The 45th Annual Convention of ISAE and International Symposium

on

Water for Agriculture

January 17-19, 2011

at

College of Agriculture, Dr. PDKV Campus, Maharajbag, Nagpur, Maharashtra, India

Organized by



Indian Society of Agricultural Engineers and Dr Panjabrao Deshmukh Krishi Vidyapeeth, Akola

Co-Sponsored by

All India Agricultural Machinery Manufacturers Association



American Society of Agricultural and Biological Engineers



Canadian Society for Bioengineering

ISAE Executive Council: 2010-12

Prof. Gajendra Singh	President
Dr. A.K. Singh	Vice- President (Activity Council)
Dr. Rajvir Yadav	Vice- President (Technical Council)
Dr. Indra Mani	Secretary General
Dr. S.K. Jha	Secretary
Er. B.N. Arya	Treasurer
Dr. Dipankar De	Chief Editor (JAE)
Dr. Surendra Singh	Chief Editor (AET)
Dr. R.T. Patil	Chief Editor (E-Newsletter)
Dr. V.K. Tewari	Director (Farm Power & Machinery)
Dr. V.N. Sharda	Director (Soil & Water Engineering)
Dr. R. Viswanathan	Director (Processing, Dairy & Food Engineering)
Dr. T.K. Bhattacharya	Director (Energy & Other Areas)
Dr. Gyanendra Singh	Director (Education, Research, Extension & Placement)
Dr. Kanchan K. Singh	Director (Membership & Public Relations)
Er. Bhanu Sharma	Director (Business & Industry)
Dr. R. Lal Kushwaha	Director (International Co-operation)
Dr. V.K. Sharma	Director (Awards)
Dr. A.P. Srivastava	AEJ Editor (Farm Power & Machinery)
Dr. S.K. Gupta	AEJ Editor (Soil & Water Engineering)
Dr. S.D. Kulkarni	AEJ Editor (Processing, Dairy & Food Engineering)
Dr. Murari Shyam	AEJ Editor (Energy & Other Areas)

International Advisory Committee

- Dr. S. Ayyappan, Secretary DARE and DG, ICAR, New Delhi, India
- Dr. David Molden, DG, IWMI, Sri Lanka
- Dr. Ron Yoder, Ex President, ASABE, University of Nebraska, Lincoln, USA
- Dr. Shiv Prasher, President, CSBE/SCGAB, McGill University, Canada
- Dr. J.S. Samra, Executive Director, NRAA, India
- Dr. N.K. Tyagi, Member, ASRB, India
- Dr. M.M. Pandey, DDG (Engineering), ICAR, India
- Dr. A.K. Singh, DDG (NRM), ICAR, India
- Dr. Bengali Baboo, National Director, NAIP, ICAR, India
- Dr. Ramesh Kanwar, Distinguished Professor and Chair, Iowa State University, Ames, USA
- Dr. Mike Walter, Professor, Cornell University, Ithaca, USA
- Dr. S. M. Virmani, Principal Scientist (Retd.), ICRISAT, India
- Dr. R. Lal Kushawaha, Emeritus Professor, University of Saskatchewan, Canada
- Dr. Ramesh Rudra, Professor, University of Guelph, Canada
- Dr. P.K. Kalita, Professor, University of Illinois, Urbana-Champaign, USA
- Dr. Indrajeet Chaubey, President, AABFEIO, Purdue University, USA
- Dr. Mukund Babel, Associate Professor, AIT, Bangkok, Thailand
- Dr. R.C. Maheshwari, Vice Chancellor, Dantiwada Agricultural University, India
- Dr. B.S. Bisht, Vice Chancellor, GBPUA&T, India
- Dr. N.C.Patel, Vice Chancellor, JAU, India
- Dr. B.C. Mal, Vice Chancellor, Technical University, India

