



Pioneer Farmers

Agri-sustainability through Farmer FIRST approach

Compiled and Edited by:

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Salt Lake, Kolkata, West Bengal





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ICAR-AGRICULTURAL TECHNOLOGY APPLICATION RESEARCH INSTITUTE KOLKATA

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Dr. U. S. Gautam
Deputy Director General
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Message

The '*Farmer FIRST Programme*' has the basic concept of putting farmer in centric role for research problem identification, prioritization, conducting experiments and its management in farmers' field conditions. It emphasizes resource management, climate resilient agriculture, production management including storage, marketing, supply chains, value chains, innovation systems, information systems etc. The problems of farmers, may be at individual level or mass level, are solved through conducting scientist-farmer interfaces through creating linkages between farmer-researcher and extensionists, to assess different solutions, technology assemblage, application and feedback management to achieve optimum production, developing close linkage with input and market support system through partnerships and promotion of community institutions. Based upon the available agro-ecosystem of the region, latest technologies were assembled and applied under Crop, Horticulture, NRM, Livestock, Enterprise and IFS-based modules at the farmers' fields. Finally, partnerships were built involving different stakeholders to sustain the agri-productions and the relevant contents were documented and mobilised for technology up scaling and out scaling.

I am happy to know that ICAR-Agricultural Technology Application Research Institute Kolkata (ICAR-ATARI Kolkata) is going to publish a document entitled '*Pioneer Farmers: Agri-sustainability through Farmer FIRST approach*' on success cases of 'Farmer FIRST Programme' being implemented by four institutions in Odisha. This document spells the income-enhancing stories of intrinsic modules of fruitful technology application i.e. farmer-scientist interface, technology assemblage, application and feedback, partnership and institutional building and content mobilization through e-enabled knowledge sharing.

This effort to come out with such a useful document is highly appreciable. I congratulate the Director, ICAR-ATARI Kolkata and the team of scientists involved in this publication.

(Udhamsingh Gautam)

Date: 23.02.2023



Preface



The 'Farmer FIRST Programme' was a unique initiative of Indian Council of Agricultural Research (ICAR) that focussed on farmers' Farm, Innovations, Resources, Science and Technology (FIRST) where farmers played centric role for research problem identification, prioritization and conduct of experiments and its management in field conditions. The major target groups were small and marginal farmers including women. The problems of farmers related to agricultural production were discussed in details in farmer-scientist interface and those problems were addressed with best suitable interventions covered under different modules. Organizing training programmes/exposure visits for farmers to enrich technical knowledge; supplying superior quality germplasm of various crops/livestock/poultry strains/fishes; using soil test-based fertilizers; managing nutrients through leaf colour chart; practising line transplanting in paddy; using mulching for soil moisture conservation; using poly house technology; adopting sprinkler/drip irrigation; using trellis system in horticultural crops production; managing crops, livestock, poultry and fishes scientifically; selecting appropriate enterprises, establishing marketing channels for agricultural produces were among the major interventions adopted under this programme. As a result, agricultural production was increased substantially under crop- and horticulture-based module (both varied from 20-200%), natural resource management module (ranged between 12 and 100%), livestock module (varied from 15-150%), enterprise-based module (ranged from 12-100%) and integrated farming system-based module (ranged between 14 and 200%) which fetched higher income to the farmers than before adopting interventions.

This is my proud privilege to share that out of total 52 projects in different agroclimatic situations in our country, four projects i.e. three for ICAR institutes and one for State Agricultural University were sanctioned by the Council under the jurisdiction of ICAR-ATARI Kolkata which are being implemented in the state of Odisha since 2017-18. I must appreciate the tireless efforts made by all the Principal Investigators (PIs) along with their team who worked day and night even under COVID pandemic situations to make the farmers sustainable in terms of income generation and in establishing a successful agri-business.

This document entitled '*Pioneer Farmers: Agri-sustainability through farmer FIRST approach*' reflects detail information about the successful farmers and their achievements resulting from adopting latest technologies provided by the scientists of the concerned institutes. As Director of this institute, I thankfully acknowledge the guidance received from Agricultural Extension Division, ICAR, New Delhi. Thanks and appreciations are also due to all PIs of the concerned institutes, scientists and staff of ICAR-ATARI Kolkata who worked hard for preparing such valuable document.

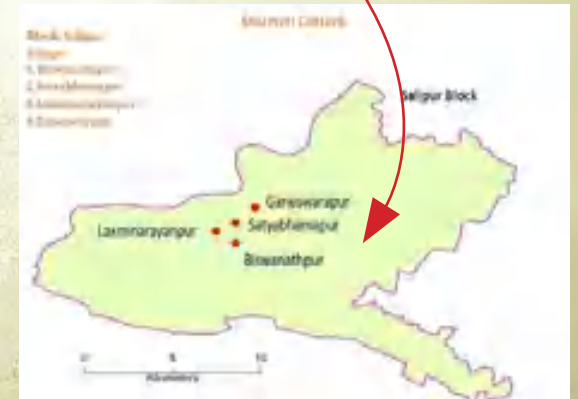
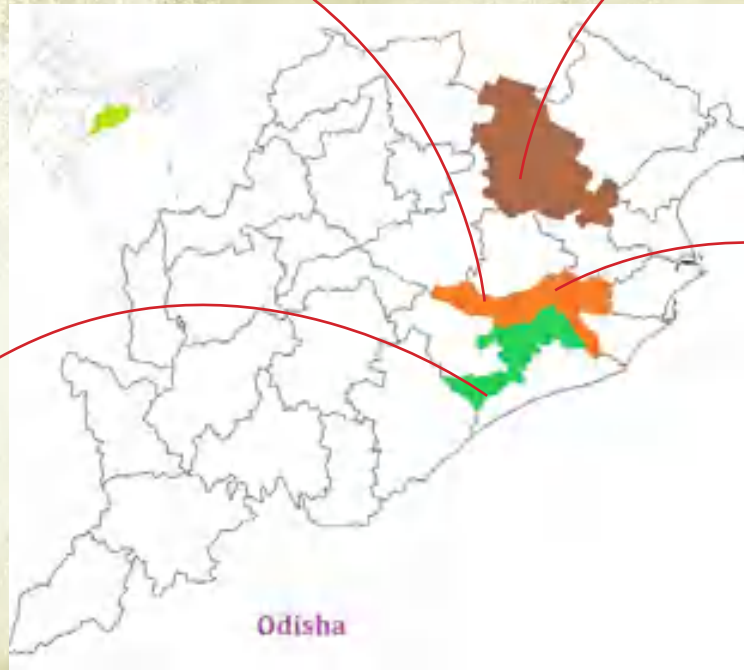
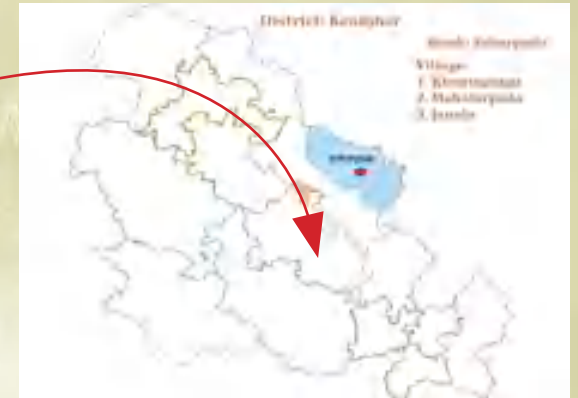
February, 2023



Director



Operational villages for Farmer FIRST Programme in Odisha



Contents

Sl. No.	Particulars	Page No.
1	Crop Based Modules	2
2	Horticulture Based Modules	11
3	Natural Resources Management Based Modules	24
4	Livestock Based Modules	35
5	Enterprise Based Modules	47
6	Integrated Farming System Based Modules	54



Crop Based Module

Crop based module consisted of the crop diversification, or the growing of various crops; and allowed agricultural households to distribute production and economic risk across a wider range of crops, hence lowering the chance of financial loss due to unfavourable weather conditions or market shocks. Crop diversification seeks to raise crop profits so that farmers are not reliant on one crop to bring in money. When farmers choose a single crop variety, they are more vulnerable to unpredictable climate events, the emergence of pests and the unexpected advent of frost or drought, which could have a significant negative impact on agricultural production. Crop based module was focussed on intensification and diversification of existing systems with introduction of new varieties and technologies to substantially enhance income. On site input management like seed production by farmers through training, timely supply of quality seeds and resource management were among the major activities. Under crop based module, different interventions are used for increasing the productivity like- i) Varietal replacement of paddy with *Pradhan dhan/CR Dhan 409* along with *Rajalaxmi* increased production to the tune of 40-56%, *Pradhan dhan/CR Dhan 409* along with *CR Dhan 701* by 120%, *Swarna Sub1* increased production by 60% and *Hasant* by 47% and green gram var. *IPM-02-03* by 25-69%; ii) Seed inoculation in green gram increased the production to the tune of 52%; iii) Green manuring with incorporation of *Sesbania*, application of Zn fertilizer during *kharif* season and use of customized leaf colour chart (CLCC) increased production up-to 20%; iv) Cultivation of SRI rice through water management improved production by 22-55%; vi) Hybrid rice with line sowing increased yield by 40-143%; vii) Use of better fertilization or integrated nutrient management (INM) practices enhanced production by 100-200%; viii) Use of quality seed or better variety of rice increased production by 23-67%; ix) High yielding variety of rice increased production by 50-152%; and x) Production of paddy through proper disease management practices with the help of application of bio-agent seed treatment *T. viridae* enhanced the production up-to 20%. In addition, using CLCC for proper application of nitrogenous fertilizer in paddy and adopting latest technologies in other production, farmers saved input cost. The predominant varieties of paddy were *CR Dhan 409*, *CR Dhan 701*, *Rajalaxmi* and *Hasant* which increased income to the tune of 153% whereas *IPM 02-03* was the only variety of pulse which gave 111% more income.





Sri Purna Chandra Samal

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

08093256096 (M)

Age: 60 years

Education : Illiterate

Size of land holding (in acre): 3.5

Institute involved:

ICAR-NRRI, Cuttack

Sri Samal used to get annual income of Rs. 61500/- from paddy, pulses, cowpea, okra etc. He faced problems like unstable production, poor quality seeds, abrupt climatic changes, disease attacks, lack of scientific knowledge etc. Through adopting scientific interventions with improved varieties of paddy, pulses and horticultural crops, practicing commercial vegetables production in trellis system along with its proper management practices, acquiring scientific knowledge through trainings, it was possible to increase net annual income of Rs.148850/- from the same land. In addition, there was saving of costs about Rs. 5200/- from vegetables production through trellis interventions.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Pooja, Sarala</i>)	3.00 ac	45.00 q	63000	27000
Pulse (Local)	3.00 ac	4.50 q	18900	9000
Cow pea (Local)	0.20 ac	4.50 q	9000	5000
Okra (Local)	0.16 ac	7.20 q	8640	4500
Cow (<i>Jersey</i>)	1 no.	2000.00 lt	50000	16000
			149540	61500

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan, Rajalaxmi</i>)	3.00 ac	63.00 q	113400	59400	40.00	120.00
Pulse (<i>IPM-02-03</i>)	3.00 ac	6.60 q	39600	24600	46.67	173.33
Cow pea (<i>Sangita B S</i>)	0.20 ac	7.50 q	18750	12250	66.67	145.00
Okra (<i>Radhika</i>)	0.16 ac	11.20 q	22400	13600	55.56	202.22
Cow (<i>Jersey</i>)	1 no.	2600.00 lt	78000	39000	30.00	143.75
			272150	148850		142.03



Crop cutting of variety *Rajalaxmi*



Cowpea production in Trellis system



Green gram cultivation



Sri Udhav Ch. Padhi

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

09090278269 (M)

Age: 47 years

Education : Class 12

Size of land holding (in
acre): 4.5

Institute involved:

ICAR-NRRI, Cuttack

Sri Padhi used to earn Rs. 67200/- annually from producing paddy, pulses, vegetables and rearing livestock with Locally available varieties/animals. Lack of water availability and irrigation facilities, frequent incidences of diseases and pest attacks in various field crops, unavailability of good crop germplasms, lack of scientific knowledge etc. were the various drawbacks for his low production. To solve those problems, interventions were made by the scientists of ICAR-NRRI, Cuttack through conducting trainings, farmer-scientist interactions and field visits. As a result, the net annual income of Sri U. C. Padhi from same area of land was increased to the level of Rs. 169700/- with the tune of 152% comparative to the base year 2016-17. In addition, there was cost saving of Rs. 6700/- towards the production of paddy through adopting line transplanting method and using hybrid vegetable seeds.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Sarala, Pooja</i>)	3.50 ac	56.00 q	70000	29750
Pulse (Local)	3.50 ac	7.00 q	26600	16100
Bitter gourd (<i>Nakhara</i>)	0.20 ac	10.00 q	15000	10000
Cauliflower (<i>Pusakatki</i>)	0.12 ac	1200 no.	9600	6000
Cow (<i>Desi</i>)	1no.	750.00 lt	18750	5350
			139950	67200

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, Rajalaxmi</i>)	87.50 q	87.50 q	157500	87500	56.25	194.12
Pulse (<i>IPM-02-03</i>)	8.75 q	8.75 q	52200	34700	25.00	115.53
Bitter gourd (<i>US 1315</i>)	17.50 q	17.50 q	35000	25000	75.00	150.00
Cauliflower (<i>Namdhari</i>)	1500 no.	1500 no.	15000	10500	25.00	75.00
Cow (<i>Desi</i>)	1000.00 lt	1000.00 lt	30000	12000	33.33	124.30
			289700	169700		152.53



Machine transplanting of paddy



Green gram cultivation



Operating finger weeder in paddy



**Sri Ramaballav
Baliar Singh**

Address

Village- Gobindpur,
Khordha, Odisha

Contact number:

07873509123 (M)

Age: 62 years

Education: M. Sc pass

**Size of land holding (in
acre):** 5.0

Institute involved:

OUAT, Bhubaneswar

Before FFP interventions, Sri R. Baliar Singh got annual profit of Rs. 61180/- from the sale of his agricultural produces in the year 2016-17. He expressed his concern over low yield, uncontrolled weed growth, excessive use of fertilizers, lack of knowledge, unavailability of seeds and so on. His problems were discussed with the concerned scientists under FFP and several remedial measures like using good quality seeds, practicing line transplanting, applying nutrient management based on soil test-based fertilizers recommendation, using leaf colour charts were undertaken. Besides, capacity building on scientific management of crops/ livestock, trainings, demonstrations, animal health camps and exposure visits were also considered. At the end of 2020-21, annual net income was Rs. 152500/-. Moreover, he saved Rs. 8000/- from his production cost using only good quality of seeds and attending health camps for animals.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Budhhaujoga, Ratnachudi</i>)	4.00 ac	52.00 q	50000	18400
Cow (<i>Red Sindhi</i>)	2 no.	2400.00 lt	96000	20000
Pumpkin (Local)	0.50 ac	40.00 q	25000	8000
Black gram (Local)	2.00 ac	1.20 q	50000	14780
			221000	61180

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Sarala, Swarna sub 1, Black rice var. Kalajeera</i>)	4.00 ac	72.00 q	100000	41000	38.46	122.83
Cow (<i>Red Sindhi</i>)	2 no.	3500.00 lt	140000	35000	9.37	75.00
Pumpkin (<i>Vimal, Tokita</i>)	0.50 ac	50.00 q	40000	15000	25.00	87.50
Green gram (<i>IPM-02-14</i>)	1.00 ac	00.75 q	37500	17500	25.00	18.40
			282500	152500		149.26



Paddy nursery raising



Line transplanting of paddy



Rearing of *Red Sindhi* dairy cows



Pumpkin cultivation



Sri Dipendra Biswal

Address

Village- Ganeswarpur,
Cuttack, Odisha

Contact number:

07788022625 (M)

Age: 31 years

Education: Metric

Size of land holding (in acre): 4.5

Institute involved:

ICAR-NRRI, Cuttack

During 2016-17, Sri D. Biswal produced paddy, pulses, vegetables with Locally available varieties and reared dairy cow. The annual income was noted to be Rs. 81500/-. He faced many problems viz. non-availability of inputs, pests/diseases attacks in crops, low milk production and many more. Those problems were discussed with the scientists of ICAR-NRRI Cuttack and interventions like using good varieties of seeds, producing vegetables commercially through horticulture-based module, rearing poultry with adopting scientific managements etc. were made which resulted an enhanced net annual income of Rs.197100/-. Not only that, production cost of Rs. 4800/- was also saved from line transplanting of paddy and using dhaincha as green manure in crop fields.

