

# Agri-Business Incubation

## for Rice-Based Ecosystems

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*Rice is the staple food for more than 50% of the global population and for about 800 million population of India. Worldwide the crop is grown in an area of 166 million ha with a production of 500 million tonnes of milled rice. India ranks first in terms of area (42 million ha) and second in terms of production (114 million tonnes) in the World. It plays a major role in diet, economy, employment, culture and history. It is the staple food for more than 65% of Indian population contributing approximately 40% to the total food grain production, thereby, occupying a pivotal role in the food and livelihood security of people.*

**Key words:** Agribusiness, FPOs, Rice

ICAR-National Rice Research Institute (NRRI) is a premier research and development institute in the country. Management of rice germplasm, development of varieties and technologies, quality rice seed production and reaching the farmers are the major activities of NRRI. The institute primarily follows traditional breeding methods such as pedigree and backcross to develop new varieties. Besides, molecular markers assisted selection is now integrated with conventional breeding. The doubled haploid technology has also been standardized and applied to develop varieties from popular commercial hybrids. Transgenic rice lines are being developed for validating gene function and efficacy of some known genes for tolerance to stem borer, sheath blight and drought. In addition to variety development, the institute designs farm implements, equipments and appliances for use in farm and post-harvest operations. Several crop management technologies have been standardized and are provided to the end-users. NRRI varieties occupy 18% of rice area of the country producing 28 million tons with ₹ 48,643 crores

gross return annually.

Agriculture can be made remunerative if it can be taken up in business mode given there is demand for the production in the market. Twenty-seven Agribusiness Incubation (ABI) Centres have been established in different ICAR-Institutes for technology commercialisation and also to train the youth in their respective fields of interest. Entrepreneurship development remains the major objective of the ABIs to support the youth for their agribusiness start-ups.

**Genesis:** Although NRRI-ABI started in 2016, Business Planning and Development (BPD) unit under National Agricultural Innovation Project (NAIP) had started in 2014.

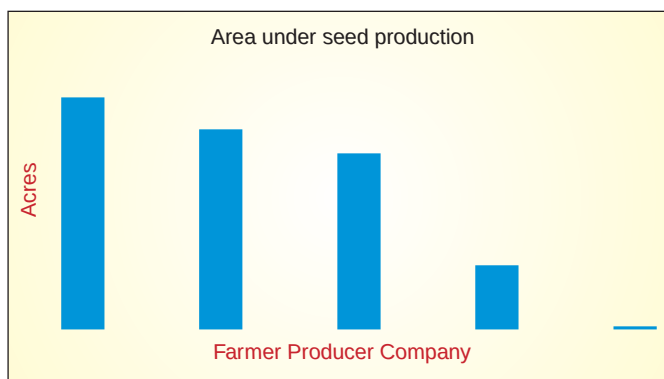
The foundation for ABI activities was laid since 2014 in form of identifying the suitable technologies for entrepreneurship development, procuring machineries, developing infrastructure and hiring manpower. Sensitisation meetings were held in villages for taking up farming as a business.

### Promoting Agri-enterprise through Farmer Producer Organizations (FPOs)

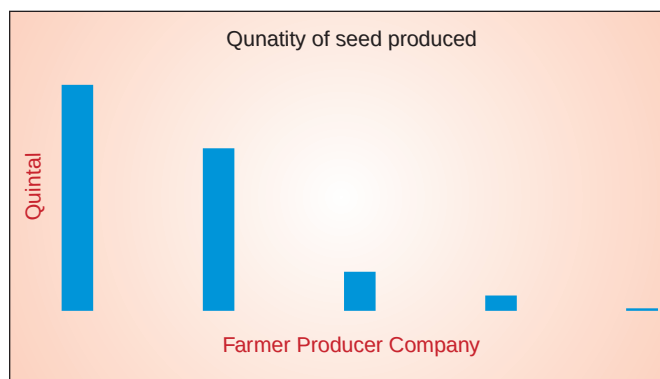
The Ministry of Agriculture, Department of Agriculture and Farmers Welfare, Govt. of India brought out a Policy and Process Guidelines for Farmer Producer Organisations in 2013 (Anonymous, 2013). At first, Strengths, Weaknesses, Opportunities and

