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We would be happy if we studied nature more in natural things and acted according to nature, whose rules are few, plain and most reasonable.
-William Penn

Sustaining Agriculture Can conservation agriculture be the way forward?



It is time that the community of soil scientists assumed a lead role in shaping and contributing to a new research for development agenda for achieving goals of sustainable agriculture which critically hinges on how wisely we use our natural resources. Conservation Agriculture has emerged a guiding theme which integrates the twin concerns of enhancing productivity and reversing the processes

contributing to resource degradation.

The agriculture sector has reached turning point. While the sector continues to play a vital role in the national economy, its contribution to our GDP has been declining over the years. However the proportion of our population dependent on agriculture has not declined in the same pattern with almost 65% of our population continuing to rely on agriculture for subsistence. Very many

questions are being raised, some being:

How can we achieve greatly accelerated levels of productivity growth which has been stagnating for sometime?

How can such a growth be pursued that does not at the same time leave an impoverished resource base with adverse environmental impact?

How can productivity goals be met addressing social ends of equity and inclusiveness?

This evidently calls for a strategy to be evolved, different from the one pursued thus far. The new strategy must aim at achieving goals of sustainable agriculture in the face of multiple challenges

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International Union of Soil Sciences confers HONORARY MEMBERSHIP on Dr. J.S.P. Yadav



International Union of Soil Sciences (IUSS) has decided to confer its highest honour i.e., Honorary Membership on Dr. J.S.P. Yadav, Past President, ISSS and Former Chairman, ASRB in recognition to his contribution to the cause of Soil Science in meeting of its Council in July 2008 held at Brisbane, Australia.

Dr. J.S.P. Yadav, born on 30 July 1922, had a brilliant academic career throughout, and



Seated from left to right.
Drs. G. Narayanasamy, B.S. Dwivedi,
P.K. Chhonkar, J.P. Sharma, J.S.P.
Yadav and J.S. Samra

occupied important positions including Chairman ASRB, Vice Chancellor HAU, Hisar, Coordinator and Director, CSSRI Karnal, and Senior Research Officer (Soils) Forest Research Institute, Dehra Dun with long

distinguished experience of research, teaching and administration. An eminent soil scientist of international repute, Dr. Yadav steered successfully multi-disciplinary research on water management and soil salinity under AICRP at a number of locations representing varied agro-climatic situations of India, leading to efficient and economic use of land and water resources. Dr. Yadav along with his associates developed a salinity-cum-alkali scale to evaluate these problem soils for crop response, which proved of immense practical applicability. In an Operational Research project in seven villages of Karnal district, lush green crops

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facing the sector largely relating to:

Stagnating/declining productivity growth of major food crops, pulses, oilseeds etc. Most importantly the challenges will be to raise productivity of vast cropland area under rainfed farming

Widespread problems of land degradation, declining soil quality, depleting water resources, and diminishing biodiversity

Increasing severity of environment problems arising from pollution of surface and groundwater, gases, atmospheric loading of greenhouse pollution

Needs for adjustments and adaptations to climate change

Spiraling energy needs

The strategy that we now seek must reconcile our short-term needs of enhanced productivity to achieve them within the framework of long term sustainability goals. Globally 'Conservation Agriculture' (CA), has emerged as an alternate to conventional agriculture and is considered a strategic response to the multiple challenges that we face. The term CA refers to a set of agricultural practices that have a basis in three basic principles of proven scientific soundness.

The three principles that have been well researched are:

Minimum disturbance of soil through practices such as ploughing, tillage, etc.

Keeping the soil surface covered by leaving crop residues on the soil surface of growing cover crops.

Adopting appropriate spatial and temporal crop sequencing, including agroforestry practices.