Secretary

Dr. V.M. Mayande, Vice Chancellor, Dr. PDKV, Akola, India

National Advisory Committee

- Mr. A.K. Bajaj, Chairman, Central Water Commission, New Delhi
- Dr. S.A Kulkarni, Executive Secretary, ICID, New Delhi
- Dr. H.S. Chauhan, Ex Dean, GBPUA&T, Pantnagar
- Dr. S.R. Singh, Ex Vice Chancellor, RAU, Pusa, Bihar
- Dr. T.B.S. Rajput, Project Director, Water Technology Centre, IARI, New Delhi
- Dr. A.K. Bhattacharya, Ex PC (AICRP), ICAR, New Delhi
- Dr. Pitam Chandra, Director, CIAE, Bhopal
- Dr. N.P.S. Sirohi, ADG (Engineering), ICAR, New Delhi
- Dr. K.K. Singh, ADG (Processing), ICAR, New Delhi
- Dr. A. Kumar, Director, Water Technology Center, Bhuvaneshwar
- Dr. Rajendra Singh, Head, Agricultural & Food Engineering Dept., IIT Kharagpur
- Dr. Alok Sikka, Consultant, NRAA, New Delhi
- Dr. N.S. Raghuwanshi, Professor, Agricultural & Food Engineering Dept., IIT Kharagpur
- Dr. N. Nagraj, CDAS, Banglore
- Dr. T. V. Satyanarayana, Dean, Agri. Engg College, ANGRAU, Bapatla
- Dr. P. Balakrishnan, Registrar, UAS Raichur
- Dr. E. K. Mathew, Head, I & D Engg. Dept., KCAET, Tavnur
- Dr. Vijay Lakteshwar, Director, ICID, New Delhi
- Dr. A.G. Powar, Director of Extension Education, BSKKV, Dapoli
- Dr. G.R. More, Director of Research, MAU, Parbhani
- Dr. H.G. More, Dean, FAE&T, MPKV, Rahuri
- Dr. R.G. Nadre, Dean, FAE&T, MAU, Parbhani
- Dr. V.T. Badhe, Dean, FAE&T, KKV, Dapoli
- Dr. S. Santhana Bosu, Dean, Engg, TNAU, Coimbtore
- Dr. P.R. Bhatnagar, PC (APA), CIPHET, Ludhiana
- Mr. Baldev Singh, President, AIAIMA, Ludhiana
- Mr. Sharad Patel, CEO, ASPEE, Mumbai
- Mr. Balchandra Babu, CEO, Farm Implements India Ltd, Chennai

Secretary: Dr. P.M. Nimkar, Dean, FAE&T, Dr. PDKV, Akola

Local Organizing Committee

Convener

Dr. V.M. Mayande, Vice Chancellor, Dr. PDKV, Akola, Chairman

Co-Conveners

Dr. S.V. Sarode, Director of Research, Akola Dr. Vijay Mahurkar, Director of Extension Education, Akola

Dr. P.M. Nimkar, Dean, Agricultural Engineering, Akola

Dr. E.R. Patil, Dean, Agriculture, Akola

Dr. Vandan Mohod, Associate Dean, Agriculture College, Nagpur

Dr. V.M. Dod, Associate Dean, Horticulture College, Akola

Dr. Y.B. Tayade, Associate Dean, Forestry College, Akola

Prof. R.C. Bhuyar, Head, Soil & Water Conservation Engineering & President, ISAE Akola Chapter, Akola

Members

Prof. S.S. Hiwase, Head, Agricultural Engineering, Akola

Dr. C.N. Gangde, Head, Farm Machinery & Power, Akola

Dr. M.B. Nagdeve, Professor of Soil & Water Conservation Engineering & Chief Scientist, Dry land, Akola

Dr. S.M. Taley, Professor of Agricultural Engineering, Akola

Dr. S.B. Wadatkar, Head, Irrigation & Drainage Engineering, Akola

Dr. S.R. Gadge, Head, Unconventional Energy Sources, Akola

Er. Mrs. S.V. Gupta, Head, Farm Structures, Akola

Dr. P.B. Kale, Additional Director, VANAMTI, Nagpur

Dr. V.M. Bhale, Registrar, Akola

Mr. M.S. Raul, Comptroller, Akola

Dr. P.G. Ingole, PRO, Akola

Prof. Ram Gawande, PRO, Nagpur

Dr. V. S. Kalbande, GM, MSSC & Vice President, ISAE Akola Chapter, Akola

Dr. P.B. Ghorpade, Professor of Botany, Agriculture College, Nagpur

Dr. D.M. Panchabhai, Professor of Horticulture, Agriculture College, Nagpur

Dr. D.B. Undirwade, Professor of Entomology, Agriculture College, Nagpur

Dr. M.M. Deshmukh, Associate Professor of Irrigation & Drainage Engineering, Akola

