



News Update

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INTERNATIONAL COMMISSION ON IRRIGATION AND DRAINAGE

Established 1950

October-November 2008

From Secretary General's Desk...

Dear Friends,

At the outset, please join me in welcoming the new President Prof. Dr. Chandra Madramootoo, who took over the stewardship of ICID on the conclusion of



59th IEC and field tour. I have also the great pleasure to welcome the newly elected Vice Presidents Dr. Samia El-Guindy, Dr. Shinsuke Ota and Prof. Dr. Lucio Ubertini. We thank profusely PH Lee for his glorious contributions and also VPH Mark Svendsen, VPH Felix and VPH Gao who were quite active during their tenure as Vice President.

Since this is the first NU following Lahore IEC and Congress, let me devote some space for touching upon the same. We owe a lot to our Pakistan National Committee and their organizing team who worked hard to ensure an excellent safety net for the conduct of the events and particularly, for the foreign delegates and guests from all corners of the world. The IEC and other related meetings took place as scheduled. They were indeed well represented in most cases. There were 26 NC representatives in IEC which compared well with the usual attendance of about 35 or so. The Congress had an excellent response especially, from the host country. There was remarkable and admirable support to ICID from several lead Government Organisations and their parastatals. Pakistan's WAPDA played a lead role to ensure a successful congress; besides other departments concerned with water in the Government of the Punjab province and in the Federal setup were visible coordinating various activities.

The Federal Minister of Water Resources and the Governor of the Punjab Province joining the inaugural and closing ceremonies demonstrated their keen interest besides adding value to ICID proceedings; it highlighted the significance Pakistan gives to irrigation and drainage sector given their agricultural economy and a complete recognition of importance attached to ICID's

role in agricultural water management. Very special requests were placed before us to take on board some issues and distinct problems of the region like Impact of Global Climate Change on Himalayan waters and reservoir sedimentation given the discernible high level of sediment yields affecting life of reservoirs which also impacted the operation and management of projects and facilities.

Not only the technical contents transacted each day but also PANCID's efforts to provide the delegates and guests relaxation after their busy days were remarkable. Very well-structured cultural functions and social get-together on almost all the evenings demonstrating the unique but varied style of Pakistan made the events very memorable. The display of the long and rich cultural heritage of the country and meticulous planning of events were remarkable and the organizers left no stones unturned to demonstrate the highest order of hospitality.

One of the key decisions in the IEC in Lahore was on future venues of our annual events. There were a few requests seeking a review of next IEC venue to attract a larger participation and better attendance in our workbody meetings. This is an issue of difficult nature. Special thanks to PH Lee who handled this delicate and sensitive issue with utmost consideration in full consultation with our colleagues in NINCID. In due consideration to the emerging situation, NINCID courageously offered to defer hosting IEC and restricting the events to African Regional Conference on the scheduled dates. This opened up the slot for next year's IEC venue. Early finalization of the alternate venue based on requests from the National Committees of Australia, India and Italy is receiving priority consideration; we shall be letting you know of the decision in this regard by the end of this month.

Best regards,

M. Gopalakrishnan
Secretary General

Newly Elected Office Bearers

President

Prof. Dr. Chandra A. Madramootoo (Canada)



Prof. Dr. Chandra A. Madramootoo (Canada) obtained Ph.D (1985) in Agricultural Engineering from McGill University, Canada. At present he holds the prestigious position of

Dean, Faculty of Agricultural and Environmental Sciences, McGill University, Canada and Associate Vice Principal of Macdonald Campus of McGill University. Dr. Madramootoo has worked as a member of the Canadian National Committee of Irrigation and Drainage (CANCID) during the past 20 years and served in numerous workbodies of ICID. He was also the Vice President of ICID from 2000-2003 and presently holding the position of Chairman, CANCEID. He participated in numerous IECs and Congresses and was the key force behind the successful organization of the 18th ICID Congress and 53rd IEC at Montreal in 2002. Prof. Madramootoo is also the member of various professional societies. He has to his credit 15 awards from different organizations and published papers in more than 300 books, Journals, Conferences etc. He also holds the membership of McGill University Senate, Senate Nominating Committee, Senate Committee on Physical Development and many more. He may be contacted at e-mail <chandra.madramootoo@mcgill.ca>.

