

Farmer FIRST Programme (2019-20)

The Farmer FIRST Programme (FFP) is a prestigious programme of the Agricultural Extension Division under ICAR, New Delhi. After successful implementation of Phase-I (2016-18), the Council decided to extend this programme for next two years i.e. 2018-19 and 2019-20. Three ICAR Institutes and one State Agricultural University were selected and carried out the projects during the period under report. The details of the projects are given in the following table. During 2019-20, field visits were conducted and Review Meeting at OUAT, Bhubaneswar was also organized to monitor the progress of the projects and to finalize the Action Plans considering the target of Doubling Farmers' Income. During 2019-20, a total of 2013 farm families involving 5625 farmers got direct benefit from this project. Highlighting the significant achievements of FFP during last three years (2017-20), one document entitled '*Inspiring farmers through farmers FIRST*' was also prepared and published from ICAR-ATARI Kolkata.

Details of Farmer FIRST Programme under ICAR-ATARI Kolkata during the year 2019-20

Sl. No.	Name of the project (Institute/ University)	Name of the PI of the project	Fund allotted during 2019-20 (Rs. in lakh)	Fund utilized during 2019-20 (Rs. in lakh)
1.	Promoting improved agriculture & allied sector technologies in Khordha district (ICAR-Central Institute Freshwater Aquaculture, Bhubaneswar)	Dr. H. K. De Pr. Scientist	16.50	13.83
2.	Increasing productivity and sustainable the rice based production system through Farmer First approach (ICAR-National Rice Research Institute, Cuttack)	Dr. S. K. Mishra Pr. Scientist	17.75	16.39
3.	Enhancing water & livelihoods security (ICAR-Indian Institute of Water Management, Bhubaneswar)	Dr. P. Nanda Pr. Scientist	16.50	8.82
4.	Enhancing Farm Productivity & Profitability with 'Farmer-First' focus in Khordha district of Odisha (OUAT, Bhubaneswar)	Dr. R. K. Paikray Professor	14.65	9.46
5.	ICAR-Agricultural Technology Application Research Institute (ATARI) Kolkata	-	5.87	5.18
Total			71.27	53.68

Salient achievements of projects:

The salient achievements of the projects under different institutes have been given as under.

ICAR-CIFA, Bhubaneswar

Under Farmer FIRST project, a study was conducted to assess the impact of improved agricultural practices on the livelihood of adopted farmers. A structured interview schedule based on the DFID framework (1999) was developed and data were collected from 86 randomly selected beneficiaries by personal interview method. The same interview schedule was introduced before i.e. in 2016-17 and after the intervention i.e. in 2019-20. Farmer FIRST project covered four villages in Khordha district and involved more than 450 beneficiaries that included small, marginal, landless and women headed households. During the year 2019-20, improved technologies were demonstrated. Twenty-five field days and thirteen scientist-farmer interfaces were organized involving 472 farmers and 284 farmers, respectively. Improved technology practices were demonstrated in the adopted villages. The

IPM-02-03 cultivar of green gram in rice fallow was demonstrated which had 62.5% higher yield than the local check. Composite fish farming was practiced in 6 ponds with an average yield of 3.0 t/ha per year. Fish yield increased by 87% compared to the pre-adoption period. A brochure (Odia) on “*Farmer FIRST pariyojana madhyamare unnata krushi ebong anusangika krushi khetra proschahana*” was prepared and same was released by Director, ICAR-ATARI during the review meeting held at OUAT, Bhubaneswar on 9th January, 2020. The Bhargabi Fish Farmers Producers Company Limited, an FPO, was promoted by ICAR-CIFA. Darbar Sahitya Sansad (DSS), NGO, was formally launched on 20th November, 2019. The launching ceremony was attended by 150 farmers and representatives from NFDB, OUAT, bank and other stakeholders. The gain was found maximum in the financial assets (25%), followed by natural assets (21%), human assets (19%), physical assets (15%) and social assets (14%). The overall gain in livelihood was worked out to be 18%. By applying the paired t-test, it was found that the project had a positive and highly significant impact on the livelihood of the beneficiaries. Under ICAR-CIFA, a total of 396 farm families involving 581 farmers got direct benefit from this project.



ICAR-NRRI, Cuttack

The NRRI-Farmer FIRST Programme was implemented in a rice-based cluster comprising four villages viz. Biswanathpur, Satyabhamapur, Laxminarayanpur and Ganeswarpur of Salipur block in Cuttack district of Odisha. Out of total 1800 odd families in the cluster, over 800 farm families have been adopted for technological interventions and backstopping in four modules (Crop-based, Horticulture-based, Animal Science-based and Enterprise-based) for improving the cropping system and doubling farmers' income. During *Kharif* 2019-20, six most promising rice varieties i.e. *Pooja*, *CR Dhan 307 (Maudamani)*, *CR Dhan 409 (Pradhan dhan)*, two hybrids (*Rajalaxmi* and *CR Dhan 701*) and one BPH pest resistant variety (*Hasant*) were demonstrated involving 420 participating farmers covering over 100 ha land area. The crop cutting experiment results of these varieties showed that the grain yield was found to be highest in variety *CR Dhan 701* (hybrid) with a maximum of 7.92 t/ha and average of 6.92 t/ha as against *Swarna* local check (5.42 t/ha) with an average grain yield advantage of 27.68%, followed by *Rajlaxmi* (hybrid) with 23.99%, *Hasant* with 14.39%, and *CR Dhan 307 (Maudamani)* with 13.65% grain yield advantage respectively. A comparative analysis of average grain yield of rice during the pre-FFP (2016-17 at 3.80 t/ha) was made with post-FFP (2019-20 at 5.65 t/ha) indicating a quantum jump of average 48.68% in rice productivity in the cluster. In monetary terms, the net return has increased from Rs. 32230/- per hectare to Rs. 90045/- per hectare with an increase in income by over 179 percent from rice alone among the beneficiary rice growers. Similarly, under farm mechanization initiatives, out of over 20 types of farm implements introduced and demonstrated in the cluster, the power-operated paddy thresher-cum-winnowing machine had shown highest acceptability and adaptability among the rice growers.