**Table 1.** Farmers Producer Company formed

| Company Name                                      | CIN Number                                                |
|---------------------------------------------------|-----------------------------------------------------------|
| Cuttack 4S4R Seed Farmer Producer Company Limited | U01404OR2018PTC028528 Date of Incorporation - 17 Mar 2018 |
| Athagarh 4S4R Farmer Producer Company Limited     | U01110OR2018PTC028457 Date of Incorporation - 09 Mar 2018 |
| Niali 4S4R Farmer Producer Company Limited        | U01100OR2018PTC028785 Date of Incorporation - 27 Apr 2018 |
| Badamba 4S4R Farmer Producer Company Limited      | U01100OR2018PTC029954Date of Incorporation – 29 Nov 2018  |
| Banki 4S4R Farmer Producer Company Limited        | U01100OR2019PTC030574Date of Incorporation – 22 Feb 2019  |



Area under paddy seed production by FPCs.



Quantity of paddy seed produced by FPCs.

Threats (SWOT) were identified for seed production, seed processing and seed marketing in Cuttack. Mahanga Block in Cuttack district of Odisha was selected as the study village for participatory seed production as it was already there in place. The data was analysed for seed production, seed processing and seed marketing using Strength, Weakness, Opportunities and Threat (SWOT) analysis and Analytical Hierarchy Process (AHP) method. Firstly, strength, weakness, opportunities and threat regarding seed production, seed processing and seed marketing were enlisted by farmers. Then the statements were prioritised using AHP method. Top three factors for seed production, seed processing and seed marketing were identified. Based on these factors 'IT enabled Self-sufficient Seed System for Rice (4S4R)' model had been developed. FPC is central to this local seed system model.

In case of seed production, it was found that Strengths: Availability of suitable irrigated and fertile land for seed production (0.219) and Farmers had basic knowledge about seed production (0.117) and Weakness: Labour problem during peak hour (0.134) were top three factors affecting seed production.

Whereas in case of seed processing, it was observed that Strengths: Technical know-how for purification (0.398) and facility for initial processing like threshing and winnowing (0.168) and Weakness: Lack of proper covered threshing floor (0.128) were top three factors affecting seed processing.

While in case of seed

marketing, the Strengths: Production of quality seed and suitable appropriate variety as per requirement of the locality (0.324) and can provide seed at a cheaper rate than the market price (0.114) and Weakness: Lack of storage facility (0.143) were top three factors affecting seed marketing.

As explained earlier, a model for local seed system was developed by NRRI-ABI Centre and five Farmer Producer Companies (FPCs) were registered under Company Act, 2013. The Centre supported off-campus incubation of these five FPCs in five different blocks of Cuttack. Assessing the demand for quality rice seed of the farmers in the market, ABI centre focussed on supporting self-sufficient sustainable seed system for rice (4S4R) through FPCs. It provided all the technical supports by organizing awareness and training programs throughout the year starting from FPC formation to marketing techniques for successful sale of their products to fetch profits. Details of the FPCs are given in Table 1.

#### Promoting Agri-enterprise through Skill-based Agripreneurship (SBA)

Agribusiness Incubation Centre conducts various skill-based

agriprenurship training programmes to develop the potential farmers, entrepreneurs, ex-servicemen, educated and unemployed rural and urban youths as agriprenurs. Three different programmes were designed to suit the need of the clientele. These trainings are oriented to inculcate managerial and entrepreneur skills to the aspiring candidates.

