



# News Update

ICID•CIID

INTERNATIONAL COMMISSION ON IRRIGATION AND DRAINAGE

Diamond Jubilee Year (1950-2009)

December 2009

## From Secretary General's Desk...



Dear Friends,

I am delighted to inform you of the successful conclusion of the 60<sup>th</sup> IEC and 5<sup>th</sup> Asian Regional Conference in New Delhi last week in a very remarkable manner. It was indeed a hallmark befitting the Diamond Jubilee Year of ICID and as one could see elsewhere in this News Update, the 'message galaxy' amply speaks volumes of the event. We owe a great deal to our hosts, the Indian National Committee on Irrigation and Drainage for having received an impressive number of delegates both from foreign countries and different States of the Indian Union. Attended by more than 700 participants with about 230 foreign delegates from 47 countries, the week long events assumed the same dimension as of congresses. The Inauguration of the conference by the Hon'ble Prime Minister of India with the participation of the Union Ministers of Water Resources at Cabinet and State levels added special value to the role of ICID in managing the agricultural water and ensuring food security in the settings of the developing nations. The Closing Ceremony was no less than the Inaugural function in as much as we had galaxy of lead figures in the Union Government of India to speak before us – including the Union Minister of Finance Pranab Mukerjee, Union Water Resources Minister Pawan Kumar Bansal, India's Planning Commission Deputy Chairman Montek Singh Ahluwalia, Minister of State Water Resources Vincent H. Pala, Minister of State of Communication and Information Technology Sachin Pilot, Secretaries in the Central Government besides INCID Chairman. In his inaugural speech, President Chandra Madramootoo highlighted and acknowledged the Indian initiative 60 years back to create ICID and praised



the arrangements made by the host country for the events that coincide with the Diamond Jubilee Year. A cherishable feature of the occasion was the release of a special postage cover connoting ICID's Diamond Jubilee.

We had a very fruitful working group meetings well attended. The remarkable attendance that packed the hall in sessions like climate change and others, special focus sessions on Mekong Basin and Aral Sea Basin issues added value to the conference. IWMI/ ADB's recent works on Asia's Future Irrigation and an international group meet on Water Governance are the other features. Overall, the very high level participation by not only political figures and farmers but social groups assigned special relevance of ICID's role in water for food and the importance that the developing world assigns to it. ICID family will cherish for long the good things that emerged during the event.

This News Update is a bigger in size than usual to convey you all about the important aspects of Delhi events. We congratulate our three new Vice Presidents: Willem Vlotman (Australia), Laszlo Hayde (Hungary) and A.K. Bajaj (India) who joined the galaxy of Office Bearers. We had briefly summed up in the Declaration the final outcome.

We thank once again INCID for their excellent hospitality and all others who stood by them like the Central Board of Irrigation and Power as conference facilitators.

Let me take this opportunity to thank you all for your remarkable support during 2009; and, Wish you a very Happy and Rewarding New Year 2010.

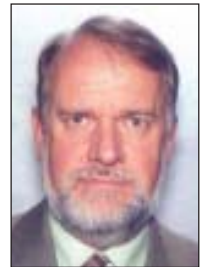
Best Regards,

M. Gopalakrishnan  
Secretary General

## New ICID Vice Presidents (2009-2012)

Dr. Willem F. Vlotman (Australia)

Dr. Willem F. Vlotman (born in 1952) obtained B.Sc. in Civil Engineering (1975), M.Sc. in Agricultural Engineering (1982), Ph.D in Irrigation and Agricultural Engineering (1985), and MBA in Agribusiness (2004)



At present he is working as Manager, Water Systems Improvement and Sustainability Units, Goulburn-Murray Water (G-NV), Tatura, Australia.

He has more than 34 years of experience in channel hydraulics and hydrology; water simulation models, water management; application of chain management; optimizing crop production; computer programming and modern computer software applications; extensive experience in Institutional Strengthening and Organizational Development of research organizations, Human Resources Unit and Marketing and Public relations Unit. Dr. Vlotman is also associated with various Professional Societies.

Dr. Vlotman authored and co-authored 7 books, 70 reports and working papers, 57 technical papers.

In ICID, Dr. Vlotman is the Strategy Theme Leader of 'Systems', Chairman Working Group on Drainage (WG-DRG), Secretary, Working Group on Modernization of Irrigation Services (WG-MIS) and Observer in Asian Regional Working Group (ASRWG).

Season's Greetings and Best Wishes for a Happy,  
Prosperous and Fruitful New Year

### Dr. Laszlo G. Hayde (Hungary)

Dr. Laszlo G. Hayde (born in 1958) obtained Doctorate in Fluid Mechanics from Technical University of Budapest (1995), M.Sc. in Civil Engineering (Specialization in Hydraulic Engineering, 1982).



At present Dr. Hayde is working as Senior Lecturer in Irrigation Engineering, UNESCO-IHE, The Netherlands.

