

Conference Reports

Third Stockholm Water Symposium

Stockholm, Sweden, 10–14 August 1993

The Third Stockholm Water Symposium had as its theme 'Integrated Measures to Overcome Barriers to Minimizing Harmful Fluxes from Land to Water'. The symposium included a set of in-depth workshops addressing four issues, namely how to overcome barriers:

- in the dialogue between scientists and decision makers;
- to using dry instead of wet methods for human waste disposal;
- to reducing pollution of the Baltic Sea;
- in financing.

A Slowly Increasing Crisis: Some Basic Observations

1. The present generation of decision makers are the ones who are choosing the future of the planet. Their challenge is that there is plenty of knowledge about what needs to be done to protect water from further deterioration. A multitude of barriers are, however, making the realization of these measures much too slow. In the meantime, world population grows, urbanization continues and industrial and municipal pollution expands, particularly in the less developed countries.
2. Although water is the very lifeblood of socio-economic development, water scarcity and deteriorating water quality are out of control. The sanitation problems now developing in megacities in the less developed countries of the world are beyond imagination.
3. A whole set of driving forces are contributing to the continued growth of these problems:
 - a world population expanding by over 90 million people every year (equivalent to one additional China every decade);
 - the general passive attitude to the overuse of chemicals in households, industry, agriculture and foodstuffs;
 - a perception of economic growth that fails to pay adequate attention to its cost in terms of deterioration of the life-supporting ecosystems on which this growth depends.
4. The world—full of vested interests producing pollutants that will end up in water—lacks a strong water quality protection constituency. The constituencies of economic growth on the one hand, and biodiversity on the other can operate in isolation as long as there is no general awareness that the water

cycle links the two: the former, although being genuinely dependent on water; the latter continuously hurt by the pollutants carried to ecosystems by the circulating water.

5. One fundamental problem is the paradigmatic problem. Even among environmental professionals, a certain illiteracy exists concerning water's fundamental roles as lifeblood of the biosphere, and in biomass production; regarding the direct links between land use and water; and relating to the role of water cycle continuity for cascading human environmental disturbances from air to land to water, finally translated into biodiversity disturbances. Instead, water is often thought of in a simplistic manner; as a technical problem of water supply to human settlements, industry, and irrigated agriculture; or alternatively as a victim of pollution with implications for human health and ecosystems.

The shortened version of the conclusions from the symposium, as interpreted and edited by the Scientific Committee, is reprinted below.

Lack of Awareness

- The Symposium was alarmed by the lack of resolute joint effort to address the slowly increasing global water crisis. The participants were disappointed by the failure of the UN system both to succinctly address the critical situation of the global water problems at the Dublin Conference, and to put water firmly on the Rio agenda.
- There is an urgent need for an international water constituency of concerned scientists, able to raise media interest in the slowly increasing water crisis.
- Due attention has to be paid to the link between water and population at the forthcoming UN Conference on Population to be held in Cairo in 1994. This will be an important opportunity to put water on the international political agenda.

Communication between Scientists and Decision Makers

- In order to secure credibility in the eyes of politicians, scientists have to communicate consensus, not disagreement. To make the messages simple and understandable, the scientific community must develop the skill of simplification without reduction. This will call for knowledge integration across scientific borders and an unprecedented scale of interdisciplinary effort.
- The scientific community has to develop a more adequate paradigmatic structure of the environment development problematique, with due attention devoted to the long neglected roles and functions of the water cycle. This is urgent!

Implementation of Water Quality Protection

- Urban development in many less developed countries is out of control. The situation will aggravate the water crisis. Waste disposal needs much more attention and resources. Technology is available, but cannot keep up with this growth. Social and economic barriers are significant and have to be dealt with locally.
- The technologies to minimize harmful fluxes from land to water are known. The delay in their realization is due to barriers such as lack of awareness,

incentives, and local acceptance; the overwhelming scale of the problems; and an outdated industrial structure. Bank policies in terms of creditworthiness criteria add to the problems of financing wastewater treatment facilities.

