

Entry No. IRRC-0511

Category : International Rice Research Conference

Select Theme : Sustainable and equitable farming systems

Endorsement email :

Keyword 1 : Sustainable management practices

Keyword 2 : Ecological approaches

Keyword 3 : Pest management

Title of Entry : Reintroducing Rich Biological Interactions in Rice Production

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Select only one type of presentation : 15 minute oral presentation

Abstract : Agroecology is a promising approach to restore biodiversity and ecosystem services to agro-ecosystems, and transition towards sustainable food and agricultural systems. The major aspects of agroecology practices in China include: (1) sustainable landscape arrangement; (2) circular design of agro-ecosystems, and; (3) diversification of species and genetic resources used in fields. Biodiversity is of critical importance in each of these three aspects. Rice is the most important food crop, both worldwide and for China. To achieve a transition towards sustainable rice production based on agroecology, biodiversity is a crucial component.

Through China's long history of agricultural development, many rich experiences of harnessing biodiversity in traditional rice production have been accumulated. This agricultural heritage is complemented by new experiences developed over the past 30 years, associated with agroecology development in China. Eight typical methods of agroecological rice production are introduced with an emphasis on the role of biodiversity. The first method is based on the genetic diversity of rice. The second to the seventh methods each emphasize diversity at the species level. The second method involves intercropping rice with lotus. The third and fourth methods involve the use of green manure in rice fields. The fifth, sixth and seventh methods are based on the co-culture of rice with ducks, fish or frogs in paddy fields. The eighth method is based on the use of biodiversity in rice production at the watershed scale. It is related to the ecosystem and landscape levels of biodiversity. These agroecology methods for harnessing biodiversity in rice production can be learned, modified, improved and integrated into rice production across different regions around the world according to the specific context in each place.

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