Vice Presidents

Dr. (Mrs.) Samia El-Guindy (Egypt)

Dr. Samia El-Guindy obtained her Ph.D in Land Reclamation from Martin Luther

University, Germany (1976). Currently, Dr. El-Guindy is an Emeritus Professor in the National Water Research Center, Ministry of Water Resources and Irrigation, Egypt and Director of the Egyptian Dutch Advisory Panel Project on Water Management. She participated in various events of ICID and also served as member on ICID workbodies. She received the prestigious Egyptian National Award in Agricultural Science (Soil and Water Science) in 1986 and Certificate of Honour from H.E. President Hosny Mubarak in 1990. Dr. El-Guindy has published over 200 papers / reports as journal articles and/or scientific research reports in the different fields of water management. She is a member of the Egyptian and Global Water Partnership together with many other national professional organizations and scientific associations. She may be contacted at e-mail <app@link.net>



Mr. Shinsuke Ota, Japan



Mr. Shinsuke Ota graduated in Agricultural Engineering from Kyoto University in the year 1972. He also served as the Secretary General of JNC-ICID from 1997-1998. Mr. Ota has worked for Ministry of Agriculture, Forestry and Fisheries (MAFF) for 32 years and

was engaged in Design, Planning and Policy Making concerning agriculture and rural development in Japan. Mr. Ota actively participated in several events of ICID including IECs and Congresses. He established the International Network for Water and Ecosystem in Paddy Fields (INWEPF) besides being member in many ICID workbodies. He may be contacted at e-mail <shinsuke_ota@water.go.jp>.

Prof. Ing. Lucio Ubertini (Italy)

Prof. Ubertini graduated in Engineering from University of Rome in 1966. Presently, he is the Director, Research Institute for Geo-Hydrological Protection of the National Research Council (IRPI/CNR), Italy. He attended various ICID events and actively contributed to various workbodies. Dr. Ubertini was Vice President, ITAL-ICID from 1994-2000 and President, ITAL-ICID from 2000-2007. Over the past 35 years, he has progressively equipped advanced level of knowledge in hydrology, water and environmental resources management within a multidisciplinary context and developed a rich international network of experts both at international and individual levels. He is a member of various professional societies. Prof. Ubertini authored and co-authored more than 150 national and international Scientific and Technical Publications and also edited a number of books. He may be contacted at e-mail <L.Ubertini@irpi.cnr.it>.



contributions to ICID activities. The award was presented to IRNCID on 17 October 2008 on the occasion of the 59th IEC and 20th ICID Congress held at Lahore, Pakistan.

IRNCID joined ICID in the year 1955 and has been very actively contributing to various activities of ICID since then. IRNCID is fairly broadbased and has organized several scientific and technical events during the years under consideration. Successful organization of the 4th Asian Regional Conference in Tehran in May 2007 was the testimony to IRNCID's deep interest and commitment towards promoting ICID's interests. The NC has also brought out a number of publications in the field of irrigation and drainage which have always demonstrated the advances made in these fields through research and on-field studies. IRNCID professionals have also contributed a number of valuable papers to ICID Journal, ICID Congresses and Regional Conferences during this period. The National Committee will also have the proud privilege of hosting the 62nd IEC and 21st Congress in 2011.

2nd Best Performing Workbody Award, 2008

The Best Performing Workbody Award (BPWA) was instituted by ICID in 2002. The performance of a workbody is adjudged based upon a set of criteria and its contribution towards the mandate and mission of ICID. The BPWA 2008 was presented to the ICID Journal Editorial Board (EB-JOUR) by Mr. Rana Mohammad Iqbal, the Governor of Punjab (Pakistan) on 17 October 2008 during the occasion of the 59th IEC and 20th ICID Congress held at Lahore, Pakistan. President Hon. Prof. Dr. Bart Schultz (The Netherlands), Chairman, EB-Journal received the award.

3rd Best Performing National Committee Award 2008

ICID in 2002 instituted an Award to recognize the Best Performing National Committee (BPNC). The award is presented at every triennial Congress. The performance of a National Committee is judged on the basis of various facets demonstrated by the participating National Committees between two successive ICID Congresses (over a three year period). The award consists of a shield and a citation plaque.



Iranian National Committee on Irrigation and Drainage (IRNCID) has won the 3rd Best Performing National Committee Award (3rd BPNC Award) for its outstanding achievements and



ICID Journal acts as a mouthpiece to communicate to the international water community ICID's sixty years of experience in the promotion and transfer of water and land management technology and related issues. ICID Journal was granted Science Citation Index Expanded (SCIE) starting with Vol.49, Issue No.1 of 2000 which was the first issue of the quarterly Journal printed and distributed under ISSN 0971-7412. ICID Journal was also selected for coverage in Current Contents/Agriculture, Biology and Environmental Sciences (CC/AB&ES).

The award reflects that the EB-Journal's contributions towards the mandate and mission of ICID were outstanding and impressive.