Dr. Hayde has more than 27 years of experience in consulting, education and research in : Water and environmental planning and management, hydraulic engineering, fluid mechanics, EU Water Framework Directive, environmentally sound solutions in Hydraulic engineering, environmental impacts and assessment; 19 years of experience in education management, organization of educational programmes, curricula development etc. He is also associated with various professional societies. Dr. Hayde has authored and co-authored 1 book, 2 book chapters, 2 Journal papers and 5 peer reviewed publications.

In ICID, Dr. Hayde has been Secretary General of HUCID (2002-2005) and became Vice President of HUCID in 2008. At present Dr. Hayde is Secretary of European Regional Working Group (ERWG), Members of Working Group on History of Irrigation, Drainage and Flood Control (WG-HIST) and Permanent

Finance Committee (PFC). He edited the ICID Publication "Danube Valley, History of Irrigation and Flood Control" in 2004. He was also Observer in ICID's erstwhile Working Group on Capacity Building, Training and Education (WG-CBTE).

### Mr. A.K. Bajaj (India)

Mr. A.K. Bajaj (born in 1951) obtained B.E. Hons. in Mechanical Engineering and M. Tech in Fluids Engineering and Water Resources subjects.



At present, Mr. Bajaj is working as Chairman, Central Water Commission and Ex-officio Secretary to Government of India, Ministry of Water Resources since April 2008.

Mr. Bajaj has more than 35 years of experience in Planning, design and conceptualization of Water resources of the country at macro level, appraisal of major and medium multipurpose water resources projects, undertaking flood management activities on an annual basis and advising the Central Government. He has written many technical papers which have been presented or published in various Journals.

In ICID, Mr. Bajaj is a member of Permanent Committee for Technical Activities (PCTA) and ICID Staff Committee. He has also become a member of PFC in 2009.

machine develops two beds and three furrows in single operation. It is designed to plant four rows on one bed. A furrow for irrigation separates each bed.



There is a buffer zone in the center of four rows on the bed. The machine develops two lines of crop on both sides of the furrow. Each furrow irrigates only 20 cm (8 inches) of the adjacent bed. The center to center distance of two beds is 90 cm (36 inches) with a bed of 60 cm (24 inches). Thus, the machine has provision to plant 4 lines in 90 cm (36 inches) width while maintaining the traditional plant population. This saved 45% of water compared to traditional methods, with 17% increase in yield. The machine has been used for other crops (cotton, maize and rice with different but similarly impressive results). The water productivity improvements were achieved on 815 ha at four locations, but the technology has great potential (8.4 Mha of wheat in Pakistan alone). Please access ICID website for more details.

The work of Dr. Ahmad can be more succinctly termed as "Bed Planting Machine". Congratulations to the award winner.

### Young Professional Award

Dr. Malcolm Gillies' work on 'Development and application of innovative and advanced simulation tools for the evaluation and optimisation of surface irrigation systems' won him the



Young Professionals Award 2009. His work was for software (simulation tools) for the inverse solution of the volume required for surface irrigation (furrow, bay or basin) capable of dealing with variable conditions by virtue of being based on measurement of actual advance and runoff.

Performance gains (water savings) in excess of 20% are readily achievable in surface irrigation systems through the process of evaluation and practice change. Surface irrigation remains the

## Best Paper Award 2009

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 2009 is awarded to Ms. Jianxin Mu (China), Dr. Shahbaz Khan (Australia); and Dr. Gao Zhanyi (China) in recognition of their outstanding paper titled "Integrated Water Assessment Model for Water Budgeting Under Future Development

Scenarios in Qiantang River Basin of China" published in Issue 57.4 of Irrigation and Drainage – The Journal of ICID. The award was a citation plaque and Gift Books from M/s. Wiley-Blackwell (UK), the publisher of our Journal.

Congratulations to all awardees.

## Winners of WatSave Awards 2009

### Technology Award

Prof. Dr Rai Niaz Ahmad's 'Wheat Bed Planter' won him the WatSave Technology Award 2009. The bed planting

dominant irrigation method in Australia at 70% of the total area irrigated (in excess of 1,000,000 ha and 4,000,000 ML). Measurements of performance across the main surface irrigated crops (cotton, grains, sugar and pasture) show application efficiencies ranging from 20 to 90% but averaging about 50%. Selection of more appropriate flow rates and irrigation times better suited to the specific soils can raise average efficiencies to above 70%. Please access ICID website for more details.

The work of Dr. Gillies can be more succinctly termed as “*An Observational Approach to the Optimisation of Surface Irrigation*”. Congratulations to the award winner.

### Innovative Water Management Award

Messrs Shahaji Manikrao Somawanshi, Bharat Kawale and Sanjay Madhukar Belsare's work on



*'Transformation of irrigation through management transfer'*



won them the WatSave Innovative Water Management Award 2009.

