

Entry No. IRRC-0652

Category	: International Rice Research Conference
Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Sustainable management practices
Keyword 2	: Precision Agriculture
Keyword 3	: Mechanization
Title of Entry	: Direct-seeded Rice Consortium: A Public-Private Multi-stakeholders Research for Development (R4D) Platform for Improving Sustainability of Rice-based Systems in Asia
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Recently in Asia, there is increased interest to shift from puddled transplanted rice to direct-seeded rice (DSR) to improve farmers profitability and environmental sustainability as DSR saves scarce resources (labor and water), and reduces GHG emissions. DSR has been widely practiced in many Asian countries such as Malaysia, Sri Lanka, Vietnam, Thailand, Cambodia, and the Philippines. Many other countries including South Asia are going through this transition from manual transplanting to DSR. Despite multiple economic and environmental benefits associated with DSR, there are few risks/constraints also which limi

the wide-scale adoption and attainment of optimal grain yields in DSR. These risks include poor and uneven crop establishment due to stand mortality attributed to field inundation during crop emergence/establishment phase, higher weed infestation leading to the risk of higher yield losses, limited knowledge on precision irrigation scheduling/water management and appropriate cultivars suited for DSR conditions. Moreover, the way DSR is practiced in Asia is mix of traditional and modern practices. Many current agronomic practices are very inefficient and large scope exists to improve the efficiency and sustainability of DSR through mechanization and precision crop and resource management practices. Moreover, many weed-related issues have emerged in countries where transplanting has been widely replaced with DSR such as (1) the shift in weed flora toward difficult-to-control weeds; (2) evolution of weedy rice- a highly competitive weed with limited control options; (3) increased dependence on herbicides leading to risks of evolving herbicide resistance in weed species and “perceptions of an impact on” human health and the environment. To address the risks/issues associated with DSR adoption and to develop and catalyze the wide-scale adoption of optimized and sustainable DSR systems, IRRI established a new public-private multi-stakeholders consortium on DSR (DSRC). The DSRC will emphasize on (1) developing mechanized low seed rate DSR, (2) developing precise weed, water and nutrient management practices, (3) identifying appropriate cultivars suitable for DSR, (4) identifying risk management agronomic, breeding and GIS approaches, and (5) supporting and strengthening the service economy of scale-appropriate mechanization and precision agriculture technologies to provide cost-effective access to capital-intensive machinery and technologies.

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