Winners of WatSave Awards 2008

Innovative Water Management Award

Dr. Yousri Ibrahim Atta (Egypt)

has received the WatSave Innovative Water Management Award for his water saving contribution on "Innovative Method for Rice Irrigation". In

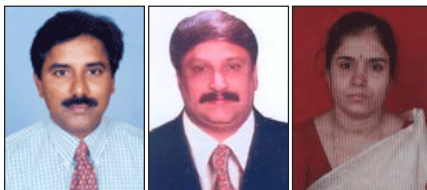


Egypt, rice is traditionally grown under flood irrigation. To reduce the amount of irrigation water required as well as to increase water productivity, a new method of growing rice on strips has been adopted. This involves planting of rice in two strips along each furrow. In the traditional method, the rice seedlings are planted at a distance of 20x20 cm, giving a density of 25 tillers per sq.m, while with the new method, the seedlings are planted in 2 strips 10 cm apart but still maintaining the same density of 25 tillers per sq.m. This strip method of rice cultivation has now been made mandatory by the Ministry of Water Resources and Irrigation (MWRI) as it allows for a 40% savings in water.

Dr. Atta is Associate Professor in Water Management and Irrigation Systems Research Institute (WMRI) of Ministry of Water Resources and Irrigation (MWRI), Egypt. He may be contacted at e-mail <yosriatta8888@yahoo.com>.

Technology Award

Dr. Yella Reddy, Mr. Satyanarayana and Mrs.G Andal (India) have been jointly awarded the Technology – Award 2008 for their water saving contribution on "Micro irrigation: A Technology for Prosperity". The innovation is related to the replacement of a portable sprinkler system with a semi-permanent sprinkler system in Andhra Pradesh State of India.



In using portable sprinkler systems, farmers have been experiencing problems with respect to storage and operation time required to shift the system to different areas. Although changing to a semi-permanent sprinkler system incurs additional expenditure, it provides for advantages like labour saving, convenience in operation and better working conditions in the field. Also it helps to eliminate ponding of water near the pipe joints. The innovative semi-portable sprinkler system has become popular in the state and its adoption has been increasing. The water savings are (upto 50%) are achieved when we switch from surface irrigation to sprinkler irrigation.

Dr. Yella Reddy is a Principal Scientist and Project Manager, Andhra Pradesh Water Management Project, Bapatla and earlier he has worked as an Officer on Special Duty (Technical) in Andhra Pradesh Micro-irrigation Project (APMIP). Mr. Satyanarayana is a Project Officer and Mrs. G Andal is a Horticultural Officer at the APMIP. Dr. Reddy may be contacted at <yellareddy@yahoo.com>.

Young Professional Award

Dr. Amgad Elmahdi (Australia) received the WatSave Young Professionals Award for his water saving contribution on "Water Banking: A Conjunctive Water Use Management



Approach for Water Saving and Improve Productivity and Environmental Performance"

The work involved developing an integrated modeling framework for estimating potential water savings, associated costs and levels of seasonal and environmental flow improvements under different supply and demand management options. Based on work on the Murrumbidgee River system, the research has helped increase understanding of how to improve the environmental quality of the river through better irrigation demand management to save water for the environment and for underground damming (water banking) downstream.

Results have shown that big water savings are possible, ranging from 80 to 200 GL, depending on climate conditions, while maintaining crop yields and reducing negative environmental impacts. The framework is a useful policy and planning tool for catchment managers, water supply irrigation authorities, policy and decisions makers and irrigators.

In brief, water banking is the storage of surplus in-stream flows during the wet season into aquifer storage to be used during deficit periods i.e. when the irrigation demand exceeds the available requirements by diversion of in-stream flows. Underground storage reduces evaporation losses greatly as compared to surface storages. This process adds flexibility in conjunctive water management, reduces water losses and better utilizes the in-stream flows. The concept of water banking provides for a better management of scarce water resources and has the potential for significant water savings.

Dr. Amgad Elmahdi is a Research Scientist at CSIRO Land and Water Department at Glen Osmond SA, Australia. He may be contacted at <amgad.elmahdi@csiro.au> or <amgad@nbcn.com>.

Best Paper Award 2008

The Best Paper Award was instituted by ICID in 2006. The Award is given to the best paper published in the issues of the Journal in the preceding year. The decision on the best paper award is

made by the Editor in consultation with the Associate Editors.

This year the Best Paper Award 2008 is awarded to the following two papers :

- 'Revisiting currently applied pipe drain depths for waterlogging and salinity control of irrigated land in the (semi) arid zone' by L.K. Smedema, (Issue : 56.4);
- 'Conjunctive Water Management Options: Examples from Economic Assessment of System-level Water Saving through Liuyuankou Irrigation System, China' by S. Khan, S. Mushtaq, Y. Luo, D. Dawe, M. Hafeez, and T. Rana, (Issue : 56.5).

