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ICID Newsletter

Managing water for sustainable agriculture

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2009/2

Message from the President

Dear Friends,

It has been a very hectic period during the past few months for all of us involved in the water sector. As you know, ICID was heavily engaged in the 5th World



Water Forum held in Istanbul during 16-22 March. Many from the ICID family were in attendance and participated in a variety of sessions. This was most heartening, as it is important for us to take advantage of such venues, in order to continually articulate the importance of water for agriculture and food production, and to explain to a wider political and general audience, the many challenges confronting the sector.

ICID has been working on its various submissions to the Forum since our 2006 IEC meeting. It has been a long process with numerous internal and external stakeholders. Internally, President Hon. Bart Schultz, Vice Presidents Hon. Henri Tardieu and Alain Vidal, Secretary General Gopalakrishnan, and President Hon. Aly Shady all played critical roles in drafting our Topic Report, and interacting with our Consortium Partners such as WWC, FAO, IFAD, IWMI, CGIAR and the Turkish Organizing Committee, to ensure that all our sessions went off without a hitch. I not only thank all these ICID stalwarts, but I commend them for their various interventions, because there was no doubt in my mind that the ICID sessions were among the best in terms of content, audience participation, and solid conclusions. ICID was highly professional and most powerful at all times in the Forum. This is a tribute

to the solidity of the institution, which has withstood the test of time, for over 60 years. You can find the Topic paper, our various presentations, and Forum conclusions on the ICID website.

I draw your attention to these materials and encourage you to find ways in which you can implement some of the initiatives which have been recommended.

The Forum, through ICID, entered the debate of non-traditional, but rapidly emerging subjects such as water and biofuels, commodity markets and international trade, and water and rural development. While some of these topics are not altogether new, they took on a heightened interest in light of the current controversy of food versus fuel, and the concerns about food security and rising food prices.

I wish to share with you some other points which I think will require our collective attention in the years ahead. I am convinced that we can raise the profile of water for agriculture by tying the link to rural development in a much stronger way than we have in the past. Rural development means many things including stimulating economic development in rural communities, creating more favourable conditions for local entrepreneurs and the private sector to provide services, establishing innovative and indigenous micro-finance schemes, creating local value added and marketing opportunities, and getting the people, public and private sectors involved in infrastructure development. It is the combination of all of these, together with the more traditional requirements of schools, roads, clinics, power, water supply, sanitation, housing etc. that will enable the creation of jobs, wealth, and boost agriculture in rural impoverished communities. Irrigated agricultural developments in rural

communities can be the stimulus to drive the water supply and sanitation infrastructure establishment in these communities. We therefore ought to take up this challenge and explore ways to integrate water supply and sanitation into our irrigation water development projects.

The question about capacity building in water and agriculture remains a major unknown. Who is the clientele? What products are needed? There was a resounding statement at one of the Forum sessions that the demographics of smallholder agriculture have changed in a very short time. Agriculture, particularly in the arid and semi arid tropics, is now being undertaken principally by women, because the men have had to take on other jobs in order to cope with the rising food prices and economic uncertainty. Therefore the technical capacity of women in subjects of agronomic practices, marketing, trade, agroprocessing, and water management needs to be significantly strengthened. This is another area, in which ICID ought to play a leadership role.

Another message from the Forum is to think more about integrated resource management, recognizing that capital assets, markets, trade, finance, land, and water in various combinations are the key drivers to the overall sustainability of rural livelihoods. This is a significant departure from our traditional thinking in ICID. We have made some progress and have partly adapted by creating new task forces dealing with financing and poverty alleviation. But we will have to do much more, if we want to heed the call of the Forum participants.

Chandra A. Madramootoo
President

International Commission on Irrigation and Drainage (ICID) was established in 1950 as a scientific, technical and voluntary not-for-profit non-governmental international organization. The Newsletter is published quarterly by ICID Central Office, New Delhi, India.

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ICID Participation in 5th World Water Forum: A Summary

Photo: Editor



The 5th World Water Forum was convened in Istanbul, Turkey from 16-22 March 2009. The Forum seeks to enable multi-stakeholders' participation and dialogue to influence water policy-making at a global level, in pursuit of sustainable development. The main theme of the Forum "Bridging Divides for Water" was addressed through six themes, viz., global change and risk management; advancing human development and the Millennium Development Goals; managing and protecting water resources; governance and management; finance; and education, knowledge and capacity development. The Forum theme was explored through 24 topics, more than 100 thematic sessions, 7 regional sessions, and a series of political processes involving local authorities, parliamentarians, ministers and head of States. A Water Expo, Water Fair, Children's Forum, Youth Forum, and meetings of various stakeholders groups including women were also held. More than 33,000 participants from 192 countries representing governments, UN agencies, inter-governmental organizations, NGOs, academia, business and industry, youth and the media attended the Forum.

