (Pongolaport Dam); and also resettlement policies and practices in China.

In terms of potential emission of greenhouse gases from reservoirs and their possible impacts on climate, few field studies available are mostly based on the emissions from reservoirs in tropical areas. At the present state of knowledge, and because of inadequate data availability, no definitive statements on the extent of greenhouse emissions can be made from reservoirs. The findings of the Inter-governmental Panel on Climate Change were also reviewed. The unanimous conclusion of the experts was that in the absence of additional data and further research no specific conclusion could be drawn one way or another.

The cases presented from Argentina included dams on international borders and the complexities associated with the decision-making processes in such cases. The Brazilian case studies analyzed the overall planning of large dams in the country, as well as resettlement experiences especially for the Manso multipurpose project in the state of Mato Grosso.

The China case study showed how resettlement and rehabilitation policies have evolved in the country from the 1980s to the present. At present, pro-dialogue policies are being used to discuss social and environmental issues. This was exemplified with detailed analyses of the Xialongdi and the Three Gorges dams. The analyses indicated how different systems of government, and changing perspectives of the leaderships, have resulted in increasing focus to search for appropriate policies to solve social and environmental problems.

India has a rich experience in terms of resettlement practices. These include lessons learnt from resettlement and rehabilitation of project-affected people from large dams and evolution of the related policies over the past 100 years. The recent Indian experiences are also worth noting. An Indian case study presented was about the social and environmental impacts of the Bhakra-Nangal Project. It is one of the very few large dams anywhere in the world whose overall impacts (both positive and negative) have been objectively and authoritatively analyzed. Considerable information was provided on the actual social, economic and environmental impacts of this project, based on extensive data collected over the last five decades of operation of this project. It was unanimously agreed by the experts present that these types of objective and scientific studies are needed for more large dams in order to get a clear picture of the overall impact of large dams on the society as a whole. These types of objective and reliable studies can improve very significantly policy making and management process of large dams, starting from planning to construction and to their management during the operational phase.

A second case study from India focused on the controversial Sardar Sarovar (Narmada) Project. The Project has faced very strong opposition from anti-dam lobbies, which has made it a cause célèbre among activist NGOs. Interestingly, in spite of the liberal resettlement and rehabilitation packages that are being provided to the project-affected population, the opposition to the dam has not changed. The Supreme Court of India has finally intervened, and provided direct instructions on the monitoring of the progress for the rehabilitations-related issues for the completion of its construction.

The Turkish case studies included resettlement practices during the construction of large dams in Turkey, and the specific case of the Ataturk Dam. In addition to considering economic, social and environmental impacts, the preservation of cultural heritage during the construction of large dams has become an important consideration in the country.

The case studies on the Lesotho Highlands project in the Kingdom of Lesotho, and the Phongolapoort Dam in the Kwazulu Natal province of South Africa, analyzed past and

present resettlement practices in the countries concerned. Both the projects were analyzed in detail against the guidelines proposed by the World Commission on Dams. These two case studies indicated that planning, construction and operation of such large infrastructures require further improvement.

It is interesting to note that discussions during this workshop were somewhat different from what might have been the case for a similar meeting some 10 years ago. No one claimed that large dams are not necessary. On the contrary, it was felt that large dams, properly planned and managed, are essential for the economic and social development of developing countries. Equally, problems caused by poor policies and inadequate management practices of the past, especially in terms of resettlement and rehabilitation, were not denied. The unanimous approach was that the past practices should be carefully analyzed in terms of learning both positive and negative experiences, with the objective of improving them further. The need for equitable distribution of project benefits was emphasized as a priority, and the importance of the social and the environmental issues was recognized as a fundamental element for the long-term success of any project.

The workshop agreed that the construction of infrastructures is essential for social and economic development of developing countries. Equally, these must be planned and managed properly. However, in the case of the large dams, both real and perceived poor management practices over the years have resulted in very negative campaigns against their construction all over the world. On the positive side, these criticisms have led to improvements in related policies, primarily in terms of alleviating environmental and social concerns. On the negative side, they have contributed to delays and, in a few cases, cancellations of large dams, even when they were properly planned and socially and economically essential.

Springer is now editing the case studies prepared for this workshop for publication as a book.

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