The awards were citation plaques and Gift Books from M/s. Wiley-Blackwell (UK), the publisher of our Journal.

Heartiest congratulations to all !

Highlights of the 20th ICID Congress and 59th IEC Meeting at Lahore, Pakistan

The 20th ICID Congress and 59th International Executive Council (IEC) meeting of the International Commission on Irrigation and Drainage (ICID) were held at Lahore, Pakistan from 13-18 October 2008. The theme of the Congress was "Participatory Integrated Water



Resources Management: From Concept to Action". More than 500 delegates from over 24 countries and several international organizations participated in various events. Besides the Congress, meetings of over 30 ICID Workbodies, Symposium, Special Session, Workshops and exhibitions were held.

The Questions which were central to the theme of the Congress were : Question 54 on "Sustainable Integrated Water Resources Management" and Question

55 on "Role of Public and Private Sectors in Water Resources Development and Management".

All the events related to the IEC and Congress were held at the magnificent conference complex 'Aiwan-e-Iqbal' at Lahore. Numerous papers were received for the Congress and other technical events. The Central Office has published Congress proceedings (printed volume) with 'Abstracts' and a 'CD-ROM' containing all full length papers of all events. The Congress was sponsored and organized by Water and Power Development Authority (WAPDA) and Pakistan National Committee on Irrigation and Drainage (PANCID) and supported by several Ministries and national organizations (Private and Government) from Pakistan. Highlights of the Congress and IEC are enumerated below :

◆ New Chairs, Vice Chairs and Secretaries of ICID Workbodies

- Vice President Hon. Dr. S. Nairizi (Iran) will serve as new Chairman of the Permanent Finance Committee (PFC) of ICID.
- Vice President Hon. Dr. S. Nairizi (Iran) and Vice President Hon. Mr. Franklin E. Dimick (USA) will serve as Interim Chairman and Secretary of the WG-DROUGHT, respectively.
- Mr. Ahmed Kamal (Pakistan) will serve as acting Secretary of the WG-CAFM

◆ Distinguished N.D. Gulhati Memorial International Lecture was delivered by Prof. Dr. Chandra A. Madramootoo (Canada)

◆ ICID Water Saving Award 2008 were sponsored by Pakistan National Committee on Irrigation and Drainage (PANCID).

◆ **ICID publications released :** (a) Water Saving in Agriculture and (b) Manual on performance evaluation of sprinkler and drip irrigation systems during Lahore Congress.

◆ Working Group on Water Savings for Agriculture (WG-WATS) proposes to organize a workshop on Water Savings in 2010.

◆ ICID is coordinator for Topic 2.3 – "Water for Food for Ending Poverty

and Hunger" of the 5th World Water Forum.

- ◆ The tenure of Special Work Team on Lake Chad Basin (ST-LCB) was extended by 2-years i.e. upto 2011.
- ◆ Task Force on the Role of Irrigation in Poverty Alleviation and Livelihood (TF-POV) will be converted into a Working Group.
- ◆ Working Group on Environmental Impacts of Irrigation, Drainage and Flood Control Projects will function as Working Group on Environment, with a new mandate.
- ◆ Working Group on On-Farm Irrigation Systems (WG-ON-FARM) proposed a new mandate to continue its activity until 2014.
- ◆ Editorial Board Journal: Three Special Issues of ICID Journal on Irrigation Drainage will be published in 2009, besides regular 5 issues of 128 pages each.

◆ 7 out of 9 Vice Presidents attended the Lahore meetings

(a) Vice President Mr. Felix B. Reinders (South Africa); (b) Vice President Dr. Gao Zhanyi (China); (c) Vice President Dr. Ing. Eiko Lubbe (Germany); (d) Vice President Dr. Karim Shiasi (Iran); (e) Vice President Prof. Peter Kovalenko (Ukraine); (f) Vice President Dr. A. Hafied A. Gany (Indonesia); and (g) Vice President Engr. Dr. Illahi B. Shaikh (Pakistan).

◆ Congresses/Conferences

- The 60th IEC meeting which was earlier scheduled to be held at Abuja in Nigeria will be held in a venue to be announced by end of November 2008. The 3rd African Regional Conference (AFRC) will, however, take place at Abuja in Nigeria as planned.
- 23rd European Regional Conference (ERC) will be held from 18-24 May 2009 at Lviv, Ukraine.
- 5th Asian Regional Conference (ASRWG) will be held from 8-11 December 2009 at New Delhi, India.
- 61st IEC and 6th Asian Regional Conference (ARC) will be held from 10-16 October 2010 at Jogyakarta, Indonesia.