Economics of production during 2016-17 (Before intervention)

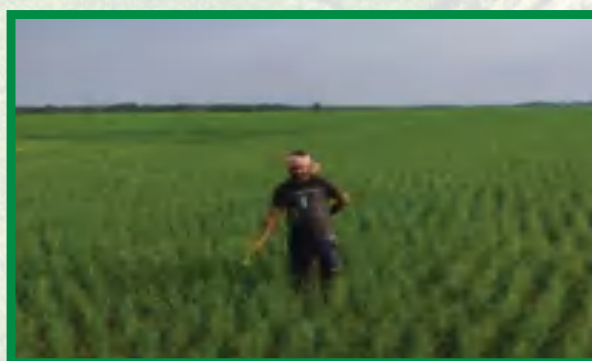
Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>1036, Pooja</i>)	4.00 ac	60.00 q	87000	39000
Pulse (Local)	4.00 ac	6.40 q	26880	14000
Tomato (Local)	0.32 ac	14.40 q	14400	9900
Brinjal (Local)	0.16 ac	10.00 q	15000	9000
Cow (<i>Jersey</i>)	1 no.	1200.00 lt	31200	9600
			174480	81500

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, Hasant</i>)	4.00 ac	88.00 q	158400	86400	46.67	121.54
Pulse (<i>IPM-02-03</i>)	4.00 ac	9.20 q	55200	35200	43.75	151.43
Tomato (<i>Rohit</i>)	0.32 ac	22.40 q	33600	22000	55.56	122.22
Brinjal (<i>JK 8031</i>)	0.16 ac	16.00 q	32000	24000	60.00	166.67
Cow (<i>Jersey</i>)	1 no.	1500.00 lt	45000	16200	25.00	89.58
Poultry (<i>Vanaraja</i>)	20 no.	Meat-0.50 q and Eggs -1800 no.	18300	11300	100.00	100.00
			342500	197100		141.84



Commercial tomato cultivation



Paddy cultivation through line transplanting



Poultry farming



**Mr. Rabindra
Pradhan**

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

07894995950 (M)

Age: 42 years

Education : Class V pass

**Size of land holding (in
acre):** 3.0

Institute involved:

ICAR-NRRI, Cuttack

The annual net income of Mr. R. Pradhan was Rs. 66500/- from the traditional production and sale of paddy, pulse, vegetables, milk and other related produces. His income was quite low due to lack of production knowledge and skills, water scarcity, poor quality seeds and so on. Several scientific interventions were implemented to mitigate those problems and a number of training programmes were also conducted for him to improve scientific knowledge which ultimately resulted higher yield in subsequent years. The net annual income reached up-to Rs.145000/- at the end of the year 2020-21. The production cost was also saved to the tune of Rs.5800/-which were added in his annual profit.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna, Pooja</i>)	3.00 ac	45.00 q	65250	29250
Pulse (Local)	3.00 ac	4.50 q	20250	11250
Okra (Local)	0.08 ac	3.50 q	3500	2000
Bitter gourd (<i>Nakhara</i>)	0.16 ac	8.00 q	12000	9000
Cow (<i>Jersey</i>)	2 no.	1100.00 lt	49400	15000
			150400	66500

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Rajalaxmi, Hasant</i>)	3.00 ac	66.00 q	97200	66200	46.67	126.32
Pulse (<i>IPM-02-03</i>)	3.00 ac	7.60 q	33000	20000	68.88	77.77
Okra (<i>Radhika</i>)	0.08 ac	5.00 q	6000	3000	42.86	50.00
Bitter gourd (<i>US 1315</i>)	0.16 ac	10.00 q	22000	17000	25.00	88.88
Cow (<i>Jersey</i>)	2.00 no.	3600.00 lt	43000	38800	227.27	158.66
			201200	145000		118.04



Paddy var. Hasant



Commercial okra production



Bitter gourd production in trellis system



Mr. Alekha Rout

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

08260347656 (M)

Age: 37 years

Education: Class VII
pass

**Size of land holding (in
acre):** 2.0

Institute involved:

ICAR-NRRI, Cuttack

Mr. Rout used to produce paddy and vegetables from his 2.0 ac land following traditional methods and also reared cows for milk without scientific management before implementing Farmer FIRST Programme. The income per annum was restricted to Rs. 61500/- from all his commodities. Lack of scientific knowledge for crop production/livestock rearing, heavy pest/disease incidences, unavailability of latest varieties of seeds etc. were the major problems behind low production. But, the problems were solved by the scientists through trainings including hands-on-trainings, field visits and interaction meets. Ultimately, at the end of 2020-21, the net annual income was increased to Rs. 142300/- which was 138% higher than the base year 2016-17. In addition, there was cost saving of Rs. 4500/- from the production of commercial hybrid vegetables only.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Sarala, Pooja</i>)	2.00 ac	30.00 q	36000	24000
Pulse (Local)	2.00 ac	3.00 q	13500	7500
Malabar Spinach (Local)	0.40 ac	6500 no.	19500	9000
Ridge gourd (Local)	0.24 ac	6.00 q	10800	8000
Cow (<i>Desi</i>)	1 no.	1200.00 lt	31200	13000
			111000	61500

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, CR Dhan 701</i>)	2.00 ac	66.00 q	118800	65800	120	174.16
Pulse (<i>IPM-02-03</i>)	2.00 ac	5.00 q	30000	20000	66.66	166.66
Malabar Spinach (Local)	0.40 ac	8000 no.	24000	17000	23.07	88.88
Ridge gourd (<i>Rama F1</i>)	0.24 ac	12.00 q	27000	15500	100	93.75
Cow (<i>Desi</i>)	1 no.	1500.00 lt	45000	24000	25	84.61
			244800	142300		131.38



Commercial Malabar spinach production



Commercial ridge gourd production



Line transplanting of paddy



Mr. Manoj Jena

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

09827148036 (M)

Age: 25 years

Education : Metric pass

**Size of land holding (in
acre):** 2.5

Institute involved:

ICAR-NRRI, Cuttack

During 2016-17, the annual agricultural income of Mr. Jena was recorded to be Rs. 43805/- from selling paddy, pulse and vegetables from his 2 ac land. He was facing problems like frequent weed infestations, lack of production skills and scientific knowledge, unavailability of improved variety seeds, selection of new enterprise and many more. Under Farmer FIRST Programme, through replacing old variety seeds with new varieties, improving scientific knowledge providing skill trainings and interaction meets, organizing exposure visits, establishing new enterprise (dairy farming) etc., the production from the same land was substantially increased. His net annual income was enhanced by 204% (Rs.133120/-) in addition to Rs.5600/- as saved cost of production.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna, Sarala</i>)	2.00 ac	32.50 q	40625	16225
Pulse (Local)	2.00 ac	3.60 q	16200	8700
Okra (Local)	0.16 ac	12.80 q	7680	4480
Pumpkin (<i>Baitarani</i>)	1.00 ac	35.00 q	32400	14400
			96905	43805

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Rajalaxmi, CR Dhan 409</i>)	2.00 ac	40.00 q	72000	42000	23.08	158.86
Pulse (<i>IPM-02-03</i>)	2.00 ac	5.20 q	31000	18200	44.44	109.20
Okra (<i>Radhika</i>)	0.16 ac	16.80 q	20160	14160	31.25	216.07
Pumpkin (<i>VNR14</i>)	1.00 ac	50.00 q	50000	35000	42.86	143.05
Cow (<i>Jersey</i>)	2 no.	1920.00 lt	53760	23760	100.00	100.00
			226920	133120		203.89



Commercial pumpkin production



Commercial okra production



Power operated transplanter in paddy field



Mr. Pramod Biswal

Address

Village- Ganeswarpur,
Cuttack, Odisha

Contact number:

09776690084 (M)

Age: 42 years

Education: Class VI pass

**Size of land holding (in
acre):** 2.0

Institute involved:

ICAR-NRRI, Cuttack

The annual profit of Mr. P. Biswal from the sale of his agricultural produces (i.e., paddy, pulse and vegetables) was Rs. 58000/- during 2016-17. His income was not satisfactory due to improper crop management practices, lack of technical knowhows, poor quality seed availability, frequent disease incidences, improper marketing and so on. After that, when he came in contact with the scientists of ICAR-NRRI, Cuttack under FFP, he was provided with skill trainings for scientific crops/horticultural/ poultry production, good quality hybrid seeds, linked with marketing channels, soil test-based crops and horticultural production technologies. Those interventions helped him to increase his annual profit to Rs. 125400/- from the same piece of land during the year 2020-21. Moreover, there was saving of Rs. 5300/- from input cost towards commercial hybrid vegetables and poultry production.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna, Sarla</i>)	2.00 ac	30.00 q	43500	19500
Pulse (Local)	2.00 ac	3.00 q	13500	7500
Bitter gourd (<i>Nakhara</i>)	0.16 ac	8.00 q	12000	9000
Brinjal (Local)	0.28 ac	22.00 q	26400	22000
			95400	58000

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 701, CR Dhan 409</i>)	2.00 ac	44.00 q	79200	54200	46.66	177.94
Pulse (<i>IPM-02-03</i>)	2.00 ac	4.40 q	26400	16400	46.66	118.66
Bitter gourd (<i>US 1315</i>)	0.16 ac	10.00 q	20000	16000	25.00	77.77
Brinjal (<i>JK 8031</i>)	0.28 ac	28.00 q	42000	24500	27.27	11.36
Poultry (<i>Vanaraja</i>)	20 no.	Meat- 0.50 q; Eggs-1800 no.	20300	14300	100.00	100.00
			187900	125400		116.21



Backyard poultry farming



Commercial vegetables production



Community nursery of paddy

Horticulture Based Module

This module involved cultivation of various horticultural crops with the study of mainly vegetables crops from a scientific perspective. The fundamental ideas in the production of vegetables are covered in this module. For the family, it serves as an additional source of income. It is a good source of the nutritional elements that the body need. Kitchen garden was practiced by using seeds of okra, radish and amaranthus etc. Horticulture based module was focussed on seed production and nursery management, vegetable, fruit production, floriculture, post-harvest management, poly house technology and adoption of new technologies. In horticulture-based module, commercial cultivation of hybrid vegetables and fruits was done through trellis system in relay sequence with proper application of fertilizer with the help of customized leaf colour chart (LCC). Other interventions included integrated nutrient and pest management and improved farm practices like introduction of thermo-insensitive cauliflower *var. Fujiyama* during off-season which increased the production by 100% over the base year and *var. Namdhari* by 25%, pointed gourd *var. Swarna alaukik* increased production by 20%, bitter gourd *var. US 1315* by 56-66%, cowpea *var. Sangita B S* by 100%, flat beans *var. Arka vista* by 39%, pumpkin *var. VNR 14* by 43%, brinjal *var. JK 8031* by 33% and *var. JK 8039* by 67%, okra *var. Samrat* by 100% and *Radhika* by 35%, tomato *var. Noble cane* by 50-100% and *Rohit* by 36%, *Samrudhi F1* by 90% and papaya *var. Red lady* by 200%. Other vegetables and fruit crops like cucumber (*Rain special*), pumpkin (*Barshati*), ridge gourd (*Rama F1*), ivy gourd (*AN kunkhi*), watermelon (*Dolly*), mango grafted (*Dasher*) and tissue culture banana cv. *Bantala* also had very good production. Under horticulture-based module, sprinkler/drip irrigation was used to supply water in vegetable crops and pheromone/sticky traps were used to control insect attacks. Among different vegetables, off-season cauliflower fetched a better market price for farmers. The yield advantages of okra, brinjal, tomato, ridge gourd and pumpkin were recorded to be 24.26, 187.84, 204.16, 120.40, 44.33 and 178.76%, respectively compared to the Local checks as well as base year. In addition, farmers save production cost of vegetables through trellis system. The highest increase of income was recorded from cultivating beans (206%) followed by bitter gourd, cauliflower (138%), ridge gourd (115%), and tomato, cucumber and cowpea (100% each).





Mr. Rajib Kumar Samal

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

09439604895 (M)

Age: 34 years

Education: Metric pass

**Size of land holding (in
acre):** 5

Institute involved:

ICAR-NRRI, Cuttack

During 2016-17, Mr. Samal earned Rs. 93100/- annually from cultivating traditional varieties of paddy, pulses, tomato, beans etc. without any scientific interventions. Low crop yield, water unavailability, poor quality seeds, lack of scientific knowledge of cultivation and rearing of animals were the main causes of his lower agricultural income. After adopting new varietal interventions in horticulture and crop-based modules, using soil test-based fertilizers and practising scientific management in rearing livestock, his net annual income was increased to Rs. 208700/-. Not only that, by using finger weeder in paddy production and by following proper nutritional management in dairy cow, he also saved Rs. 5500/- from cost of production.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Pooja</i> , CR Dhan 1018)	4.00 ac	64.00 q	89600	41600
Pulse (Local)	4.00 ac	6.00 q	27600	13500
Tomato (Local)	0.28 ac	22.00 q	20000	15000
Beans (Local)	0.48 ac	21.60 q	16200	15000
Cow (<i>Desi</i>)	1 no.	750.00 lt	21500	8000
			174900	93100

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Rajalaxmi</i> , CR Dhan 409)	4.00 ac	85.00 q	153000	77000	32.81	85.09
Pulse (<i>IPM-02-03</i>)	4.00 ac	8.00 q	52000	32200	33.33	138.51
Tomato (<i>Rohit</i>)	0.28 ac	30.00 q	45000	30000	36.36	100
Beans (<i>Arka vista</i>)	0.48 ac	30.00 q	60000	50000	38.89	233.33
Cow (<i>Desi</i>)	1 no.	1500.00 lt	45000	19400	100.00	142.50
			355000	208700		124.16



Rajalaxmi variety paddy cultivation



Commercial bean production



Introduction of bush type French bean



Sri Bharat Khatua

Address

Village-Jagannathpur,
Khordha, Odisha

Contact number:

09040252912 (M)

Age: 51 years

Education : Metric pass

**Size of land holding (in
acre):** 3.0

Institute involved:

ICAR-CIFA, Bhubaneswar

Mr. Khatua used to get annual income of Rs.79500/- with net income of Rs. 28600/- from his agricultural produces, i.e., paddy and green gram. With the interventions like green manuring, use of Leaf Colour Chart (LCC) for efficient nitrogen management in paddy, seed inoculation in green gram with Rhizobium, Phosphobactor and Trichoderma, seed dressing with Gaucho, introduction of improved cultivar *TARM 1* and introduction of thermo-insensitive variety of cauliflower var. *Fujiyama*, his net annual income from the same 3 ac land was substantially increased to Rs. 158055/- during 2020-21 which was 453% higher than the net income of base year 2016-17.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy	3 ac	40 q	62000	21370
Green gram	3 ac	5 q	17500	7230
			79500	28600

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Swarna</i>)	3	43.00 q	79550	32200	7.50	28.30
Green gram (<i>TARM 1</i>)	1	2.50 q	13750	5600	51.80	129.18
Cauliflower (<i>Fujiyama</i>)	2	145.00 q	246500	120255	100.00	100.00
			339800	158055		452.64



Paddy cultivation



Cauliflower var. *Fujiyama* cultivation



Green gram var. *TARM 1* cultivation



Sri Harihar Pradhan

Address

Village- Gopalpur,
Khordha, Odisha

Contact number:

08249662568 (M)

Age: 57 years

Education: Class VIII
pass

**Size of land holding (in
acre):** 5.0

Institute involved:
OUAT, Bhubaneswar

Before intervention of the Farmer FIRST Programme, Sri H. Pradhan was getting an annual profit of Rs. 61000/- from the sale of his produces. He expressed his concern regarding the low yield of crops. His problems were discussed with the concerned scientists of OUAT, Bhubaneswar under FFP and several remedial measures like using good quality seeds (HYVs/Hybrids), practicing line transplanting and applying fertilizers based on soil test and leaf colour charts. Besides capacity building on scientific management of crops, demonstrations/exposure visits were also undertaken. At the end of 2020-21, annual net income touched to Rs. 184000/-. Moreover, he could save Rs. 5000/- from his production cost using only hybrid variety vegetables seeds and off-season vegetable cultivation.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Masoori, Ratnachudi</i>)	2.00 ac	26.00 q	26000	16000
Green gram (<i>CO2</i>)	1.00 ac	1.00 q	4000	2000
Brinjal (Local)	0.25 ac	15.00 q	15000	7000
Tomato (Local)	0.25 ac	20.00 q	20000	10000
Okra (Local)	0.10 ac	03.00 q	3000	2000
Bitter gourd (<i>VNR Katahi</i>)	0.25 ac	25.00 q	30000	10000
Pumpkin (<i>VNR 11</i>)	0.50 ac	40.00 q	25000	14000
			123000	61000

