

Brief report about ICSCI 2022

International conference on System of Crop Intensification (ICSCI 2022) for Climate – Smart Livelihood and Nutritional Security 12-14, December 2022, ICAR-IIRR, Hyderabad

In consultation with National and International organization committees, Society for Advancement of Rice Research (SARR) in collaboration with ICAR – Indian Institute of Rice Research (ICAR-IIRR) and many ICAR institutes like ICAR - National Rice Research Institute (ICAR-NRRI), ARRW (Association of Rice Research Workers), Indian Institute of Millets Research (ICAR-IIMR), Indian Institute of Oilseeds Research (ICAR-IIOR), Indian Institute of Sugarcane Research (ICAR-IISR), Indian Institute of Wheat & Barley Research (ICAR-IIWBR), Central Research Institute on Dryland Agriculture (ICAR-CRIDA), National Academy of Agricultural Research Management (ICAR-NAARM), Institute of Rural Management Anand (IRMA); Agricultural Universities like Professor Jayshanker Telangana State Agricultural University (PJTSAU), Acharya NG Ranga Agricultural University (ANGRAU); International organizations like SRI-2030, AgSRI, GIZ and NGOs like Watershed Support Services and Activities Network (WASSAN), Professional Assistance for Development Action (PRADAN), People Science Institute (PSI), National Consortium on (NCS), SRI-Rice, Round – glass as knowledge partners organized International conference on System of Crop Intensification (ICSCI 2022) for Climate – Smart Livelihood and Nutritional Security in hybrid mode during 12-14, December 2022, at ICAR-IIRR, Hyderabad after formal approval from ICAR and DARE.

The inaugural session of International Conference – ICSCI 2022 was chaired by Dr. Himanshu Pathak, Secretary, DARE & DG, ICAR with Dr. SK Pradhan, ADG (FFC) as co-chair. Dr. Alapati Satyanarayana, Former Director of Extension, ANGRAU, who started SRI in Andhra Pradesh and India, was the Chief guest. Guests of Honour included Dr. DK Yadava, ADG (Seeds), ICAR; Dr. AK Singh, Director, ICAR-IARI; Dr. R Jagdeswar, Director of Research, PJTSAU; Dr. Francesco Carnevale Zampaolo, Program Director, SRI-2030, UK; Dr. Abha Mishra, Former Director, ACISAI, Thailand. Dr. Himanshu Pathak, Secretary DARE & DG, ICAR, New Delhi and chairman of the session welcomed the delegates of this conference on behalf of ICAR and DARE. He pointed out several challenges in sustainable rice production like degrading soil quality and issues of greenhouse gases and mentioned that technologies like SRI and SCI can address several of these issues. He also mentioned that location specific modification of SCI is needed to upscale the technology.



Inaugural session

Several publications were released during the conference inaugural session that includes i) ICSCI 2022 Souvenir, ii) Food products from broken rice of Kalanamak, iii) Story of Kalanamak rice: Past, Present and Future, and iv) Journal of Rice Research, Vol. 15, Issue 1 along with e-publications like i) Extended summaries of ICSCI 2022, ii) Learning experiences and success stories of SCI, and iii) Journal of Rice Research Special Issue with compilation of Keynote and lead lectures, and iv) e-poster presentations on ICSCI 2022 website.



Release of publications

The Society for the Advancement of Rice Research (SARR) instituted seven awards from this year onwards, out of which three awards were presented for the first time. These include, i) Dr. R. Seetharaman best PhD thesis award to Dr. Sadras Bhavana, Ph.D in Crop Physiology, PJTSAU, Hyderabad; ii) SARR young scientist award to Dr. Divya Balakrishnan, Senior Scientist, Plant Breeding & Genetics, ICAR-IIRR, Hyderabad and iii) Dr. SVS Shastry SARR Fellow to Dr. LV Subba Rao, Principal Scientist & Head, Plant Breeding, ICAR-IIRR, Hyderabad.