- 62nd IEC and 21st International Congress on Irrigation and Drainage will be held from 15-23 October 2011 at Tehran, Iran.
- 8th Micro-Irrigation Congress will be held in a conjunction with Tehran Congress in 2011. News from ICID National Committees

News from ICID National Committees

Irrigation Australia (IAL)

New CEO Appointed

The new Chief Executive Officer of Irrigation Australia Limited (IAL) is Mr. Chris Bennett. The National Chair of IAL, Mr. Peter Toome, said the appointment had been made following an extensive nationwide search.

Mr. Bennett has strong background in industry training and in working with government agencies and funding bodies. Mr. Chris Bennett, not only understands the issues facing the industry, but has the strategic vision to ensure that we are seen as part of the solution. He is interested in the development and expansion of industry organizations for the benefit of members.

The Contact coordinates are : Catherine Parbery, Administrative Officer, IAL, E-mail <Catherine.parbery@irrigation.org.au>; website <www.irrigation.org.au> Mr. Chris Bennett can be contacted at Tel : +61 2 9476 0142, and, Mr. Peter Toome at e-mail<p.toome@adcon.at>

Hungary (HUCID)

Mr. Sándor Szalai has assumed the charge as the new President of the Hungarian National Committee of ICID (HUCID). We congratulate and welcome Mr. Szalai and look forward to his stewardship in organizing various activities in the direction of accomplishing objectives of ICID. Prof. F. Ligetvari, Vice President Hon. relinquished the position of the President of HUCID owing to his pressing engagements elsewhere. Vice President Hon. Ligetvari's contributions to ICID were immense. We gratefully appreciate the excellent co-operation

extended by him and look forward to his continued support and association.

The contact e-mails of Office Bearers of HUCID are as below :

President: Sándor Szalai
<szalai.s@met.hu>

Vice President (focused on English speaking duties): László Hayde
<l.hayde@unesco-ihe.org>

Vice President (focused on French speaking duties): Sándor Vámosi
<vamosi.sandor@message.hu>

Secretary: László Menyhért Tóth
<tothlaszlo@mail.kvvm.hu>

Italy (ITAL-ICID)

Ms. Gabriella Zanferrari has assumed the charge of the new President of Comitato Nazionale Italiano ICID (ITAL-ICID). We congratulate and welcome Ms. Zanferrari to ICID fraternity and look forward to her stewardships in organizing various activities in direction of accomplishing objects of ICID.

We place on record our appreciation and gratefulness to Prof. Lucio Ubertini, who relinquished the position of President of ITAL-ICID, for his excellent co-operation and support to ICID activities. [Source : ITAL-ICID]

Iran (IRNCID)

H.E. Mr. Mohammad Reza Attarzadeh, Deputy Minister of Energy for Water and Wastewater Affairs, Islamic Rep. of Iran has been elected as the New Chairman of Iranian National Committee on Irrigation and Drainage (IRNCID). We congratulate and welcome H.E. Attarzadeh and look forward to his stewardship in organizing the 21st International Congress on Irrigation and Drainage together with 62nd IEC meeting in Tehran in 2011. We express our appreciation and gratefulness to H.E. Dr. Rasool Zargar, who relinquished his chairmanship of IRNCID due to his retirement, for his excellent cooperation and support to ICID activities. It was his leadership that helped IRNCID bag the Best Performing National Committee Award in 2008. [Source : IRNCID]

USA (USCID)

USCID Conferences

- **Irrigation District Sustainability – Strategies to Meet the Challenges, A USCID Irrigation District Specialty Conference during 3-6 June 2009 at Reno, Nevada.**

The success or failure of today's irrigation districts rests with the long and short term decisions made by the management staffs of those institutions. Often those decisions are predicated on the direction provided by elected officials – officials who, again, rely upon the expertise and professional judgment of district staff and consultants. That responsibility demands the continuing development of tools, knowledge and skills to make good decisions, and that is why USCID thinks this Conference is one you should not miss. The 'Call for Papers' together with topic and sub-topics is available on the USCID website <www.uscid.org>

- **Fifth International Conference on Irrigation and Drainage on 'Irrigation and Drainage for Food, Energy and the Environment' during 4-7 November 2009 at Salt Lake City, Utah.**

USCID's Fifth International Conference on Irrigation and Drainage will bring together irrigation and drainage professionals from around the world to network, examine contemporary water resources issues, see US technology, and visit water resources projects. The Call for papers is available on the USCID website <www.uscid.org>

Contact: Vice President Hon. Mr. Larry D. Stephens (USA) of U.S. National Committee on Irrigation and Drainage (USCID) at e-mail <stephens@uscid.org>

Kyoto World Water Prize

This is to inform you that the deadline for applications for the second edition of the Kyoto World Water Prize has been extended to **30th November 2008**.

