

Preface

It is estimated that the humid tropics make up 22% of the globe's land area, or 29.4×10^6 km². They hold most of the world's uncut forest, most of the unharnessed hydroelectric power and most of the world's genetic riches among their estimated 30 million species of plants and animals. They also contain vast, untapped supplies of minerals. In addition, two people out of every three live in the coastal regions of the world (mainland as well as island coasts). All coastal areas are under increasing pressure from expanding human populations and it is only recently that our population has begun to realize the extent of damage caused to the many coastal areas, and to islands as a whole, in the humid tropics.

It is certain that the total world population will continue to rise and that the highest rates of growth are forecast to take place in the developing countries, many of which are located in the humid tropics and other warm humid regions. Because of this geographical population shift and the concomitant need to sustain the economies and the environments of the developing countries, it is urgent that water resource managers have the hydrologic understanding and the appropriate methods to cope with the impacts of the water-related activities that will accompany the inevitable socio-economic and technical changes in the humid tropics.

UNESCO organized in 1989 an "International Colloquium on the Development of Hydrologic and Water Management Strategies in the Humid Tropics", which led to the formal establishment of a Humid Tropics Programme within UNESCO's International Hydrological Programme. Subsequently, this has generated a series of symposia on humid tropic hydrology that produced proceedings. The Jamaica symposium and the present proceedings volume are a continuation of this series.

Water experts naturally focus primarily on the water problems as they identify them. There is an urgency to the question of whether the fields of hydrology and water resources management have the appropriate methods to meet the specialized needs and rising demands that will be made in the humid tropics. Technology transfer activities such as international symposia and resultant proceedings represent several ways to provide the needed hydrological methods. T. S. Eliot wrote: "Where is the wisdom we have lost in knowledge, and where is the knowledge that we have lost in information?" It is hoped that the papers assembled in this volume will provide the information and knowledge that will give the wisdom to solve some of the hydrologic problems of the humid tropics.

This proceedings volume is the printed product of the "International Symposium on Hydrology in the Humid Tropic Environment" which took place during 17-23 November 1996 in Kingston, Jamaica. This symposium followed the two other IAHS symposia on the humid tropics convened in 1983 in Hamburg, Germany*, and in 1993 in Yokohama, Japan†.

The objective of the symposium was to bring together international specialists, scientists, engineers, and water managers to a forum for exchange of experiences and theories and transfer of technology related to hydrologic and environmental impacts,

* The proceedings *Hydrology of Humid Tropical Regions* were published as IAHS Publ. no. 140 in the same series as this proceedings volume.

† The proceedings *Hydrology of Warm Humid Regions* were published as IAHS Publ. no. 216 in the same series as this proceedings volume.

conflicts, and solutions related to the uniqueness of the humid tropics. The symposium also was designed to draw the attention of everyone—including decision makers, politicians, and the general public—to the special problems of managing water in the humid tropics and the unique hydrology of such areas of the world. Because of the location of the symposium, emphasis was placed on the humid tropical areas of the Western Hemisphere, especially of Latin America and the Caribbean.

Of the 77 papers presented in oral and poster sessions, 47 were selected for publication. Topics included eight primary hydrological and environmental subjects especially related to problems in the humid tropics of Latin America and the Caribbean, with a few papers covering the humid tropics in other parts of the world. The topics and numbers of papers in this proceedings include (1) Environmental Contamination and Impacts, five papers; (2) Hydrologic Methods and Analysis, seven papers; (3) Modelling and Statistical Analysis, eight papers; (4) Information and Data Systems, five papers; (5) Legal and Societal Impacts, three papers; (6) Urban Drainage, four papers; (7) Karst and the Environment, eight papers; and (8) Coastal and Island Hydrology, seven papers.

Readers of this publication may be interested in the following reports:

- Bonell, M., Hufschmidt, M. M. & Gladwell, J. S. (eds) (1993) *Hydrology and Water Management in the Humid Tropics*. UNESCO, Paris.
- Braga, B. Jr & Fernández-Jáuregui, C. A. (eds) (1991) *Water Management of the Amazon Basin*. UNESCO/UNEP/ABRH, Montevideo (Revised internet edition 1998).
- Swaminathan, M. S. & Ramesh, R. (eds) (1993) *Sustainable Management of Coastal Ecosystems*. Chrom Grafix, Madras, India.
- UNESCO (1991) *A Programme for the Humid Tropics*. UNESCO, Paris.
- UNESCO (1992) *Water-related Issues and Problems of the Humid Tropics and Other Warm and Humid Regions*. UNESCO, Paris.

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