Participatory Irrigation Management (PIM)

was introduced in the project in 1990 with 3 Water User Associations (WUAs). In 2004, 24 WUAs took over the operation and maintenance of the entire irrigation scheme. Water is supplied volumetrically at the head of canal and subsequently the Project Level Water Users Association (PLWUA) distributes the water among 24 WUAs as per their demand and entitlements. The PLWUA collects water charges from its member associations. Management transfer to PLWUA has resulted in to 100% utilization of irrigation



potential, saving in water, crop diversification, and 100% collection of water charges. In this way average area irrigated increased from 3,212 ha to 10,750 ha after the management transfer over a period of 15 years.

The big improvement in water productivity appears to have come in the last 5 years with management based on assured entitlements of volumetric bulk supplies that have increased the irrigated area by about a third with more or less the same amount of water at the canal head. Please access ICID website for more details.

The work of Messrs Shahaji Manikrao Somawanshi, Bharat Kawale and Sanjay Madhukar Belsare can be more succinctly termed as “*Increased Productivity from Participatory Management of Bulk Water Entitlements*”. Congratulations to the award winners.

### Special Recognition

Additionally, the Panel of Judges recommended recognising the farmer initiative on “*Rainwater Conservation through Natural Cracks in Deep Black Soils*” by Mr. Arvind Narayanrao Nalkande (India). The 4692 sq. km area of the Purna valley of Vidarbha region in Maharashtra, India characterized by high clay content (50-70%), alkaline in reaction, calcareous with slow permeability. The soils have low hydraulic conductivity and thus become susceptible to poor drainage. Some areas have sodicity problem in the sub soil. The farmers of the valley face problems like water stagnation in rainy season, poor drainage, deterioration of soil structure, moisture stress and soil erosion. Keeping in view the problems at grass root level, Mr. Arvind Nalkande adopted a simple affordable and efficient technique of rain water management and soil erosion control. He adopted the following steps – (i) Use of natural soil cracks for conservation of rainwater, (ii) Contour cultivation for *in situ* soil and water conservation, (iii) Use of farm pond for collecting runoff, and (iv) Reuse of water from farm pond as a protective irrigation during prolonged monsoon break. Thus, Mr. Arvind Nalkande practiced the model of *in situ* rain water conservation in Dhamodi village and achieved the

following aspects – (i) Utilization of the land according to its physical properties, (ii) Conserved as much rain water as possible at the place where it falls, (iii) Drained out excess water with a safe velocity and diverted it to storage ponds and stored it for future use, (iv) Avoided gully formation and controlled soil erosion and recharged ground water, and (v) Maximized productivity per unit area and per unit of water.

He practiced these techniques in his own field and after visible benefits, he demonstrated these techniques to the farmers and promoted the practical implementation on the farmers field in his village. Please access ICID website for more details.

Congratulations to the award winner.

### New Additions to ICID's TDS Database (November 2009)

The additions during the month to the TDS Database are:

#### Article Section – 55 additions (Articles / Papers)

- (i) Hydropower & Dams, 2009, Vol. 16, No. 5 (11 articles)
- (ii) Paddy and Water Environment, September 2009, Vol. 7, No. 3 (10 articles)
- (iii) Natural Resources Journal, 2008, Vol. 48, No. 3 (4 articles)
- (iv) WMO Bulletin, July 2009, Vol. 58, No. 3 (9 articles)
- (v) Lakes & Reservoirs – Research and Management, September 2009, Vol. 14, No. 3 (7 articles)
- (vi) Journal of Indian Water Resources Society, July 2009, Vol. 29, No. 3 (8 articles)
- (vii) International Water Power & Dam Construction, September 2009, Vol. 61, No. 9 (2 articles)
- (viii) Water and Energy International, April-June 2009, Vol. 66, No. 2 (4 articles)

**Book Section – 10 additions;** till date 31429 additions have been made to TDS database. The Text Delivery Service (TDS) has received two requests during the period from India and Iran.

The Text Delivery Service (TDS) database can be accessed by visiting ICID website: [www.icid.org](http://www.icid.org).



# Messages from Dignitaries on the Occasion of 60<sup>th</sup> International Executive Council Meeting and 5<sup>th</sup> Asian Regional Conference

ICID•CIID

6-11 December 2009, New Delhi, India



## MESSAGE

I am happy to learn that the International Commission on Irrigation and Drainage is organizing the 5<sup>th</sup> Asian Regional Conference on the theme 'Improvement in Efficiency of Irrigation Projects through Technology Upgradation and Better Operation and Maintenance' during December 6-11, 2009.

The theme of the Conference is very apt in the present context. I am sure that the deliberations during the Conference and experience gained would be helpful in better management and optimal use of precious water resources.

I extend my warm greetings and felicitations to delegates and organisers and wish the Conference every success.

  
(PRATIBHA DEVISINGH PATIL)

New Delhi  
October 21, 2009



## MESSAGE

I am happy to know that the 60<sup>th</sup> International Executive Council Meeting and the 5<sup>th</sup> Asian Regional Conference on 'Improvement in Efficiency of Irrigation Projects through Technology Upgradation and Better Operation & Maintenance' is being held in New Delhi from 6<sup>th</sup> to 11<sup>th</sup> December, 2009.