The improved trellis system of growing 4-5 climber vegetable crops with locally available resources like bamboo twigs by about 50 vegetable growers in a relay sequence, e.g. bitter melon (Feb-May), cucumber (May-Aug), cow pea (Aug-Nov), and lab-lab bean/French bean (Nov-Feb) had multiplied farmers' income from a single piece of land in a year.

The B:C ratio of brinjal was found to be the highest with 4.87 closely followed by tomato (4.22) and pumpkin (3.36).

Under the animal science components, composite demonstrations on pond-based aquaculture in the fish ponds of 25 farmers by providing 55000 fingerlings of Indian Major Carps, on backyard and commercial poultry demonstrations by 60 farmers, farm women and rural youths by providing 1200 improved and immunized poultry chicks (*Vanaraja-500*, *Rhode Island Red-500*, *Kadaknath-200*) were conducted coupled with capacity building training programmes. From this project, 770 farm families with 2410 farmers were benefitted during the period.



ICAR-IIWM, Bhubaneswar

During the year 2019-20, interventions like sprinkler irrigation for water conservation was used in 20 hectares of land in three villages for vegetable cultivation ensuring water saving up-to 50% in comparison to flood irrigation. Line transplanting under SRI for increasing water use efficiency in transplanted rice and scientific fertilizer management in SRI paddy in 25 hectares of land ensured the increase in net paddy income by 20%. Polythene mulching in vegetable cultivation was adopted for conservation of moisture, prevention of weeds and better nutrient management. Three trainings each in three project villages on improving farm income, water use efficiency, integrated farming system, improved methods of paddy and vegetable cultivation, increasing cropping intensity through winter vegetables, improved livestock rearing trainings etc. were conducted for 370 farmers. Vegetable cultivation was promoted in three villages covering more than 300 farmers. Scientific pisciculture was taken up in 3 community ponds with help of three farmer groups consisting of 30 members. Fish fingerlings released during 2018-19 were harvested in 2019-20 with production of fish worth Rs. 497600/- rupees in three villages. The interventions under NRM, crop, horticulture and IFS ensured the increase farmers' net income up-to 175% in different cases in comparison to 2015-16 when the project was initiated. In some of the cases where mono crop rain fed paddy was practiced, adoption of improved vegetable cultivation increased net income by more than 200% in comparison to 2015-16. The project benefitted 357 farm families involving 484 farmers during the period.



Under crop based module, demonstrations were done for high yielding rice variety ‘*Mrinalini*’ (150 days) and ‘*Swarna Sub-1*’ (140 days) were grown in 16 and 8 ha, respectively involving 170 and 80 farmers during *Kharif* 2019. Green manuring with incorporation of *Sesbania* was undertaken in the demonstrated plots to improve soil fertility and land productivity. Farmers raising rice var. ‘*Mrinalini*’ got average grain yield of 4.68 t/ ha, gross return of Rs. 84240/-, net return of Rs. 31240/- and B:C ratio of 1.59 with an investment of Rs. 53000/-. Farmers raising rice var. ‘*Swarna Sub-1*’ got average grain yield of 4.25 t/ ha, gross return of Rs. 76500/-, net return of Rs. 25000/- and B:C ratio of 1.48 with an investment of Rs. 51500/-. Farmers were motivated to raise green gram var. *IPM 02-14* after harvesting of rice. They got average grain yield of 0.46 t/ ha, gross return of Rs.36800/-, net return of Rs.11800/- and B:C ratio of 1.47 with an investment of Rs. 25000/- . The Hybrid pumpkin (Tokita hybrid-*Vimal*) was grown in an area of 3.2 ha involving 16 households. The farmers realized an average fruit yield of 17.97 t/ ha and net return of Rs. 108438/- per ha with an expenditure of Rs. 107188/- per ha. The farmers faced some difficulties in marketing of fruits towards end of March, 2020 due to lockdown. Hybrid cucumber (Arnnapurna hybrid- *Rajmata*) was grown in an area of 2.36 ha involving 15 households. Farmers realized an average fruit yield of 21.83 t/ ha and net return of Rs. 268546/- per ha with an expenditure of Rs. 168121/- per ha. Four numbers of greenhouses (each size- 10m×5m, Shape- Arch) were constructed during 2018-19 which were utilized for raising healthy seedlings of cauliflower and cabbage towards the end of *Kharif* season to get early produce. The members of women SHG achieved recovery of 77-78 % from greengram and blackgram with pre-milling treatment with oil and water. A total of 490 farm families which involved 2150 farmers got direct benefit from this project.