ICID coordinated the discussions on topic 2.3 Water and Food for Ending Poverty of Theme 2 **"Advancing Human Development and the Millennium Development Goals."** The topic was dealt in 4 sessions namely, 2.3.1 How to achieve the required food production to meet the growing demand? (Convener: Dr. Colin Chartres, IWMI); 2.3.2 How can food market measures boost rural development and poverty alleviation? (Convener: Dr. Cleveringa Rudolph, IFAD); 2.3.3 Water for bio-energy or food? (Convener: Mr. Akkineni Bhavani Prasad, CIFA, India); and 2.3.4 How can better water management reduce poverty and hunger? (Convener: Dr. Chandra Madramootoo, ICID).

Earlier, a 'Draft Topic Report' and a 'Draft Session Situation' were prepared under the leadership of Pres. Hon. Bart Schultz and Vice Pres. Hon. Henri Tardieu. The draft reports attempted to provide an overview of the relevant aspects to the questions related to these four sessions in consultation with 50 Consortium Partners and 17 Consultation Partners interested in the topic. The summary of recommendations of the first three sessions was presented in the 4th session (2.3.4) by President Chandra Madramootoo, and can be seen at <<http://www.icid.org/wwf5>>.

Participants from ICID included Pres. Dr. Chandra Madramootoo; Pres. Hons. Dr. Bart Schultz, and Mr. Peter Lee; Vice Presidents Prof. Peter Kovalenko,

Dr. Hafied A. Gany, Dr. Karim Shiati, Prof. Lucio Ubertini, and Mr. Shinsuke Ota; Vice Pres. Hons. Dr. S. Nairizi, Mr. Henri Tardieu, Dr. Fatma Attia, Engr. I.K. Musa, Prof. Victor Dukhovny, H.E. Dr. M. Abu-Zeid, Dr. Gao Zhanyi, Dr. Mohd. Ait Kadi, Dr. Khalid Mohtadullah, Dr. Safwat Abdel-Dayem and Prof. Riota Nakamura; H.E. M.R. Attarzadeh, Deputy Minister and Chairman of IRNCID, Secretary General M. Gopalakrishnan; Er. A.K. Bajaj, Chairman INCID, Ms. Ronit Golovaty (Israel), Mr. Teshome Atnafie Guyo, Chairman, ETCID, Dr. Tsughiro Watanabe, Mr. Mitsukuni Watanabe, Mr. Hideki Furihata, Mr. Akihiro Tsubaki, and Dr. Kazumi Yamaoka from Japan, Mr. A.R. Salamat (Iran), Ms. Isobel van der Stoep (South Africa), Er. K.N. Sharma, Secretary, and Dr. S.A. Kulkarni, Executive Secretary, Central Office, ICID.

Besides coordination of the Topic 2.3, ICID also contributed to Sessions 1.1.3, 1.2.3, 1.3.3, 2.2.1, 2.4.2, 3.2.3, 3.3.3, 3.3.4, 4.2.4, 5.1.4, 6.3.2, Topic 5.2, and Sessions on Drought, Water Management 2020, Mega disasters, and Irrigation.

In the Session on Drought, VPH Dr. Saeed Nairizi, Iran, described activities related to drought, water scarcity and risk management undertaken by ICID. He said that ICID addressed drought management strategies and indices and suggested that future work needed to include implementation and redefinition of conventional understanding of agricultural water use.

Agricultural water management encompasses a continuum of water management solutions from rainfed conservation farming, water harvesting, drainage, supplementary irrigation to fully irrigated agriculture. Globally, about 40% of the food production is achieved on irrigated lands, 15% on rainfed land provided with a drainage system, and 45% is achieved on lands without any water management systems. To satisfy the future food requirements, there is a limited scope for expansion of the cultivable as well as irrigated area. It is therefore of importance to target increase of low yields especially in emerging and least developed countries by adopting higher level of water management besides other inputs.