India's growing population has put enormous pressure on land and water resources. The challenges faced by the irrigation and agri-food sectors call for adoption of modern techniques and technology and improved management procedures.

I am confident that the Conference would provide a welcome opportunity to the participants to share their knowledge and ideas.

My best wishes.

  
(M.HAMID ANSARI)

New Delhi  
13<sup>th</sup> October, 2009



## MESSAGE

I am happy to note that the 5<sup>th</sup> Asian Regional Conference on "Improvement in Efficiency of Irrigation Projects through Technology Upgradation and Better Operation & Maintenance" is being organized jointly by the Ministry of Water Resources and the International Commission on Irrigation & Drainage at New Delhi between December 6-11, 2009.

Water is a precious gift of nature which sustains life and constitutes an important element in the processes of economic development. We have to adopt modern techniques, technologies and innovations to conserve water, preserve its quality and ensure sustainable development and efficient management to meet its ever increasing requirement.

I am confident that deliberations during the Conference will help the participants to better understand related issues and address them in a scientific manner.

I wish the Conference all success.

  
(MANMOHAN SINGH)

New Delhi  
16 October, 2009



प्रणव मुखर्जी  
PRANAB MUKHERJEE



वित्त मंत्री, भारत  
FINANCE MINISTER  
INDIA

## MESSAGE

Ministry of Water Resources, Central Water Commission and Indian National Committee on Irrigation and Drainage need to be complemented for hosting the 60<sup>th</sup> International Executive Council Meeting of International Commission on Irrigation & Drainage in its diamond jubilee year along with the 5<sup>th</sup> Asian Regional Conference on "Improvement in Efficiency of Irrigation Projects through Technology Upgradation and Better Operation & Maintenance" in New Delhi during 6-11 December, 2009.

Water is the lifeline for the survival of the mankind. In view of its limited availability, there is a need for effective conservation of water in all sectors. Various topics selected for deliberations during the conference such as Modernization of Irrigation system, Public Private Partnership, Impact of Climate Change on Water Resources availability and Crop Productivity etc are very relevant and timely in the present context.

I congratulate the organizers for this timely event and I am sure there would be fruitful exchange of ideas during the conference, which would benefit one and all.

I extend my best wishes for the grand success of the conference.

  
(PRANAB MUKHERJEE)



शरद पवार  
SHARAD PAWAR



कृषि, उपभोक्ता मामले, खाद्य और  
सार्वजनिक वितरण मंत्री  
भारत सरकार  
MINISTER OF AGRICULTURE  
& CONSUMER AFFAIRS  
FOOD & PUBLIC DISTRIBUTION  
GOVERNMENT OF INDIA  
30<sup>th</sup> November, 2009

### MESSAGE

I am glad to know that the Indian National Committee on Irrigation and Drainage with the support of Ministry of Water Resources and Central Water Commission is hosting the 60th International Executive Council Meeting of International Commission on Irrigation & Drainage and 5<sup>th</sup> Asian Regional Conference on "Improvement in Efficiency of Irrigation Projects through Technology upgradation and better operation & maintenance in New Delhi during 6-11 December, 2009.

Water Management is a key element to food security. With global population continuing to grow at a fast pace, it is essential to optimize the use of water resources and to increase agricultural production to meet the demand of food for 8 billion people by 2030. Improvement in efficiency is the need of the hour, which will go a long way in assuring food security.

I am sure the Conference will provide ample opportunity to the participants to gain from the experiences of the experts from India and abroad, which would help in development strategies for efficient utilization of water in irrigation sector.

I wish the Conference all success.

(SHARAD PAWAR)



पवन कुमार बंसल  
PAWAN KUMAR BANSAL



संसदीय कार्य एवं जल संसाधन मंत्री  
भारत सरकार  
नई दिल्ली-110 001  
MINISTER OF PARLIAMENTARY AFFAIRS  
&  
WATER RESOURCES  
GOVERNMENT OF INDIA  
NEW DELHI-110001  
8 October, 2009

### MESSAGE

Water energises all sectors of society. Everything, from the basic human need of drinking water to food production to industrial progress, depends on it. It is crucial for life-support system and a vital element of socio-economic development. Understandably, the world is experiencing a rapidly growing demand for water.

The future challenges in water sector, particularly those related to likely impact of climate change, call for conservation of the available water resources, preservation of quality and efficient use.

It is heartening that to deliberate on these issues, the Ministry of Water Resources and International Commission on Irrigation & Drainage (ICID) are jointly organizing the 5<sup>th</sup> Asian Regional Conference on "Improvement in Efficiency of Irrigation Projects through Technology Upgradation and Better Operation & Maintenance" in New Delhi during December 6-11, 2009. The theme of the Conference is pertinent and I hope that it will, besides benefiting the participants, guide us to evolve appropriate strategies and plans of action.

I welcome all the participants and wish the Conference a grand success.