Er. A.R. Mhaske, Associate Professor of Agricultural Engineering, Agriculture College, Nagpur

Mr. Vilas Telgote, Associate Professor of Mathematics, Agriculture College, Nagpur

Dr. S.H. Thakare, Associate Professor of Farm Machinery & Power, Akola

Dr. S.K. Thakare, Assistant Professor of Farm Machinery & Power, Akola

Er. R.B. Miskin, Associate Professor of Agricultural Engineering, Nagpur

Mr. V.J. Golliwar, Associate Professor of Horticulture, Agriculture. College, Nagpur

Mr. R.O. Deotale, Associate Professor of Entomology, Agriculture. College, Nagpur

Mr. S.G. Thote, Associate Professor of Statistics, Agriculture College, Nagpur

Dr. R.M. Deshpande, Associate Professor of Agronomy, Agriculture College, Nagpur

Er. A.R. Pimple, Assistant Professor of Agricultural Engineering, Agriculture College, Nagpur

Er. K.S. Ghatode, Assistant Professor of Agricultural Engineering, Agriculture College, Nagpur

Organizing Secretary

Dr. A.B. Kubde, Professor of Agricultural Engineering, Agriculture College, Nagpur

45th Annual Convention of ISAE and International Symposium On Water for Agriculture 17-19 January 2011.

F ood and water are the two most important issues for world peace and social security in the 21st century, especially for countries in South Asia. World population is expected to increase from 6 billion today to 9 billion by the year 2050. This increase in population will demand more resources including food and water. Several studies indicate that world food production must increase by 50% by 2030 and 100% by 2050 from the current production levels to feed the increasing population. Therefore, key question facing the global society today is how to increase food production to feed the increasing population in the world and how much water would be needed to produce enough food to meet targets by 2050. It is not a simple task and will require innovative and collaborative discussions between countries to develop right water policies and make appropriate investments in water projects worldwide.

India and other countries in South Asia are facing some of the most challenging water issues. With increasing population and climate change scenarios, the demand for water will continue to increase for irrigation to meet food security needs. Therefore, water resource management is of great importance to India and we must develop strategies for efficient water use for irrigation and reuse of poor quality water for agriculture after primary treatment. About two-third of Indian agriculture is dependent on rainwater and livelihood of about two third of population depends on rain-fed land. Rainwater management for life saving irrigation of crops during dry spell is key issue for ensuring food security in India. Agriculture in Vidarbha region of Maharashtra state of India is 93% rain dependent and is a challenged area. Water, water and water holds key to sustainable agriculture.

UN General Assembly has proclaimed the period 2005-2015 as international decade of WATER FOR LIFE. It is necessary to make all societies vigilant about the role of water in food security. Encouraging strategic investment in research & development and international co-operation for improvement of agricultural water management is need of the hour / time. Therefore, the main purpose of this symposium is to discuss some of the difficult water issues, especially water resources development, increasing water productivity, efficient irrigation systems to meet food security needs in 2050. This symposium will invite world-renowned experts to present papers on topics of their interest and provide solutions to marginal and poor farmers of India to maintain daily livelihood and address water sustainability issues for agriculture.

