

Capitalizing opportunities of rice fallow area in Jharkhand for sustainable livelihood development

1. Back ground ;

The rice is the major crop of the Jharkhand state occupying more than 70 % area of the total cultivated land. The total cultivated area of the state is approximately 26 lakh ha, out of which rice (*Kharif*) alone is being cultivated in more than 18 lakh ha. This is due to the facts that rice is the only crop which is grown in all the agro-ecological condition (Rainfed upland, Rainfed medium land and Rainfed lowland). Although the productivity of land is very poor this ultimately affects the rice yield per unit area and per unit time in the state of Jharkhand. During rabi, only 3.40 lakh ha. of rainfed rice area is cultivated by rabi pulses (chickpea, fieldpea and lentil) and oilseeds (mustard and linseed). The remaining 14.60 lakh ha rice area of kharif remains fallow and no cultivation in this very large area is done. The average cropping intensity of the state is 113-115 % this is great loss to the farmers, State and Nation as such.

The project on **capitalizing opportunities of rice fallow area in Jharkhand for sustainable livelihood development** was implemented in 2010 for the period of four years in the state of Jharkhand. The total cost of the project was **Rs.659.68 lakhs**, which was funded by **National Rainfed Area Authority, Ministry of Agriculture & farmers welfare Govt. of India New Delhi.**

2. Goal and objectives

The overall goal of this project was to contribute to agricultural growth and increase farm productivity, income and employment in order to augment food security and reduce poverty as well as improving the natural resource conservation in the rice fallow areas.

The main objectives of the project are:

1. Evolve and pilot test for promotion of production/farming system focused at second crop/ alternate livelihood interventions in the rice fallows of eastern India.
2. Develop and demonstrate convergence to support the systems perspective and a workable institutional mechanism for holistic development of rice fallows.
3. Provide new in-sights for next generation comprehensive rainfed area development/watershed programmes and identify the enabling policy options for sustainable development of rice fallows.

4. Increase the capacity of the developmental agencies and partners through joint collaboration and experience sharing.

3. Implementation Methodology, methodology adopted for the project was:

- **Identification of problems and prospects**, under this geographical area under kharif, rabi and summer crops, reasons of rice fallow, varieties under use, irrigation status, and prospects of double cropping was collected and analyzed.
- **Awareness and skill development**, for this various meetings and training programmes has been organized.
- **Convergence**: various activities and seed distribution was done under conversion mechanism with liasoning with national Horticulture mission, MNREGA, WSHG, etc.
- **Input Supply**: seeds of high yielding and hybrid variety of rice and vegetables, fertilizer, herbicides, insecticides etc. were made available to the farmers in advance in project areas.
- **Mechanization**: cono weeder, drum seeder, power sprayers etc. distributed to the farmers.
- **Water resource development**: efficient irrigation system, renovation of government water tanks and new harvesting structures were constructed.
- **Livelihood activities**: vegetable cultivation, Goatry, Piggery, Poultry, organic farming, vermin composting etc. were adopted to increase income and employment.
- **Technology demonstration** : demonstration on crop production technology, method of sowing, and weed management were done to make farmers aware of the new technology.

4. Project Implementers and Partners:

State Govt. - Jharkhand, Ranchi.

Dept. of Agriculture and Sugarcane Development,

Animal Husbandry & co-operation, Jharkhand, Ranchi.

Directorate of Soil Conservation, Jharkhand, Ranchi.

Jharkhand Space Applications Center, Jharkhand, Ranchi.

SAU- Birsa Agricultural University, Ranchi

Leading NGO's-

Parivesh Society, Ranchi,

Samaj Kalyan, Palamu,

Sanskar, Dumka.