Agricultural practices based on these principles have been shown to be beneficial in many ways. Farmers stand benefited primarily due to reduced production costs on account of saving on labour, fuel, and machinery wear and tear. Crop residues left on the soil surface serve to reduce run off and soil erosion, conserve rain water in-situ, and over a period of time enhance soil organic matter status improving soil fertility and capacity of soil to retain and supply moisture. The nature and extent of benefits will vary according to the farming conditions prevalent. Similarly crop sequencing including intercropping and agroforestry serve to strengthen ecological foundations for sustainable agriculture, apart from enhancing farmers' income through better utilization of time and space. While the scientific soundness of principles guiding CA practices is

not in doubt, wide spread adoption of CA practices is a challenge to the scientific and farming communities alike. Most importantly there is a need to bring about a change in the mindset. Development, adaptation, and widespread adoption of CA practices will critically depend on scientists from several disciplinary backgrounds coming together and working with farmers to bring to bear on the solutions to problems faced while adopting new technologies. While farmers can best optimize resource use by pursuing an integrated approach, the ability of scientists to understand, appreciate and respect the farming community's experience and knowledge will be decisive to promote CA practices. Equally important will be the emergence of a farmer led movement backed by efforts of the scientific community that will create a demand led research programme. 'Professional Association for Conservation Agriculture (PACA)' has been created as an institutional platform in response to these pressing needs. The role of soil scientists will be critical in forwarding the cause of conservation agriculture.

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of rice and wheat were grown at numerous farmers' fields of highly deteriorated barren alkali lands. These successful efforts prompted the state governments of Punjab, Haryana and U.P. to undertake massive reclamation programmes with substantial additional annual production of foodgrains. The research work initiated on afforestation of alkali lands, provided impetus for adoption of forestry/agroforestry for rehabilitation of degraded sodic lands.

Dr. J.S.P. Yadav has, to his credit, more than 250 publications including research papers in foreign and Indian journals. In view of his significant contributions, Dr. Yadav was conferred **Padma Shri** by the

Govt. of India. He is recipient, singly or jointly, of several awards such as Guinness Award of Commonwealth Scientific Association, Hari Om Trust Award, Dr. Rajendra Prasad Award, Brandis and Schlich Memorial Prizes, Honorary Member of the Indian Society of Soil Science and Soil Conservation Society of India, Golden Jubilee honour of the Indian Society of Soil Science, USAID award for superior performance, Samaj Gaurav Samman National Award, Indira Gandhi National Award, D.Sc. (h.c.) from GBPUAT, Indira Gandhi National Award by the Indian Farm Journalists Association. He is Fellow of several scientific academies and societies including Chemical

Society, London, National Academy of Sciences, India, and National Academy of Agricultural Sciences. He has been president of the several professional Societies. Dr. Yadav has recently been appointed as the Patron of the Indian Society of Coastal Agricultural Research. He is currently the Editor of the National Academy of Agricultural Sciences. He has widely travelled and has been expert consultant of FAO, USAID, UNDP, UN-ESCAP, World Bank, WAPCOS, AFC, PPCL and United Rice Land Ltd.

Delhi Chapter of the ISSS organized a function on 30 August 2008 and felicitated Dr. Yadav on his election as Honorary Member of the IUSS.

Chapter Activities

Gwalior Chapter

The Chapter brought out its 4th Newsletter (Vol. 4) December 2007. A function was organized to release it on 22 August 2008. Dr. V.S. Tomar, Founding Vice Chancellor, Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior was the Chief Guest.



Executive Committee of GCISSS, Gwalior with V.C. Dr. V.S. Tomar, Speaker- Dr. S. S. Tomar and Special Speaker Dr. V. N. Tiwari during 15th Dr. D.P. Motiramani Memorial Lecture and National Seminar on Soil Health

The Chapter also organized 15th Dr. D.P. Motiramani Memorial Lecture and National Seminar on Soil Health at RVSKVV-ZARS, Morena on 13 September 2008. Dr. V. S. Tomar, Vice Chancellor, RVSKVV, Gwalior was the Chief Guest. Dr. S.S. Tomar, Director Research, JNKVV, Jabalpur was the speaker of memorial lecture. Dr. V.N. Tiwari, Former-Professor, CSAUA&T, Kanpur delivered a special invited talk. Twenty-two research papers covering various aspects of soil health were presented in national seminar. Dr. O.P. Verma, Acting President, GCISSS, Gwalior extended his warm welcome to all the distinguished guests and delegates. Dr. R.J. Tiwari, Secretary of the Chapter, briefed about the activities of the Chapter for 2007-2008. Three best papers in seminar have also been selected for awards. The Chief Guest presented the Chapter's Certificate to Mr. Raman Pachori for securing highest marks in M.Sc. (Ag.) Soil Science and Agricultural Chemistry.

