

ICID-CEC PENANG STATEMENT

The 7th ICID International Drainage Workshop, organised by the International Commission on Irrigation and Drainage (ICID), and the Commonwealth Water Forum, convened by the Commonwealth Engineering Council (CEC) were held in Penang, Malaysia, November 17-21, 1997. The theme of the ICID Drainage Workshop was : Drainage for the 21st Century, and the theme of the Commonwealth Water Forum was : Sustainable Water Resources Management into the 21 Century - Policy and Technological Innovations. There were 254 delegates from 41 countries representing all the continents of the world. The participants noted that with the emergence of the World Water Council and Global Water Partnership on the world stage, more effective arrangements for collaborative work towards comprehensive and integrated development of water resources will be progressively available in the near future.

ICID in close cooperation with the other international professional associations such as the International Water Resources Association (IWRA), the International Water Supply Association (IWSA) and the International Association of Water Quality (IAWQ) has also initiated efforts for promoting water conservation programmes worldwide. It is imperative that water is put to use in a sustainable manner in all parts of the world through appropriate social, environmental and economic arrangements along with regulatory regimes and international cooperative mechanisms.

Worldwide agriculture accounts for 65% of all water obtained for human activity. The bulk of the increase of food production for the growing population will have to come from increasing productivity of the irrigated areas and from irrigation expansion in new areas. To achieve this successfully, under increasing competition for water, a multidisciplinary-multisectoral approach to the management of the world's water resources will have to be adopted.

Supplieside manipulations alone will not provide the desired results. Demand management measures will have to be put in place through new policy interventions, consumer education, waste minimisation and re-examination of lifestyles and food consumption patters. Available resources will also have to be protected and preserved by adopting clean technologies, pollution control, and by using buffers such as wetlands, as natural filters.

Sound drainage practices can achieve substantial increase in land productivity, ensure bio-diversity protection and provide for a proper quality of drained water flowing to the downstream system. As irrigated and rain-fed agricultural production is intensified, drainage will become critical for sustainability of the system. Provision of extensive drainage infrastructure, surface as well as sub-surface, in conformity with the local requirements along with its effective operation and maintenance through participation of the beneficiaries, will be the key to success in sustainable agricultural production. The likely effects of climate change will have also to be kept in view. Global attention will have to be focused on these requirements.

For this purpose, watertable management, controlled drainage, flood mitigation, reuse of drainage and wastewater will have to be given closer attention. Comprehensive management plans must be developed for different areas on a scientific basis and backed by adequate legal provisions. The International Programme for Technology Research in Irrigation and Drainage (IPTRID) will have to work with other organisations to evolve innovative solutions for problem areas. Capacity building measures including development of expertise for handling the complex soil-water-plant relation and drainage extension services to farmers are urgently required. Extensive networks for continuous monitoring of the ground watertable and the soil environment near plant root zones will have to be instituted early. Towards these objectives, necessary institutional reforms must be undertaken.

ICID and CEC will collaborate to undertake future international activities towards the fulfillment of these goals. In this regard, they appeal to all governments, international agencies, financing institutions, private sector organisations and NGOs to work together for sustainable management of global water resources, especially for meeting future food requirements through sound drainage arrangements, incorporated as al integral part of sustainable management of land and water.