Symposium session topics include:

- o Rain Water Management
- Soil and Water Conservation
- Water Resource Development and Management
- Water for Food Security
- Environment and Water Security
- Irrigation and Drainage
- Soil-Water-Crop-Animal Interactions
- o Socio-Economic Issues in Water Management
- o Water Policies

Other concurrent sessions during ISAE convention are:

- Farm Machinery and Power
- o Processing, Dairy and Food Engineering
- Energy in Agriculture

CALL FOR PAPERS

Soft copies of abstracts of the papers related to International Symposium shall be submitted to the Technical Director, Soil & Water Engineering and for other convention sessions I, II, III be submitted to concerned Technical Directors (given below) before October 15, 2010. The abstract should be approximately 200-300 words, single-spaced, composed in MS word, using Times New Roman, Font Size 12. The title of abstract shall be followed by names of authors with presenting author and corresponding authors marked with single and double asterisk respectively. The abstract must include a brief introduction, objectives, material and method, tentative or final results and discussion. Acceptance of the abstract and category, i.e. oral or poster will be communicated before November 1, 2010. After getting the acceptance, full-length paper should be sent both on CD and by e-mail to the respective Technical Directors. Poster should conform to the size 1m X 1m.

Soil & Water Engineering (International symposium session) Dr. V.N. Sharda Director Central Soil & Water Conservation Research & Training Institute (CSWCRTI) Dehradun – 248 195, Uttrakhand director@cswcrtiddn.org; vnsharda2@gmail.com +91 – 135 – 275-8564	Farm Power and Machinery (ISAE convention session I) Dr. V. K. Tewari Professor, Agri. & Food Engineering Dept. IIT, Kharagpur - 721 302, West Bengal prof.vktewari@gmail.com +91 94 3401 4171
Processing, Dairy & Food Engineering (ISAE convention session II) Dr. R. Viswanathan Professor and Head Dept. of Food & Agricultural Process Engineering Tamil Nadu Agricultural University, Coimbatore – 641 003, Tamil Nadu drrviswanathan@rediffmail.com; drrviswanathan@gmail.com +91-422-6611272 /+91-9443129711	Energy in Agriculture (ISAE convention session III) Dr. T.K. Bhattacharya Professor and Head Dept. of Farm Machinery & Power Engineering College of Technology, GBPUAT, Pantnagar – 263 145, Uttrakhand tkb_183@rediffmail.com +91 94 1241 9867

Official Language: English

Note: The registration form provided with brochure should be sent along with the registration fee in the form of demand draft drawn in favour of **Organizing Secretary**, **45**th **ISAE Convention** payable at **Nagpur** and mailed to Organizing Secretary of the Convention & Symposium on or before November 15, 2010 at the following address.

Dr. S. M. Taley Professor of Agricultural Engineering, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Maharashtra, India Email: smtaley@indiatimes.com	ORGANIZING SECRETARY Dr. A.B. Kubde Professor of Agricultural Engineering, College of Agriculture, Maharajbagh, Nagpur (M.S.), 400 001, India Email: anilkubde@yahoo.com Phono: (O) 0712 - 2522418
Phone: (O) 2258200-218 Extn. 1074	Phone: (O) 0712 - 2522418
Mobile: +91-9822723027	Mobile: +91-9423466298

IMPORTANT DATES

Last date for receipt of abstract	October 15, 2010
Communication to Authors about acceptance	November 1, 2010
Submission of full length paper and payment of registration fees	November 15, 2010
Final manuscript submission to conveners by concern technical directors.	December 14, 2010
Printing of the souvenir	December 25, 2010

SIGHT SEEING TOURS

Local sight seeing trips and tours to other destinations in Nagpur can be arranged on payment. For details of conducted tours of Maharashtra Tourism and places of interest, you may visit the website: www.maharashtratourism.gov.in/

SPONSORSHIP AND ADVERTISEMENT

A Souvenir containing Messages from Dignitaries and lead papers will be released by the Chief Guest at the time inaugural function during the conference. Sponsorship for technical session and advertisements in the compendium would be a business opportunity for entrepreneurs and business houses, to popularize their products, nationally and internationally.

ADVERTISING TARIFF

1. Back Cover Page (color), 8.5x11 inches	: Rs.40000
2. Front Inside (color), 8.5x11 inches	: Rs.35000
3. Back Inside Cover (color), 8.5x11 inches	: Rs.35000
4. Full Page (color), 8.5x11 inches	: Rs.25000
5. Full Page B/W, 8.5x11 inches	: Rs.20000
6. Half Page B/W, 8.5x11 inches	: Rs. 10000

PRODUCT DISPLAY

There will be unique opportunity to limited number of firms to display their products, for the national and international visitors, on first- come first-serve basis at the conference venue. This package includes free registration for two delegates and a space to display their products (Rs.30000/- for three days).