Dr. R Seetharaman Best Ph.D Thesis Award – Dr. S Bhavana



SARR young scientist award – Dr. Divya Balakrishnan



**Dr. SVS Shastry SARR Fellow -
Dr. LV Subba Rao**

A total of 209 participants registered including delegates from 16 Countries, i.e., USA, UK, Philippines, Germany, Italy, New Zealand, Netherlands, Japan, Iran, Nepal, Bangladesh, Vietnam, Tanzania and India. Additionally, around 150 farmers also registered and participated in the ICSCI 2022. The Conference was conducted in 7 themes, each theme as a session, *viz.*, Theme 1 on Current Status of System of Crop Intensification (SCI) in India and rest of the world, Theme 2 on Breeding Cultivars, Land Races, Ideotypes, Management Practices, Pest and Disease Dynamics of SCI; Theme 3 on Resource use and Conservation in SCI (Natural Farming, Organic Farming, Conservation Agriculture etc.), Climate Resilience and Ecosystem Protection; Theme 4 on Agro-Industries/Mechanization for Scaling up SCI; Theme 5 on SCI Adoption and their Socio-Economic Impacts including Gender, Labour and Institutional Dynamics; Theme 6 on : Policy needs (at State, National and International levels) for scaling up SCI and Theme 7 on Learning Experiences & Success stories of SCI; Farmer and Scientist Interaction & Export Potential of Rice and Strengthening FPOs. In these sessions, 10 keynote and 55 lead lectures were delivered by eminent speakers from across the World.



National and International delegates at ICSCI 2022



ICSCI 2022 Theme wise sessions organised at ICAR-IIRR

In Theme 7 on Learning Experiences & Success stories of SCI; Farmer and Scientist Interaction & Export Potential of Rice and Strengthening FPOs, 20 farmers from across the country shared their experiences. These farmers were felicitated in the plenary session.



Felicitations of SCI practicing farmers representing various States across the Country

On 15 December 2022, a field visit was organised to the delegates and farmers to SRI fields of Mr. Nagaratnam Naidu, a progressive farmer followed by visit to System of Millet Intensification fields at Shamirpet. And also to fields with cultivation of landraces in SRI method at Parigi in collaboration with WASSAN.



Field visit

Around 245 extended summaries were received, out of these 26 were presented as lightning talks and rest presented as e-posters. All the posters were presented virtually along with an audio of their presentation and uploaded on the ICSCI 2022 website (<https://www.sarr.co.in/icsci2022/posterppt.html>).

Key points that emerged for consideration are summarized as follows:

- Food security is a very important issue in India and rice production has increased at a higher rate than the population growth leading to net export of rice.
- Productivity needs to be further increased as the area under cultivation is shrinking slowly
- Challenges in sustainable rice production like degrading water and soil quality, especially in states like Punjab and Haryana, issues of greenhouse gases that can be addressed by SCI.
- Rainfed rice areas has to be tapped for its potential to meet the global food security since the future needs for increasing population has to be met by using the marginal lands.
- SCI in uplands, especially in the NEH regions with problems like soil erosion, expanding population and human animal conflicts, needs special attention both from researchers and policy makers.
- Present rapid climate change is decreasing productivity in many crops, hence climate smart, carbon negative agriculture with high focus on system approach needs to be advocated.
- Location specific modification of SCI technologies to meet specific challenges be developed
- Need for skilled trainers to impart the technical knowledge to the farmers in specific problems associated with SCI.
- Need based technologies should be developed through participatory approach from farmers.
- Strategies to be made to develop carbon neutral villages and up scaling of climate resilient technologies in farming system mode.
- Both National and International networks are important in promoting the SCI technology. Government intervention through policy changes to make the technology more farmer friendly is the need of the hour.
- Strategies for sustainable agriculture like development of system approach, diversification of system, use of green manures, need based integration of organic +inorganic sources, inclusion of people participation and Government support.
- High investments and innovations in Trans-disciplinary mode be made by PPP mode.
- Explore scope for carbon finance and linking it to SCI
- To include several of SCI practices in Govt. sponsored programs like MGNREGA, Natural farming and to reduce the carbon footprint.
- Scaling up of SCI needs institutional changes that includes Innovative initiatives and Institutional arrangements by going away with disciplines and working in interdisciplinary teams.
- Need to change the strategy from Genotype x Environment X Management X Social to Social x Environment x Management X Genotype by including participatory approaches.
- Interactions between Scientists and Policy makers, Scientists and Citizens is very important to identify appropriate methodologies for scaling-up.
- As the saying goes “Vasudaika Kutumbam”, we need to consider World as one family and as India holds the presidency of G20 from 1 December 2022 to 30 November 2023 at Bengaluru, we need to focus on developing technologies that are economically viable, socially acceptable and environmentally sound to improve the livelihoods of small and marginal farmers.