- Bart Schultz and Henri Tardieu

The UNESCO released its 3rd World Water Development Report (WWDR-3), "Water in a Changing World". Er. M. Gopalakrishnan, Secretary General, ICID was a member of the Technical Advisory Committee of WWDR-3. The report can be viewed at <<http://www.unesco.org/water/wwap/wwdr/>>.

During the closing ceremony, Sumru Noyan, Chair of the Ministerial Process of the 5th World Water Forum, announced that the 6th World Water Forum will be held in South Africa in March 2012.

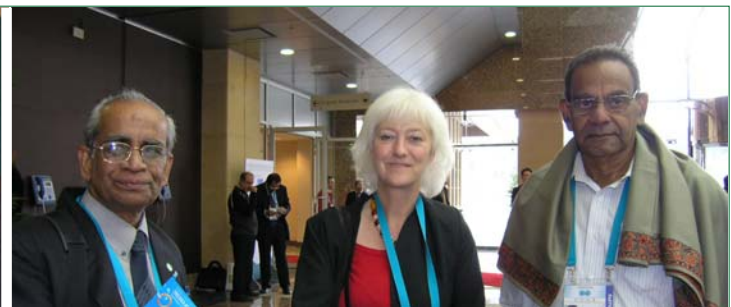
The daily World Water Forum Bulletin and Photo Gallery can be accessed at <<http://www.iisd.ca/ymb/water/worldwater5>>.

Photo: Editor



(L-R) Pres. Hon. Bart Schultz, Pres. Chandra Madramootoo, and Pres. Hon. Peter S. Lee at the Wrap-Up Session of Theme 2

Photo: K.N. Sharma



(L-R): Secretary General M. Gopalakrishnan, Alison Bartle, Aqua-Media International, and Akkineni Bhavani Prasad, CIFA, India at the Forum Venue

Increase Investment in Irrigated Agriculture to Alleviate Poverty and Hunger - Stressed Pres. Madramootoo at the 5th World Water Forum, Istanbul

Addressing to the hall-packed delegates at the synthesis session of the Topic 2.3, Pres. Chandra Madramootoo, placed the debate on poverty and hunger in the context of the food crisis, which he said threatens progress on the MDGs.

Pres. Madramootoo said that global demand for food will double in the next 25 to 30 years due to population growth and change of diet. He emphasized the need for increased investment in irrigated agriculture which should be mostly borne by the country themselves as there was a decreased interest on the agendas of the donors. Empowering farmers on local markets will result in better prices at farm gate; better income to farmers resulting in a better financial sustainability of irrigation services. Investment in water management should anticipate impacts of climate change. Although development of the bio-fuel can generate income from the poor

rural areas, President said that it should be given priority to grow those in rainfed agriculture system. Pres. Madramootoo said that ICID should include smallholders and consider the issues of financing and marketing. ICID also needs to develop linkages with private sector for financing and propose the ways and means to empower farmers to take control of land and water. He solicited contributions from all member countries for sharing their knowledge and experiences.

Dr. Jonathan Woolley, CGIAR stated that, despite being the major user of diverted water resources, agriculture has remained on the margins of the Forum. He urged

consideration of how to place agriculture more centrally in discussions. Dr. Salih Abdin, Arab Water Council, identified challenges to food production, including population growth, natural disasters and the use of agricultural products for biofuels. He underscored the need for international cooperation and systematization of international food trade.

Khalid Mohtadullah, lauded the recommendation to link water-related sectors. A synthesised outcome of the Topic 2.3 is given on page 4. In discussions, participants considered the implications of the financial crisis on poverty and hunger and called for coordinated action across ministries at national and international levels. Panelists and participants discussed, *inter alia*, land tenure and water rights; preparing for higher commodity prices; dialogue with the donor community; technology transfers and technology for increasing water productivity; the link between oil prices and food prices; and threats to food production from land degradation and drought.

At the Wrap-Up session of the Theme 2, 'Advancing Human Development and the MDGs', Dr. Pasquale Steduto, Chair of UN-Water, introduced the four topics under the Theme. On Topic 2.3 'Water and food for ending poverty and hunger', Pres. Madramootoo, covered the outcome of sessions and highlighted the importance of micro-finance mechanisms, integrated approaches for food and energy; and the development of local markets. He noted that farmers are part of the solution not the problem.

