

Book review

CLIMATIC FLUCTUATIONS AND WATER MANAGEMENT

by M. A. Abu-Zeid and A. K. Biswas
Butterworth Heinemann, Oxford, 1992, 356 pp, £50.00.

At the global level, there is a wide consensus among scientists that mankind is facing climate change and global warming. Coverage by the media and various publications are so effective that the issue has become common knowledge. The seriousness of the issue placed climate convention as one of the major agenda items for the United Nations Conference on Environment and Development (UNCED) or the 'Earth Summit'.

In spite of a successful awareness programme on climate change issues, scientists feel that the state of current knowledge and the analytic work required are far from being acceptable. It is against this

background that this book is an additional source of information on climate fluctuations within the context of water development and management.

The book includes a selected group of papers that were presented at the International Seminar on Climatic Fluctuations and Water Management in Cairo, Egypt, from 11–14 December 1991. The seminar was co-sponsored by the International Water Resources Association, Water Research Centre of the Ministry of Public Works and Water Resources, Government of Egypt and the United Nations Environment Programme and was attended by 150 participants from 38 countries and many international organizations.

The book is divided into five parts: *Part 1: Monitoring, Forecasting and Analysis Procedures; Part 2: Impact of Climatic Changes; Part 3: Planning and Management; Part 4: Case Studies and Reports; and Part 5: Keynote Lectures and Recommendations.*

The authors should be congratulated for the logical organization of the seminar and documents, and for including key papers

of importance to the readers in the field. A quick reading of the book immediately gives the impression that it is certainly an enhancement to the present unsatisfactory state of knowledge on how to deal effectively with climatic fluctuations within the context of water development and management. I agree with the authors' views that the book, a result of the seminar, could contribute further to accelerated research in the area by those water professionals dealing with the complex problem of climate fluctuations. To this end, the authors and the contributors have put noble efforts into producing this book and it is an addition to the state of the art in its field.

Finally, I should like to mention that Part III of the book includes a seminar report and a list of useful recommendations which provide suggested reading for those who are working in the field and are charged with the task of developing a work programme in this area.

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Conference report

Developing an integrated approach

International Symposium on Transboundary River Basin Management and Sustainable Development, The Netherlands, 18–22 May 1992

This symposium was held at Delft and Rotterdam and was organized by the RBA Centre on the occasion of the 150th anniversary of the Delft University of Technology. It was attended by 110 people representing 27 countries. A total of 75 scientific contributions were made, which will be published by UNESCO in two volumes of the series 'Technical Documents on Hydrology'. During the symposium a book with extended abstracts was made available. Also a special edition of *European Water Pollution Control*, Vol 2, No 3, May 1992, containing the full text of 10 contributions, was published. The symposium was sponsored by UNESCO/IHP, the International Water Resources Association, the International

Association of Hydrological Sciences, the European Water Pollution Control Association and by the International Association for Water Law. Financial aid was given by the Dutch Royal Academy of Sciences, Delft University of Technology, the Ministry of Foreign Affairs, the Ministry of Transport and Public Works, the city of Rotterdam, RIWA, IWACO, Boskalis and other companies.

River basin management is the broad field of multidisciplinary activities directed at a more integrated approach towards land–water and upstream–downstream relations in river systems. Concentrating on sustainable development means adding a time dimension to day-to-day problems.

This time dimension is not neutral, but it shows the consequences of our present plans and activities. The specific topics of the symposium were chosen from the wide area of transboundary river basin management, with attention to topics of interest for Delft University of Technology, such as the management of water pollution and polluted sediments in international and transboundary rivers.

There were six plenary sessions with invited speakers (approximately 35) and six parallel working group sessions where participants' papers (around 40) were discussed. The titles of the plenary sessions were:

- transboundary river basin management;
- sustainable development;
- transboundary river basin management and water quality control;
- planning for transboundary river development and conservation;
- project studies of transboundary rivers (Rhine, Danube);
- possibilities for sustainable development.

Parallel sessions were devoted to:

- transboundary river basin management and polluted sediments;

- environmentally sound river basin management;
- transboundary river basin management and water quality problems;
- legislation, planning and environmental impact assessment in transboundary rivers;
- Rhine – Danube studies: reports on case studies;
- studies on other river basins.

The opening speech on the first day was delivered by Mr S. Patijn, Governor of the province of South Holland, the province in which both Delft and Rotterdam are situated. On this and the last day plenary sessions only took place. Parallel sessions were scheduled for the afternoon meetings of the second and fourth days. The third day was an excursion day. Excursions were made to Rotterdam harbour, the Delta works and the IJsselmeer area.