(PAWAN KUMAR BANSAL)



एम. एस. आहलुवालिया  
MONTEK SINGH AHLUWALIA



उपाध्यक्ष  
योजना आयोग  
भारत  
DEPUTY CHAIRMAN  
PLANNING COMMISSION  
INDIA

### MESSAGE

Sustainable development of natural resources is the biggest challenge before developing countries like India. There is a need to formulate appropriate strategies for their management and to develop state-of-the-art technologies for harnessing these resources to meet the growing demands of the society.

I am happy to note that Indian National Committee on Irrigation and Drainage together with the Ministry of Water Resources and Central Water Commission are organizing 60<sup>th</sup> International Executive Council Meeting of International Commission on Irrigation & Drainage and 5<sup>th</sup> Asian Regional Conference on "Improvement in Efficiency of Irrigation Projects through Technology Upgradation and Better Operation & Maintenance" in New Delhi during 6-11 December 2009. Hopefully recommendations at the Conference would be helpful in improving efficiency of irrigation systems.

I wish the Conference all success.

(MONTEK SINGH AHLUWALIA)



वीसंट एच. पाला  
VINCENT H. PALA



जल संसाधन राज्य मंत्री  
भारत सरकार  
श्रम शक्ति मवन  
नई दिल्ली-110001  
MINISTER OF STATE FOR  
WATER RESOURCES  
GOVERNMENT OF INDIA  
SHRAM SHAKTI BHAWAN  
NEW DELHI-110001  
Dated the 1<sup>st</sup> October, 2009

### MESSAGE

I would like to compliment the Ministry of Water Resources and the International Commission on Irrigation and Drainage for jointly organizing the 5<sup>th</sup> Asian Regional Conference on "Improvement in Efficiency of Irrigation Projects through Technology Upgradation and Better Operation & Maintenance" in New Delhi during December 6-11-2009.

The demand for water for various purposes and particularly agriculture is increasing considerably, primarily due to population growth. In view of limited availability of Water Resources, we have to ensure that water is applied as effectively and efficiently as possible for its sustainable use. I am very confident that the deliberations during the Conference will help in identifying the most appropriate measures for efficient utilization of water in the irrigation sector.

I wish the Conference all success.

(VINCENT H. PALA)



उमेश नारायण पंजियार  
UMESH NARAYAN PANJIAR



सचिव  
भास संस्कार  
जल संसाधन मंत्रालय  
श्रम शक्ति भवन,  
राफी मार्ग, नई दिल्ली - 110001  
SECRETARY  
GOVERNMENT OF INDIA  
MINISTRY OF WATER RESOURCES  
SHRAM SHAKTI BHAWAN  
RAFI MARG, NEW DELHI-110001

### MESSAGE

Sustainable development and efficient management of water resources is undoubtedly, the need of the hour. All of us have to join hands for achieving the maximum efficiency in use of water - the most precious gift of nature to the mankind.

It is a matter of great satisfaction that the theme of the 5<sup>th</sup> Asian Regional Conference being organized jointly by the Ministry of Water Resources and International Commission on Irrigation and Drainage is "Improvement in Efficiency of Irrigation Projects through Technology Upgradation and Better Operation and Maintenance."

I am confident that the deliberations at the Regional Conference would help in preparation of well defined roadmap for achieving the important goal of maximizing the water use efficiency.

I wish all success for the Conference.

  
(UMESH NARAYAN PANJIAR)

सबसे सुरक्षित जल- सुन्दर सुखाहात कल  
CONSERVE WATER, SAVE LIFE

We have impressive Messages from the Chief Ministers of several State Governments in India. These will be brought out in subsequent issues (for want of space).



A.K. BAJAJ



CHAIRMAN  
CENTRAL WATER COMMISSION  
GOVERNMENT OF INDIA

### MESSAGE

It is a matter of great pleasure that during the Diamond Jubilee year of ICID, India has been given the privilege of hosting the 5<sup>th</sup> Asian Regional Conference along with 60<sup>th</sup> International Executive Council Meeting at New Delhi. On behalf of the Indian National Committee on Irrigation and Drainage (INCID) and on my behalf, I extend warm greetings to all of you on the occasion.

India is one of the founder member countries of ICID. INCID is amongst one of the active national committees of ICID and plays an active coordinating role with ICID with both having headquarters at Delhi. India has a long history of irrigation development since prehistoric times and has developed a sizeable irrigated area soon after independence. The venue of this conference is very appropriate given the fact that India has one of the largest irrigated areas in the world.

The main theme for the 5<sup>th</sup> Asian Regional Conference is "Improvement in Efficiency of Irrigation Projects through Technology Upgradation and Better Operation & Maintenance" is quite appropriate in the present context. We are aware that fresh water is becoming scarce as the population continues to grow and there is an ever increasing demand for water from all sectors due to growth in agriculture, rapid industrialisation and change in life style of the people. Irrigation being a major consumer of the water, low efficiencies obtained in the irrigation sector is a cause of concern. Some of the reasons for low efficiencies are deficiencies in water delivery system, inequitable delivery of water to the fields and inefficient water management. The reasons of present low efficiencies include wasteful use of water by head reach farmers, excessive losses in conveyance due to seepage and evaporation, low water charges, non-completion of on-farm development works, lack of drainage facilities, etc.