1. Comprehensive Agribusiness Incubation Program (CAIP) - 3 weeks
2. Technology based Entrepreneurship Development Program (TEDP) - 1 week
3. Skill based Entrepreneurship Development Program (SEDP) - 1 week

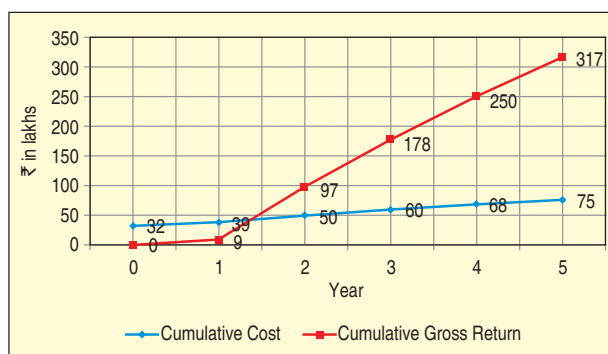
CAIP is a three-week program oriented to provide comprehensive understanding on agriprenurship comprising of 1<sup>st</sup> week: Entrepreneur motivation; 2<sup>nd</sup> week: Agri-technologies (as per candidate's area of interest) and 3<sup>rd</sup> week: Enterprise management. This programme is designed for those who have no exposure to either entrepreneurship or business.

TEDP is a one-week program comprising of the thrust areas as per the choice of the participants. This is designed for those who have been exposed to nuances of business but want to know only about technologies.

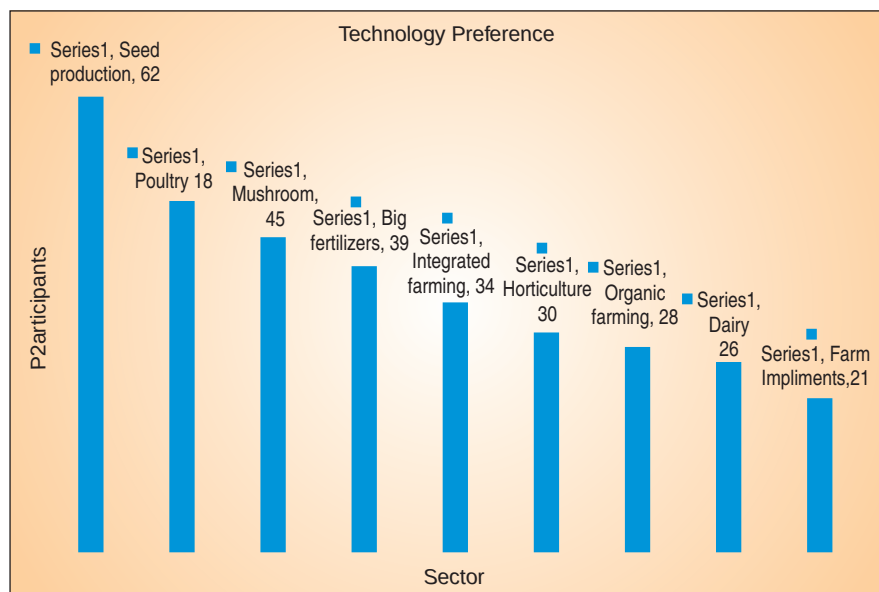
The SEDP is also a one-week programme oriented to provide hands on experience for manufacturing small agriculture farm implements.

#### Categories of Participants

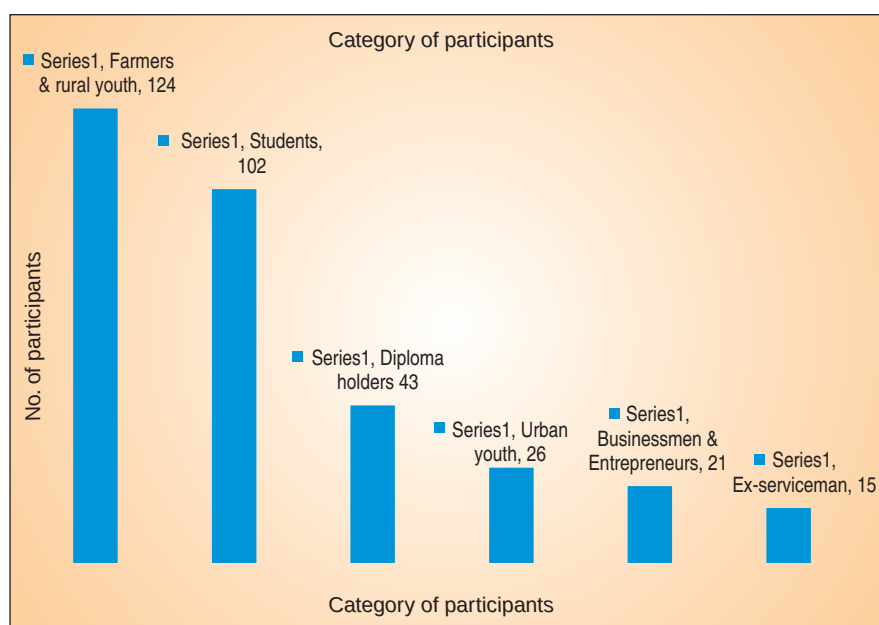
Di fferent types of participants have participated