REGISTRATION FEE

	Indian delegates		Foreign delegates *	
	Before November 15	After November 15	Before November 15	After November 15
ISAE member	Rs 3000	Rs. 4000	US\$ 100	US\$ 125
Non-member	Rs 4000	Rs. 5000	US\$ 125	US\$ 150
Companion	Rs 1500	Rs. 2000	US\$ 50	US\$ 70
Student	Rs 800	Rs 1000	US\$ 30	US\$ 40

* Foreign delegates have the option of paying in equivalent Indian Rupees at 1US\$=Rs 45.

ACCOMMODATION / **HOTEL RESERVATION:** Delegates will be required to pay Rs.1000 towards accommodation charges along with the registration fee if they want to avail the accommodation provided by the organizers. International delegates and others requiring accommodation in hotels should make an advance payment of registration and accommodation charges. The charges for different category rooms in selected hotels are furnished below.

1) The Pride HoteL (www.pridehotel.com)

	INR		US \$ (approx.)	
	Single	Double	Single	Double
Deluxe Room	5500	6250	125	140
Superior Room	6500	7250	145	160
Premium Room	7500	8250	170	185

2) Tuli Imperial (www.tuligroup.com)

	INR		US \$ (approx.)	
	Single	Double	Single	Double
Deluxe Room	6500	7000	145	155
Club Room	7500	8000	165	180

3) Hotel Centre Point (www.centrepointgroup.org)

	INR		US \$ (approx.)	
	Single	Double	Single	Double
Executive Room	3500	4000	80	90
Executive Deluxe	4000	4500	90	100
Club Class	5500	6300	125	140

ABOUT NAGPUR: Nagpur is the winter capital of Maharashtra state and has glorious history being capital of erstwhile Central Province and Berar. It is located at geographical center of India and the zero milestone of India is situated in the city. The Nagpur is located 837 km east of Mumbai and 1094 km south of Delhi, 1092 km north of Chennai and 1140 km west of Kolkata. Major National Highways NH-7(Varanasi – Kanyakumari) and NH-6 (Mumbai – Kolkata) pass through Nagpur city. Nagpur oranges are world famous for its very special aroma and taste and brought indispensable glory to the region.

CLIMATE: The weather during January is pleasant with temperature ranging from 10°C (night) to 22°C (day) requiring normal cotton clothing. However, due to the extension of cold season, light woolen clothing may be required.

ACCESSIBILITY: Nagpur is well connected by road, rail (www.indianrail.gov.in) and air (www.airindia.in) from all major cities of the country.

Details of Annual Convention and International Symposium are available on

Conference website: www.pdkv.ac.in and ISAE website: www.isae.in

REGISTRATION/ACCOMMODATION REQUEST FORM

45th ISAE Annual Convention and International Symposium on Water for Agriculture 17-19 January, 2011 at College of Agriculture, Dr. PDKV Campus, Maharajbag, Nagpur, Maharashtra, India

Name	:		
Designation	:		
Sex	:	Age:	
Nationality	:		
Membership: Non-n	nember/ Mer	nber (Membership No	
Mailing Address	:		
Email	:		
Tel. (Office):		(Residence):	
Mob:		Fax:	
Number of registere	ed accompan	iying persons: 1 / 2 / none	
Registration fee det Amount	ails :		
DD.No. & Date	:		
Accommodation (Please tick)	: Provi	ided by organizers()	Hotel ()
Accommodation chat Amount	arges details :		
DD.No. & Date	:		
Place:	Sign	ature:	Date:

Please send it to:

Dr. A.B. Kubde, Organizing Secretary

Professor of Agricultural Engineering, College of Agriculture,

Maharajbagh, Nagpur (M.S.), 400 001, India

Email: anilkubde@yahoo.com; Phone: (O) 0712 - 2522418; Mobile: +91-9423466298