More information about the Kyoto Prize on <http://www.worldwaterforum5.org/index.php?id=1899&L=0>.

**Topics and Sub-topics
proposed for
Tehran Congress (2011)**

**Congress Theme : Water
Productivity towards Food Security**

**Question 56 : Water and Land
Productivity Challenges**

- 56.1:** Water and Land Productivity; Concepts, Indices and Targets
- 56.2:** Innovations and Technologies and Best Practices for Sustaining and/or Increasing Water and Land Productivity
- 56.3:** Productivity of Low Quality Waters for Irrigation Uses
- 56.4:** Improving Crop Water Productivity under Stressed Environment
- 56.5:** Irrigation and Drainage Management Improvements

**Question 57: Water Management
in Rainfed Agriculture**

- 57.1:** Drainage and Flood Management in Rainfed Farming
- 57.2:** Water Harvesting and Conservation
- 57.3:** Supplementary Irrigation
- 57.4:** Rainfed Farm Management

**Symposium : Climate Change
Impacts on Soil and Water Resources**

**Special Session : Modernization of
Water Management Schemes**

(‘Call for Papers’ will be available in due course of time).

**7th N.D. Gulhati
Memorial Lecture 2008**

The N.D. Gulhati Memorial Lecture for International Cooperation in Irrigation and Drainage was instituted in 1981 in the loving memory of late President Hon. N.D. Gulhati (India). The continuity of the lecture was broken after 1993 and re-established in 2005 at Beijing, China.



**Plenary Report – Sustainable Integrated Water
Resources Management (Question 54)**

General Reporter: Dr. Hussam Fahmy (Egypt)

Sustainability of integrated agriculture is typically threatened by water scarcity and soil degradation. Climate change, emerging world wide food crisis and bio-fuel production will probably add to the viciousness of these threats. As recognized by the participants of the ICID 20th Congress at Lahore, Pakistan, IWRM paradigm provides hope that may be the only, to achieve sustainability for irrigated agriculture. However, IWRM is a concept that does not, at least easily, render itself for implementation.

Management of water resources system is a complex process that requires extensive data and information. Such requirement is magnified and diversified when integrated paradigm is adopted. In most of the developing countries reliable data information, or estimates on the different components of water resources system, not to mention related socio-economic and ecological systems, are not available. Also, research results dissemination and field uptake seem to be very weak. Support and capacity building are need in these areas is indispensable step towards IWRM implementation in the developing and least developed countries.

Under the serious threats to irrigated agriculture and magnifying factors, utilization agriculture of marginal water and soils has become a fact. Therefore, planning, design, and operation of land reclamation projects and irrigation systems, have to take into account this new fact. Simultaneous planning and design of irrigation and land drainage systems, is one of the most important factors to achieve the widely accepted approach of Integrated Water Resources Management (IWRM).

If limited water supply or the vulnerable cultivated soils are term of irrigated agriculture equation, drainage role in IWRM becomes more significant. However, introduction of the drainage typically takes place after encountering salinity or water logging problem. Capacity of the drainage sinks in terms of quantity and quality could be the main determinate of the reclaimed land area, cropping pattern, water management scheme, and agricultural practice. Simultaneous design and planning could help very much phasing the drainage infrastructures according to the different phases of land reclamation and progress in the cultivated area.

It is obvious; from the thesis made by the papers that reuse of drainage and marginal water is inevitable. However, the focus of most of the papers was on salt as a sole or main soil and water pollutant, which is not a valid concept anymore. Results on the short term impacts are not enough and long term have to be studies and investigated thoroughly. Therefore, costly environmental monitoring programs need to be launched.

By default single purpose reservoirs or hydraulic structures does not suit the IWRM concept. Moreover, conjunctive use and operation of the water resources system elements is primary step for integration. More surface capacity and optimized reservoir management are crucial for IWRM successful implementation.

Experience in bio drainage and bio technologies for waste land reclamation is yet recent and pilot experimental results are still inconclusive. However, such innovative technology, which employs nature for nature, needs to be more investigated and invested in.

The Memorial Lecture aims at reporting on significant global developments and world knowledge in the fields of irrigation, drainage, flood management and river training including all allied aspects like Environment, Sociology, Economics etc. The Memorial Lecture is delivered at each triennial ICID Congress by an eminent international personality.

This year the N.D. Gulhati Memorial Lecture was delivered by Prof. Chandra

Madramootoo (Canada) on 17 October 2008 on the occasion of the 20th ICID Congress held during 13-18 October 2008 at Lahore, Pakistan.