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Sarala, Kalachampa, Swarna sub1</i>)	2.00 ac	36.00 q	43000	23000	38.46	43.75
Cucumber (<i>Annapurna, Rajmata</i>)	0.50 ac	50.00 q	75000	45000	100.00	100.00
Brinjal (<i>VNR hybrid B-5</i>)	0.10 ac	10.00 q	20000	10000	66.67	42.0
Tomato (<i>VNR hybrid 3348</i>)	0.25 ac	25.00 q	50000	30000	25.00	200
Okra (<i>Kalasa</i>)	0.10 ac	04.00 q	6000	4000	33.33	100
Bitter gourd (<i>Nabadhana</i>)	0.25 ac	30.00 q	60000	30000	20	200
Pumpkin (<i>Vimal, Tokita</i>)	1.00 ac	90.00 q	72000	42000	12.5	50
			326000	184000		201.63



Commercial pumpkin production



Commercial cucumber production



Commercial okra cultivation



Sri Ganesh Bhoi

Address

Village- Dorbanga,
Khordha, Odisha

Contact number:

07205627276 (M)

Age: 45 years

Education : Matric pass

Size of land holding (in acre): 1.5

Institute involved:

ICAR-CIFA, Bhubaneswar

During the year 2016-17, Sri Ganesh Bhoi, a small agricultural farmer, used to earn Rs. 44000/- with net annual income of Rs. 14700/- through using his existing technical knowledge. His problem was discussed with the scientists of ICAR-CIFA, Bhubaneswar and he was provided with a series of training programmes. After adopting advanced scientific cultivation practices and using thermo-insensitive variety of cauliflower *var. Fujiyama* in 1 acre of his existing land during off-season, Sri Bhoi fetched gross annual income of Rs. 179850/- with net income of Rs. 93460/-. The current income was quite higher (>500%) than his income before adopting scientific management in agricultural production.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy	1.5 ac	25.00 q	38750	12365
Green gram	1.5 ac	2.00 q	5250	2335
			44000	14700

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy	1.5 ac	29.00 q	53650	26900	16.00	38.45
Green gram	0.5 ac	1.00 q	5500	3500	50.00	4.70
Cauliflower (<i>Fujiyama</i>)	1.0 ac	71.00 q	120700	63060	100.00	100.00
			179850	93460		535.78



Paddy cultivation



Commercial cauliflower production



Green gram production





Sri Bikash Samal

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

08457898435 (M)

Age: 23 years

Education: Higher
Secondary Pass

**Size of land holding (in
acre):** 6.0

Institute involved:
ICAR-NRRI, Cuttack

Mr. B. Samal used to cultivate paddy, pulse, cauliflower and bitter gourd in his 6 ac land with his traditional agricultural knowledge and his net annual income was noted to be Rs.120100/-. He had many problems viz. lack of knowledge in improved crop management, availability of good quality seeds, frequent disease incidences and so on. Under Farmer FIRST Programme, the problems were discussed with the scientists of ICAR-NRRI Cuttack and accordingly, interventions were made and the same were followed in the subsequent years. He also introduced new enterprise like scientific dairy farming. As a result, at the end of the year 2020-21, the annual net income was increased up-to the level of 162% (Rs.315150/-). Further, there was cost saving of Rs. 6000/- from the production of commercial cultivation of hybrid vegetables.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna, Pooja</i>)	3.00 ac	45.00 q	65250	29250
Pulse (Local)	3.00 ac	4.50 q	20250	11250
Cauliflower (<i>Pusakatika</i>)	2.00 ac	24000 no.	44000	72000
Bitter gourd (<i>Nakhara</i>)	0.12 ac	4.50 q	6750	4000
Cow (<i>Desi</i>)	1 no.	600 lt	15600	3600
			251850	120100

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Rajalaxmi, Hasant</i>)	3.00 ac	66.00 q	97200	46200	46.67	111.28
Pulse (<i>IPM-02-03</i>)	3.00 ac	6.60 q	33000	18000	46.67	118.67
Cauliflower (<i>Namdhari</i>)	2.00 ac	30000 no.	300000	135000	25.00	177.78
Bitter gourd (<i>US 1315</i>)	0.12 ac	7.50 q	12000	7000	66.67	162.55
Cowpea (<i>Sangita BS</i>)	0.20 ac	6.50 q	17750	12850	100.00	100.00
Cow (<i>Desi</i>)	1 no.	720.00 lt	21600	5400	20.00	50.00
			574250	315150		162.41



Commercially cultivated cowpea in Trellis system



Cauliflower nursery



Commercial bitter gourd production



Sri Sushant Kumar Sahoo

Address

Village- B. Pattna,
Khordha, Odisha

Contact number:

09178902244 (M)

Age: 42 years

Education : Metric pass

Size of land holding (in acre): 3.0

Institute involved:

OUAT, Bhubaneswar

Before FFP interventions, Sri S. K. Sahoo got annual profit of Rs. 50800/- from the sale of his produces. He expressed his concern over low yield, weed infestation and disease infestation (brinjal pod borer, wilting in tomato). His problems were discussed with the concerned scientists under FFP and several interventions like use of good quality seeds, practice of line transplanting, soil test-based fertilizer application, use of leaf colour charts for nutrient management were undertaken. Besides, capacity building training/demonstrations on scientific management of crops and exposure visits were organized for him. At the end of 2020-21, annual net income reached to Rs. 151000/-. Moreover, he could save Rs. 5000/- from his production cost using only hybrid variety of vegetable seeds grown under polyhouse conditions which resulted into germination of healthy seedlings and technologies adopted for off-season vegetable cultivation.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Nalidhusura, Nandi</i>)	1.00 ac	13.00 q	13000	7000
Green gram (Local)	1.00 ac	0.60 q	2800	1800
Brinjal (Local)	0.10 ac	10.00 q	18000	9000
Tomato (Local)	0.15 ac	20.00 q	20000	10000
Okra (Local)	0.10 ac	05.00 q	7500	3000
Bitter gourd (<i>VNR Katahi</i>)	0.25 ac	15.00 q	15000	8000
Pumpkin (<i>VNR 11</i>)	0.50 ac	35.00 q	21000	12000
			97300	50800

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Sarala, Kalachampa, Swarna sub1</i>)	2.00 ac	36.00 q	54000	24000	38.46	71.42
Cucumber (<i>Arnapurna, Rajmata</i>)	0.50 ac	50.00 q	75000	45000	New intervention	
Brinjal (<i>VNR hybrid B-5</i>)	0.10 ac	12.00 q	20000	10000	20	11
Tomato (<i>VNR hybrid 3348</i>)	0.25 ac	25.00 q	30000	20000	25	100
Okra (<i>Kalasa</i>)	0.10 ac	06.00 q	12000	7000	20	133.33
Bitter gourd (<i>Nabadhana</i>)	0.25 ac	20.00 q	40000	25000	33.33	212.5
Pumpkin (<i>Vimal, Tokita</i>)	0.50 ac	50.00 q	40000	20000	42.85	66.66
			271000	151000		197.24



Bitter gourd production



Commercial pumpkin production



Commercial okra production



**Sri Braja Kishore
Jena**

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

08260355862 (M)

Age: 50 years

Education: Graduate

**Size of land holding (in
acre):** 2.5

Institute involved:

ICAR-NRRI, Cuttack

Sri Jena practiced conventional agricultural production and used to get average net annual income of Rs.65500/- from the sale of paddy, pulse, vegetables and milk. Indiscriminate use of fertilizers, lack of scientific management practices, disease and pest incidences, unavailability of improved variety seeds were the major problems. Accordingly, interventions were made by the scientists after a number of interactive meets to mitigate those problems. With the passing of years, the production was substantially increased for all the enterprises. The net annual income was enhanced to the tune of Rs. 167100/- (155% more than net income of base year). Moreover, there was cost saving of Rs. 6600/- towards the production of vegetables through trellis system and proper application of fertilizers with the help of customized leaf colour chart (CLCC).

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Pooja, Sarala</i>)	2.00 ac	30.00 q	42000	18000
Pulse (Local)	2.00 ac	3.00 q	12600	6600
Flat Beans (Local)	0.48 ac	21.60 q	16200	25000
Pumpkin (<i>Baitarani</i>)	1.00 ac	35.00 q	32400	14400
Bitter gourd (Local)	0.12 ac	5.00 q	7500	4500
Cow (<i>Desi</i>)	1 no.	900.00 lt	21000	5400
			132420	65500

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 307, CR Dhan 701</i>)	2.00 ac	49.00 q	79200	43200	46.67	140.00
Pulse (<i>IPM-02-03</i>)	2.00 ac	4.40 q	26400	18400	46.67	178.79
Flat beans (<i>Arka vista</i>)	0.48 ac	30.00 q	60000	50000	38.89	177.78
Pumpkin (<i>VNR14</i>)	1.00 ac	50.00 q	40000	30000	42.86	94.44
Bitter gourd (<i>US 1315</i>)	0.12 ac	7.80 q	19500	13500	56.00	200.00
Cow (<i>Desi</i>)	1 no.	1100.00 lt	35200	12000	22.22	122.22
			260300	167100		155.11



Broad bean production in trellis system



Production of bitter gourd in trellis system



Harvested pumpkins for sale



Mr. Hemant Kumar Samal

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

08270248776 (M)

Age: 33 years

Education : Metric pass

Size of land holding (in acre): 4.0

Institute involved:

ICAR-NRRI, Cuttack

Mr. Samal received net annual income of Rs.106400/- from the sale of his produces like paddy, pulses, okra and pointed gourd during the year 2016-17. He used to face problems on insect and disease attacks, scientific knowledge, irrigation facilities, proper enterprise selection, availability of hybrid seeds and many more for agricultural production. The problems were solved through different interventions resulting into increased annual net annual income of Rs. 282300/- at the end of 2020-21. A new crop (mushroom) production was also started by him by that time. New interventions saved Rs. 5800/- as input cost from commercial hybrid vegetables and mushroom production.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>CR Dhan 1018, Sarala, Swarna</i>)	4.50 ac	67.50 q	94500	40500
Pulse (Local)	4.50 ac	7.50 q	33750	18000
Okra (Local)	0.28 ac	11.00 q	13200	7200
Pointed gourd (Local)	0.48 ac	40.00 q	60000	40800
			201450	106400

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Rajalaxmi, CR Dhan 409</i>)	4.50 ac	95.00 q	162000	72000	40.74	77.78
Pulse (<i>IPM-02-03</i>)	4.50 ac	10.00 q	60000	32500	33.33	80.56
Okra (<i>Radhika</i>)	0.28 ac	16.00 q	25600	12800	45.45	77.78
Pointed gourd (<i>Swarna alaukik</i>)	0.48 ac	48.00 q	12000	80000	20.00	96.08
Mushroom (Paddy straw)	1000 no.	10.00 q	15000	85000	100.00	100.00
			517600	282300		165.31



Commercial papaya production



Spraying of water with the help of a Rose cane



Pointed gourd cultivation



**Sri Nilakantha
Sundaray**

Address

Village- Gopalpur,
Khordha, Odisha

Contact number:

08144934945 (M)

Age: 57 years

Education: Class VII pass

**Size of land holding (in
acre):** 2.0

Institute involved:

OUAT, Bhubaneswar

Sri N. Sundaray earned annual profit of Rs. 48500/- from the sale of paddy and vegetables. Low yield, weed infestations, disease incidences (brinjal pod borer and wilting in tomato) were the major huddles of production. The concerned scientists under FFP took appropriate remedial measures like using good quality seeds, practicing line transplanting, fertilizer application through soil test, using leaf colour charts for nutrient management and so on. Capacity building trainings on scientific management of crops, demonstrations and exposure visits were also arranged for him. As a result, annual net income increased to Rs. 122000/- during the year 2020-21. Moreover, he could save Rs. 5000/- from his production cost through adopting new technologies.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Nalidhusura</i>)	1.00 ac	14.00 q	14000	6000
Green gram (<i>CO2</i>)	0.50 ac	0.25 q	1000	500
Ridge gourd (Local)	0.20 ac	10.00 q	10000	3000
Tomato (Local)	0.25 ac	18.00 q	20000	9000
Okra (Local)	0.10 ac	5.00 q	8500	4000
Bitter gourd (<i>VNR Katahi</i>)	0.25 ac	15.00 q	30000	12000
Pumpkin (<i>VNR 11</i>)	0.50 ac	40.00 q	30000	14000
			113500	48500

Economics of production during 2020-21 (After intervention)

Components	Area/ No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Sarala, Kalachampa, Swarna sub1</i>)	1.00 ac	18.00 q	27000	18000	28.57	125
Cucumber (<i>Arnapurna, Rajmata</i>)	0.50 ac	50.00 q	40000	22000	100.00	100.00
Ridge gourd (<i>VNR hybrid Sourabh</i>)	0.20 ac	15.00 q	20000	10000	100.00	100.00
Tomato (<i>VNR hybrid 3348</i>)	0.25 ac	20.00 q	30000	20000	11.11	53.84
Okra (<i>Kalasa</i>)	0.10 ac	6.00 q	12000	7000	20.00	75.00
Bitter gourd (<i>Nabadhana</i>)	0.25 ac	20.00 q	42000	25000	33.33	56.25
Pumpkin (<i>Vimal, Tokita</i>)	0.50 ac	50.00 q	40000	20000	25.00	11.11
			211000	122000		151.55



Commercial cucumber cultivation



Commercial pumpkin cultivation



Commercial tomato cultivation



Mr. Gagan Bihari Sahoo

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

08658346928 (M)

Age: 58 years

Education : Class VI pass

Size of land holding (in acre): 2.5

Institute involved:

ICAR-NRRI, Cuttack

Mr. Sahoo used to get annual income of Rs.58750/- from his agri-produces. But, due to lack of technical knowledge, unavailability of quality seeds, unscientific dairy cow management, frequent incidences of diseases etc., the production was not good. Those problems were solved after necessary interventions by the scientists under Farmer FIRST Programme which resulted higher annual income of Rs. 134350/- from the same 2.5 ac land. Further, the production cost of Rs. 4800/- was saved from only using hybrid variety seeds.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Pooja</i> , 1036)	1.50 ac	22.50 q	31500	13500
Pulse (Local)	1.00 ac	1.50 q	6750	3750
Cauliflower (<i>Pusakatki</i>)	0.12 ac	1200 no.	9600	6000
Bitter gourd (<i>Nakhara</i> special)	0.40 ac	14.00 q	25200	17500
Cow (<i>Desi</i>)	1 no.	1500.00 lt	52000	18000
			125050	58750

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409</i> , <i>Swarna Sub 1</i>)	1.50 ac	33.00 q	61050	32550	46.67	141.11
Pulse (<i>IPM-02-03</i>)	1.00 ac	2.20 q	13200	8200	46.67	118.67
Cauliflower (<i>Namdhari</i>)	0.12 ac	1500 no.	22500	16500	25.00	175.00
Bitter gourd (<i>US 1315</i>)	0.40 ac	28.00 q	70000	45200	100.00	158.29
Cow (<i>Desi</i>)	1 no.	2160.00 lt	69120	31900	44.00	77.22
			235870	134350		128.68



Paddy var. *CR Dhan 409* (*Pradhan Dhan*)



Commercial cauliflower cultivation



Mr. Hemanta Padhi

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

0969279619 (M)

Age: 32 years

Education : Class V pass

**Size of land holding (in
acre):** 5.0

Institute involved:

ICAR-NRRI, Cuttack

From the sale of paddy, pulse, vegetables and milk, Mr. Padhi earned Rs. 85800/- annually. Due to lack of technical knowledge and guidance, improper crop and dairy animal management practices, excess fertilizer use, frequent disease occurrences, poor seed quality etc., his income was comparatively lower than the potential. After intervening by the scientists in his production system through adopting new technologies, providing trainings, supplying quality inputs and many more, his annual income during 2020-21 was increased substantially to the tune of Rs.197400/- than the income from base year. Not only that, he saved Rs.5800/-from using hybrid vegetable seeds and proper application of nitrogen fertilizers.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna, Sarala</i>)	4.00 ac	67.00 q	94000	40000
Pulse (Local)	4.00ac	7.00 q	33500	17500
Brinjal (Local)	0.40 ac	30.00 q	30000	16000
Ridge gourd (Local)	0.40 ac	12.00 q	10800	8000
Cow (<i>Jersey</i>)	1 no.	750.00 lt	19500	4300
			187800	85800