It was brought out that water was directly or indirectly linked to all development and environment targets, and serves as a link between them. Water management was therefore a fundamental prerequisite in order to achieve current targets and beyond. Sessions and topics presented many fundamental challenges and ideas for action. Mr. Johan Kuylentierna, UN-Water, closed the wrap-Up session with the general recommendations that water must be further integrated into relevant sector planning (health, agriculture, energy); policy making must become more integrated (agriculture, energy and water sectors) to achieve more appropriate scaled responses to global challenges and changes; the water debate must move beyond the water box: influencing macro-economic policies, infrastructure development policies and spatial planning policies will be essential. The planning process for the steps beyond 2015 must also start now.

Photo: www.iisd.ca



(L-R) VPH K. Mohtadullah, Dr. Jonathan Woolley, CGIAR, Pres. Chandra Madramootoo, Ms. Nathalie Chartier-Touze, FWP, Parviz Koohafkan, FAO, and VPH M. Ait Kadi, Morocco at the Synthesis Session 2.3.4

Photo: www.iisd.ca



Delegates at the Session 2.3.4

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(L-R) Ms. Charissa Brockiehurst, UNICEF, Pasquale Steduto, Chair, UN-Water, Michael Fink, IHA, Daniel Renault, FAO, Pres. Chandra Madramootoo, ICID, Peregrine Swane, DFID, and Martin Walsh, GWP at the Wrap-up Session of Theme 2

Topic 2.3: Water and Food for Ending Poverty and Hunger – A Synthesis

The Topic 2.3: Water and Food for Ending Poverty and Hunger was coordinated by the International Commission of Irrigation and Drainage (ICID). The collective efforts of the Topic Coordinators, Session Conveners, Co-conveners, Panelists, Reporters, support staff from the host country, Turkey, and a wider audience during the sessions ensured a smooth conduct of all the four sessions. The following is a synthesised outcome of the Topic 2.3.

The key questions posed through Topic 2.3 were:

- **How to reconcile agricultural and water policies to avoid both global and local food crises?**
- **How can institutional and technical water management improvements and investments contribute to increase food production?**
- **How can scientific findings more effectively be transferred to practical technologies, especially supporting the poor farmers?**
- **How can poor farmers benefit from new market opportunities?**
- **How can local community and regional developments benefit from bioenergy?**

The questions raised were well discussed and the outcome is categorized as follows:

(A) Political, economic, and social considerations

- ❖ Better integration between food production and natural resources management (land-water and climate) is needed,
- ❖ Enhancement of public and private investments in infrastructure to re-emphasize decentralization and governance systems, and public-private partnerships for the financing of research, and project implementation are needed,
- ❖ Rural sanitation and wastewater re-use need to be coupled to agriculture and water investment agendas,
- ❖ Increasing agricultural productivity and access to food, and reducing hunger will hinge on conducive policies, adequate institutions, improved market infrastructure and social safety nets. What is important is peace and stability for all these measures to be sustainable in the long term,
- ❖ An enabling condition that determines the roles of all the stakeholders and promotes synergies in their interaction is needed.

(B) Technological, environmental, and legal considerations

- ❖ Capacity building is required for better policies and more timely implementation, and to train decision-makers to make the right decisions at the right time and to create the conditions for promoting successful technological breakthroughs,
- ❖ Better linkages between research and education and better communication of research findings are necessary,
- ❖ Food price volatility especially for poor small-holders need to address climate change proofing of agricultural water related goods and services, e.g. drought and flood resistant crops, innovative rural finance and insurance schemes, dual purpose transport networks, local level food storage facilities, field to fork reduction of food losses, weather and price information and knowledge,
- ❖ Protect rights of the poor to use water for production of basic food demands,
- ❖ Ensure enabling governance and policies.

(C) Key messages

- ❖ Food production improvement by sustainable increase in crop production and equitable distribution is achievable,
- ❖ Smallholder agriculture, irrigation and the rural water agenda have been neglected for decades. The current crises offer double dividend opportunities for diversified livelihoods – for smallholder farmers, in developing and emerging country economies, women and men, young and old. One needs to recognise small farmers as rural entrepreneurs and as such are part of the solution to economic development, not the source of the crises,
- ❖ Higher/right food prices will ensure that there is better water management.

(D) Recommendations

- ❖ Create grassroots water resources management institutions (financing, land, water, micro- credit),

- ❖ Mainstream water in national and international strategic development planning,
- ❖ Consider diverse options for agricultural water management: rainfed, irrigated, water harvesting. Integrate these options in an optimum manner,
- ❖ Water, energy and agriculture are intimately related. Deal with them as an integrated entity; dealing with agriculture in this context will have the added value of enabling the sector to attract better attention from development organizations and the donor community,
- ❖ Move from water management to integrated resource management (land degradation, water, infrastructure, institutions, markets, etc.),
- ❖ Water and resource management have both external and internal dimensions, which are to be given equal attention.

