NEW DELHI DECLARATION

January - February 2000

The 8th ICID International Drainage Workshop with the theme “Role of Drainage and Challenges in 21st Century” organised by the Indian National Committee on Irrigation & Drainage (INCID) attended by 260 delegates from 15 Countries and 12 International agencies was held from January 31st to February 4th, 2000. After considerable discussion, the workshop approves the following declaration :

The state of drainage development in many countries is far below the basic needs. In the last century, drainage was often considered as an adjunct to irrigation and was not considered as a discipline in its own right.

For increasing the agricultural productivity required by the growing population and sustainability, provision of adequate drainage is important. Sound drainage practices can achieve substantial increase in productivity and minimise the losses through waterlogging and salinity. An estimated 1/3rd of the irrigated land in the arid and semi arid zones faces salinisation hazards. Drainage, apart from improving food production, can also help progressively, as rural development proceeds in making agriculture more diversified and competitive, promoting rural well being, improving public health etc.

There are considerable differences in drainage problems and needs in different climatological regions. These differences should be taken into account in all drainage planning. The currently used classification should, however, be further defined and mapped. Reliable global information data on the drainage needs of rainfed land and on the waterlogging and salinization of irrigated land do not exist. Status and the collection and compilation of more precise upto-date dis-aggregated and meaningful statistics is a priority area for the early part of the new millenium. The development of drainage should more and more be seen within the context of broader integrated water and environmental management strategies at the catchment level.

The relationships between drainage and flood management need to be further clarified. Flood seems to occur in almost all regions, although nature and scales may differ considerably. Flood management is obviously a pre-condition for effective drainage, but improved drainage can also be part of a flood management strategy. While floods generated outside the agricultural drainage area are generally outside the domain of drainage, floods and inundation caused by local rainfall within such a catchment/area are generally within the drainage domain and should be addressed as such.

Under increasing competition for water from other uses like industrial and domestic water supply it may become necessary for reuse and recycling of drainage waters. Development of an integrated on-farm drainage management (IFDM) system, based on the principle that drainage water and salt are natural resources rather than toxic waste may hold the key for recycling. For removal of drainage water and for maintaining the ground water levels, the concept of “Bio-Drainage”, an environmentally friendly measure could hold promising possibilities. Further research is needed on some aspects of Bio-Drainage such as the salt balance. Due attention needs to be given to the downstream impacts of drainage interventions, including the pollution of drainage by agro-chemicals, or domestic and industrial waste. Disposal of low quality drainage waters in an environmentally sustainable way, requires continued attention and an integrated management approach.

The stake-holders participation in the planning, implementation and management of drainage systems is necessary. Integration of participatory irrigation and drainage management is highly desirable. Awareness programmes among the farmers in regard to the biological, physical and chemical indicators as preventive measures of waterlogging and secondary salinisation need to be encouraged. Farming communities and especially the women need to have enhanced skills in land and water management. Service oriented management, which provides a contract service agreement between stakeholders is especially to provide an effective accountability framework participation of end-users in the management of drainage systems. Financial sustainability of the operation and maintenance of drainage is important, but institutional models in this regard are not available. Guidelines for “ Participating Drainage Management” may be prepared.

Apart from basic research, focused research for problem solving is necessary. Drainage implementation projects need to reserve some money for research including action research,

development and training activities. The tools of modelling and simulation need to be used in a large way. These tools would also assist in formulating well designed data collection programmes.

To tackle the drainage problems of Asian regions, promotion of close cooperation between the various existing Drainage Research Institutes dealing with drainage in the arid and semi-arid zones by way of exchange of information and technical programmes for collaboration through the IPTRID network need to be encouraged. For this purpose, it is recommended that these institutions be given International mandate extend their networking and R&D activities. For humid tropical zones, the cooperation as initiated by ICID and IPTRID needs to be further developed.