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Rajalaxmi, CR Dhan 409</i>)	4.00 ac	91.00q	160000	90000	35.82	75.00
Pulse (<i>IPM-02-03</i>)	4.00 ac	10.00 q	60000	32500	42.85	85.71
Brinjal (<i>JK 8031</i>)	0.40 ac	50.00 q	75000	45000	66.66	181.25
Ridge gourd (<i>Rama F1</i>)	0.40 ac	20.00 q	35000	21500	60.00	130.00
Cow (<i>Jersey</i>)	1 no.	1000.00 lt	27000	8400	33.33	95.35
			357000	197400		130.06



Commercial ridge gourd production



Commercial brinjal production



**Sri Siba Prasad
Muduli**

Address

Village- Gopalpur,
Khordha, Odisha

Contact number:

09178063881 (M)

Age: 47 years

Education : Metric pass

**Size of land holding (in
acre):** 3.0

Institute involved:

OUAT, Bhubaneswar

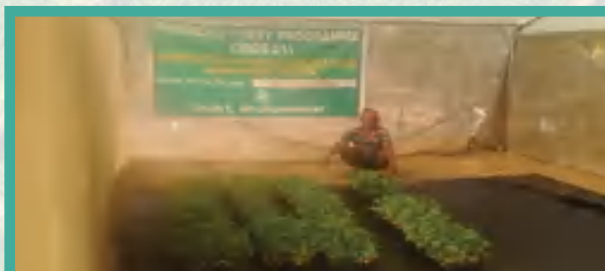
Before FFP interventions, Sri S. P. Muduli got annual profit of Rs. 68000/- from the sale of his produces. He expressed his concern over low yield, weed infestations and disease incidences. His problems were discussed with the concerned scientists under FFP and several interventions like using good quality seeds, practicing line transplanting, polyhouse cultivation, nutrient management based on soil test and leaf color charts were made. Besides, capacity building on scientific management of crops, trainings, demonstrations and exposure visits were also undertaken. At the end of 2020-21, net annual income increased to Rs. 142000/-. Moreover, he could save Rs. 5000/- from his production cost.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Golabhandi, Mukusula</i>)	1.00 ac	13.00 q	13000	7000
Green gram (<i>CO2</i>)	1.00 ac	0.60 q	2000	1000
Brinjal (Local)	0.10 ac	10.00 q	15000	7000
Tomato (Local)	0.25 ac	20.00 q	20000	12000
Okra (Local)	0.10 ac	5.00 q	8000	4000
Bitterguard (<i>VNR Katahi</i>)	0.25 ac	15.00 q	30000	15000
Pumpkin (<i>VNR 11</i>)	1.00 ac	70.00 q	42000	22000
			130000	68000

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Sarala, Kalachampa, Swarna sub 1</i>)	1.00 ac	17.00 q	25000	15000	30.76	114.28
Cucumber (<i>Arnapurna, Rajmata</i>)	0.50 ac	50.00 q	40000	20000	100.00	100.00
Brinjal (<i>VNR Hybrid B-5</i>)	0.10 ac	12.00 q	20000	10000	20	42.85
Tomato (<i>VNR Hybrid 3348</i>)	0.25 ac	25.00 q	30000	20000	25	66.66
Okra (<i>Kalasa</i>)	0.10 ac	06.00 q	11000	7000	20	75
Bitterguard (<i>Nabadhana</i>)	0.25 ac	20.00 q	45000	25000	33.33	66.66
Pumpkin (<i>Vimal, Tokita</i>)	1.00 ac	90.00 q	75000	45000	28.57	104.54
			246000	142000		108.82



**Nursery raising under polyhouse condition
using pro-tray culture method**



Commercial pumpkin production



Line transplanting of paddy

Natural Resource Management Module

The natural resource management (NRM) based module consisted of natural resource management, climate resilient agriculture, use of resource conservation technologies, water harvesting and micro irrigation, micro-organisms, land races and bio diversity etc. Management of water logging problem of lowland rice field for the cultivation of second crop using raised and sunken bed method was demonstrated under this module. Use of vermicompost for improving the soil health grabbed farmers' interest by demonstration of low cost vermi-composting unit using the farm and household waste. Using mulching technology for soil moisture conservation and better germination, adopting line transplanting methods, applying green manure, providing skill training, using trellis system for horticultural crops, sowing crops considering soil moisture, applying soil test-based fertilizers and use of quality seeds etc. were the major interventions made within this module. New enterprise in the form of pisciculture was started to add an income source. Using these interventions farmers were able to increase production from paddy by 20-47% using *Swarna sub1*, *Pooja* and *CR Dhan 701*, pulses by 50-67% using *IPM-02-03*, brinjal by 40% using Local varieties, cowpea by 80% using *Sangita B S*, okra by 100% using *Samrat*, tomato by 90% using *Samrudhi F1*, milk by 12% rearing *Jersey* cow and fish by 100% culturing *Rohu*, *Catla* and *Mrigal*. Ultimately, farmers' earning was considerably raised and they saved input cost too by following various NRM methods. Through adopting NRM technologies, maximum increase of income was noted to be 151% from horticultural crops followed by other field crops (127%).





**Mr. Sailendra
Narayan Behera**

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

09658455852 (M)

Age: 40 years

Education : Class IX pass

**Size of land holding (in
acre):** 1.5

Institute involved:

ICAR-NRRI, Cuttack

The average annual income of Mr. S. N. Behera was Rs. 44750/- from the sale of paddy, pulse, vegetables and milk during 2016-17. The productivity was low because of poor seed quality, lack of knowledge on crop/vegetable production and dairy animal management, high disease incidences, water scarcity, poor germination of seeds, poor soil fertility etc. His problems were solved by the scientists of ICAR-NRRI, Cuttack under Farmer FIRST Programme through using good quality seeds, providing skill trainings to Mr. Behera on commercial crops/horticultural/dairy production, using mulching technology for soil moisture conservation and better germination, adopting line transplanting methods, applying green manure and so on. New enterprise in the form of pisciculture was also started to add income. Ultimately, during the year 2020-21, his earning from farming reached to Rs. 112070/- annually. In addition, he saved Rs. 5200/- as input cost through following line transplanting method in paddy and applying green manure i.e. dhaincha into the soil.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Sarala, Pooja</i>)	1.50 ac	22.50 q	31500	13500
Pulse (Local)	1.50 ac	2.00 q	10000	4750
Brinjal (Local)	0.12 ac	9.00 q	9000	6000
Cow (<i>Jersey</i>)	1 no.	2500.00 lt	62500	20500
			113000	44750

Economics of production during 2020-21 (After intervention)

Components	Area/ No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Swarna sub-1, Pooja, CR Dhan701</i>)	1.50 ac	27.00 q	48600	21600	20.00	60.00
Pulse (<i>IPM-02-03</i>)	1.50 ac	3.00 q	16500	8250	50.00	73.68
Brinjal (Local)	0.12 ac	12.6 q	18900	12900	40.00	115.00
Okra (<i>Samrat</i>)	0.12 ac	11.40 q	14820	8320	100.00	100.00
Cow (<i>Jersey</i>)	2 no.	2700.00 lt	81000	31000	12.00	51.22
Fish (<i>Rohu, Catla, Mrigal</i>)	0.16 ac	4.00 q	40000	30000	100.00	100.00
			219820	112070		150.43



Commercial brinjal cultivation



Commercial okra cultivation



Sri Bharat Jena

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

07873132910 (M)

Age: 35 years

Education : Class III pass

**Size of land holding (in
acre):** 3.0

Institute involved:

ICAR-NRRI, Cuttack

Sri B. Jena was engaged in crop, vegetable and dairy farming since long back. It was calculated that with his existing traditional knowledge, he was able to earn Rs. 92000/- annually from his agricultural produces during the year 2016-17. He was facing problems like lack of knowledge on crop management practices, lack of recent technologies, unavailability of good quality seeds, non-scientific rearing of exotic cows, climatic vulnerability, unstable crop germination, improper management of horticultural crops, inconsistent water availability and many more. The scientists of concerned institute addressed those problems with appropriate interventions viz. providing good quality seeds, using mulching technology, providing skill trainings, using trellis system for horticultural crops, sowing crops considering soil moisture, applying soil test-based fertilizers etc. It was noted during the year 2020-21 that his yearly profit was jumped to Rs. 223900/- from the sale of crops, vegetables and milk which was 143% more than the income of base year (2016-17) in addition to the saved input cost of Rs. 4200/-.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Pooja, Swarna</i>)	2.00 ac	30.00 q	43500	19500
Pulse (Local)	1.00 ac	1.50 q	7500	4500
Bitter gourd (<i>VNR</i>)	0.40 ac	18.00 q	27500	14500
Cauliflower (Local)	0.40 ac	4000 no.	32000	22000
Cowpea (Local)	0.12 ac	3.00 q	7500	4500
Cow (<i>Desi</i>)	4 no.	3500.00 lt	87500	27000
			205500	92000

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>SwarnaSub-1, CR Dhan 409</i>)	2.00 ac	44.00 q	79200	44200	46.67	126.67
Pulse (<i>IPM-02-03</i>)	1.00 ac	2.50 q	15000	10000	66.67	122.22
Bitter gourd (<i>US 1315</i>)	0.40 ac	28.00 q	70000	45000	55.56	210.34
Cauliflower (<i>Namdhari</i>)	0.40 ac	5000 no.	75000	57500	25.00	161.36
Cowpea (<i>Sangita B S</i>)	0.12 ac	5.40 q	16200	12200	80.00	171.11
Cow (<i>Desi</i>)	4 no.	4500.00 lt	117600	55000	28.57	103.70
			373000	223900		143.37



Production of bitter gourd in trellis system



Production of cowpea in trellis system



Cauliflower production



**Mrs. Geetanjali
Nayak**

Address

Village- Jamuda,
Keonjhar, Odisha

Contact number:

09937743877 (M)

Age: 40 years

Education : Higher
Secondary pass

**Size of land holding (in
acre):** 6.5

Institute involved:

ICAR-IIWM, Bhubaneswar

Mrs. G. Nayak used to get annual income of Rs. 39300/- from paddy and milk. She used to practice paddy fallow due to lack of water source and technical knowledge. With the assistance from Farmer FIRST project after adopting line sowing, using hybrid paddy seeds and cono-weeder, practicing vegetables cultivation with mulching, cultivating banana and tapioca, she was able to produce round-the-year. Her annual agricultural income increased to Rs. 218600/- at the end of the year 2020-21. In addition, there was cost saving of approx. Rs. 12000/- from adopting new technologies like SRI method and mulching technologies.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy	5 ac	75.00 q	75000	35000
Cow (<i>Desi</i>)	1 no.	300.00 lt	15000	4300
			90000	39300

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy	5 ac	105.00 q	214200	102000	40.00	191.43
Brinjal	0.45 ac	41.00 q	144000	54000	100.00	100.00
Bitter gourd	0.10 ac	13.80 q	55200	22000	100.00	100.00
Cabbage and cauliflower	0.25 ac	10.50 q	21000	8000	100.00	100.00
Tapioca	0.10 ac	10.00 q	10000	4800	100.00	100.00
Cow (<i>Desi</i>)	2 no.	840.00 lt	42000	14800	100.00	244.19
Portable rice mill	1 no.		30000	13000	100.00	100.00
			516400	218600		456.23



Bitter gourd cultivation



Brinjal cultivation with polythene mulching



Commercial cabbage and cauliflower cultivation



**Sri Naba Kishore
Padhi**

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

09583074574 (M)

Age: 45 years

Education : Metric pass

**Size of land holding (in
acre):** 2.5

Institute involved:
ICAR-NRRI, Cuttack

The traditional production of paddy, pulse, vegetables and milk gave yearly net income of Rs. 90200/- to Sri N. K. Padhi during the year 2016-17. Moisture content during sowing of crops, consistent water availability during cultivation, scientific crops and dairy cow management skill, frequent disease/pest incidences, quality seed availability etc. were the major problems faced by him at that time. Under Farmer FIRST Programme, scientists of ICAR-NRRI, Cuttack considered those challenges and took several interventions e.g. using mulching techniques to conserve residual soil moisture, supplying good quality crop seeds, providing skill trainings/exposure visits on crops and livestock management, preventive measures to resist diseases/pest attacks and so on. As a result, his agricultural productivity was increased by 136% over the base year which fetched substantial profit of Rs. 213200/- during 2020-21 in addition to the saved input cost of Rs. 5400/- towards production of commercial vegetables from using improved variety seeds.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna, Sarala</i>)	2.00 ac	30.00 q	43500	19500
Pulse (Local)	2.00 ac	3.00 q	13500	7500
Cauliflower (<i>Pusakatki</i>)	0.40 ac	4000 no.	40000	28000
Brinjal (Local)	0.40 ac	30.00 q	35000	20000
Pointed gourd	0.16 ac	11.00 q	23500	16500
Cow (Local)	1 no.	1000.00 lt	26000	13400
			161800	90200

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 701, CR Dhan 409</i>)	2.00 ac	44.00 q	79200	54200	37.50	160.58
Pulse (<i>IPM-02-03</i>)	2.00 ac	4.40 q	26400	16400	46.67	118.67
Cauliflower (<i>Namdhari</i>)	0.40 ac	5000 no.	60000	40000	25.00	185.71
Brinjal (<i>JK 8031</i>)	0.40 ac	40.00 q	80000	52000	33.33	188.89
Pointed gourd	0.16 ac	14.00 q	45000	29000	27.27	75.76
Cow (<i>Desi</i>)	1 no.	1200.00 lt	36000	21600	20.00	61.19
			326600	213200		136.36



Harvested pumpkin for marketing



Commercial pointed gourd production through trellis system



Commercial brinjal production



**Sri Chitta Ranjan
Rout**

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

09078645161 (M)

Age: 47 years

Education : Graduate

**Size of land holding (in
acre):** 2.5

Institute involved:

ICAR-NRRI, Cuttack

Sri C. R. Rout got annual profit of Rs. 70050/- from the sale of his produces. He faced problems during crop cultivation and livestock rearing. His problems were discussed with the concerned scientists under FFP and several interventions viz. mulching, line transplantation, soil test-based fertilizers, leaf colour charts, good quality seeds, scientific management of crop/livestock, trainings/demonstrations/exposure visits were undertaken. At the end of the year 2020-21, annual net income touched to Rs. 175800/-. Moreover, he could save Rs. 5000/- from his production cost using only hybrid variety of pulse and vegetables seeds.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Sarala, Swarna</i>)	1.50 ac	22.50 q	31500	13500
Pulse (Local)	1.00 ac	1.50 q	6000	3000
Brinjal (Local)	0.20 ac	12.50 q	18750	10750
Tomato (Local)	0.20 ac	10.00 q	8000	5900
Okra (<i>Radhika</i>)	0.16 ac	12.00 q	14400	9400
Cow (<i>Jersey</i>)	1 no.	1350.00 lt	35100	17000
Fish (<i>Indigenous</i>)	0.12 ac	1.20 q	14400	10500
			128150	70050

Economics of production during 2020-21 (After intervention)

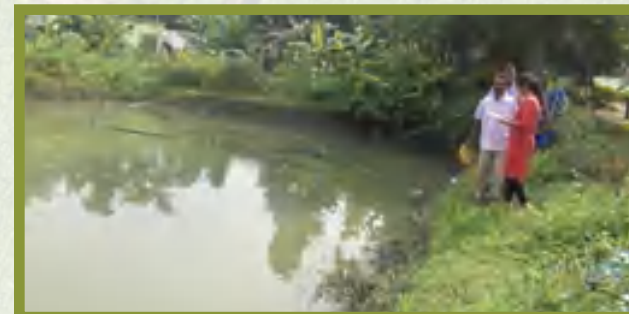
Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Rajlaxmi, CR Dhan 409</i>)	1.50 ac	33.00 q	59400	32400	46.67	140.00
Pulse (<i>IPM-02-03</i>)	1.00 ac	2.20 q	13200	8200	46.67	173.33
Brinjal (<i>VNR BJ</i>)	0.20 ac	16.50 q	40000	29000	60.00	169.77
Tomato (<i>Samrudhi F1</i>)	0.20 ac	17.50 q	22800	15300	90.00	159.32
Okra (<i>Radhika</i>)	0.16 ac	16.00 q	32000	24000	33.33	155.32
Cow (<i>Jersey</i>)	1 no.	168.00 lt	50400	32400	24.44	90.59
Fish (<i>Rohu, Catla, Mrigal</i>)	0.12 ac	3.00 q	48000	34500	150.00	228.57
			265800	175800		150.96



Commercial okra production



Line transplanting of paddy



Composite carp production



Sri Dhusasan Jena

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

07788939959 (M)