(E) Commitments

- ❖ While fixing water resource management problems, time has come to involve people from multiple sectors and stakeholders in resolving them, jointly,
- ❖ International partnerships to promote the goal are the call of the hour. Concerted efforts by ICID, FAO, IFAD and other organizations independently and jointly in formulating integrated programmes (water-energy-local, cultural) and dialogue with donor communities to mobilize advanced technologies should be a priority follow up action,
- ❖ Extending the state of art technologies and making them accessible to small-holders will help achieve the ultimate objective of poverty eradication.

ICID intends to float a draft synthesis report. This will also include presentations, comments made during the sessions, recommendations and initiatives. These will be mailed to all Consortium and Consultation Partners and put on the VMS and ICID website. Several Consortium Partners are also working on proposals that will elaborate on the issues presented and discussed in the Topic Report and sessions.

Special Session on Efficient Use of Water in Agriculture

The session focused on country experiences in irrigation in Mexico, China and Turkey. The panels addressed legal and institutional arrangements, planning and development, and operation and maintenance.

Photo: www.iisd.ca



Panelists from Turkey, Mexico, and China at the dias during the Session

In the panel on China, H.E. Chen Lei, Minister for Water Resources, China, highlighted country's central role in world food security, noting that this security is challenged by land degradation, population growth, climate change and water scarcity for food production. VPH Dr. Gao Zhanyi made presentation on 'Efficient use of water' in Chinese Agriculture. Turkish panelists identified, *inter alia*, the importance of new financing

plans to address climate change impacts. Panelists outlined the institutional framework in Mexico and emphasized the need for investment in activities that improve water savings and productivity. They described the shift to decentralized administrative control over irrigation districts. Panelists further described the need to rehabilitate ageing irrigation infrastructure and the legal framework for resource management, including legislation

strategies for irrigation investments and of rural activities to the national economy. H.E. Mehmet Mehdi Eker, Minister of Agriculture and Rural Affairs, Turkey, highlighted policies and action

on state water resource ownership and conservation requirements. They also encouraged participation by farmer water use associations in irrigation management activities.

All panelists mentioned the necessity of accounting for social, political, economic and technical considerations in water management for agriculture. In ensuing discussions, participants and panelists drew attention to: water banks to regulate the transfer of water rights, the need to modernize irrigation, and the economic sustainability of water user associations, implications of energy costs and irrigation technology, the need for a stepwise approach to increasing irrigation efficiency, and the use of flexible financing and agricultural development funds to increase productivity in water use. Corruption was also touched upon amongst various issues.

23rd European Regional Conference, Ukraine: A brief

The 23rd European Regional Conference of ICID was held in Lviv, Ukraine between 18 and 21 May 2009 and focused on the theme "Progress in Managing Water for Food and Rural Development". Nearly 85 professionals participated to present response papers and poster presentations. The assembly included experts from Bulgaria, Germany, Hungary, India, Iran, the Netherlands, Poland, Romania, Russia, Spain, UK, and Uzbekistan besides Ukrainians in a sizeable number.

The presence of several ICID Office Bearers enhanced the value of the conference. Pres. Hons. Bart Schultz and Peter Lee; Vice Pres. and Chairman ERWG Eiko Lübbe, Vice Pres. Peter Kovalenko (the host); Vice Pres. Hons. Victor Dukhovny, Dr. Ricardo Segura Graiño, Prof. Ferenc Ligetvári, and Secretary General M. Gopalakrishnan contributed and shared their views during the proceedings. Prof. Joachim Quast, GECID coordinated the deliberations on inter-state cooperation on capacity building and young professionals.

Welcoming the galaxy of experts from outside, Vice President and President UKCID Peter Kovalenko pointed out the significant opportunity that the occasion provided in understanding the remarkable strides that Ukraine has made since 1991; and the exchange of views on several new

challenges to address the river basin management comprehensively.