Awards/ Recognitions to Society Members

Dr. Ch. Srinivasarao, Principal Scientist, CRIDA, Hyderabad and presently on deputation to ICRISAT, Patancheru has been

elected as a Fellow of National Academy of Agricultural Sciences for the year 2008.

Dr. Amresh Das, Research Scientist, Navasari Agricultural University, Navsari was conferred "Bharat Jyoti Award" and a Certificate of Excellence by India International Friendship Society, New Delhi for meritorious services, outstanding performance and remarkable role in his field of activity. The award was presented on 28th March 2008 at a Seminar on Economic Growth and National Integration at New Delhi.

Drs. N. Sahoo, S.K. Jena, P. Nanda, Madhumita Das, P.S. Brahmanand, R.K. Mohanty, WTC for Eastern Region, Bhubaneswar have been awarded the ICAR Award "Vasanttrao Naik Award for Outstanding Research and Applications in Dryland Farming Systems 2007" for their work "Developing ideal and replicable watershed technology to improve rice productivity by 46%, cropping intensity by 73% and net returns of the farmers by 136% in watersheds under rainfed production system".

Drs. Tapas Bhattacharyya, D.K. Pal, P. Chandran, S.K. Ray, (Mrs) C. Mandal, S.P. Wani and M.V. Venugopalan, NBSS&LUP, Nagpur were awarded with "The ICAR Award for Interdisciplinary Team Research in Agriculture and Allied Sciences for the Biennium 2005-2006", for their contribution in natural resources.

Dr. M.S Sachdev, Principal Scientist, New Delhi has been elected as Coordinator of the Indian Nitrogen Group of the Society for Conservation of Nature (SCON-ING) for organizing International Nitrogen Conference N2010 sponsored by International Nitrogen Initiative, an organ of ICSU (SCOPE & IGBP).

Dr. Dipak Sarkar, Director, National Bureau of Soil Survey and Land Use Planning (ICAR), Nagpur has been awarded the 'Fellow - Indian Society of Coastal Agricultural Research (FISCAR), 2007.

Visits of Members Abroad

Dr. Amitava Rakshit, Lecturer, Banaras Hindu University, Varanasi attended and presented a paper in BioVison Alexandria 2008 Biannual International Conference, Egypt from 12-16 April 2008.

Appointments

Dr. V.S. Tomar, Director Research, JNKVV, Jabalpur has been appointed as founder Vice-Chancellor of Rajmata Vijayaraje Scindia Krishi Viswa Vidyalaya, Gwalior w.e.f. 20.08.2008.

Dr. Sanjay Arora has been selected as Senior Scientist (Soils) at Central Soil Salinity Research Institute (ICAR) Regional Research Station, Bharuch (Gujarat).

Dr. P. Chandrasekhar Rao has taken over as Professor and Head, Department of Soil Science and Agricultural Chemistry, College of Agriculture, Rajendranagar with effect from 1.7.2008.

Forthcoming Seminars/ Symposia/ Conferences/ Workshops

July 11-16, 2009 International Congress on Conservation Biology, Beijing, China. Webpage: <http://scb2009.ioz.ac.cn/>.

August 23-28, 2009, 2nd World Congress of Agroforestry: the Future of Global Land Use, Nairobi, Kenya. Webpage: <http://worldagroforestry.org/wca2009>

September 13-19, 2009, 8th International Carbon Dioxide Conference, Jena, Germany. Website: <http://www.icdc8.org/>

September 21-24, 2009, 2nd International Conference BIOHYDROLOGY 2009: A changing climate for biology and soil hydrology interactions, Bratislava, Slovakia. Website: <http://www.ih.savba.sk/biohydrology2009/index.html>

October 13-16, 2009, Biodiversity and Society: understanding connections, adapting to change, Cape Town, South Africa. Webpage: www.diversitas-osc.org

