Preface

The 2003 Stockholm Water Symposium was the first in a new series within the overall topic of Drainage basin security – Prospects for tradeoffs and benefit sharing in a globalised world. Where population continues to grow, and the need increases to produce more food and other goods and services, the complexity of water management also increases. Ways have to be found in which to manage the chain of consecutive users, interests and quality degrading activities in the catchment so that all relevant uses/demands/polluting activities can be properly balanced.

Background and themes addressed

The Symposium put drainage basin security in a system perspective, with attention to catchment dynamics in terms of biophysical constraints, and water’s multiple roles in linking human activities and ecosystems. The various claims on water in different parts of the basin and the corresponding governance challenges, were seen in an interactive system with a special logic determined by hydroclimatic, hydrological and other physical realities. The workshops aimed at problematising and further developing the theme of the symposium – Balancing production, trade and water use – and at entering the particular problem into a systems approach, looking for adequate solutions and strategies. Aspects elucidated include the challenge of multipurpose water use; integrated catchment-based top down approach as linked to a bottom-up approach of stakeholder participation and local action plans; coping with climatic variability, risk and uncertainty; managing pollution loads and waste fluxes; income generation problems as linked to urban development and industrialisation; and food security, trade and virtual water flows.

Particular attention was paid to governance which includes both efforts needed to ensure that desired solutions are possible to implement (legislation, institutions/administration, financing etc), and efforts needed to secure real-world implementation (incentives, motivation, information campaigns, education, etc.). Governance efforts could thus be seen as tools towards reaching relevant goals, given the hydro-physical framework. Increased administrative focus on the river basin raises the issue of how to properly link to both national policies and local action plans.

A fundamental issue is to break the link between economic development and water degradation. Industrial development is fundamental for the socio-economic development of a country, but involves the severe complication of waste production. In a catchment perspective, pollution loads added upstream may generate considerable problems for water quality sensitive activities downstream, such as irrigated agriculture, aquaculture etc. Agricultural chemicals tend to add to this problem by the addition of nutrients with worldwide ecological consequences in terms of algal blooms, oxygen depletion, unpenetrable fields of water hyacinths, etc.

There is an urgent need for constructive links between water-related professionals and politicians. The latter are living in a world where the dominating worldview defines what decisions are politically possible to take and which ones are not. In view of the increasing attention paid to stakeholder participation, societal acceptance and politicians’ critical role in decision making, efforts are needed to bridge the gap between public belief and scientific understanding. Widespread, uncautious use of the ambiguous word “water” is
particularly unfortunate: even in the same meeting, “water” may refer alternatively to drinking water to be paid for (water provision), to streamflow or groundwater to be put to beneficial use (blue water), or to the water in the soil on which crop and tree growth critically depends (green water). Serious misconceptions may also be widespread. One example is land cover changes and their hydrological effects which may in fact be opposite to the ones assumed in the environmental and forestry communities.

Attention was also paid to finding ways to better cope with climate variability as related to food production, flood risks and inundations. Climate change and climate variability are two completely different animals, though the common confusion of the two tends to delay development in the South. While climate change is associated with global warming and represents a long term change of human or natural origin, climate variability has always been part of the climate system but has received surprisingly limited attention in the water community. Addressing the erratic nature of rainfall by dryspell mitigation is particularly challenging for the poverty-stricken savanna zone where subsistence agriculture is a dominant food source.

**Workshops and co-conveners**

The Symposium included workshops on the following eight themes:
- Multipurpose water management strategies through river flow regulation
- Linking drainage basin management to local action plans and national policy
- Climatic variability, water systems and management options
- Securing food production under climatic variability: exploring the options
- Pollution sources, water quality, and ecosystem-based management
- Monitoring, understanding and managing waste fluxes within a drainage basin
- Role and and governance implications of virtual water trade
- Managing urban and industrial development from a drainage basin perspective

It also included a SIWI Young Professionals Seminar on “Basin Water Security – Implications of Virtual Water Trade and Agricultural Subsidies at Regional, National and Local Levels”. A number of co-convenors contributed to the bridge-building process:
- Global Water Partnership
- Third World Centre for Water Management
- UNDP
- Dialogue on Water and Climate
- United Nations University
- Columbia River Estuary Study Task Force

**Organisation of proceedings**

This volume contains the selected proceedings of the 2003 Symposium and is organized in the following way. It starts with the Symposium Conclusions by the Scientific Program Committee Chair. The first part contains the contributions of the Keynote Speaker. The second part contains Workshop Syntheses by the respective Chairmen/Rapporteurs, each followed by the contributions of Invited Workshop Speakers. Then follows the conclusions from the SIWI Seminar for Young Water Professionals, of the 2003 Stockholm Water Prize Laureate, and of other Plenary Speakers, and the results of the High Level Agricultural Subsidy Panel Debate. The last part contains lists of all Workshop Speakers and of Posters presented in the workshops together with a short summarising Poster Report. The publication ends with the List of Participants in the Symposium. The authors are fully responsible for the views expressed in their respective papers.

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Chair of the Scientific Program Committee