In his key note speech, Dr. Vasyl Stashuk, Head of Water Management Committee of Ukraine highlighted the status of Ukrainian Water Development and the water management issues that the country faces. The challenges that the Carpathian region faced due to unusual flood events and the programmes being launched with international cooperation were highlighted. An example is seen in the Transcarpathian Water Management where "Automated information measuring systems for flood forecasting and water management" in this regard. Dr. Bart Schultz in his keynote addressed the challenges faced in doubling the food production for the global needs in the coming decades. The role of water management has to comprehensively include all aspects that impact the tasks; and small holder ownership may face a challenge in a competing environ. PH Lee's key note speech touched upon the active and inactive National Committees as spelt



Photo: UKCID

(L-R) Dr. Eiko Lübbe, M. Gopalakrishnan, Mr. Yaroslav Panwa, Dy. Head of Lviv Regional State Administration, Prof. Peter Kovalenko, Dr. Vasyl Stashuk, Dr. Vasyl Vysochanskiy, Rector, Ivan Franco Nat. Agrarian Univ. of Lviv, and Volodymyr Stutynskiy, Rector Lviv Nat. Agrarian University

out in ICID Bylaws. What is more crucial is the need for ICID National Committees' connectivity and out-reach. This could be national, regional and / or global.

Secretary General Gopalakrishnan pointed out the important role of Ukraine in Europe in respect of food security. Ukraine shares about 10% of irrigated area and 7% of drained area of Europe's agriculture. Remarkable examples of water productivity have been achieved in Ukraine, thanks to the contributions of national agrarian universities that have a very rich history. Secretary General highlighted the need for developing a Russian speaking network of our professionals and urged the cooperation of all scientific institutions in the region in enhancing the technology and outreach.

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Issue 5

INSIGHT ON ULTRA-LOW SEDIMENT FLOW PROVIDED BY ARGONAUT-ADV®

LOUISIANA, USA.

Louisiana's coastal wetlands provide vital wildlife habitat and a strong buffer against storms. But they are threatened by subsidence and cut off from the historic floods that built the Mississippi River Delta. Using SonTek Argonaut-ADV®, a Louisiana State University team captured continuous streams of data on shallow, slow-moving currents (down to 1 mm/s) that are notoriously difficult to measure. Their findings are teaching stakeholders how releases of sediment-rich pulses of water through a diversion structure near New Orleans may be managed to help rebuild marshes while minimizing impacts on local fisheries.

> www.sontek.com/news/UltraLowFlow.pdf



ACOUSTIC DOPPLER TECHNOLOGY ENABLES FAST ASSESSMENT OF POST-QUAKE HYDRAULIC CONDITIONS



SICHUAN PROVINCE, China.

A 7.9 magnitude earthquake in China left millions homeless and susceptible to thirst and water-borne disease as it ravaged the country's hydrology monitoring stations. SonTek/YSI immediately responded with assistance and hydroacoustic equipment — allowing hydrologists to gauge the speed and strength of water flow, as well as monitor drinking water distribution. The advanced RiverSurveyor®



provided fast assessment of flood conditions and did in minutes what had taken hours for a field crew with conventional instruments. > www.sontek.com/news/ChinaQuake.pdf

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A SMART WAY TO HANDLE FLOODS

KUALA LUMPUR, Malaysia.

Devastating floods are common in crowded Kuala Lumpur, necessitating the massive Stormwater Tunnel Management and Road Tunnel (SMART) project. Because accurate and timely information on discharge and velocity are vital for success, 16 SonTek Argonaut-SL and Argonaut-SW current meters were required. Says Bruce Sproule, Greenspan Technology's International Manager, "SonTek equipment...was the easiest and most accurate to incorporate into this project. The support is good and the equipment reliable."

> www.sontek.com/news/SmartTunnel.pdf



The most common and widespread of the world's natural hazards is the flood. According to UNESCO, these disasters strike about 150 times, impact 500 million lives, and create at least \$60 billion in damages — each year. Providing fast and reliable flow data under unpredictable conditions is serious business at SonTek. And making a difference anywhere in the world means our instruments have to be accurate, reliable, and capable under extreme conditions.

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Will the Target of MDG of Halving the Number of People Affected by Poverty and Hunger by 2015 be Achieved?

In response to the question "Have we failed in our mission?" posed to the ICID family by Prof. Chandra Madramootoo, President in his editorial message of the 2009/1 issue of the Newsletter, Herve Plusquellec, Former Irrigation Advisor to the World Bank has given his analysis of the situation and the challenges facing irrigation community.

With 150 million people going into poverty and hunger under the current food crisis, an immediate response to the ICID President question could be unequivocally YES. The author of this response is aware of the complexity of the food and hunger issues ranging from macro-economy, global trade, government policies and technology.

