

**NRRI Success Story**



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# **IT enabled Self-Sufficient Sustainable Seed System for Rice (4S4R)**

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The formal system of seed production in India has been fulfilling the need of the farmers. However, the system faces a number of problems related to Quality, Quantity, Timeliness, Choice of variety and Cost of seed production and distribution. The solution lies in developing local seed system.

### **Developing Local Seed Systems**

In contrast to formal seed sector, local seed system, if strengthened can offer solutions to overcome the constraints of formal (government) seed supply system. Local seed system can produce seed according to local farmers' need, in right quantity, of right quality with lower cost of production & supply and with timely delivery of seed to farmers.

### **Self-sufficient Sustainable Seed System for Rice (4S4R) model**

Accordingly, Self-sufficient Sustainable Seed System for Rice (4S4R) model is tested in Mahanga block of Cuttack, Odisha. However, the model itself is general in nature harnessing the advantages of advancements in IT sector at planning, execution, monitoring, capacity building, support stage and marketing. The model is trying to combine best of the technologies and practices available with ICAR Institutions/University and IT Institution.

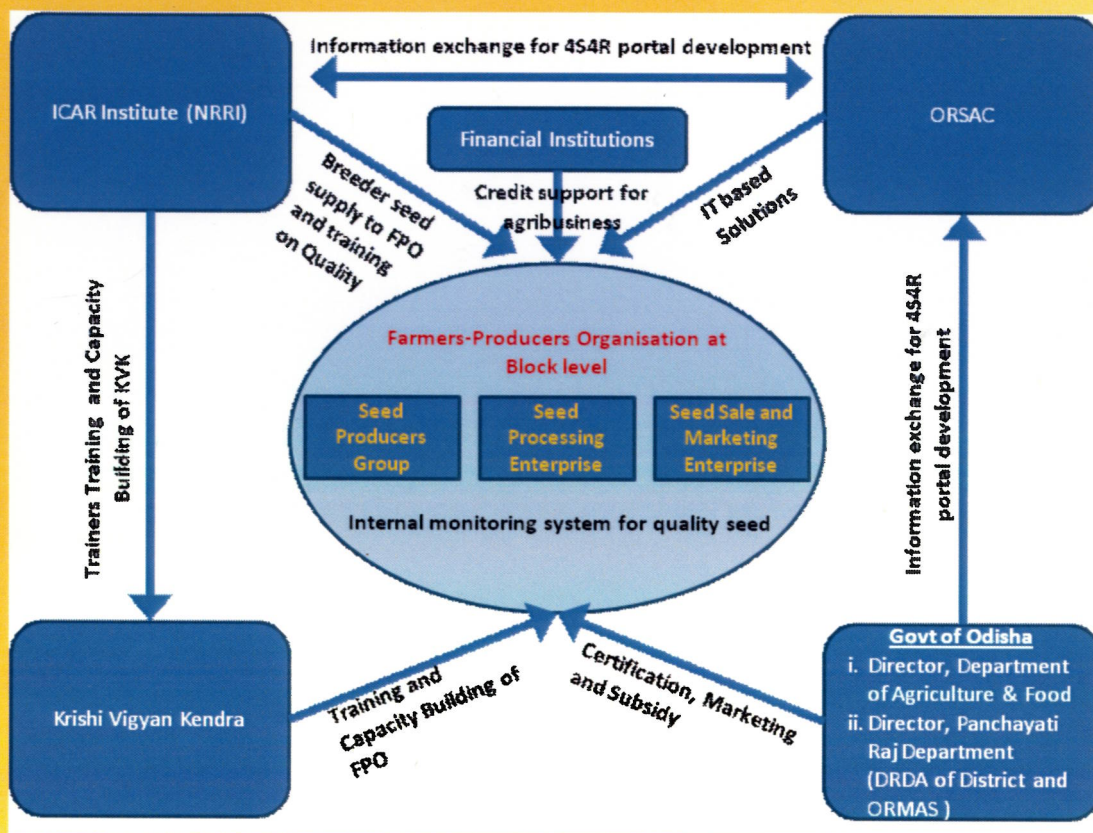
### **Interventions for Improving Local Seed System**

Existing seed systems is improved and supported by various interventions.

- 1. *Facilitated farmers' access to seed through***
  - a. Awareness
  - b. Training and
  - c. Capacity building
- 2. *Introduced of appropriate agricultural technologies in***
  - a. Crop production
  - b. Integrated pest and disease management
  - c. Introduction of improved varieties
  - d. Seed health and storage management
- 3. *Improved disorganized local seed system through***
  - a. Improved organization by starting Farmer Producer Organisation (FPO)
  - b. Registering FPO under Company Act 2013 (Old 1956) as Mahanga Agro Producers 4S4R Pvt. Ltd. on 30 April, 2017.
  - c. Providing support for establishing and sustainability
- 4. *Provided IT based solutions for***
  - a. Expert system of seed production – PaddySeed Xpert available at Google Play Store.
  - b. Used remote sensing for identification of appropriate location for seed production.
  - c. Used remote sensing and GIS maps to determine the seed requirement of the area.
  - d. Linked financial institutions/KVKs of the districts to the Farmers Producers Organisation (FPO).
  - e. GIS mapping of seed availability/ marketing.



### Farmers-Producers Organisation (FPO)



This model has Farmers-Producers Organisation (FPO) in the centre of the activity at a block level. The FPO consists of i) seed producing farmers group, ii) seed processing enterprise and iii) seed selling and marketing enterprise mainly catering the quality seed requirement of the block at local level. The seed producing farmers group produces foundation/certified seeds as per local demand from the breeder seed supplied by NRRI. Paddy seed processing and packaging machineries besides seed storage godown has been provided through RKVY. The sale outlet is part of the processing unit. These two units have been developed using entrepreneurship development approach. A specialized training has been imparted in the area of FPO management and Paddy Seed Production which is followed by support to establish processing and marketing unit(s).

The pivotal role in this model will be played by National Rice Research Institute being the specialized institute for technology development in rice. NRRI is performing following specialized role.

1. Supplying breeder seed.
2. Providing production and post-production technologies for seed production.
3. Developing Trainers Training Module and imparting training to KVK personnel involved in this project.
4. Providing inputs for expert system development for seed production in Odisha to IT Institution.
5. Supporting in developing GIS based tools for site (land) selection for seed production.



6. Organising workshops at planning stage, portal development stage and for capacity building to efficiently implement the project.
7. Coordinating various stakeholders in achieving the objectives of the project.

Besides, OUAT is also supplying breeder seed to FPO as per the requirement of the farmers.



**Capacity building program for farmers of Mahanga Agro Producers 4SSR Pvt. Ltd.**

### ***Challenges***

The major challenges faced in implementing this project are coordination among different stakeholders besides setting up FPOs at block level and marketing of the paddy seed.

### ***Benefits***

The Mahanga Agro Producer 4S4R Pvt. Ltd. required 30 lakhs as cost of the project but in the second year itself the Break Even Point (BEP) is achieved with 87 lakhs profit from second year onwards annually. As a result of local seed system 4S4R, Mahanga block farmers are getting seed in Right Quantity, of Right Quality, of Right Choice, at Right Time and at Right Cost.



### ***Published by:***

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