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Conference Reports

Seminar on Water and Energy, Stockholm, Sweden, August 21, 2005

The Seminar on Water and Energy was organized by the Third World Centre for Water Management, International Hydropower Association, Water Resources Laboratory of the Helsinki University of Technology, and International Water Resources Association, within the overall framework of the World Water Week, in Stockholm, on August 21, 2005.

The focus of the Seminar was on the existing close interrelationships between the water and the energy issues. One affects the other, and is, in turn, affected by the other. These interlinkages are likely to intensify further in the future. However, in spite of these close interrelationships, the water profession as a whole has given inadequate attention to the energy sector. The Seminar was very specifically structured to bring in leading experts and senior decision-makers from all over the world to analyze the present situation and review the future implications in this overall area.

The presentations and discussions at the Seminar included policy issues for socioeconomic development of the world, especially in terms of their relation to water and energy security, consideration of social, economic, political, and environmental impacts (both positive and negative) of large dams for electricity generation, water demands for bioenergy production, and the role of hydropower in achieving the Millennium Development Goals. Case studies included water-energy interlinkages for Brazil, China, India, Australia, Laos, an overview of the situation in Latin America, and resettlement issues from Indonesia. Issues discussed included water and energy resources management, how water and energy requirements of various regions of the world could be met in the future in a timely and cost-effective manner, as well as institutional arrangements and capacity building requirements. Water and bioenergy linkages were also analyzed in terms of their future requirements.

A very high-level panel session was organized within the context of the Seminar. The panelists were Martha Karua, Minister of Water Resources, Kenya; Hinrich Mercker, Director, Division of Environment, Energy and Water, InWEnt, Germany; Jamal Saghir, Director, Division of Water and Energy, World Bank, Washington, D.C.; and Klaus Töpfer, Under Secretary-General of the United Nations and Executive Director, UNEP.

Minister Karua eloquently expressed the urgent infrastructural needs for water and energy sectors for developing countries like Kenya, without which the development potential of the countries would be seriously jeopardized. Mercker stressed that the world is not having a water crisis, but rather a crisis in managing water, which can be overcome by extensive and intensive capacity building efforts.

Saghir gave an authoritative and comprehensive global view of water and energy requirements, both for the present and the future, and forcefully argued that these needs cannot be met efficiently in the coming decades without appropriate infrastructural developments, especially as 90 percent of non-developed hydropower potential is now in developing countries. Töpfer argued that the investments in catchment improvements are both economic and environmental necessities. He noted that the debate should not be between small and large dams, or between dams or no dams, but between good and bad dams.

During the panel discussion and the paper presentations, the enormity of the challenge the world is facing to provide adequate water and energy resources to an expanding global population became very clear. Economic development and ensuring good quality of life for the world's citizens will require appropriate access to water and energy. Estimates provided by Saghir indicated that:

- 1.4 billion people do not have access to clean water;
- 2.6 billion people lack basic sanitation;
- 2 billion people do not have access to electricity; and
- 2.4 billion people rely on biomass for cooking and heating, with corresponding adverse health and environmental-related impacts.

The magnitude of the problems the world is facing in terms of water and energy security becomes evident when estimates for investment requirements are considered. To ensure an acceptable coverage for clean water in the developing world will require investment of $30 billion per year until 2015. To meet the power requirements, an additional $120 billion per year will be required until 2010. Together with this high level of investment requirements,

ensuring that there is good governance for both the water and energy sectors, along with functional and uncorrupt institutions which can work efficiently without undue political influences, would be essential. Each developing country will have to formulate and implement its long-term water and energy strategies, which should depend upon its own aspirations, and economic, social, and environmental conditions. Ensuring that adequate management and technical capacities exist to formulate and implement such strategies will be an important challenge to overcome.

All the speakers and the participants of the Seminar agreed that improvements in the economic and living conditions of developing countries would simply not occur without extensive infrastructural developments. These developments, however, must be sensitively and carefully carried out to ensure that they are economically efficient, socially acceptable, and environmentally sound. In this connection, the overwhelming view of the participants was that much of the recent debate on large dams has been counterproductive. The question no longer is whether large dams should be built, since the world really has no other alternatives, but to ensure how best the positive impacts of such structures could be maximized, negative impacts can be minimized, and those who may have to pay the costs (for example, people who have to be resettled) are explicitly made beneficiaries of such developments.

Properly planned and managed large dams are essential for regional development, as well as to mitigate the impacts of floods and droughts. As Minister Karua noted, one single major flood for Kenya in the past represented nearly a loss of 20 percent of the national GDP, which the country simply cannot afford. The Minister further argued that "dams are required to remove the growing mismatch between needs and supplies. In their absence, underdevelopment will perpetuate rather than helping removal of poverty and aiding economic growth."

The overall feeling was that the debate must not be structured in terms of large dams versus small-scale alternatives like rainwater harvesting. Each must be analyzed in the context of specific prevailing local conditions in economic, social, cultural, and environmental terms. Depending upon the context, construction of a large dam may be necessary, or equally the focus could be on rainwater harvesting, or a mixture of both.

It was noted that bioenergy production is a rapidly-growing commercial activity, which should rely on sound water supply and water infrastructure. Bioenergy exploitation still occurs in a somewhat uncontrolled fashion, which could lead to massive environmental problems in terms of deforestation, erosion, desertification, and air quality problems. The links between bioenergy production and efficient water resources management, including related infrastructure, have thus far been largely ignored.

As the convener of the Seminar, Asit K. Biswas, concluded at the end of the Panel session: "Small can be beautiful, but it can also be ugly. Similarly, big can be magnificent but it can also be disastrous. Each alternative, whether a large dam and/or rainwater harvesting, must be judged by its own specific context, merits, and constraints in scientific, objective, and holistic terms without any biases and dogmas."

The papers presented at the Seminar and the results of the panel discussion are now being edited for publication. Additional information on the Seminar can be obtained from www.thirdworldcentre.org.

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