The overall organization of the symposium was in the hands of Prof. ir. J. H. Kop, vice-chairman of the Board of Trustees of the RBA Centre, Prof. Mr J. Wessel, Director, and Mr B. Prinz, Staff member of the Centre. Drs E. Mostert, ir. J. Wissershof and Mr L. van de Werf assisted the 12 chairmen, among whom were Prof. Dr A. Van der Beken from Brussels, Prof Dr J. Kindler from Warsaw and Dr A. Szöllösi-Nagy from UNESCO. Among the members of the Recommending Committee were listed: Mrs J. R. H. Maij-Weggen, Minister of Transport and Public Works of the Netherlands, Mr L. J. Brinkhorst, Director General of Environment, Nuclear Safety and Civil Protection of the Commission of the European Communities and Mr S. Patijn, Provincial Governor of the Province of Zuid-Holland. The Scientific Committee was chaired by Prof Dr. ir. J. C. van Dam.

At the end of the symposium recommendations were adopted, which are listed at the end of this report. Another symposium will be organized three years hence.

There were many interesting contributions. Prof. A. K. Biswas took a look at the history of the concept of sustainable development and stated that we should better use the expression of durability. He noted a lack of leadership on the part of officials of international organizations in promoting solutions for conflicts in international river basins. Prof. J. Wessel gave an exposé about the various types of basin committees, their functions and their legal

context. He pointed to the importance of bottom-up organizations of water users. Prof. Dr D. Huisingsh showed how pollution preventive measures can be most profitable to the companies applying them and to the general environmental state of the river basin. Prof. Dr J. Kindler pointed out the economic aspects of river basin management. Much research still lies ahead in the field of incorporating environmental effects in economic calculations. Mrs N. Lavigne from Canada explained how at the Saint Lawrence Centre all information concerning this river and its basin is being collected and distributed to public and private agencies and the general public. Prof Dr. J. J. Bogardi gave a good overview of the different aspects of sustainable development connected to river basin management. Mrs Malin Falkenmark, who was asked to do the summing up of the whole week's work, gave an excellent and rather optimistic resumé of all topics covered by the symposium pointing at new approaches to future water problems.

The symposium unanimously adopted the following recommendations.

Recommendations of the symposium

The participants of the International Symposium on Transboundary River Basin Management and Sustainable Development, convened at Delft and Rotterdam from 18 to 22 May 1992 by the RBA Centre for Comparative Studies on River Basin Administration:

- *being aware* of the importance and need for *integrated river basin management*;
- *recognizing* the basinwide interdependencies in the socio-economic development, use and protection of land and water resources, and ecosystems in river basins;
- *considering* the urgency to ensure sustainable, beneficial use of land and water resources, and ecosystems, and to create institutions of corresponding scope;
- *considering* also that the basinwide approach to water resources management includes protection and, as appropriate, restoration of land and water resources in river basins, especially including the attainment of levels of in-stream water quality com-

patible with acceptable standards and with the reduction of polluted sediments, particularly those originating from non-point sources of pollution;

- *expressing* their concern for the vital need for the development of expertise, particularly in the field of interdisciplinary international river basin development and management, including administration;
- *adopt* the following recommendations for the consideration of:
 - the United Nations Conference on Environment and Development to be convened in Rio de Janeiro in June 1992;
 - all relevant international organizations, especially the Council of Ministers of the EC and the Council of Europe;
 - all professionals engaged in land and water management:

1. The river basin approach should underlie inter-state cooperation in developing and managing the land and water resources of international rivers and lakes.
2. Basinwide management (including planning) should be established as a function of international river basin authorities and be reflected in formal processes and mechanisms aimed at promoting sustainable goals, also with a view to ensuring equity for successive generations. Basinwide planning should include allocation of land and water resources, protection from land degradation, pollution prevention, source control and treatment. In particular, effective control of quantity and quality of sediments should be established.
3. The general public should be informed about water-related issues and be given opportunities to contribute to the decision-making process concerning the development and management of the natural resources of transboundary river basins; NGOs should participate in international discussions concerning the implementation of the relevant international rules.
4. River basin administration centres should be created for training and research purposes.
5. International river basin authorities should be developed or adapted to suit the particular circumstances of transboundary river basins. They should be

vested with planning and operational mandates, including responsibility for environmental impact assessment;

6. In developing transboundary cooperation, strict keeping of international obligations or modification to a more sustainable form should be promoted.
7. At the earliest convenient time, internationally accepted guidelines and criteria should be established for use
8. Conflict prevention methodologies and conflict solution tools, such as independent committees of experts, should ensure the good functioning of the river basins' legal regimes.
9. External support agencies and govern-

in the settlement of disputes involving the joint use of shared international water resources derived from international river or groundwater basins.

ments should give greater priority to assisting developing countries in resolving conflicts for the sustainable and beneficial use of international river basins.

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