To explain this situation, the President suggests that the irrigation community has been operating under the assumption that the technological advances we were making in irrigation and drainage together with the rapid advances in biotechnology were going to pull us through. The President states that we can no longer limit ourselves to study water conservation, reuse, harvesting and storage. He proposes that we must work with the political and financial machinery to rapidly invest. This would be the right approach if we also had a right diagnosis of the problem.

Proliferation of Groundwater Irrigation

IFPRI, IWMI and FAO have all agreed that a large part of the additional food to meet the demand in the medium term would have to come from the irrigated sector. As stated by the President, we are now facing an ever larger monumental task. A major food crisis has been delayed by the explosive exploitation of groundwater in most countries during the last 20 years. The dependability of groundwater compared to the inflexibility and unreliability of the irrigation service provided in many large-scale surface systems has been a major driver in groundwater development, in addition to the additional resources. The operational superiority of groundwater, compounded with the policies of some governments providing energy subsidies with flat rates has resulted in the over-exploitation of groundwater in most regions of the world. The dependability of service has also contributed to the successful adoption of water-saving techniques, and to the increased shift to high-value crops in groundwater areas. These successes have obliterated the inevitable coming of the present crisis.

Issues of large-scale Irrigation Schemes

While groundwater was developing at an uncontrolled pace, much less attention was given to the poor performance of the

surface large and medium scale irrigation systems. The area irrigated from these systems is not well documented, but likely accounts for about half the area irrigated or 130- 150 million ha. The author agrees with the critics who coined the term "brick and mortar approach" projects developed by construction-oriented engineers during three decades from 1960 to 1980 without consideration for future operation. A publication by a well known agency in the 1900s rightly stated that "the projects we designed in the past could not be operated efficiently".

The wrong turning point was made in the early 1990s when it was accepted by the common wisdom that the problems of large scale irrigation were mostly institutional. It went even further: The public statement that there were no technical problems in irrigation made during an ICID Congress did not provoke any comments. Based on the undeniable success of the transfer of irrigation management to the users in Mexico and later in Turkey, donors and governments thought that the solutions to the poor performance of the surface systems were a rehabilitation program combined with policies leading to the transfer of management of the users. Twenty years later, there is now a recognition that the solutions to the problems of surface irrigation systems are both institutional and technical. Too late, the damage is done.

During these last two decades, the focus of the research has been on water saving at the farm level. WATSAVE prizes have so far been awarded to research at this level, not to research at the system level¹. The international organizations dealing with water issues are concentrating their research on inter-sector competition for water, including environment, efficiency concepts, related hunger and poverty production, with little or no recognition of the service-to-user concept.

What is the least understood and the most important is the complexity of conveying water from a far away source and distributing it in a timely, reliable and flexible way to hundred or thousands of users miles away. The technologies exist. The art is the selection and adaptation of these techniques to the technical, social and physical environment of projects in developed and developing countries. There are

few research institutes in the world working on this aspect of irrigation systems. Hydraulics of canals is a science inserted between the pure civil engineering of the large dams and the agronomy at the farm level, with very few high-level experts involved in the irrigation sub-sector.

Modernization of Irrigation Schemes

A number of developed countries have embarked in massive program of modernization² of the large scale irrigation systems, financed by the users or subsidized by the government. The drivers of these programs are multiple: improving the flexibility of service, reducing the recurrent costs, competition for water, increase productivity and a combination of these. By contrast, only few developing and emerging countries have initiated a program for improving the performance of surface systems in a sustainable way. Farmers will not invest in water saving techniques and in non-water inputs as long as water delivery is not reliable or better flexible. Rehabilitation works or policy changes alone are not enough, as would be investments alone.

The challenge for some developing countries is the enormous cost for rehabilitation to be associated with improvement works often attributed to poor maintenance, but also caused by inadequate quality of construction and design. Another challenge is the very limited number of experts in the complexity of canal hydraulics and associated technologies in both developed and developing countries, aggravated by the decline of investments during the last decades. This shortage of experts affects the irrigation agencies, the international and local consulting firms and the donor agencies. The level of investments and the efforts in education to upgrade the irrigation service from surface irrigation systems are monumental. This is the mission of the irrigation community.

¹ It is estimated that the annual volume of water saved through a very simple change in canal lining technology in the Tarim basin, Xinjiang province, China, is about 600- 800 million m³. This remarkable result is still unknown to the irrigation community.