Age: 55 years

Education : Metric pass

Size of land holding (in
acre): 4.0

Institute involved:

ICAR-NRRI, Cuttack

Sri D. Jena was engaged in traditional agricultural production since long back. His annual income from the sale of produces was recorded as Rs. 101500/- during the year 2016-17. Major problems were poor quality crop varieties and seeds, climatic vulnerability, improper germination of seeds, frequent insect and pest attacks in crops, lack of scientific knowledge of rearing exotic cows, poor marketing facility, lack of irrigation facilities, lack of farm implements and many more. While implementing FFP at his village, he highlighted those problems to the scientists of ICAR-NRRI Cuttack and accordingly, several interventions were suggested to Mr. Jena. Out of those, mulching technology in conserving soil moisture, sowing of crop in residual moisture, using good quality seeds, receiving skill trainings for scientific management of crops and livestock rearing, using soil-test based fertilizer, using trellis system for horticultural crops were important. With considering above interventions, during the year 2020-21, his annual net profit was substantially increased to Rs. 249500/- in addition to his saving of Rs. 4900/- from production cost of vegetables through trellis system.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (1036, Swarna)	3.00 ac	45.00 q	63000	25500
Pulse (Local)	3.00 ac	4.50 q	20250	10500
Bitter gourd (Nakhara)	0.28 ac	12.00 q	24000	13500
Pumpkin (Baitarani)	0.52 ac	20.00 q	16000	10000
Pointed gourd (Local)	0.12 ac	8.00 q	26000	13000
Cow (Jersey)	2 no.	3000.00 lt	75000	29000
			224250	101500

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (CR Dhan 409, Rajalaxmi)	3.00 ac	66.00 q	118800	66300	46.67	160.00
Pulse (IPM-02-03)	3.00 ac	6.60 q	39600	24600	46.67	134.29
Bitter gourd (US 1315)	0.28 ac	17.50 q	52500	35100	45.83	160.00
Pumpkin (VNR 11)	0.52 ac	30.00 q	36000	30000	50.00	200.00
Pointed gourd (Swarna alaukik)	0.12 ac	12.00 q	48000	36000	50.00	176.92
Cow (Jersey)	2 no.	3600.00 lt	108000	57500	20.00	98.28
			402900	249500		145.81



Commercial pointed gourd production in trellis system



Commercial cauliflower production



Cultivation of bitter gourd



Mr. Parsuram Rout

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

06370073510 (M)

Age: 36 years

Education : Metric pass

**Size of land holding (in
acre):** 1.5

Institute involved:

ICAR-NRRI, Cuttack

The annual profit of Mr. Rout from agricultural produces was Rs. 23770/- during the year 2016-17. The production was quite low because of improper nutrient management of soil, lack of water availability, insufficient knowledge on scientific crop production, abrupt climatic vulnerability, frequent pest incidences, poor quality seeds and many others. Those problems were properly addressed by the scientists involved in Farmer FIRST Programme of ICAR-NRRI Cuttack. Mr. Rout was trained with technical know-hows for getting optimum production from all the enterprises. Efforts were made to conserve natural resources. New enterprise like fish production was introduced with good return. Finally, at the end of the year 2020-21, commercial crops/vegetables production and fish farming, he was able to get profit of Rs. 57600/- annually. Not only that, there was saving of Rs.5400/-from input cost towards commercial vegetable production using hybrid seeds and proper application of fertilizers using customized leaf colour chart (CLCC).

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Sarala, Swarna</i>)	1.00 ac	17.00 q	20400	8400
Pulse (Local)	1.00 ac	1.80 q	8370	4370
Okra (Local)	0.08 ac	4.00 q	6000	3000
Malabar spinach (Local)	0.16 ac	3500 no.	10500	8000
			45270	23770

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, CR Dhan 701</i>)	1.00 ac	21.00 q	30450	13450	23.53	70.25
Pulse (<i>IPM-02-03</i>)	1.00 ac	2.20 q	13200	7700	22.22	76.20
Okra (<i>Radhika</i>)	0.08 ac	7.00 q	11200	7200	75.00	140.00
Malabar Spinach (Local)	0.16 ac	4500 in no.	20250	14250	28.57	78.13
Fish (<i>Rohu, Catla, Mrigal</i>)	0.12 ac	2.00 q	20000	15000	100.00	100.00
			95100	57600		142.32



Commercial okra cultivation



Commercial Malabar spinach cultivation



Fish fingerlings production



Sri Surendra Swain

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

07735602490 (M)

Age: 65 years

Education : Class IX pass

**Size of land holding (in
acre):** 2.0

Institute involved:

ICAR-NRRI, Cuttack

Sri Swain had annual net income was Rs.50375/- from sale of paddy, pulses, vegetable and milk. He faced problems like water unavailability, improper germination of seeds, unavailability of good quality seeds, climatic vulnerability, improper fertilizer application, poor technical knowledge, poor management of plants during production and lack of knowledge on scientific dairy production. The problems were solved under Farmer FIRST Programme through providing trainings/exposure visits, practicing mulching for moisture and nutrient conservation, analysing soils before fertilizer application, using trellis system etc. As a result, his annual net income was increased to the tune of Rs.122175/- in addition to the input cost saving of Rs.4800/-from production of improved variety of vegetables with trellis system.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Pooja, Sarala</i>)	1.50 ac	24.00 q	34800	15300
Pulse (Local)	1.50 ac	2.25 q	10125	4875
Brinjal (Local)	0.16 ac	8.00 q	8000	5000
Bitter gourd (Local)	0.20 ac	6.00 q	10800	6300
Cow (<i>Jersey</i>)	1 no.	900.00 lt	23400	7200
			100325	50375

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 701, CR Dhan 409</i>)	1.50 ac	28.50 q	54000	27000	25.00	76.47
Pulse (<i>IPM-02-03</i>)	1.50 ac	3.75 q	20625	12375	66.67	153.85
Pointed gourd (<i>Swarna alaukik</i>)	0.08 ac	16.00 q	64000	52000	100.00	246.67
Bitter gourd (<i>US 1315</i>)	0.20 ac	15.00 q	30000	20000	87.50	150.00
Cow (<i>Jersey</i>)	1 no.	1200.00 lt	36000	10800	33.33	50.00
			204625	122175		142.53



Commercially cultivated pointed guard through polythene mulching



Commercial production of bitter gourd in trellis system



Mechanization of paddy threshing



Mr. Radhanath Pradhan

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

09337960097 (M)

Age: 52 years

Education : Class III pass

Size of land holding (in acre): 3.0

Institute involved:

ICAR-NRRI, Cuttack

During 2016-17, Mr. Pradhan earned Rs. 95000/- annually from his agricultural produces. The yields were quite low due to poor quality seed, poor germination of seeds, excessive fertilizer use, water scarcity and lack of technical knowledge on crop and animal production. His problems were discussed in various meetings arranged by the scientists of ICAR-NRRI, Cuttack under FFP and necessary interventions were made. Out of those interventions, use of mulching, practicing drip irrigation, applying soil test-based fertilizers, enriching knowledge through trainings were important. His income was gradually increased with the advancement of years which reached to Rs.230400/- at the end of the year 2020-21. Further, input cost was saved up-to Rs.4900/- from adopting new technologies.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>1036, Swarna</i>)	3.00 ac	45.00 q	63000	25500
Pulse (Local)	3.00 ac	4.50 q	20250	10500
Brinjal (Local)	0.40 ac	30.00 q	35000	20000
Pumpkin (<i>Baitarani</i>)	0.52 ac	20.00 q	16000	10000
Cow (<i>Jersey</i>)	2 no.	3000.00 lt	75000	29000
			209250	95000

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, Rajalaxmi</i>)	3.00 ac	66.00 q	118800	66300	46.67	160.00
Pulse (<i>IPM-02-03</i>)	3.00 ac	6.60 q	39600	24600	46.67	134.29
Brinjal (<i>JK 8031</i>)	0.40 ac	40.00 q	80000	52000	33.33	160.00
Pumpkin (<i>VNR1</i>)	0.52 ac	30.00 q	36000	30000	50.00	200.00
Cow (<i>Jersey</i>)	2 no.	3600.00 lt	108000	57500	20.00	98.28
			382400	230400		142.52



Commercial brinjal production



Commercial pumpkin production





Mr. Bichitrananda Rout

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

09660796763 (M)

Age: 42 years

Education : Metric pass

Size of land holding (in acre): 2.0

Institute involved:

ICAR-NRRI, Cuttack

Mr. B. Rout earned Rs. 84000/- annually from the sale of paddy, pulse, vegetables and milk. He had many problems in agricultural production viz. weed infestations, unavailability of high yielding seeds, water unavailability, use of excess fertilizers, lack of technical knowledge on crop and animal management etc. His problems were addressed through adopting mulching technology, using soil test-based fertilizers/drip irrigations/good quality seeds, providing trainings, applying vermicompost to the fields and so on by the scientists of the concerned institute. Ultimately, during the year 2020-21, it was noted that his annual income was substantially increased by 144% (Rs. 205100/-) than the base year. Again, Rs. 4200/- was saved from input cost by using hybrid seeds and applying improved package of practices.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna, Sarala</i>)	2.00 ac	30.00 q	43500	19500
Pulse (Local)	2.00 ac	3.00 q	13500	7500
Brinjal (Local)	0.40 ac	30.00 q	35000	20000
Ridge gourd (Local)	0.20 ac	5.00 q	11000	5000
Cow (<i>Jersey</i>)	3 no.	4500.00 lt	112500	45000
			215500	84000

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Swarna Sub-1, CR Dhan 701, Pooja</i>)	2.00 ac	44.00 q	79200	54200	37.50	160.58
Pulse (<i>IPM-02-03</i>)	2.00 ac	4.40 q	26400	16400	46.67	118.67
Brinjal (<i>JK 8031</i>)	0.40 ac	40.00 q	80000	52000	33.33	188.89
Ridge gourd (<i>1001</i>)	0.20 ac	7.00 q	21000	12000	40.00	140.00
Cow (<i>Jersey</i>)	3 no.	5400.00 lt	172800	90500	20.00	101.11
			379400	205100		144.16



Commercial brinjal production



Commercial ridge gourd production



Transplantation of paddy

Livestock Based Module

Livestock-based module involved the interventions associated with livestock production commonly consisting of poultry birds, milch cows, goat and pig production. Livestock production remains one of the world's most important sectors concerning economy, food security and the livelihoods of people. This module has been found to contribute significantly in increasing farm income. It is also true that women play a key role in livestock production and management throughout the world. Fishery based interventions were also included under this section. Through adopting scientific backyard poultry farming with dual purpose birds (*Vanaraja*, *Rhode Island Red* and *Kaveri*) and backyard duck farming with *Khaki Campbell* provided landless farmers and women enhanced household income. Using the scientific backyard poultry farming with *Vanaraja* increased the production 100% over the base year. As far as livestock-based module was concerned, *Pallishree* strain was introduced for backyard poultry rearing. The *Kadakhnath* and *Aseel* poultry chicks were provided to the livestock farmers to demonstrate backyard poultry farming as a source of income and source of nutrition. Among those, the performance of *Kadakhnath* birds was found to be better than *Aseel* birds. The farmers were also trained for introducing crossbred dairy cow to enhance milk production and to manage dairy cows and goats for better health, production and reproduction. Among those, the production increased by 15-30% for *Jersey*, 33% for *Crossbred cow* and for goat by 25-67%. Scientific pig farming also contributed to a significantly increased income to the farmers. Scientific carp culture was demonstrated as pond-based aquaculture production (*Rohu: Catla: Mrigal :: 2:1:1*) and increased production by 100-150%. While considered the income enhancement from different farming, broiler poultry farming gave maximum (320%) followed by backyard poultry farming (100%) predominantly with *Vanaraja* and pig farming (100%). Fish seed rearing and fingerling production also fetched 176% more income to the farmers.





Sri Gadadhar Pradhan

Address

Village- Giringo,
Balipatna, Khordha,
Odisha

Contact number:

09437320086 (M)

Age: 67 years

Education : Metric pass

Size of land holding (in acre): 2.5

Institute involved:

ICAR-CIFA, Bhubaneswar

Mr. G. Pradhan used to get annual income of Rs. 246650/- with net income of Rs. 115325/- from his produces- paddy, black gram, papaya, cattle, sheep, pisciculture etc. during the year 2016-17. Non-availability of quality seeds/ planting materials/fish fingerlings, poor knowledge of advanced farming practices, frequent disease and pest attacks were the major problems with him. After implementing interventions like using green manuring, using Leaf Colour Chart in rice cultivation, rearing backyard poultry strains (*Vanaraja* and *Kaveri*), rearing fish seed scientifically by the scientists of ICAR-CIFA, Bhubaneswar, Sri Pradhan was able to earn Rs. 569160/- as gross income annually with net income of Rs. 283550/-.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy	2.00 ac	30 q	49500	12500
Black gram	2.00 ac	3.6 q	14400	3600
Papaya	0.10 ac	10 q	16000	5500
Cow	3 no.	1870.00 lt	46750	22350
Sheep	20 no.	2.40 q	72000	50000
Grow out	0.35 ac	4.00 q	48000	21375
			246650	115325

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy	2.00 ac	36.20 q	66960	18000	20.00	35.27
Black gram	2.00 ac	4.00 q	28000	12000	11.11	94.44
Papaya	0.25 ac	30.00 q	48000	24000	200.00	200.00
French bean	0.25 ac	7.00 q	10500	5500	100.00	100.00
Poultry (<i>Vanaraja, Kaveri</i>)	200 no.	4.00 q	48000	22500	100.00	100.00
Cow	5 no.	3650.00 lt	109500	52350	95.18	134.23
Sheep	30 no.	3.60 q	126000	70000	50.00	75.00
Seed rearing and fingerling production	0.35 ac	800000 spawn; 5.00 q	7200 125000	4200 75000	100	176.46
			569160	283550		145.87



Poultry farming



Fish fingerling production



Line transplanting of paddy



Sri Bichitrananda Samal

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

09853154541 (M)

Age: 57 years

Education : Graduate

Size of land holding (in acre): 2.5

Institute involved:

ICAR-NRRI, Cuttack

During 2016-17, Sri Samal was producing paddy, pulse, okra and ridge gourd with available crop varieties near his village following traditional methods. He had one *Jersey* cow which was being reared using his own knowledge and skills. However, the production from all enterprises was not satisfactory. His net annual earning was restricted to around Rs. 67500/-. He discussed those problems with the scientists involved in his village under Farmer FIRST Programme and requested to provide necessary interventions for commercial production. Sri Samal was provided with new variety seeds, marketing linkages, technical know-how of scientific dairy cow management like timely vaccination and deworming, mineral mixture feeding, housing modifications, low-cost ration formulation using Local ingredients, backyard poultry rearing and so on which ultimately resulted into higher production and increased annual net income of Rs. 162360/- during the year 2020-21. With implementing new technologies, he saved production cost of Rs. 5500/- from using improved paddy seed along with line transplanting method and practicing scientific management for livestock rearing.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Pooja</i> , CR Dhan 1018)	2.00 ac	30.00 q	43500	18500
Pulse (Local)	2.00 ac	3.00 q	12600	6600
Okra (Local)	0.24 ac	10.20 q	15300	6900
Ridge gourd (Local)	0.24 ac	5.00 q	7500	4000
Cow (<i>Jersey</i>)	1 no.	3000 lt	75000	32500
			153900	67500

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Swarna Sub-1</i> , CR Dhan 409)	2.00 ac	42.00 q	75600	39600	40.00	114.05
Pulse (<i>IPM-02-03</i>)	2.00 ac	4.40 q	26400	16000	46.67	142.42
Okra (<i>Radhika</i>)	0.24 ac	16.80 q	33600	20600	64.71	198.55
Ridge gourd (<i>Rama F1</i>)	0.24 ac	8.00 q	20000	9500	60.00	216.67
Cow (<i>Jersey</i>)	1 no.	3600.00 lt	129600	62600	20.00	92.62
Poultry (<i>Vanaraja</i>)	20 no.	Meat-0.50 q; Egg-10560 no.	18060	14060	100.00	100.00
			303260	162360		140.53



Commercial ridge gourd production



Dairy farming



Rearing of *Vanaraja* poultry



Sri Jugala Kishore Mohanta

Address

Village- Khuntapingu,
Keonjhar, Odisha

Contact number:

06372286761 (M)

Age: 66 years

Education : Graduate

Size of land holding (in acre): 20.0

Institute involved:

ICAR-IIWM, Bhubaneswar

During the year 2016-17, Sri J. K. Mohanta sold paddy, milk and chicken which were produced through contract rearing of 2000 *Broiler* per lot. His annual profit was noted to be Rs. 141000/-. With the support of scientists of ICAR-IIWM, Bhubaneswar under Farmer FIRST programme through digging of bore well and implementing other interventions e.g. using high yielding variety seeds/sprinkler irrigation, practicing vegetable cultivation, rearing more dairy and poultry birds etc., his income was reached to the tune of Rs. 922720/- per annum during the year 2020-21. In addition, there was saving of Rs. 14000/- from production cost for adopting sprinkler irrigation, IPM measures and applying vermicompost in agriculture fields.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy	8 ac	104.00	93600	56000
Cow (<i>Crossbred</i>)	1 no.	2100.00 lt	84000	25000
Poultry (Broiler)	8000 no.	200.00 q	120000	60000
			297600	141000

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy	5.00 ac	93.00 q	189720	104720	43.00	39.62
Okra	0.10 ac	3.80 q	14400	9000	100.00	100.00
Cabbage	0.05 ac	7.50 q	22000	13000	100.00	100.00
Cow (<i>Crossbred</i>)	10 no.	30000.00 lt	1200000	412000	42.86	64.80
Poultry (Broiler)	24000 no.	600.00 q	600000	384000	200.00	540.00
			2026120	922720		554.41



Farming through sprinkler irrigation



Contract broiler poultry farming



Dairy farming with crossbred cow



Mr. Chitta Ranjan Jena

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

08260983500 (M)

Age: 47 years

Education : Class VII pass

Size of land holding (in acre): 2.0

Institute involved:

ICAR-NRRI, Cuttack

The net annual income of Mr. Jena in the year 2016-17 was recorded as Rs. 82200/- from the sale of his agricultural produce e.g. paddy, pulse, vegetables and milk. He faced problems like improper management practices, inferior seed quality, frequent incidences of diseases and pests, scientific skills and many more. He came in contact with the scientists of ICAR-NRRI, Cuttack under FFP Programme and got trainings/exposure visits etc. to improve his scientific skills and knowledge. Mr. Jena started rearing *Vanaraja* poultry bird under backyard system. As a result, he was able to increase his yearly profit to the extent of Rs. 191850/- in addition to Rs. 5200/- as saved cost of production through adopting new technologies.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna</i> , <i>CR Dhan 1018</i>)	1.50 ac	22.50 q	31500	13500
Pulse (Local)	1.50 ac	2.25 q	9000	4500
Brinjal (Local)	0.40 ac	30.00 q	30000	16000
Cow (<i>Jersey</i>)	2 no.	3500.00 lt	87500	48200
			158000	82200

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Swarna Sub-1</i> , <i>CR Dhan 409</i> , <i>Pooja</i>)	1.50 ac	33.00 q	59400	32000	33.33	92.59
Pulse (<i>IPM-02-03</i>)	1.50 ac	3.00 q	16500	8250	33.33	83.33
Brinjal (<i>JK 8031</i>)	0.40 ac	50.00 q	75000	45000	66.67	181.25
Cow (<i>Jersey</i>)	2 no.	4500.00 lt	135000	91600	15.38	34.31
Poultry (<i>Vanaraja</i>)	25 no.	Meat - 1.50 q; Eggs-2000 no.	25000	15000	100.00	100.00
			285900	191850		133.39



Dairy farming



Backyard poultry farming



Paddy cultivation



Mrs. Debasmita Bhoi

Address

Village- Dorbanga,
Khordha, Odisha

Contact number:

09668626922 (M)

Age: 35 years

Education : Class IX pass

Size of land holding (in acre): 0.5

Institute involved:

ICAR-CIFA, Bhubanswar

From the traditional farming in existing land, this marginal farmer used to get annual gross income of only Rs. 14965/- with net income of Rs. 5374/- from selling paddy and green gram. She was trained with scientific paddy and green gram cultivation and backyard poultry farming by the scientists of ICAR-CIFA, Bhubaneswar. Through adopting scientific backyard poultry farming with 15 birds initially and then, adding another 35 dual purpose birds along with paddy and green gram cultivation, she increased her annual earning to Rs. 103490/- with net income of Rs. 54677/-.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy	0.5 ac	8.30 q	12865	4238
Green gram	0.5 ac	0.60 q	2100	1136
			14965	5374

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy	0.5 ac	9.80 q	18130	7302	18.07	40.92
Green gram	0.5 ac	1.00 q	5500	3000	66.67	161.90
Backyard poultry	50 no.	Egg-5940 no.; Body weight- 0.93 kg	79860	44375	100.00	100.00
			103490	54677		917.43



Backyard poultry rearing



Green gram production



Transplanted paddy cultivation



**Sri Sangram
Keshari Pani**

Address

Village- Ganeswarpur,
Cuttack, Odisha

Contact number:

09439355031(M)

Age: 46 years

Education : Graduate

**Size of land holding (in
acre):** 2.0

Institute involved:

ICAR-NRRI, Cuttack

During the year 2016-17, Sri Pani used to cultivate paddy, pulse and brinjal traditionally. He also reared three *Jersey* cows for milk. But, the production from crops and animals was not satisfactory. At the end of the year, his profit was calculated to be Rs. 62020/- which was far below his expectations. Improper management practices, lack of adequate knowledge on crops and dairy animal management, unavailability of quality crop seeds, lack of marketing facilities were among the major causes of his low income. The scientists of ICAR-NRRI Cuttack guided him and provided technical know-hows to improve his crops and dairy production. Sri Pani started poultry farming with scientific management and prepared vermicompost at his farm for his agriculture field. Those interventions caused substantial increase of his annual net income to the extent of Rs.176500/- during the year 2020-21. In addition, there was cost saving of Rs.7400/- towards the production of HYV paddy through line transplanting using transplanter and through application of green manuring with *dhaincha*.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Sarala, Pooja</i>)	2.00 ac	30.00 q	43500	19500
Pulse (Local)	2.00 ac	3.20 q	14720	8720
Brinjal (Local)	0.12 ac	7.50 q	7500	3900
Cow (<i>Jersey</i>)	3 no.	3500.00 lt	87500	29900
			153220	62020

Economics of production during 2020-21 (After intervention)

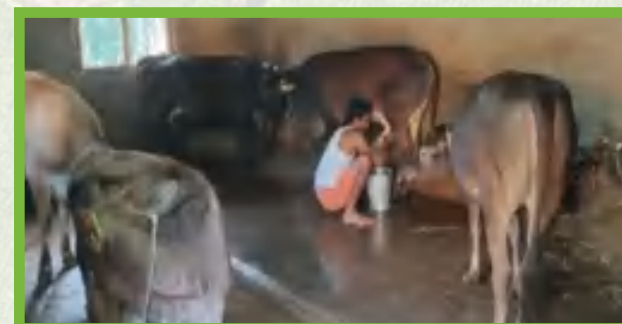
Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, Rajalaxmi</i>)	2.00 ac	36.00q	89200	42200	46.67	116.41
Pulse (<i>IPM-02-03</i>)	2.00 ac	4.00 q	30000	19500	56.25	123.62
Brinjal (<i>JK 8031</i>)	0.12 ac	11.00 q	18000	11400	60.00	192.31
Cow (<i>Jersey</i>)	3 no.	4500.00 lt	135000	48600	28.57	62.54
Poultry (<i>Vanaraja</i>)	50 no.	Meat-1.00 q; Eggs-3600 no.	135000	48600	100.00	100.00
Vermicompost	1 no.	20.00 q	10000	6200	100.00	100.00
			417200	176500		184.59



Mat type nursery seedlings in a layer of soil



Raising of paddy nursery



Dairy farming



Sri Manoj Mohanta

Address

Village- Khuntapingu,
Keonjhar, Odisha

Contact number:

09110822902 (M)

Age: 52 years

Education : Class VIII pass

Size of land holding (in acre): 7.0

Institute involved:

ICAR-IIWM, Bhubaneswar

Sri Mohanta earned Rs. 47700/- annually from the sale of paddy, tomato, milk and chicken. He faced problems like low productivity, poor irrigation facilities, lack of water, lack of awareness, frequent insect attacks, improper utilization of land, poor quality seeds etc. His problems were addressed by the scientists of ICAR-IIWM, Bhubaneswar with supplying hybrid vegetable seeds, using mulching, providing trainings/exposure visit to improve technical skill and knowledge, adopting crop diversification, irrigation using bore well and so on. Ultimately, at the end of 4-5 years of adopting new technologies, he was able to earn Rs 255500/- annually in addition to Rs. 14000/- which was saved from production cost.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy	4.00 ac	65.00 q	65000	37000
Tomato	0.10 ac	6.00 q	6000	4000
Cow (<i>Desi</i>)	1 no.	480.00 lt	19200	5200
Poultry	25 no.	10 birds @ Rs. 400.00 per bird	4000	1500
			94200	47700

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy	4.50 ac	98.00 q	199920	85000	50.77	129.73
Tomato	0.15 ac	14.00 q	28000	11000	133.33	175.00
Brinjal	0.25 ac	21.00 q	63000	24000	100.00	100.00
Banana	0.15 ac	9.00 q	22500	8000	100.00	100.00
Cabbage and cauliflower	0.20 ac	12.50 q	25000	9000	100.00	100.00
<i>Desi</i> Cattle	1 no.	750.00 lt	30000	9000	56.25	73.08
Poultry	30 no.	18 birds @ Rs. 600.00 per bird	10800	4500	50.00	66.67
Piggery	61 no.	37.50 q from 45 animals	375000	105000	100.00	100.00
			754220	255500		435.64



Commercial brinjal cultivation



Commercial tomato cultivation



Banana plantation with polythene mulch



Smt. Pravati Pani

Address

Village- Ganeswarpur,
Cuttack, Odisha

Contact number:

09438097968 (M)

Age: 37 years

Education : Graduate

**Size of land holding (in
acre):** 2.0

Institute involved:

ICAR-NRRI, Cuttack

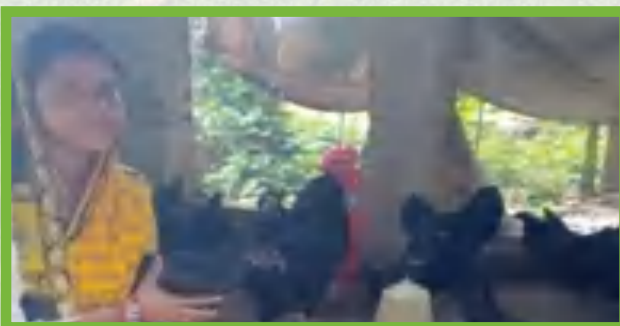
Smt. Pani was engaged in dairy farming, crop and horticultural production during 2016-17 with traditional knowledge and available crop seeds in her 2 ac land. The annual net income was Rs. 63075/- from all produce which was quite low. She faced problems like low yield potential, no irrigation facilities, unavailability of quality seeds, lack of scientific knowledge, choosing of enterprises, judicious fertilizer use etc. With the objective to increase income, she contacted scientists working under FFP and implemented several interventions viz. rearing of backyard poultry birds, mushroom production as an enterprise, establishment of a mini rice-pulse mill, improving knowledge through trainings/exposure visits/ interactive meets, using improved variety seeds etc. She substantially increased her net annual income to the tune of Rs. 206425/- during 2020-21 which was 227% higher than the base year. In addition, using customized leaf colour chart (CLCC) for proper application of nitrogenous fertilizers in paddy and adopting latest technologies in other production, Rs. 6200/- was saved as input cost.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Pooja, Swarna</i>)	1.50 ac	22.50 q	31500	13500
Pulse (Local)	1.50 ac	2.25 q	10125	4875
Brinjal (Local)	0.12 ac	8.00 q	8000	4100
Cow (<i>Jersey</i>)	3 no.	4000.00 lt	100000	40600
			149625	63075

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 304, Hasanta</i>)	1.50 ac	31.50 q	56700	30750	40.00	127.78
Pulse (<i>IPM-02-03</i>)	1.50 ac	3.45 q	20700	13200	53.33	170.77
Brinjal (<i>JK 8031</i>)	0.12 ac	12.00 q	24000	10000	50.00	143.90
Cow (<i>Jersey</i>)	3 no.	5000.00 lt	160000	84800	25.00	108.87
Poultry (<i>Kadagnath, Vanaraja</i>)	45 no.	Meat-92.50 q; Eggs-3600 no.	48975	29675	100.00	100.00
Mushroom (Paddy straw)	400 no.	4.00 q	64000	38000	100.00	100.00
			374375	206425		227.27



Kadagnath bird under backyard farming



Dairy farming



Oyster mushroom production



Smt. Nirmala Pradhan

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

09348038929 (M)

Age: 45 years

Education : Higher
Secondary pass

**Size of land holding (in
acre):** 1.5

Institute involved:

ICAR-NRRI, Cuttack

Smt. N. Pradhan earned Rs. 86450/- annually from her agricultural produces- paddy, pulses and milk during the year 2016-17. At that time, she did not have scientific knowledge about various agricultural production. Not only that, poor variety crop seeds, unavailability of various inputs, frequent disease and pest attacks in crops, lack of knowledge about vaccination/deworming/feeding were among different problems of good productivity. With the help of scientists of ICAR-NRRI Cuttack, Mrs. Pradhan gained scientific knowledge through skill training programmes, started producing mushroom and rearing poultry under backyard system. She replaced her old crop seeds with new varieties and adopted scientific dairy farming which helped her to fetch annual net income of Rs. 209950/-. Moreover, she saved Rs. 5300/- as production cost from following proper disease management practices with applying bio-agent seed treatment with *T. viridae*.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Sarala, Pooja</i>)	1.5 ac	22.50 q	31500	13500
Pulse (Local)	1.5 ac	2.00 q	10000	4750
Cow (<i>Jersey</i>)	2 no.	3900.00 lt	101400	68200
			142900	86450

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Swarna Sub-1, Pooja, CR Dhan 701</i>)	1.50 ac	27.00 q	48600	21600	20.00	60.00
Pulse (<i>IPM-02-03</i>)	1.50 ac	3.00 q	16500	8250	50.00	73.68
Poultry (<i>Vanaraja</i>)	80 No.	Meat- 2.00 q; Egg-8100 no.	78600	66000	100.00	100.00
Cow (<i>Jersey</i>)	2 no.	4500.00 lt	135000	81600	15.38	19.65
Mushroom (Paddy straw)	0.04 ac	4.00 q	64,000	32500	100.00	100.00
			342700	209950		142.86



Backyard poultry rearing



Mushroom cultivation



Rearing of dairy cow



**Sri Rakesh Kumar
Sahoo**

Address

Village- Laxminarayanpur,
Cuttack, Odisha

Contact number:

08917474290 (M)

Age: 29 years

Education : Metric pass

**Size of land holding (in
acre):** 1.5

Institute involved:

ICAR-NRRI, Cuttack

Sri R. K. Sahoo was engaged with culturing indigenous fishes in his 1.0 ac pond during the year 2016-17. His net annual income was Rs.170000/- from selling of fishes in the Local market. Mr. Sahoo was lacking scientific knowledge and skills for fish culture. When he came in contact with the scientists of ICAR-NRRI Cuttack, he was suggested for scientific fish culture in his existing 1 ac pond and remaining 0.5 ac land for rearing poultry and producing mushroom. After getting many skill trainings, he started producing fish, poultry and mushroom scientifically and increased annual income to the level of Rs.434000/-. Not only that, due to his improved knowledge and skills, he was able to save Rs.5200/- as production cost from scientific fish production.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Fish (<i>Indigenous</i>)	1.00 ac	20.00 q	240000	170000
			240000	170000

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Fish (<i>Rohu, Catla, Mrigal</i>)	1.00 ac	30.00 q	450000	300000	50.00	76.47
Poultry (<i>RIR, Vanaraja</i>)	400 no.	9.00 q	117000	77000	100.00	100.00
Mushroom (Paddy straw)	0.08 ac	7.00 q	105000	57000	100.00	100.00
			672000	434000		155.29



Rearing of *Vanaraja* poultry birds



Rearing of *RIR* birds



Pisciculture



Mr. Arun Dutta

Address

Village- Laxminarayanpur,
Cuttack, Odisha

Contact number:

09583261086 (M)

Age: 29 years

Education : Higher
Secondary pass

**Size of land holding (in
acre):** 2.0

Institute involved:

ICAR-NRRI, Cuttack

During 2016-17, Mr. Dutta used to earn profit of Rs.40250/- annually from the sale of paddy, pulses and vegetables. His farm productivity was comparatively low due to frequent insect/pest infestations in crops, unavailability of good quality crop seeds, improper management practices, lack of technical know-how and many more. However, those problems were solved by the scientists of ICAR-NRRI, Cuttack who were involved in Farmer FIRST Programme. Necessary interventions were undertaken for commercial paddy, vegetable and poultry production. Through training programmes/ exposure visits, he learned scientific agricultural production. Finally, his annual net income was substantially increased to Rs. 131850/- which was 227% higher than before adopting interventions. In addition, there was cost saving of Rs.5200/- from the production of backyard poultry and commercial hybrid vegetables.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (1036, Pooja)	2.50 ac	37.50 q	52500	22500
Pulse (Local)	2.50 ac	3.50 q	15750	8250
Cauliflower (Pusakatki)	0.12 ac	1200 no.	9600	6000
Brinjal (Local)	0.12 ac	6.60 q	6600	3500
			84450	40250

Economics of production during 2020-21 (After intervention)

Components	Area/ No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (CR Dhan 307, CR Dhan701)	2.50 ac	50.00 q	90000	46250	33.33	105.55
Pulse (IPM-02-03)	2.50 ac	5.50 q	33000	20500	57.14	148.48
Cauliflower (Namdhari)	0.12 ac	1,500 no.	22500	16500	25.00	175.00
Brinjal (JK 8031)	0.12 ac	12.00 q	18000	10000	81.82	185.71
Poultry (Vanaraja)	50 no.	Meat-1.00 q; Eggs-3600 no.	105000	38600	100.00	100.00
			268500	131850		227.57



Backyard poultry farming



Commercial cauliflower production



Paddy nursery raising

Enterprise Based Module

There was a need to develop module especially for farm women to address income enhancement and livelihood security and thus, the enterprise-based module was conceptualized. An enterprise-based module demonstrated growing of paddy straw mushroom by farm women, mushroom spawn production and its value addition and preservation of oyster as well as paddy straw mushroom. Besides, agro-shade net house construction to control the incidental sunlight falling upon the mushroom bed and demonstration/distribution of honey bee boxes alongwith technical backstopping were provided to women SHGs for skill development and economic empowerment of farm women. Bee keeping was practised for increase pollination and income of rural income. Oyster and button mushroom production for income generating activity increased income by 100%, whereas, *Vanaraja* poultry rearing under backyard system increased income by 100% and scientific dairying with local cow by 12-20%. Moreover, farmers saved as input cost from scientific mushroom production.