5. Terms of References :

- The pilot study conducted as per ToR within a period of four years from the date of agreement fixed between NRAA and respective implementing nodal agencies designated by state government.
- A detailed work plan was jointly developed by all consortia partners in a participatory mode, the state agriculture department was the nodal agency. They (state Agriculture Dept.) submitted the detailed proposal jointly prepared by state govt., SAU, and NGO for carrying out the study to NRAA.
- A total 2-3 clusters (rice fallow) having 1000-1500 ha. area was identified in Jharkhand representing different agro-ecological zones. Selected sites/clusters represented the typical rice fallow consisting of uplands, medium and lowland typology and had demonstrative value.
- A three tier monitoring mechanism was developed at state level under the agriculture production commissioner, comprising members from line departments and representatives of consortia partners, NREGA, RKVY and NHM.
- After completion of the project a comprised final report supplemented with tables photographs and maps (25 hard and 02 soft copies) was submitted to NRAA.
- The funds were disbursed directly to designated State government/state nodal agency. It was released in installments/phases. First 20% amount at time of approval of project, second installment of 30% in second year after submission of UC of first installment, third installment of 30% in the third year after receiving UC of second year, the balance amount of 20% of the study was released in fourth year in two installments of 10% each.
- The utilization certificate of full amount requires to be submitted within 3 months of the release of final installment.

6. OUTCOMES OF THE PROJECT:

After introduction of this project in three districts i.e Ranchi, Palamau and Dumka, the following outcomes/achievements have been reported:

➤ A . Agriculture & productivity

(1) Increase in cropping intensity:

(i) Initially the cropping intensity of domain villages of Ranchi was 110% which increased up to 162% .

(ii) In Dumka district it increased from 114% to 166% on completion of project.

(iii) Before 2010, cropping intensity was 108% in palamu which rose up to 157% on completion of this project.

(2) **Increase in fodder production:** initially the fodder production was 50q/ha. in the domain villages which increased up to 250q/ha..

(3) **Increase in area under Rabi crops:** farmers were not growing rabi crops after harvesting of rice in most of the fallow lands, but area under rabi crops increased to 482.137 ha. in three districts during the period 2010 to 2014-15.

(4) **Introduction of new varieties:** farmers were using poor or low quality of seeds due to which they were harvesting low yield. The BAU scientists provided the improved variety/hybrid of rice, along with hybrid and open pollinated varieties of summer vegetables. This technological backstopping brought significant increase in production.

Varieties/hybrid introduced were:

Crops	Varieties/hybrids
Rice	<i>Varieties:</i> IR 64, Sahabhagi, Naveen; <i>Hybrids:</i> PAC 801, 27P31, BS Tej
Chickpea	<i>Desi:</i> KPG 59, KWR 108, BG 372, BG 256; <i>Kabuli:</i> KAK 2, HK 94-134
Lentil	<i>Large seeded:</i> K75; <i>Medium:</i> DPL62; <i>Small seeded:</i> KLS218, PL639, PL406
Fieldpea	HUDP 15 (Malviya Matar 15), DDR 23
Mustard	Shivani, Pusa bold
Toria	PT 303
Linseed	T 397, Shekhar

B. Soil and moisture conservation

(1) **Ground water augmentation:** water level of wells had risen up to 2 meters. It was available throughout the year for irrigation.

(2) **Change in pumping hours:** 25% increase in pumping hours has been noticed in project area due to water conservation.

(3)**Irrigation intensity:** 65% increase in irrigation intensity has been observed in project areas.

(4)**Additional water storage capacity:** 100 cum additional water storage capacity had been created for irrigation purposes. About 430 numbers of water structures were constructed, and 660 government tanks were renovated during project period under state plan.

➤ **C.Livelihood interventions**

(1)**Income of farmers:** income of farmers has increased from Rs. 2000/- to Rs. 3500/- per month.

(2)**Addition in man days:** by construction of water conservation devices in each project area per day 50-60 additional man days were created during lean period of 5 to 6 months, in total 20000-22000 man days were generated in each district in four years.

(3)**Decline in migration:** additional employment to the farmers in the domain districts has helped stopping migration of the farmers. In an average migration of farmers which was **730** in number was reduced to just **139** persons.

D.Institutional arrangement

- (1)**Capacity building trainings:** a total 89 training programme were organized in three districts for goatry, piggery, poultry, organic farming, handmade articles and micro finances in which **2989** women and **1670** male were trained.
- Demonstrations on improved package and practices for using the recommended dose of NPK, and needed pesticide (fungicides and insecticide) also been done for the farmers.
- Total number of Self help groups (SHG) created in three districts was **229** which was just **25** before implementing this project.

ACHIEVEMENTS

Under this pilot study since inception about 6600 ha. land under pilot project and convergence had been developed with expenditure of **Rs507.847lakhs** from **NRAA**, further the target of project had successfully achieved and idea of changing mono-cropping in double cropping has become a reality in the domain districts of the targeted villages of project area.