Education

- Human capability development is a necessary condition, especially in the Third World. Multilateral and bilateral aid organizations should make a special sustained effort to enhance training opportunities for Third World water professionals in their own countries.
- Regional research institutes to address issues of global change have been proposed within the International Geosphere–Biosphere Programme. Since ongoing population growth is driving serious life-support problems on a shorter time scale than climate change, a broadening of the focus of these institutes is necessary.
- Major efforts have to be put into education on all levels. It is essential that environmental school education focuses on basic understanding of man's life-support systems, rather than on isolated issues.

The main papers and findings of the Third Stockholm Water Symposium will shortly be published as a book. For more information, please contact the undersigned.

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International Workshop and Training Course on Sustainable Irrigation Management: Policy Issues and Operational Implications

Bangkok, Thailand, 12–16 November 1993

This Workshop and Training Course was sponsored by the Asian Institute of Technology (AIT), International Water Resources Association (IWRA) and German section of the International Hydrological Programme. It was convened within the AIT campus.

In his introductory address, Prof. Rainer Loof pointed out that, nearly two years ago, the curriculum of the Irrigation Engineering and Management Programme of AIT was substantially revised in order to provide additional in-depth coverage on management-related issues in irrigated agriculture. Earlier, some irrigation experts were inclined to consider developments and impacts within the irrigated area only. With the increasing water scarcity situation in nearly all arid and semi-arid regions of the world, it is now evident that the real dimension of irrigation management is much larger. Irrigation management should now be seen within the overall context of river basin management and in some cases even at larger scales.

Prof. Loof outlined the three main objectives of the workshop. These were to:

- (1) study the experiences gained world-wide concerning the policy and management issues related to irrigated agriculture;
- (2) exchange views with respect to various issues and approaches to ensure sustainability of irrigation systems; and
- (3) identify ways and means for improving the above-mentioned issues, especially in terms of operationalizing the findings.

In his welcoming address, Prof. A. North, President of AIT, pointed out the importance of sustainable irrigation management to the economies of the Asian countries, and also the extensive knowledge base available in the region due to centuries of irrigation practices. Not surprisingly, water resources is AIT's first and oldest programme.

The workshop was remarkable because of the quality of the world-class experts on irrigation and sustainable development which it attracted. Among the main speakers, in alphabetical order, were the following, with the subjects they discussed in brackets: Mahmoud Abu-Zeid, President of IWRA (sustainability of irrigation systems in Egypt); Apichart Anukularmphai, Director, Office of National Water Resource Committee of the Prime Minister's Secretariat, Bangkok (policy options for sustainable irrigation management with special reference to Thailand); Asit K. Biswas, Past President of IWRA (role of irrigation in sustainable agriculture and water resources management in developing countries; environmental assessment and performance evaluation of irrigation systems); Gershon Feder, Chief, Agricultural Policies Division of the World Bank (water resources management and policy: World Bank experience); Roberto Lenton, Director-General of International Irrigation Management Institute (strategies for sustainable irrigation management); A.M. Michael, Vice-chancellor, Kerala Agricultural University (irrigation-environment interrelationships and environmental impacts of irrigation); Horst Reinhardt, Project Director, GITEC, Thailand (maintenance and modernization of irrigation schemes in Thailand); Aly M. Shady (Canadian experiences in irrigation and drainage management in developing countries; new perspectives on sustainability of irrigation and drainage of agricultural lands in developing countries); Kaneko Takeuchi of FAO (overview of policy issues on agricultural and irrigation systems development in Asia); and Le Huu Ti, Mekong Secretariat (important policy issues for sustainable irrigation management in international river basins).

In addition to the above discussions, the workshop also reviewed country-specific national irrigation management policies and practices for Australia, China, Indonesia, Nepal, Thailand and Vietnam. A study tour was also organized.

In terms of the quality of presentations and discussions, the workshop was an outstanding success. The organizers wisely restricted participation to 25 people from 12 countries, all of whom have had considerable personal experience of irrigation management in different parts of the world. Intellectually, it was one of the best meetings this participant has attended for a long time. Prof. Loof and his colleagues at AIT are to be complimented for such a well-organized meeting.

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