

Challenges of Modern Land Drainage



ICID through its working group on drainage has been at the forefront in promoting land drainage technology for sustainable crop production. The group has brought out many valuable publications, organized international drainage workshops on regular basis, and collaborated with other international organizations like FAO and the World Bank. The group will be commemorating its 'Silver Jubilee' at Sacramento on the occasion of ICID's 58th IEC meeting. The group is in the process of revamping its present mandate in view of the changing needs and challenges of the modern land drainage. Dr. Williem F Vlotman, Chairman, ICID Working Group on Drainage (WG-DRG) chronicles the march of the group during the last 25 years.

Agricultural drainage is one of the core area activities of ICID. An exclusive workbody focussing on land drainage was established twenty-five years back. The mandate of the working group on drainage (WG-DRG) has been "to determine the state-of-the-art of construction and maintenance of surface and subsurface drainage systems under various conditions; to investigate case histories concerning disposal and/or reuse of saline drainage water; and to develop simulation models". Since then the group has been actively and effectively contributing to the ICID's mission through publications, networking, dialogues, interactions and organization of International Drainage Workshops (IDWs). Publications on various construction and design aspects, such as pipe material, drain envelopes and construction equipments, dominated early work of the group. Numerous articles were produced by members and were published/presented in both peer reviewed journals and at international fora.

The WG-DRG has been endeavouring to create a database on global waterlogged, salt affected and constructed drainage system areas, besides contributing to databases of the World Bank and the FAO. In the early 90's, non-technical aspects including institutional arrangements, policy decision and

25 Years of WG-DRG

The ICID Working Group on Drainage Construction (WG-CONST) was established in 1983 in Melbourne, Australia. The name was changed to the Working Group on Drainage (WG-DRG) in 1992. WG-DRG will hold its 25th meeting in September 2007 at Sacramento, on the occasion of 58th IEC meeting. More information on group's activities can be viewed at <<http://www.wg-drg.icidonline.org>>. To commemorate the occasion, a special issue of the ICID journal is in preparation and scheduled for publication in November 2007. This issue will highlight the past, current and future directions of the WG-DRG. Draft copies of the Journal will be made available at the Sacramento meeting.

International Drainage Workshops (IDW)

The first International Drainage Workshop was held in the Netherlands in 1979. After IDW4 held at Cairo in 1990, subsequent five workshops were organised under the auspices of the WG-DRG. The IDWs have served as one of the main means to advance the science of drainage. The 10th IDW will be held in Helsinki (Finland) and Tallinn (Estonia) in July 2008.

capacity building received greater focus, while, towards the late 90's, environmental issues emerged on the scene, and topics such as reuse, bio-drainage, drainwater quality and its disposal were addressed. Since then, drainage needs, performance assessment, controlled drainage and drainage as part of Integrated Water Resources Management (IWRM) were dealt with and still are the current topics of discussion.



An automated drainage control structure in the central part of the Netherlands

We are now in the 21st century. What has been happening in the field of drainage? A paradigm shift from draining of water from fields - as quickly and efficiently as possible, to only removal of water when necessary has occurred. The concept of controlled drainage as part of IWRM has been emerging fast. Major publications on drainage such as American Society of Agronomy (ASA)'s Monograph no 38, Agricultural Drainage

(1999), Modern Land Drainage, Planning, Design and Management of Agricultural Drainage Systems (2004), in this century reflect this new paradigm.



Drainage, as part of IWRM, received a major boost in 2003 at IDW9 with the launch of the Drainage Integrated Analytical Framework (DRAINFRAME), developed by the World Bank. The DRAINFRAME is a guide which addresses agricultural drainage from an integrated natural resources management perspective. Concurrently, the WG-DRG has prepared 'Performance assessment guidelines for drainage systems' to be released at the upcoming Sacramento meeting.

Some group members have had active involvement in preparation of the FAO Irrigation and Drainage Papers. A joint publication with FAO on performance assessment of drainage systems is in the offing.

Over the years, planning, design and management of agricultural drainage have undergone significant changes. The need for further change became apparent in the recently held INPIM workshop in Iran (May 2007), where the need for the establishment of drainage beneficiary groups for the sustenance of agricultural drainage systems was raised. Modern agricultural drainage calls for an integrated and participatory approach which must include consideration of the effects of climate change. It thus became obvious that the present mandate be revised in light of the new issues and challenges ahead of us. Consequently, the group has re-formulated its mandate to reflect modern land drainage principles and will be firmed up at Sacramento. □