Mr. Nihar Ranjan Pani

Address

Village- Ganeswarpur,
Cuttack, Odisha

Contact number:

09178887550 (M)

Age: 32 years

Education : B.Sc.

Size of land holding (in acre): 2.0

Institute involved:

ICAR-NRRI, Cuttack

The net annual income of Mr. N. R. Pani was recorded as Rs. 37175/- from sale of paddy, pulse and milk. His income was too less to bear his family expenditure. Low productivity of crops and poor milk yield arising from unavailability of improved variety crop seeds, lack of scientific knowledge of crop production and dairy animal management, improper selection of enterprise were the main causes of low profit. His problems were discussed and necessary interventions were made by the scientist of concerned Institute. Mr. Pani was trained for commercial crop/dairy production, and additional enterprise i.e. mushroom production was also selected to use his existing land. After that, he established himself as a successful mushroom entrepreneur. His income increased gradually with the subsequent years and during the year 2020-21, the net annual income reached to Rs. 148175/-. Moreover, Rs. 5000/- was saved as input cost from commercial hybrid vegetables and mushroom production.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Pooja, Sarala</i>)	1.50 ac	24.00 q	34800	15300
Pulse (Local)	1.50 ac	2.25 q	10125	4875
Cow (<i>Desi</i>)	1 no.	1600.00 lt	40000	17000
			84925	37175

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 701, CR Dhan 409, Pooja</i>)	1.50 ac	28.50 q	54000	27000	25.00	76.47
Pulses (<i>IPM-02-03</i>)	1.50 ac	3.75 q	20625	12375	66.67	153.85
Cow (Local)	1 no.	1800.00 lt	54000	31600	20.00	35.85
Mushroom (Paddy straw)	1200 no.	10.00 q	160000	77200	100.00	100.00
			288625	148175		298.58



Mushroom unit



CR Dhan 409



Paddy straw mushroom cultivation



Mrs. Lilipta Behera

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

09853475014 (M)

Age: 38 years

Education : Metric pass

**Size of land holding (in
acre):** 3.0

Institute involved:

ICAR-NRRI, Cuttack

During the year 2016-17, Mrs. L. Behera had annual income of Rs.38275/- from her farm produces. At that time, she did not have knowledge of scientific management on commercial production of crops including milk production, superior quality crop seeds, most suitable enterprise, marketing of produces etc. With the help of ICAR-NRRI Cuttack scientists worked under FFP, she got trainings on commercial mushroom production, provided with good quality crop seeds, gained technical know-how on scientific dairy animal management which resulted substantial increase (589% more than the base year's profit) in her net annual income to the tune of Rs. 263800/-. She also reduced her input cost as Rs. 8300/-while producing scientifically.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>CR Dhan 1018</i> , <i>Pooja</i>)	1.50 ac	22.50 q	27000	9000
Pulse (Local)	1.50 ac	2.25 q	10125	4875
Cow (<i>Jersey</i>)	1 no.	1600.00 lt	48000	24400
			85125	38275

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to inter-vention	
					Production	Income
Paddy (<i>CR Dhan 409</i> , <i>CR Dhan 307</i>)	1.50 ac	28.50 q	39900	14400	26.67	60.00
Pulse (<i>IPM-02-03</i>)	1.50 ac	3.00 q	16500	9000	33.33	84.62
Cow (<i>Jersey</i>)	1 no.	1800.00 lt	54000	30400	12.50	24.59
Mushroom (Paddy straw, Oyster)	3000 no.	30.00 q	450000	210000	100.00	100.00
			560400	263800		589.22



Paddy straw mushroom unit



Rearing of Jersey cow



Mushroom cultivation



Sri Shiba Narayan Bhoi

Address

Village- Laxminarayanpur,
Cuttack, Odisha

Contact number:

08328946403 (M)

Age: 40 years

Education : Class IX pass

Size of land holding (in acre): 1.0

Institute involved:

ICAR-NRRI, Cuttack

Sri Bhoi was engaged in crop and horticultural production using traditional methods and earned net profit of Rs.12900/- annually. His production was not good because of poor quality crop seeds, frequent disease incidences, lack of technical knowledge, improper utilization of land, improper selection of enterprise and many others. Then, the scientists of ICAR-NRRI, Cuttack suggested him to incorporate poultry and mushroom production along with his crop and vegetable production system. He attended a series of training programmes and exposure visits on commercial crop/mushroom/vegetable/poultry production for next three to four years. Using good quality seeds, soil test-based fertilizer use, developing skills on a particular enterprise were among the other interventions implemented in his farming. Now, he has become one of the leading mushroom growers and poultry farmers under backyard rearing system in the area. At the end of the year 2020-21, his net annual income was recorded as Rs. 97600/- in addition to his saved input cost as Rs.6500/-.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna, Pooja</i>)	0.80 ac	12.00 q	15000	5000
Pulse (Local)	0.80 ac	1.20 q	5400	2900
Pumpkin (Local)	0.20 ac	4.00 q	4000	3000
Okra (Local)	0.08 ac	3.50 q	3500	2000
			27900	12900

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Pooja, Rajalaxmi</i>)	0.80 ac	15.00 q	21000	7400	25.00	48.00
Pulse (<i>IPM-02-03</i>)	0.80 ac	1.60 q	8800	4800	33.33	65.52
Pumpkin (<i>VNR14</i>)	0.20 ac	6.00 q	7800	5000	50.00	66.67
Okra (<i>Radhika</i>)	0.08 ac	5.00 q	6000	3000	42.86	50.00
Poultry (<i>Vanaraja</i>)	50 no.	Meat-1.00 q; Eggs-2700 no.	32200	20200	100.00	100.00
Mushroom (Paddy straw)	1000 no.	8.00 q	128000	57200	100.00	100.00
			203800	97600		656.59



Paddy straw mushroom production



Line sowing method of paddy



Freshly harvested pumpkins ready for sale



**Sri Purna Chandra
Behera**

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

06370455834 (M)

Age: 52 years

Education : Higher
Secondary pass

**Size of land holding (in
acre):** 3.0

Institute involved:

ICAR-NRRI, Cuttack

Sri P. C. Behera earned profit of Rs. 52025/- from the sale of paddy, pulse and milk. He used locally available crop seeds, *Desi* low producing dairy cow and traditional knowledge. That's why, yields from crops and animal were not up to the mark. His problems were solved by the scientists of ICAR-NRRI, Cuttack and he was suggested to start paddy and oyster mushroom production at his farm. Local crop varieties were also replaced with high yielding varieties and scientific management on crop and animal production was practiced. Special training was arranged for him on mushroom production, its processing and value addition. By the end of the year 2020-21, majority (Rs. 252000/- out of total profit of Rs. 325350/-) of his profit came from one single enterprise i.e. mushroom. Not only that, there was also cost saving of Rs. 6500/- from the production of commercial paddy and mushroom.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>CR 1018, Pooja</i>)	2.50 ac	40.00 q	58000	28000
Pulse (Local)	2.50 ac	3.75 q	16875	8125
Cow (<i>Desi</i>)	1 no.	1500.00 lt	37500	15900
			112375	52025

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, Rajalaxmi</i>)	2.50 ac	47.50 q	85500	38000	18.75	35.71
Pulse (<i>IPM-02-03</i>)	2.50 ac	5.00 q	27500	13750	33.33	69.23
Cow (Local)	1 no.	1800.00 lt	50400	21600	20.00	35.85
Mushroom (Paddy straw, Oyster)	2800 no.	28.00 q	448000	252000	100.00	100.00
			611400	325350		525.37



Paddy straw mushroom unit



Paddy harvesting



Sri Ranjan Kumar Behera

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

09853475014 (M)

Age: 48 years

Education : Higher
Secondary pass

**Size of land holding (in
acre):** 2.0

Institute involved:
ICAR-NRRI, Cuttack

The annual net income of Sri R. K. Behera was Rs.38275/- from paddy, pulse and milk production with his existing knowledge, skills and Locally available crop seeds. The profit was less due to improper dairy cow management practices, poor quality seeds, lack of scientific knowledge, pest attacks in crops, disease incidences in animals etc. Problems were solved with appropriate interventions by the concerned scientists of FFP and production was increased gradually. Two more enterprises were added and necessary trainings were imparted to him. As a result, net annual income was increased to the extent of Rs. 278100/- during the year 2020-21 in addition to saved production cost of Rs.6400/-.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>CR Dhan 1018, Pooja</i>)	1.50 ac	22.50 q	27000	9000
Pulse (Local)	1.50 ac	2.25 q	10125	4875
Cow(<i>Jersey</i>)	1 no.	1600.00 lt	48000	24400
			85125	38275

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, CR Dhan 307</i>)	1.50 ac	28.50 q	39900	14400	26.67	60.00
Pulse (<i>IPM-02-03</i>)	1.50 ac	3.00 q	16500	9000	33.33	84.62
Cow (<i>Jersey</i>)	1 no.	1800.00 lt	54000	30400	12.50	24.59
Poultry (<i>Vanaraja</i>)	20 no.	Meat- 0.50 q; Eggs-1800 no.	18300	14300	100.00	100.00
Mushroom (Paddy straw, Oyster)	3000 no.	30.00 q	450000	210000	100.00	100.00
			578700	278100		626.58



Harvested paddy straw mushroom



Operation of power operated thresher-cum-winnower



Vanaraja poultry rearing



Mrs. Aarati Behera

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

09439135849 (M)

Age: 35 years

Education : Class III pass

**Size of land holding (in
acre):** 2.0

Institute involved:

ICAR-NRRI, Cuttack

From cultivating locally available paddy and vegetables in 2 ac of land, Mrs. Behera received annual net profit of Rs. 12900/-. She faced problems like insufficient knowledge, lack of technology interventions, poor quality seeds, frequent insect and pest attacks and many more. But, her problem was addressed through various interactions /meetings with proper interventions and selecting new enterprises. She started rearing *Vanaraja* poultry birds under backyard system and started growing paddy mushroom which fetched maximum income during the year 2020-21. The net annual income from her agricultural farming had reached to Rs. 97600/- during the year 2020-21 which was 657% more than the earning from the year 2016-17. In addition, there was cost saving of Rs. 5800/- from the production of high yielding varieties, Paddy straw mushroom and backyard rearing of poultry.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna, Pooja</i>)	0.80 ac	12.00 q	15000	5000
Pulse (Local)	0.80 ac	1.20 q	5400	2900
Pumpkin (Local)	0.20 ac	4.00 q	4000	3000
Okra (Local)	0.08 ac	3.50 q	3500	2000
			27900	12900

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Pooja, Rajlaxmi</i>)	0.80 ac	15.00 q	21000	7400	25.00	48.00
Pulse (<i>IPM-02-03</i>)	0.80 ac	1.60 q	8800	4800	33.33	65.52
Pumpkin (<i>VNR 14</i>)	0.20 ac	6.00 q	7800	5000	50.00	66.67
Okra (<i>Radhika</i>)	0.08 ac	5.00 q	6000	3000	42.86	50.00
Poultry (<i>Vanaraja</i>)	50 no.	Meat-1.00 q; Eggs-2700 no.	32200	20200	100.00	100.00
Mushroom (Paddy straw)	1000 no.	8.00 q	128000	57200	100.00	100.00
			203800	97600		656.59



Commercial okra cultivation



Harvesting of mushroom



Pumpkin cultivation

Integrated Farming System (IFS) Module

The integrated farming system (IFS) is an eco-friendly sustainable agricultural system in which waste of one enterprise becomes the input of another. Thus, it makes more efficient use of resources from the farm. The IFS is a mixed farming system that consists of at least two different but logically interdependent parts of a crop and livestock enterprises, and it helps in improving the soil health, controlling weed and pest, increasing water use efficiency and maintaining water quality. In IFS, the use of harmful chemical fertilizers, weed killers and pesticides should be minimized. In IFS module, using the interventions like green manuring, use of Leaf Colour Chart in rice cultivation, applying soil test-based fertilizers like ZnSO_4 , cultivating paddy through SRI method by using cono-weeder, inoculating of green gram seeds, introduction of improved cultivars like *TARM 1* and improved variety of cauliflower (*Fujiyama*) and French bean were described. Introduction of backyard poultry strains (*Vanaraja* and *Kaveri*) and fish seed rearing increased the system productivity. The production increments were recorded in paddy by 14.25-20%, black gram by 11%, green gram by 60-102%, papaya by 200%, French bean by 35-100%, cauliflower by 100%, cucumber by 31%, okra by 50% using *var. Radhika*, pointed gourd by 56% using *var. Swarna alaukik*, brinjal by 64% using *var. JK 8031*, poultry by 100%, cow by 95%, sheep by 50%, fish fingerling production by 100%, vermicompost by 100% and honey production by 100%. As a result, annual profit of farmers was enhanced considerably than the income of the base year. Under IFS module, highest increase income was found from horticultural production (116%) followed by crop production (114%) and livestock rearing (102%).