The presentation of Prof. Madramootoo on ‘Irrigation in the Context of Today’s Global Food Crisis’ can be accessed at the following link : http://www.icid.org/nd_gulhati_2008.pdf

Plenary Report : Roles of Public and Private Sector in Water Management (Question 55)

General Reporter: Dr. Gao Zhanyi (China)

In many countries institutional reforms in irrigation and drainage system management towards stakeholder-controlled management are on-going. Transfers of systems, or of responsibilities are especially taking place in the Asia, Central and South America, Central and Eastern European Countries. In the countries with a transition economy, specific problems concern: (i) such as the layout of the systems, which is mostly based on the former large-scale type of agricultural production, (ii) the transfer of irrigation system management from the traditional government agencies towards water management agencies and water users associations, (iii) the funding of modernization and resulting operation and maintenance, (iv) lack of good governance, (b) unaffordable pumping systems and (vi) environmental degradation.

In light of the above considerations and issues, papers for Q55 were invited on the following sub-topics: **55.1** Performance of irrigation and drainage systems after modernization/privatization; **55.2** Socio-economic aspects of agriculture production in developing countries; and **55.3** Technical, technological, economic and legal aspects of management and use of water resources of trans-boundary (interstate) rivers.

The number of papers accepted for Q55.1, Q55.2 and Q55.3 were 19, 3 and 4, respectively.

The papers under Q55.1 could be classified into 7 categories: 6 papers for institutional reform, 2 papers for management model study and application, 2 papers for monitoring and management of irrigation system, 2 papers for design of irrigation and drainage system, one paper for testing of new drain envelopes materials, 2 papers for evaluation and benchmarking of irrigation system operation, 3 papers for experience and progress of modernization and rehabilitation of irrigation systems.

For the three papers under Q55.2, 2 papers reported studies of socio-economic feasibility of solutions to overcome the constraints of canal water distribution. One proposed using on farm water storage and drip irrigation to produce high value crops like bananas under long cycle of canal water distribution. Another one considered better utilization of water, land and energy

by increasing yield and cropping intensity to satisfy rising demands.

The four papers were presented for Q55.3. The paper from India stressed the need of rethinking the rationale to identify important factors/parameters of water like utility-based classification, economic value of its productive use, exchange of other natural resources, sharing of environmental impacts, etc. that can improve the acceptability of any agreement among entities for sharing the valuable resource of water. The paper from the Netherlands described the need to build a strong trust relationship among the various entities sharing a trans-boundary river. The level of trust determines the validity and usefulness of any agreement among the entities. The level of trust also determines how effective water resources are managed in an international context. The paper from China demonstrated the need for properly managing water resources of the Greater Mekong Sub-region (GMS) to improve power production and international trade among the various riparian countries of the Mekong River. The activities behind the GMS Cross-Border Transport Agreement and the Inter-governmental Agreement on Regional Power Trade and the effect these activities have on International Water Law are the main focus of this paper. The paper from Pakistan discussed the idea that through properly addressing the technical, technological, economic and legal aspects of managing trans-boundary water resources, the sharing nations/states would be able to ensure proper conservation, development/management and protection of the trans-boundary waters. The legal and protected agreements would thus be the most effective tool for promoting the optimal and sustainable utilization of the water resources for the present and future generations.

Participatory Integrated Water Management was considered essential to the sustainable development of irrigation. Government, management agents, WUA, farmers and other stakeholders need to join together to achieve the common objectives: increasing sustainability, efficiency, productivity and profitability of the irrigation systems.

The major roles of Government included: providing leadership, working out policy

and legal arrangement, making institutional arrangement, enhancing capacity building, providing financial support. The major roles of management agents include: Modernization of irrigation system, operation and maintenance of main structures and canals system; linkage between government and WUA and farmers; technical support to WUA and farmers; supervising and Monitoring of system; collection of water fees from WUA.

The major roles of WUA included: Rehabilitation of on farm canals and structures; Operation and maintenance of on-farm structures and canals system; Collection of water fees from farmers.

There are a number of opportunities and challenges to implement modernization and institutional reforms in the irrigation sector. The opportunities included: Food security is an increasing world problem; Food price is rising; Bio-fuel development is speeding up; Climate change highlight the importance of Irrigation and drainage. There is huge scope for modernization and institutional reforms in irrigation and drainage sector. The challenges include poor and aged infrastructure, mismatch of institutions, shortage in investment, low productivity and profitability, complexity of integrated water management, especially trans-boundary water resource management.

Transfer didn't mean to transfer all responsibility of whole system to WUA and farmers.