Announcement



4th World Congress on Conservation Agriculture to address innovations in agriculture for realizing improved efficiency, equity and environment, will be jointly organized during February 4-7, 2009 at New Delhi, India by the Indian Council of Agricultural Research (ICAR) and the National Academy of Agricultural Sciences (NAAS) along with the International Centre for Agricultural Research in Dry Areas (ICARDA), Rice-Wheat Consortium (RWC), the Food and Agriculture

Organization (FAO), Indian Society of Soil Science (ISSS), and Indian Society of Agricultural Economics (ISAE) as co-sponsors. Researchers, farmers, extension workers, policy planners, corporate leaders and non-governmental organizations interested in agricultural and natural resources, are invited to the said Congress. For more information please contact Dr. P.K. Joshi, Organizing Secretary of the 4th World Congress on Conservation Agriculture, National Centre for Agricultural Economics and Policy Research (NCAP), Dev Prakash Shastri Marg, New Delhi - 110012, email: wccagri@gmail.com or visit www.wccagri.ernet.in. (**Last date for submission of Abstract: 30 November 2008**)

Editor's note

On behalf of all the members of ISSS and on my personal behalf I take this opportunity to congratulate Dr. J.S.P. Yadav, Former Chairman, ASRB and past president ISSS for getting IUSS Honorary Membership. Dr. Yadav is the 3rd distinguished soil scientist from India to get this recognition besides late Dr. S.K. Mukherjee and Dr. J.S. Kanwar. I also take this opportunity to thank Dr. I.P. Abrol for his thought-provoking article entitled "Sustaining agriculture: Can conservation agriculture be the way forward?". The article addresses the twin concerns of enhancing productivity and reversing the processes contributing towards resource degradation in greater detail. The article is of great relevance in the present context as ICAR is organizing the 4th World Congress on Conservation Agriculture from 4-7 February, 2009 wherein scientists from all over the globe will meet to deliberate, share and get benefit from the rich experience/innovations on conservation agriculture. I place on record my gratefulness to all those whose contributions have enabled me to make this Newsletter informative and interesting.

K.M. Manjaiah

August 1-6, 2010, 19th World Congress of Soil Science, Brisbane, Australia. Information: website: <http://www.ccm.com.au/soil>; e-mail : soil@ccm.com.au.

Obituary

Dr. R.S. Minhas, Former Head of the Department of Soil Science and Water Management, HPKV, Palampur left for heavenly abode on 9 June 2008.

25% Rebate on FDCO Books

The Fertiliser Development and Consultation Organisation, on completion of 25 years have decided to offer all their books to members of the ISSS at 20% discount plus free registered postage till the Platinum Jubilee of the Society in 2009. For list of books, readers may contact Dr. H.L.S. Tandon at fdco@vsnl.net or fdco@airtelmail.in

What are the 14 greatest engineering challenges for the 21st century?

The National Academy of Engineering (NAE), at the request of the National Science Foundation, convened a committee of leading technical thinkers to create a list of the grand challenges and opportunities for engineering facing those born at the dawn of this new century. Much input was considered, ranging from experts in science or engineering to the broader general public. The NAE on Feb. 15, 2008 announced their Grand Challenges for Engineering. These challenges would transform the very nature of our society, transforming the society at least as much as the great achievements of the 20th century- allowing for responsible and precise control over information and natural resources in ways that would surpass any other time in human history. The 14 challenges are listed below, of which the 3rd and 4th are directly relevant to Soil Scientists, suggesting a huge potential and opportunities in the future to reshape and prioritize our goals.

1. Make solar energy affordable
2. Provide energy from fusion
3. **Develop carbon sequestration methods**
4. **Manage the nitrogen cycle**
5. Provide access to clean water
6. Restore and improve urban infrastructure
7. Advance health informatics
8. Engineer better medicines
9. Reverse-engineer the brain
10. Prevent nuclear terror
11. Secure cyberspace
12. Enhance virtual reality
13. Advance personalized learning
14. Engineer the tools for scientific discovery

You can share your comments on any one of these challenges by logging on to the website of NAE or <http://www.engineeringchallenges.org/>