In this backdrop, various sub-themes chosen for the conference viz. modernization of public/state operated irrigation systems and services, integrated approach in agricultural drainage, capacity development for modern irrigation management etc. are very appropriate. For meeting the increased irrigation demand, it is necessary to adopt measures for improving the water use efficiencies besides exploring new avenues for increasing the water availability. Improvement in irrigation management practices and involving people in operation and management of irrigation projects are crucial for improving irrigation efficiencies. Creating public awareness about efficient management of water resources and popularizing the initiatives taken in the field of water management is important to ensure that this increasingly scarce resource is optimally utilized to fulfill the need of population in future.

This has assumed an added importance due to the phenomenon of climate change, since it is likely to alter the distribution and quality of the world's water resources by affecting the hydrological cycle. It may lead to a warmer climate, more frequent, severe and prolonged droughts and floods. Thus it may adversely affect the livelihood of millions of people. India's National Action Plan on climate change, acknowledges this and has laid down principles and identified the approach to be adopted to meet the challenges of impact of climate change through eight missions in climate sensitive sectors, National Water Mission being one of them.

This conference will provide a unique opportunity to all of us to work collectively and share our experiences and make suitable recommendations for carrying out improvement in efficiency of irrigation projects and other related topics.

I wish all success to the Conference.

  
(A. K. BAJAJ)

PRESIDENT  
International Commission  
on Irrigation & Drainage  
(ICID)



CHANDRA MADRAMOOTOO

### MESSAGE

The 5<sup>th</sup> Asian Regional Conference of ICID is being held at a time when the world is facing critical issues about how to feed a growing world population in light of increasing water scarcity. Nowhere in the world is the population growth rate and impacts of water availability on food production more evident than in Asia. The combination of floods and droughts threaten the safety, security, livelihoods and development of over 3 billion people.

The world is in the midst of a food crisis, and the watchwords of our respective agencies are food security. Current world food production will have to double in order to feed the population, growth. Climate change, the demand for biofuels, inadequate investments in agriculture and rural infrastructure, and limited access to credit and markets by small producers are threatening food production and availability. Given that over 40% of the world's food supply comes from an irrigated land area that represents only about 17% of the world's cultivated area, it is imperative that increased focus be given to both irrigated and rainfed agriculture, in order to meet future food demands. Water management for food production is therefore at the heart of the today's global challenge of food security for human and economic development.

Irrigated agriculture will face numerous challenges in the coming decades including: dwindling water supplies due to other competing water uses, contamination of water supplies, low water use efficiencies, lack of adequate storage capacity, and climate change impacts. Institutions will face growing societal pressures to ensure that food production is undertaken within a framework that includes protection of adjoining sensitive ecosystems. This will necessitate significant technological and institutional innovations. Appropriate public-private partnerships to foster financial investments for irrigation infrastructure will need to be developed.

Research and development and capacity building will be at the heart of the irrigation and water management innovation agenda. There will have to be significant investments in the expanded training of engineers, scientists, extension agents, and irrigators. Universities, technical colleges and schools will be called upon to develop new curricula and training programs geared to the different human resources needs.

The role of rainfed agriculture in Asia for food production and food security must not be underestimated given that over 800 million people live in the semi-arid tropics, and derive their livelihoods from agriculture. This will necessitate research and development, training, and financial investments in technologies such as water harvesting systems, drought and salt tolerant crops, and soil moisture management.

The hosting of the 5<sup>th</sup> Asian Regional Conference of ICID by the Indian National Committee of ICID is therefore very timely. I congratulate INCID for its superb organization of this Conference and wish all participants fruitful deliberations, as we debate on how to improve and enhance water management for ending poverty and hunger.

  
(CHANDRA MADRAMOOTOO)

## Highlights of the 60<sup>th</sup> IEC Meeting and 5<sup>th</sup> ARC at New Delhi, India

In the Diamond Jubilee Year of ICID, the 60<sup>th</sup> International Executive Council (IEC) meeting and 5<sup>th</sup> Asian Regional Conference (ARC) of the International Commission on Irrigation and Drainage (ICID) were held during 6-11 December 2009 at Vigyan Bhawan in New Delhi, India. The theme of the 5<sup>th</sup> Asian Regional Conference was “**Improvement in Efficiency of Irrigation Projects through Technology Up-gradation and Better Operation & Maintenance**”.

During above events, over 32 ICID Workbody meetings and 6 Special Sessions were held. The papers received for 5<sup>th</sup> Asian Regional Conference were presented in 20 Technical Sessions. The events were organized by the Indian National Committee of ICID (INCID) under the dynamic leadership of Mr. A.K. Bajaj, Chairman of CWC / INCID and the support from Central Board of Irrigation & Power (CBIP).