The experiences have shown that the government itself could not maintain the sustainability, productivity and profitability of the irrigation systems without the active involvement of stakeholders, especially farmers. Farmers or Water User Associations may not be in a position to modernize and manage irrigation systems without the support and leadership from government, especially for the medium and large irrigation schemes. Transfer meant to transfer the responsibility and/or ownership of parts of the systems from the government to WUA and farmers. Government, management agents, WUA, farmers and other stakeholders needed to join together to achieve the common objectives: increasing sustainability, efficiency, productivity and profitability of the irrigation systems.

Lahore Declaration October 2008 Lahore, Pakistan

The target of the First Millennium Development Goal (MDG 1) is reducing hunger by 50 % by 2015. Notwithstanding the progress made to some extent, realisation is still lagging behind considerably. It is disheartening to observe that there are indeed depleting levels of global food stock. This has caused food scarcity resulting in a steep increase in food prices during 2008. This has brought us back to the global agenda on water for agriculture and better agricultural water management, the primary mission of the International Commission on Irrigation and Drainage (ICID).

The 20th ICID Congress in Lahore was rightly conducted on a theme quite relevant to the current needs of Food Security. The theme of 'Participatory Integrated Water Resources Management: From Concept to Action' covered several sub themes. The participation of over 150 international delegates and 400 local delegates in Pakistan, which has the world's largest contiguous irrigation system could help a fair assessment of the opportunities and bottlenecks in the implementation of 'Water Management For Sustainable Agriculture Production' and identifying the issues of importance.

In due consideration to the transactions in the Congress, deliberations in the ICID specialized working groups and recommendations of various stakeholders, the following key recommendations emerged:

- (1) To achieve the required increase in Food Production in light of the rising demand, there is an urgent need to modernize and expand the irrigation and drainage systems and to improve their operation and maintenance in the broadest sense as a tool to assume primary importance;
 - (2) The increase in worlds' population and an enhancing standard of living for the people world over ask for more production to meet the increasing demands. The looming climate change and its likely impacts on water management for agriculture requires cooperation of cutting across boundaries especially in regard to the Himalayan River Systems
- Sharing knowledge and information,

intensification of data collection networks, research and technology to adapt to the increased needs under the impacts of climate change;

- A review of the operation of storage systems keeping in view the dynamics of climate change: need for enhancing storage dam based reservoir systems, enhancing soil water storage with water harvesting structures, check dams, recharging groundwater, farm dams and enhancing grain banks - virtual water storage;
- Design and operation of irrigation systems using treated or partially treated water including waste water re-use;
- Dealing with mineral tolerant plants, saline land crops and crops to withstand waterlogging.

For the countries served by the Himalayan rivers, it will be of special importance to improve in addition the knowledge on the processes in the snow clad regions.

- (3) Experiences discussed in the congress reflect that participatory water management of schemes involves that the water users' contribute positively to sustainable operation and maintenance of systems. In the emerging countries the responsibility for operation and maintenance has been generally in hands of the Governments. In such cases the transfers concern the transfer of responsibility and ownership of full or parts of the systems gradually getting handed over to the farmers, and/or irrigation or drainage agencies. In the countries with a transition economy, problems of concern differ, such as the need for looking into the layout of the systems, which had hitherto been mostly based on the large-scale agricultural production. The transfer of irrigation system management from the traditional government agencies towards water management agencies and water users associations, the funding of modernization and resulting operation and maintenance, lack of good governance, unaffordable pumping systems and environmental degradation came up as emerging issues.
- (4) Investment in the modernization of (large-scale) surface irrigation schemes will result in better service provisions. The partial transfer of such schemes for participatory irrigation management will help better governance, cost recovery in stages and efficient water use.



- (5) Assets created in the recent past for enhancing water availability, particularly dam based reservoirs are facing the challenge of loss of live storage at a pace that is becoming critical: the high rate of sedimentation in Himalayan reservoirs and other river systems in China, Iran, Turkey call for a global initiative to study this aspect; cooperation of international organizations like International Commission on Large Dams (ICOLD), International Hydropower Association (IHA), International Association of Hydraulic Research (IAHR) besides ICID and Research Institutions who are doing works in this regard can pool the knowledge and share it to address the problems of handling this issue.
- (6) In an exclusive session on Tarbela Reservoir sedimentation, the international delegates had an appreciation of the tremendous magnitude of the impending problem arising out of loss of storage; they reviewed available solutions but acknowledged that the Tarbela case as such is unique asking further research, innovative solutions applying frontier knowledge and beyond and exchange ideas. ICID shall in accordance with its By Laws, constitute a Task Force to study this aspect of reservoir sedimentation involving experts of the member countries and liaise with other international organizations like ICOLD, IHA, etc.
- (7) The international participants expressed their high appreciation for the efforts of all involved in the host country to make their stay as good as possible under the present day conditions.

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