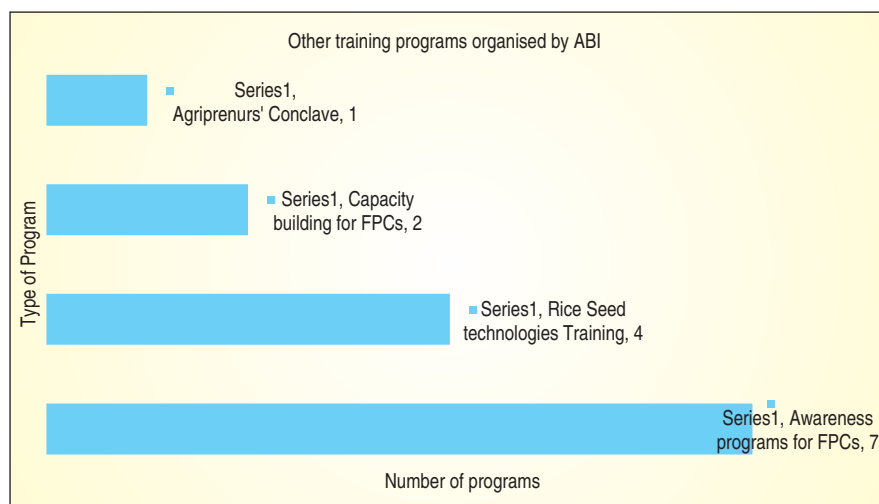
Sale realisation by FPCs and Break-Even Point (BEP).



Technology preference of the participants.



Different sectors of people participated in training programs.



Details of other programmes organised by ABI Centre.

and others.

The ABI Centre has also organised various awareness programmes and capacity building programmes for farmers on organisation and management of farmer producer companies. An agripreneur's conclave was organised to know the status of the progress of the budding agripreneurs graduated from ABI Centre. Nine incubatees are incubating in this Centre, out of which one has started an innovative process of utilizing rice husk for making incense sticks. Other off-campus incubatees have started their agribusiness in different sectors. At ABI Centre, 63 candidates have so far graduated through Comprehensive Agribusiness Incubation Program while 257 candidates graduated through Technology based Entrepreneurship Development Program and 11 candidates graduated through Skill based Entrepreneurship Development Program.

#### Future plans for NRRI-ABI

The NRRI-ABI is being upgraded from incubation centre to Start-up Park which would have modern workshop, production facility for microbial fertilizer, bio-agent production unit and quality lab besides incubation offices. The start-ups will be able to use these facilities on payment basis at nominal rate.

#### CONCLUSION

In situations where rice cultivation is less remunerative, it can be made profitable through innovative agribusiness approaches. The role of Agribusiness Incubation Centre at NRRI is to make available the scalable and commercial technologies in rice based ecosystem to the budding agripreneurs to make their farming remunerative. With the above mentioned technologies and also with the upcoming technologies, ABI Centre would reach more number of aspirants and train them to develop agribusiness ventures through incubation process.

in the Entrepreneurship farmers/farmwomen, students, Development Programs. It included entrepreneurs, ex-servicemen, youth

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