More than 700 delegates from 47 countries of which 230 were foreign delegates participated in various events. The highlights of the above meetings were:

### Opening Ceremony

The 5<sup>th</sup> Asian Regional Conference was inaugurated by Hon'ble Prime Minister Dr. Manmohan Singh. Mr. Pawan Kumar Bansal, Hon'ble Union Minister of Water Resources, Mr. Vincent H. Pala, Hon'ble Minister of State for Water Resources, Mr. U.N. Panjiar, Secretary of Ministry of Water Resources, Mr. A.K. Bajaj, Chairman, Central Water Commission / Indian National Committee of ICID, Prof. Dr. Chandra A. Madramootoo, President of ICID and Er. M. Gopalakrishnan, Secretary General, ICID graced the occasion.

### Exhibition

An impressive number of international and national agencies, manufacturers of irrigation and drainage products put their stalls in an exhibition which was inaugurated by Hon'ble Union Minister of Water Resources Mr. Pawan Kumar Bansal.

### New Vice Presidents

- Dr. Willem F. Vlotman (Australia)
- Dr. Laszlo G. Hayde (Hungary)
- Mr. A.K. Bajaj (India)

### Secretary General

Secretary General Gopalakrishnan's present term was extended till December 2010.

### The ICID WatSave Award Winners

- Technology Award – Dr. Rai Niaz Ahmad (Pakistan)

- Innovative Water Management Award – Mr. S.M. Somawanshi, Mr. Bharat Kawale and Dr. Sanjay M. Belsare (India)
- Young Professionals Award – Dr. Malcolm Gillies (Australia)
- Special Recognition – Mr. Arvind Narayanrao Nalkande, a farmer from India.

**Best Paper Award 2009** was presented to Ms. Jianxin Mu (China), Dr. Shahbaz Khan (Australia); and Dr. Gao Zhanyi (China) in recognition of their paper in Irrigation and Drainage (Issue 57.4).

**MoU** - Memorandum of Understanding (MoU) was signed for Bilateral Collaboration between International Commission on Irrigation and Drainage (ICID) and Ministry of Energy, Islamic Republic of Iran through Iranian National Committee on Irrigation and Drainage (IRNCID).

### New Chairs, Vice Chairs and Secretaries of ICID Workbodies

- Vice Presidents Dr. A. Hafied A. Gany (Indonesia) and Mr. Shinsuke Ota (Japan) will serve as Chairman and Vice-Chairman of PCSPOA.
- Dr. Kamran Emami (Iran) will serve as new Chairman of WG-HIST.
- Dr. Gerhard Backeberg (South Africa) will serve as New Chairman of TF-FIN.
- Ir. Henk P. Ritzema (The Netherlands) and Dr. Ruey-Chy Kao (Chinese Taipei) will serve as new Vice-Chairman and Secretary of the WG-SDTA, respectively.
- Dr. Laszlo G. Hayde (Hungary) will serve as new Vice-Chairman of PFC.
- Mr. R.C. Jha (India) will serve as new Vice-Chairman of TF-POVERTY.
- Dr. Kamran Emami (Iran) and Dr. Takao Masumoto (Japan) will serve as new Vice-Chairman and Secretary of the WG-CAFM.
- Dr. Marcel Kuper (France) and Dr. Bruce Lankford (UK) will serve as new Associate Editors of the EB-JOUR.
- Mr. L.C. Tollefson (Canada) will serve as new Vice-Chairman of the WG-CROP.
- Dr. Ray Shyan Wu (Chinese Taipei) will serve as new Secretary of WG-CLIMATE.
- Dr. Adama Sangare (Mali) and Mr. Andrew Sanewe (South Africa) will serve as new Chairman and Vice Chairman of AFRWG.

### New Task Force

- Task Force on 'Water for Bio-Energy and Food'

### Re-named ICID Workbody/ Newsletter

- ST-ARAL renamed as Working Group on

“Irrigation and Drainage in States with Transition Economy”

- ICID quarterly newsletter renamed *ICID News*

### Publications released

- Publication released during the Opening Ceremony was “Water Resources Development in India”.
- ICID Multilingual Technical Dictionary on Irrigation and Drainage (2010).
- ICID@60 (CD-ROM).

### New Member Countries of ICID

- Applications from Cameroon and Fiji have been accepted.

### Congresses / Conferences / Workshops

- WG-CROP proposes to organize a workshop on “Water Saving and Conservation” in October 2010 at Yogyakarta, Indonesia.
- 24<sup>th</sup> ICID European Regional Conference will be held in December 2010 at Orleans, France.
- WG-PQW proposes to organize a workshop on “Water Quality and Irrigation” in October 2011 at Tehran, Iran.
- 25<sup>th</sup> ICID European Regional Conference will be held during 16-20 May 2011 at Groningen, The Netherlands.
- 63<sup>rd</sup> IEC and 7<sup>th</sup> Asian Regional Conference will be held in 2012 at Adelaide, Australia.
- 65<sup>th</sup> IEC and 22<sup>nd</sup> ICID Congress will be held in 2014 in South Korea.