² Modernization does not necessarily mean adoption of sophisticated techniques; sound hydraulics can produce substantial improvements.

ICID Events in 2009

3rd African Regional Conference, 11-14 October 2009, Abuja, Nigeria



The theme of the conference is "Role of Irrigation and Drainage in Food Security: Towards attaining the Millennium Development Goals in Africa". The subtopics are – (i) Food production and income generation through irrigated agriculture; (ii) The role

of private public partnership in irrigated agriculture in poverty reduction; (iii) Performance appraisal of different irrigation systems towards achieving Millennium Development Goals and the way forward; (iv) Irrigated agriculture as a strategy for poverty reduction in developing countries; and (v) Environmental sustainability and pursuit of the Millennium Development Goals.

For details, please visit the Conference website: <<http://www.icid2009.org/>> or contact: Engr. D.B. Madu, Secretary General (NINCID), Federal Ministry of Water Resources and Rural Development, PMB 159, Garki, Area 1, Abuja, Nigeria. Tel: +234 804-4108000; 803-32977965; Fax: +234-9-2347394; E-mail: <nincid@icid2009.org>

60th IEC Meeting and 5th Asian Regional Conference, 6-11 December 2009, New Delhi, India



The Indian National Committee on Irrigation and Drainage (INCID) is organizing the 60th International Executive Council Meeting and 5th Asian Regional Conference during 6-11 December 2009 at New Delhi. The theme of the conference is "Improvement in Efficiency of Irrigation Projects through Technology Upgradation and Better Operation and Maintenance". Papers are invited on the sub-themes: (i) Modernization of public/state operated irrigation system and services; (ii) Public-private partnership in irrigation development and management; (iii) Integrated approach in agricultural

drainage; (iv) Capacity development for modern irrigation management; (v) Impact of climate change on water resources availability and crop productivity; and (vi) Legal aspects in sharing of water resources. A comprehensive synopsis of about 450-550 words of proposed papers may be submitted electronically to the Organizers by **30 June 2009**.

Besides the conference, there will be many interesting international workshops and side meetings. An exhibition of products and services related to irrigation, drainage and flood control is also planned to be held. Technical visits have been arranged to the reputed Research Institutes. Many exciting excursions and post-conference tours have been arranged.

Those registering before **30 June 2009** will get a discount of US\$ 50/ INR 500.

For details about the programme, venue, accommodation and online registration facility please visit: <<http://www.incid2009delhi.org>> or contact Conference Secretariat: Secretary, Central Board of Irrigation and Power, Malcha Marg, Chanakyapuri, New Delhi 110021, India. Tel: +91-11-26115984/ 26111294; Fax: +91-11-26116347; E-mail: <sunil@cbip.org>; <cbip@cbip.org>, or INCID Secretariat: Member Secretary, Indian National Committee on Irrigation and Drainage (INCID), CWC, Tel: +91-11-26107086; 26101593; Fax: +91-11-26176533; E-mail: <arc5delhi@gmail.com>

ICID Invites Nominations for WatSave Awards 2009

ICID 'WatSave Awards' are presented annually to recognize 'outstanding contributions to water saving in agriculture' across the world. Entries for the nominations for the WatSave Awards 2009 are now open. Awards are given in three categories viz. (i) Technology, (ii) Innovative Water Management, and (iii) Young Professionals. The Awards are only made in respect of actual realized savings and not for promising research results, plans and/or good ideas/intentions to save water. Each award carries prize money of US\$ 2000 and a Citation.

The ICID WatSave Awards for the year 2009 are sponsored by Indian National Committee on Irrigation and Drainage (INCID) and will be presented at the 60th meeting of the IEC to be held in December 2009 at New Delhi. The entries are open to all professionals/ teams from ICID member countries as well as non-member countries. In case of an entry from a 'non-member'

country, the nomination has to be routed through and validated by an active National Committee of ICID. The contact coordinates of the ICID National Committees/ Committee, the 'Nomination Form', 'Conditions and Criteria', and 'Evaluation Proforma' are available for download at <<http://www.icid.org/awards.html>>. The entries from the applicants along with a completed

'Nomination Form' etc. should reach to the concerned National Committees latest by **31 July 2009**. The National Committees after reviewing the applications will forward electronically only the deserving nominations so as to reach the Central Office, ICID, New Delhi on or before **31 August 2009**.

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