Sri Bhima Charan Das

Address

Village- Laxminarayanpur,
Cuttack, Odisha

Contact number:

09938993558 (M)

Age: 51 years

Education : Metric pass

Size of land holding (in acre): 5.0

Institute involved:

ICAR-NRRI, Cuttack

Sri B. C. Das used to produce paddy, pulses and vegetables with his existing knowledge in 5 ac land and his net annual income during the year 2016-17 was noted to be Rs. 61320/-. In spite of his full efforts, he could not increase his income due to low production from crops and dairy animals. Frequent insect and pest infestations, improper nutrient management in crops, unavailability of good quality seeds, lack of knowledge on scientific livestock management, lack of marketing facilities were the main reasons behind low productivity. While implemented Farmer FIRST programme in his village, the problems were discussed in details with the scientists of the concerned institute and every step was taken into account to mitigate those lacunae. With the series of training programmes/exposure visits/interaction meets, Sri Das gained skills and knowledge on crop and livestock production in a scientific way. He also included poultry, vermicompost and honey bee as new enterprise in his production system. Thus, by the end of the year 2020-21, his net annual income was recorded to be Rs.138900/-. Moreover, Rs. 6300/- was saved from input cost towards production of paddy through line transplanting and using *dhaincha* as green manure.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>CR Dhan1018,Pooja</i>)	3.00 ac	51.00q	73950	34950
Pulse (Local)	2.00 ac	3.00 q	13800	5800
Brinjal (Local)	0.60 ac	25.00 q	25000	10500
Cucumber (Local)	0.20 ac	6.50 q	9750	5750
Cow (<i>Desi</i>)	1 no.	720.00 lt	18720	4320
			141220	61320

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, CR Dhan 701</i>)	3.00 ac	60.00 q	108000	51000	17.65	45.92
Pulse (<i>IPM-02-03</i>)	2.00 ac	4.00 q	24000	12000	33.33	106.90
Brinjal (<i>JK 8031</i>)	0.60 ac	30.00 q	45000	27000	20.00	157.14
Cucumber (<i>Rain special</i>)	0.20 ac	8.50 q	17000	10500	30.77	82.61
Poultry (<i>Vanaraja</i>)	50 no.	Meat-1.00 q; Eggs-3600 no.	36600	21600	100.00	100.00
Cow (<i>Desi</i>)	1 no.	900.00 lt	27000	9000	25.00	108.33
Vermicompost	1 no.	16.00 q	8500	6000	100.00	100.00
Honey bee	1 box	4.00 lt	2200	1800	100.00	100.00
			268300	138900		126.52



Senior officers from ICAR-DKMA visiting farm



Rice farm mechanization



Honey bee rearing



**Sri Manoranjan
Rout**

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

08658200301(M)

Age: 44 years

Education : Graduate

**Size of land holding (in
acre):** 2.0

Institute involved:

ICAR-NRRI, Cuttack

During the year 2016-17, Sri Rout practiced paddy, pulse and vegetable production using traditional knowledge. The average net income was around Rs. 66000/- per annum. The productivity was not stable because of lack of technical knowledge, poor quality crop seeds, climatic vulnerability and many more. After making available hybrid seeds, providing technical knowledge through skill trainings/interaction meets, selecting new profitable and suitable enterprises and linking market channels for selling agricultural produces by the scientists of ICAR-NRRI, Cuttack, Sri Rout started producing commercial paddy, vegetables, milk and fishes. His annual profit was substantially jumped to Rs.219400/- by the end of 2020-21 due to adoption of new technologies in agricultural production.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Sarala, Pooja</i>)	1.50 ac	22.50 q	32625	14625
Pulse (Local)	1.50 ac	2.50 q	11250	6750
Okra (Local)	0.12 ac	10.00 q	16000	10000
Pointed gourd (Local)	0.32 ac	16.00 q	32000	22400
Brinjal (Local)	0.16 ac	15.20 q	18240	12240
			110115	66015

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 304, Swarna Sub-1</i>)	1.50 ac	30.00 q	55500	28500	33.33	94.87
Pulse (<i>IPM-02-03</i>)	1.50 ac	3.30 q	19800	12300	32.00	82.88
Okra (<i>Radhika</i>)	0.12 ac	15.00 q	30000	22000	50.00	120.00
Pointed gourd (<i>Swarna alaukik</i>)	0.32 ac	25.00 q	62500	40000	56.25	78.57
Brinjal (<i>JK 8031</i>)	0.16 ac	20.00 q	30000	21200	31.57	73.20
Fish (<i>Rohu, Catla, Mrigal</i>)	0.50 ac	5.00 q	75000	60000	100.00	100.00
Cow (<i>Jersey</i>)	2 no.	3000 lt	90000	35400	100.00	100.00
			362800	219400		232.35



Vegetables ready for sale



Commercial brinjal production



Scientific carp culture



**Smt. Priyadarsini
Mohanty**

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

08249497489 (M)

Age: 29 years

Education : Graduate

**Size of land holding (in
acre):** 5.0

Institute involved:

ICAR-NRRI, Cuttack

Smt. Mohanty had annual net income of Rs. 41450/- from the sale of paddy, pulses, vegetables and fishes. She faced problems like lack of knowledge on scientific fish and crop production, selecting suitable enterprise, managing diseases and pests and many others. She highlighted her problems in front of scientists involved in FFP and accordingly, interventions were made with inclusion of new enterprises like poultry and honey production. Within 4 years her annual profit was recorded to be Rs. 107250/-. In addition, there was cost saving of Rs. 5280/- from the production of paddy by line transplanting method and improved vegetable varieties.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Sarala, Pooja</i>)	1.50 ac	22.50 q	32625	14625
Pulse (Local)	1.50 ac	2.25 q	10125	4125
Okra (Local)	0.12 ac	5.00 q	7500	3200
Brinjal (Local)	0.12 ac	5.50 q	8100	4500
Fish (<i>Indigenous</i>)	0.12 ac	1.80 q	21600	15000
			79950	41450

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, CR Dhan 307</i>)	1.50 ac	30.00 q	54000	26000	33.33	77.78
Pulse (<i>IPM-02-03</i>)	1.50 ac	3.00 q	16500	6250	33.33	51.52
Okra (<i>Radhika</i>)	0.12 ac	7.50 q	13000	6000	30.00	87.50
Brinjal (<i>JK 8031</i>)	0.12 ac	9.00 q	13500	8000	63.64	77.78
Fish (<i>Rohu, Catla, Mrigal</i>)	0.12 ac	3.00 q	45000	35000	66.67	133.33
Poultry (<i>RIR</i>)	50 no.	Meat-1.00 q; Egg-4000 no.	39000	24000	100.00	100.00
Honey bee	1 box	4.00 lt	2400	2000	100.00	100.00
			183400	107250		158.75



Honey bee rearing



Poultry farming



Composite carp production in backyard pond



Mr. Sanjaya Kumar Swain

Address

Village- Dorbanga,
Balipatna, Khordha,
Odisha

Contact number:

09437287787 (M)

Age: 47 years

Education : Graduate

Size of land holding (in acre): 5.0

Institute involved:

ICAR-CIFA, Bhubaneswar

During 2016-17, Mr. Swain had annual profit of Rs. 30450/- from selling paddy, green gram and fishes. Untimely rainfall, unavailability of quality seeds/planting material and lack of scientific agricultural knowledge were among the different lacunae in his production system. The problems were solved by the scientists of ICAR-CIFA, Bhubaneswar under Farmer FIRST Programme with conducting trainings/exposure visits and farmer-scientist interaction meets. Using green manuring, applying soil test-based fertilizers like $ZnSO_4$, cultivating paddy through SRI method by using cono-weeder and Leaf Colour Chart for efficient nitrogen management in paddy, inoculating green gram seeds, introducing improved cultivar like *TARM 1* and improved variety of cauliflower and French bean, adopting scientific fish farming, Mr. Swain increased his annual income to the level of Rs. 206325/- with net income of Rs. 93900/-.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy	2.50 ac	35.00 q	54250	15750
Green gram	1.50 ac	2.40 q	8400	3500
Carp culture	2.50 ac	2.30 q	25300	11200
			87950	30450

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy	2.50 ac	40.00 q	74000	30000	14.25	36.40
Green gram	2.50 ac	6.75 q	37125	18500	101.80	341.96
Cauliflower	0.50 ac	34.00 q	34000	15000	100.00	100.00
French bean	0.50 ac	16.00 q	24000	10400	100.00	100.00
Carp culture	2.50 ac	3.10 q	37200	20000	34.78	47.04
			206325	93900		208.37



Commercial vegetable production



Monitoring visit of vegetable fields





**Sri Udaya Kumar
Padhi**

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

09348225155 (M)

Age: 22 years

Education : Graduate

**Size of land holding (in
acre):** 4.0

Institute involved:

ICAR-NRRI, Cuttack

During the year 2016-17, Sri Padhi was engaged in paddy, pulse and vegetable production with Locally available varieties and existing knowledge. His earning was noted as Rs. 62625/- annually from sale of his produces. Non-availability of inputs, poor quality seeds, lack of scientific knowledge, frequent attacks of diseases and pests in crops were the major drawbacks for low productivity. Those problems were addressed through discussion with the scientists of ICAR-NRRI, Cuttack by undertaking different interventions, starting new enterprises for optimum use of resources and providing trainings/exposure visits. Vermicomposting, fish farming and dairy farming were among the new enterprises in his production system. As a result, his annual profit was enhanced by 177% (Rs.173750/-) at the end of the year 2020-21 than the income of base year. Not only that, he saved Rs.6300/- from production cost due to adoption of scientific management for commercial vegetable production and use of improved varieties of paddy through line transplanting method.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Sarla, Pooja</i>)	3.50 ac	52.50 q	73500	31500
Pulse (Local)	3.50 ac	5.25 q	23625	13125
Cauliflower (<i>Pusakatki</i>)	0.12 ac	1200 no.	9600	6000
Brinjal (Local)	0.20 ac	15.00 q	18000	12000
			124725	62625

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>CR Dhan 409, CR Dhan 307</i>)	3.50 ac	70.00 q	126000	63000	33.33	100.00
Pulse (<i>IPM-02-03</i>)	3.50 ac	8.75 q	52500	35000	66.67	166.67
Cauliflower (<i>Namdhari</i>)	0.12 ac	1500 no.	22500	16500	25.00	175.00
Brinjal (<i>JK 8031</i>)	0.20 ac	22.50 q	33750	23750	50.00	97.92
Fish (<i>Rohu, Catla, Mrigal</i>)	0.08 ac	2.00 q	30000	22000	100.00	100.00
Cow (<i>Desi</i>)	1 no.	900.00 lt	27000	9000	100.00	100.00
Vermicompost	1 no.	15 q	7500	4,500	100.00	100.00
			299250	173750		177.45



Paddy harvesting mechanization



Machine transplantation of paddy



Vermicompost production



Sri Bishnu Prasad Jena

Address

Village- Jagannathpur,
Balianta, Khordha, Odisha

Contact number:

09938142097 (M)

Age: 42 years

Education : Higher
Secondary pass

**Size of land holding (in
acre):** 2.5 + 2.5 (Took lease
during 2017-18)

Institute involved:

ICAR-CIFA, Bhubaneswar

Sri B. P. Jena an innovative farmer, was able to raise his annual gross income to Rs. 361750/- with net income of Rs. 170500/- during 2020-21 from annual gross income of Rs. 97750/- with net income of Rs. 34170/- during 2016-17 through adopting advanced farming practices. Under supervision of FFP team, he adopted scientific agricultural farming and developed a fish based integrated farming system with integration of fish culture and horticultural crops in an area of 2 acre. He replaced traditional variety of French bean with bush type French bean and recorded 20% higher yield.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy	2.50 ac	35.00 q	54250	15750
Green gram	2.00 ac	3.00 q	10500	4100
French bean	0.50 ac	27.50 q	33000	14320
			97750	34170

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy	2.50 ac	41.00 q	75850	31200	17.14	39.81
Green gram	2.00 ac	4.80 q	26400	11800	60.00	151.43
French bean	0.50 ac	33.00 q	49500	22300	20.00	50.00
Fish and Cauliflower	2.00 ac	Fish- 10.00 q; Cauliflower- 35.00 q	210000	105200	100.00	100.00
			361750	170500		398.97



Commercial French bean production



Pisciculture



Composite fish culture



Mr. Prabhat Samal

Address

Village- Biswanathpur,
Cuttack, Odisha

Contact number:

09776206873 (M)

Age: 29 years

Education : Higher
Secondary pass

**Size of land holding (in
acre):** 4.0

Institute involved:

ICAR-NRRI, Cuttack

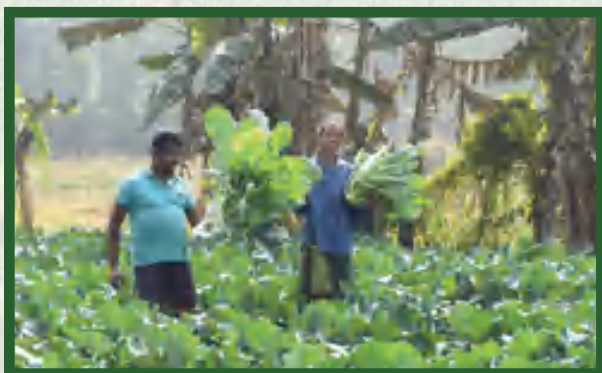
Mr. P. Samal had annual profit of Rs. 87500/- from his farming during the year 2016-17. Poor quality seeds, lack of scientific management of crops and dairy animals, excess fertilizer use, frequent insect/pest attacks, improper marketing were among the reasons of his low income. Those problems were addressed with proper interventions suggested by the concerned scientists of FFP which resulted higher annual profit of Rs. 211700/- at the end of the year 2020-21. In addition, the use of hybrid seeds and soil test-based fertilizers reduced the input cost of Rs. 5200/-.

Economics of production during 2016-17 (Before intervention)

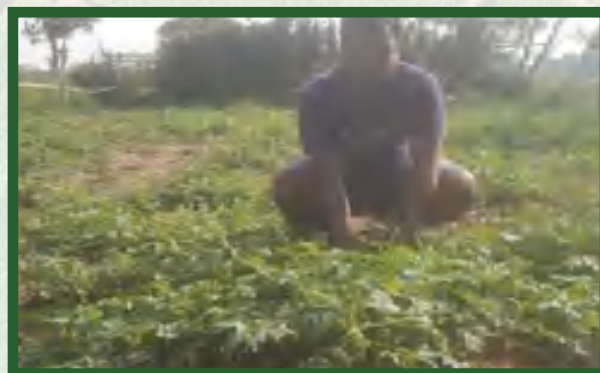
Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Pooja, Swarna</i>)	2.00 ac	30.00 q	43500	19500
Pulse (Local)	1.00 ac	1.50 q	7500	4500
Bitter gourd (<i>VNR</i>)	0.40 ac	18.00 q	27500	14500
Cauliflower (Local)	0.40 ac	4000 no.	32000	22000
Cow (<i>Desi</i>)	4 no.	3500.00 lt	87500	27000
			198000	87500

Economics of production during 2020-21 (After intervention)

Components	Area/ No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Swarna Sub-1, CR Dhan 409</i>)	2.00 ac	44.00 q	79200	44200	46.67	126.67
Pulse (<i>IPM-02-03</i>)	1.00 ac	2.50 q	15000	10000	66.67	122.22
Bitter gourd (<i>US 1315</i>)	0.40 ac	25.00 q	60000	45000	55.56	210.34
Cauliflower (<i>Namdhari</i>)	0.40 ac	4800 no.	72000	57500	25.00	161.36
Cow (<i>Desi</i>)	4 no.	4500.00 lt	117600	55000	28.57	103.70
			343800	211700		141.94



Commercial cauliflower production



Commercial bitter gourd production



Green gram cultivation



Mr. Prashant Kumar Pradhan

Address

Village- Satyabhamapur,
Cuttack, Odisha

Contact number:

09692842027 (M)

Age: 36 years

Education : Class VIII
pass

**Size of land holding (in
acre):** 1.0

Institute involved:
ICAR-NRRI, Cuttack

The annual income of Mr. P. K. Pradhan was Rs.60100/- from the sale of local variety of paddy, pulse and vegetables, and milk from *Jersey* cows with traditional knowledge during the year 2016-17. He faced many problems like lack of scientific knowledge, improper crop management practices, water unavailability, unavailability of hybrid seeds, improper fertilizer application and many more. Necessary interventions e.g. proper fertilizer application in paddy using customized leaf colour chart (CLCC), nutrition management in other crops and dairy animals, supply of hybrid seeds, providing skill training programmes, use of residual moisture for crop production were made by the scientists. He was also trained with commercial crops and dairy farm management. After adopting those interventions for subsequent years, he was able to earn Rs.138200/- annually from the same land which was 130% higher than his profit of base year. Around Rs.5000/- was saved from production cost through scientific production.

Economics of production during 2016-17 (Before intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)
Paddy (<i>Swarna, Sarala</i>)	1.00 ac	15.00 q	18000	9000
Pulse (Local)	1.00 ac	1.60 q	7200	4200
Pointed gourd (Local)	0.16 ac	6.00 q	12000	8000
Okra (Local)	0.24 ac	10.20 q	15300	6900
Cow (<i>Jersey</i>)	3 no.	4500.00 lt	112500	32000
			165000	60100

Economics of production during 2020-21 (After intervention)

Components	Area/No.	Production	Gross income (Rs.)	Net income (Rs.)	Percent increase due to intervention	
					Production	Income
Paddy (<i>Swarna Sub-1, CR Dhan 701</i>)	1.00 ac	22.00 q	39600	21100	46.67	134.44
Pulse (<i>IPM-02-03</i>)	1.00 ac	2.50 q	15000	10000	56.25	138.10
Pointed gourd	0.16 ac	8.00 q	24000	16000	33.33	100.00
Okra (<i>Radhika</i>)	0.24 ac	16.80 q	33600	20600	64.71	198.55
Cow (<i>Jersey</i>)	3 no.	5400.00 lt	172800	70500	20.00	120.31
			285000	138200		129.95



Commercial pointed gourd production



Commercial okra production



Green gram sowing





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