### Closing Ceremony

Hon'ble Union Finance Minister Mr. Pranab Mukherjee was the Chief Guest for the Closing Ceremony. Mr. Pawan Kumar Bansal, Hon'ble Union Minister of Water Resources, Dr. Montek Singh Ahluwalia, Deputy Chairman, Planning Commission, Mr. Vincent H. Pala, Hon'ble Minister of State for Water Resources,

**A Special Postal cover marking the 'Diamond Jubilee Year' (1950-2009) of ICID was released during the Closing Ceremony.**

Mr. Sachin Pilot, Hon'ble Minister of State for Communications & Information Technology, Mr. U.N. Panjiar, Secretary of Ministry of Water Resources, Mr. S. Manoharan, Additional Secretary, Ministry of Water Resources, Mr. A.K. Bajaj, Chairman, Central Water Commission / Indian National Committee of ICID, Prof. Dr. Chandra A. Madramootoo, President of ICID and Er. M. Gopalakrishnan, Secretary General, ICID graced the occasion.

## 60<sup>TH</sup> International Executive Council Meeting and 5<sup>th</sup> Asian Regional Conference, 6-11 December 2009, New Delhi, India

### Preamble

The Indian National Committee on Irrigation and Drainage (INCID) hosted the events before you on the theme "**Improvement in efficiency of irrigation projects through technology upgradation and better operation and management**". More than 700 professionals, experts, researchers, policy makers, managers, donors, development partners, and representatives from national, international organizations from 47 countries participated in the event.

Global food demand is expected to double over the next 25-30 years. An increase in irrigated area and consequent increase in

water withdrawals for food production is therefore imperative. This conference is very much timely in view of the worldwide issue of soaring food prices impacted by global financial turmoil. Many national governments, particularly in emerging and least developed countries would have to put major efforts to achieve the required increase in food production. This global event provided an important platform for discussing issues, experiences, best practices, innovative ideas and challenges in agricultural water management specifically focusing on technological

upgradation and improvement of water management in the Asian region. More than 190 technical papers were presented in the Conference covering wide range of technical, institutional, legal issues of irrigation development and management

The Conference was inaugurated by Hon'ble Prime Minister of India, Dr. Manmohan Singh, who highlighted the challenge of food demand, climate change, floods and drought requiring integrated approach into resource management to conserve water and ensure equitable distribution of resources, through citizen and State actions.

### Delhi Declaration

- ❖ Realizing the growing population, industrialization and urbanization;
- ❖ Foreseeing the increased demand for precious water resources for various purposes particularly for agriculture;
- ❖ Recognizing the enormous challenges and complexities associated with the water sector;
- ❖ Considering the likely impact of Climate Change on agricultural land and water resources; and

In due consideration of the transactions and deliberations in various technical working groups, special sessions, and the Asian Regional Conference it was resolved that:

- ❖ There is an urgent need for implementing various strategies and measures to boost agricultural production utilizing the available water and land resources with the highest efficiency possible in context to the social, economic and ecological factors. Since secured food production comes mostly from irrigated agriculture, especially in semi-arid and arid countries, it calls for a considerable improvement in the overall performance of the irrigation and drainage sector
- ❖ About 70%, a major part of the world's irrigated area lies in the Asian region, as is its share of global population. Agricultural Water Management in Asian countries plays a crucial role not only in coping with food demand but also in alleviation of poverty, especially in rural

areas. National Governments need to invigorate their focus in modernization / improvement of publicly operated irrigation and / or drainage schemes creating a synergy between agricultural and water policies with a view to securing food.

- ❖ Recognizing the enormous challenges and complex issues facing the irrigation sector, increased investment both from public and private sources not only for expansion of irrigation area but also for modernizing existing infrastructure through the appropriate institutional arrangements are needed. Private sector is urged to come forward and discharge their social responsibility in water and food sector.
- ❖ Farmers, as the principal stakeholders, should be consulted. Women play a big role in food production. Participatory Irrigation Management (PIM) with well introduced reforms can enhance irrigation performance. National and regional governments and donor agencies are urged to support PIM, and encourage reforms by mobilizing financial and technical sources. There is a need to make Water User Associations (WUAs) economically sound and legally empowered.
- ❖ Enhanced support is needed for research and development, capacity building, improved extension services in the dissemination of technology/

information/ knowledge among all stakeholders, especially farmers. Promote best agricultural technologies and their dissemination to reach up to the level of the farmers.

- ❖ Taking into consideration the likely impacts of climate change on the availability of water resources and crop yields, national governments and related organizations are called upon to develop work plans for adoption/ mitigation measures and encourage their implementation.
- ❖ An integrated approach of agricultural drainage by developing and adopting modern technologies and tools suited to local conditions for the reclamation of waterlogged and saline areas is required right from planning / implementation stage.
- ❖ The public private partnership in development and management of water resources for irrigation with the involvement of local stakeholders to ensure efficient management of the scarce water resources is to be given immediate attention.
- ❖ Encouraging an increase in investment in water resources sector, particularly in irrigation, from both private and public sources will create a proper provision for a thrust in action oriented programme.



## INTERNATIONAL COMMISSION ON IRRIGATION AND DRAINAGE

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